SECTION 4: IMPACT ANALYSIS

This section calculates the expected emissions from the construction and operation of the project as a necessary requisite for assessing the regulatory significance of project emissions on a regional level. It also analyzes areas of concern on a qualitative level where no recognized calculation methodologies exist.

4.1 - Construction Unmitigated Impacts

Short-term impacts will include fugitive dust and other particulate matter, as well as exhaust emissions generated by earthmoving activities and operation of grading equipment during site preparation. Construction emissions are caused by onsite or offsite activities. Onsite emissions principally consist of exhaust emissions (NO_x, SO_x, CO, ROG, PM_{10}, and $PM_{2.5}$) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, as well as worker traffic, but also include road dust (PM_{10}). Major construction-related activities include the following:

- Grading/clearing, including the excavation
- Excavation and earth moving for infrastructure construction of the utilities, both on and offsite, and dwelling unit foundations and footings
- Building construction
- Asphalt paving of access roads throughout the development
- Application of architectural coatings for things such as dwelling stucco and interior painting

Construction equipment such as scrapers, bulldozers, forklifts, backhoes, water trucks, and industrial saws are expected to be used on the project site and will result in exhaust emissions. During the finishing phase, paving operations and application of architectural coatings will release ROG emissions. Construction emission can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions.

Construction fleet was estimated using a spreadsheet developed by the San Joaquin Valley Unified Air Pollution Control District for their Indirect Source Rule. The project and Reduced Density Option 2 emissions include those from the demolition of the existing building on Bishop Ranch 2. The project's construction plan is to phase out construction of the projects different parcels over a period of years. The construction timeline is detailed in Table 7. Because the threshold of significance is based on maximum pounds per day (lbs/d) and the construction timeline has overlapping schedules, more than one parcel would be having activity at the same time. Therefore, construction emissions were estimated on a maximum lbs/d for each year of activity.

Table 7: Project Construction Plan

Parcel	Construction Begins	Duration of Construction
Plaza District	Fall 2008	24 month
Bishop Ranch 1A – Phase 1	Mid-2008	14 months
Bishop Ranch 1A – Phase 2	Mid-2009	14 months
Bishop Ranch 1A – Phase 3	Mid-2010	14 months
City Hall & Transit	Mid-2009	18 months
Source: Sunset Development Company 2007		

4.1.1 - Construction Impact from Project

Table 8 summarizes these construction-related emissions (without mitigation) for the proposed project. Only emissions with quantifiable thresholds are presented. The emission estimates were derived from the project description using the CARB URBEMIS2007 Version 9.2 emission model. The URBEMIS data files are provided in Appendix A.

Table 8: Project Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	80.0	80.0	550.0	80.0
Year 2008	46.1	456.6	224.0	403.1
Significant Impact?	No	**Yes**	No	**Yes**
Year 2009	343.6	575.1	417.5	496.6
Significant Impact?	**Yes**	**Yes**	No	**Yes**
Year 2010	461.6	306.8	326.0	83.0
Significant Impact?	**Yes**	**Yes**	No	**Yes**
Year 2011	141.1	39.0	44.1	2.8
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 8 indicates that for the proposed project, the BAAQMD construction emission thresholds will be exceeded in 2008 for NO_x and PM_{10} emissions; in 2009 and 2010 for ROG, NO_X, and PM_{10} emissions; and in 2011 for ROG emissions only. Therefore, without mitigation, the short-term construction emissions are considered to have a significant impact.

4.1.2 - Construction Impact from Reduced Density Option 1

Table 9 summarizes these construction-related emissions (without mitigation) for the Reduced Density Alternative Option 1. Only emissions with quantifiable thresholds are presented. The

emission estimates were derived from the project description using the URBEMIS2007 Version 9.2 emission model. The URBEMIS data files are provided in Appendix A.

Table 9: Reduced Density Option 1 Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	80.0	80.0	550.0	80.0
Year 2008	17.6	165.1	95.5	73.1
Significant Impact?	No	**Yes**	No	No
Year 2009	174.4	284.2	189.0	168.7
Significant Impact?	**Yes**	**Yes**	No	**Yes**
Year 2010	293.3	225.9	186.3	77.9
Significant Impact?	**Yes**	**Yes**	No	No
Year 2011	141.1	39.0	44.1	2.8
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in the above table indicates that for the Reduced Density Alternative Option 1, the BAAQMD construction emission thresholds will be exceeded in 2008 for NO_x and PM_{10} emissions; in 2009 for ROG, NO_X, and PM_{10}; in 2010 for ROG and NO_x emissions; and in 2011 for ROG emissions only. Therefore, without mitigation, the short-term construction emissions are considered to have a significant impact.

4.1.3 - Construction Impact from Reduced Density Option 2

Table 10 summarizes these construction-related emissions (without mitigation) for the Reduced Density Alternative Option 2. Only emissions with quantifiable thresholds are presented. The emission estimates were derived from the project description using the CARB URBEMIS2007 Version 9.2 emission model. The URBEMIS data files are provided in Appendix A.

Table 10: Reduced Density Option 2 Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	43.8	406.5	213.9	412.9

Table 10 (Cont.): Reduced Density Option 2 Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Significant Impact?	No	**Yes**	No	**Yes**
Year 2009	343.8	338.6	283.5	331.2
Significant Impact?	**Yes**	**Yes**	No	**Yes**
Year 2010	168.3	80.9	139.7	5.2
Significant Impact?	**Yes**	**Yes**	No	No
Source: Michael Brandman Associates, 2007				

The information shown in the above table indicates that for the Reduced Density Alternative Option 2, the BAAQMD construction emission thresholds will be exceeded in 2008 for NO_X emissions; in 2009 for ROG, NO_X, and PM_{10} emissions; and in 2010 for ROG and NO_X emissions. Therefore, without mitigation, the short-term construction emissions are considered to have a significant impact.

4.1.4 - Construction Impact from the No Project Alternative

Table 11 summarizes these construction-related emissions (without mitigation) for the No Project Alternative. Only emissions with quantifiable thresholds are presented. The emission estimates were derived from the project description using the CARB URBEMIS2007 Version 9.2 emission model. The URBEMIS data files are provided in Appendix A.

Table 11: No Project Alternative Construction Emissions (Unmitigated)

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	15.3	115.1	85.5	82.9
Significant Impact?	No	**Yes**	No	**Yes**
Year 2009	174.5	47.7	55.1	3.3
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in the above table indicates that for the No Project Alternative, the BAAQMD construction emission thresholds will be exceeded in 2008 for NO_X and PM_{10} and in 2009 for ROG emissions only. Therefore, without mitigation, the short-term construction emissions are considered to have a significant impact.

4.2 - Construction Mitigations

AQC-1 The project owner shall designate an onsite AQCMM who shall be responsible for directing compliance with the following Best Available Control Measures for fugitive dust mitigation during project construction.

AQC-2 For any earthmoving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.

AQC-3 For all disturbed surface areas (except completed grading areas), apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas that cannot be stabilized, as evidenced by wind-driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.

AQC-4 For all disturbed surface areas that are completed grading areas, apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind-driven fugitive dust, excluding any areas that are inaccessible because of excessive slope or other safety conditions.

AQC-5 For all inactive disturbed surface areas, apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind-driven fugitive dust, excluding any areas that are inaccessible because of excessive slope or other safety conditions.

AQC-6 For all unpaved roads, water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph.

AQC-7 For all open storage piles, apply water to at least 80 percent of the surface areas of all open storage piles on a daily basis when there is evidence of wind-driven fugitive dust.

AQC-8 To provide track-out control, pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and width of at least 20 feet.

AQC-9 Provide rerouting or rapid cleanup of temporary sources of mud and dirt on unpaved roads. In addition, street sweeping of roads adjacent to the project site should be done to reduce fugitive dust from traffic.

AQC-10 During rough grading and construction, access to the site should require an apron to be built into the project site from the adjoining paved roadways. The apron should be paved

or have a petroleum-based palliative applied. All petroleum-based palliatives will comply with BAAQMD's Regulation 6, Rule 15.

AQC-11 During rough grading and construction, streets including shoulders adjacent to the project site should be swept at least once per day to reduce fugitive dust from traffic, or as required by governing body, to remove silt which may have accumulated from construction activities.

AQC-12 All diesel-fueled engines used in the construction of the project shall use ultra-low sulfur diesel fuel, which contains no more than 15 ppm of sulfur, or alternative fuels (i.e., reformulated fuels, emulsified fuels, compressed natural gas, or power with electrification). Low sulfur diesel fuel (500 ppm of sulfur content) shall be used only if evidence is obtained and maintained from the fuel supplier(s) that ultra-low sulfur diesel fuel is infeasible. CEQA Public Resource Code Section 21061.1 defines "feasible" as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

AQC-13 To the extent that equipment and technology is available and cost-effective, the contractors are encouraged to use catalyst and filtration technologies, and retrofit existing engines in construction equipment.

AQC-14 Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.

4.3 - Construction Impacts with Mitigations

4.3.1 - Construction Impact from Project

Table 12 summarizes the mitigated construction-related emissions for the proposed project. Only emissions with quantifiable thresholds are presented. The emission estimates with mitigations were derived from the project description using the CARB URBEMIS2007 Version 9.2 emission model. The URBEMIS data files are provided in Appendix A.

Table 12: Mitigated Project Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	46.1	456.6	224.0	156.1
Significant Impact?	No	**Yes**	No	**Yes**
Year 2009	343.6	575.1	417.5	193.2
Significant Impact?	**Yes**	**Yes**	No	**Yes**
Year 2010	461.6	306.8	326.0	38.5
Significant Impact?	**Yes**	**Yes**	No	No
Year 2011	141.1	39.0	44.1	2.6
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 12 indicates that for the proposed project, even with all feasible mitigations, the BAAQMD construction emission thresholds will still be exceeded in 2008 for NO_x and PM_{10} emissions and in 2009 for ROG, NO_X, and PM_{10} emissions; in 2010 for ROG and NO_X emissions; and in 2011 for ROG emissions. Therefore, even with mitigation, the short-term construction emissions are still considered to have a significant impact, therefore the impacts from construction emissions are significant and unavoidable.

4.3.2 - Construction Impact from Reduced Density Option 1

Table 13 summarizes the mitigated construction-related emissions for the Reduced Density Alternative – Option 1. Only emissions with quantifiable thresholds are presented. The emission estimates with mitigations were derived from the project description using the CARB URBEMIS2007 Version 9.2 emission model. The URBEMIS data files are provided in Appendix A.

Table 13: Mitigated Reduced Density Option 1 Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	17.6	165.1	95.5	30.4
Significant Impact?	No	**Yes**	No	No
Year 2009	174.4	284.2	189.0	67.4
Significant Impact?	**Yes**	**Yes**	No	No
Year 2010	293.3	225.9	186.3	34.2
Significant Impact?	**Yes**	**Yes**	No	No

Table 13 (Cont.): Mitigated Reduced Density Option 1 Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Year 2011	141.1	39.0	44.1	2.6
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 13 indicates that for the Reduced Density Alternative Option 1, even with all feasible mitigations, the BAAQMD construction emission thresholds will still be exceeded in 2008 for NO_X; in 2009 and 2010 for ROG and NO_X emissions; and in 2011 for ROG emissions. Therefore, even with mitigation, the short-term construction emissions are still considered to have a significant impact, therefore the impacts from construction emissions are significant and unavoidable.

4.3.3 - Construction Impact from Reduced Density Option 2

Table 14 summarizes the mitigated construction-related emissions for the Reduced Density Alternative – Option 1. Only emissions with quantifiable thresholds are presented. The emission estimates with mitigations were derived from the project description using the CARB URBEMIS2007 Version 9.2 emission model. The URBEMIS data files are provided in Appendix A.

Table 14: Mitigated Reduced Density Option 2 Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_x	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	43.8	406.5	213.9	162.4
Significant Impact?	No	**Yes**	No	**Yes**
Year 2009	343.8	338.6	283.5	129.1
Significant Impact?	**Yes**	**Yes**	No	**Yes**
Year 2010	168.3	80.9	139.7	4.3
Significant Impact?	**Yes**	**Yes**	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 14 indicates that for the Reduced Density Alternative Option 2, even with all feasible mitigations, the BAAQMD construction emission thresholds will still be exceeded in 2008 for NO_X and PM_{10} emissions; in 2009 for ROG, NO_X, and PM_{10} emissions; and in 2010 for ROG and NO_X emissions. Therefore, even with mitigation, the short-term construction emissions are still considered to have a significant impact, therefore the impacts from construction emissions are significant and unavoidable.

4.3.4 - Construction Impact from the No Project Alternative

Table 15 summarizes the mitigated construction-related emissions for the No Project Alternative. Only emissions with quantifiable thresholds are presented. The emission estimates with mitigations were derived from the project description using the URBEMIS2007 Version 9.2 emission model. The URBEMIS data files are provided in Appendix A.

Table 15: Mitigated No Project Alternative Construction Emissions

Year	Maximum Emissions (lbs/d)			
	ROG	NO_X	CO	PM_{10}
Regional Threshold	**80**	**80**	**550**	**80**
Year 2008	15.3	115.1	85.5	36.7
Significant Impact?	No	**Yes**	No	No
Year 2009	174.5	47.7	55.1	3.3
Significant Impact?	**Yes**	No	No	No
Source: Michael Brandman Associates, 2007				

The information shown in Table 15 indicates that for the No Project Alternative with feasible mitigations, the BAAQMD construction emission thresholds will be exceeded in 2008 for NO_X emissions and in 2009 for ROG emissions. Therefore, even with mitigation, the short-term construction emissions are still considered to have a significant impact, therefore the impacts from construction emissions are significant and unavoidable.

4.4 - Project Operations Impacts

Project operations cause long-term emissions considering they occur over the life of the project. The project has the potential to add vehicular emissions, emissions from area sources, carbon monoxide hot-spots, and odors. Additionally the project has the potential to have an adverse effect on global climate change through emissions of greenhouse gases.

4.4.1 - Total Emissions Impacts

Emissions from developmental projects are traditionally considered for project build-out. Emission sources consist of mobile emissions and area source emissions. Mobile emissions estimates are derived from motor vehicle traffic. Area Source emissions estimates are derived from the consumption of natural gas, electricity, and consumer products, as well as emissions resulting from landscape maintenance. An estimate of the daily total long-term project emissions is derived by combining both mobile and stationary emissions (natural gas consumption, consumer product consumption, paint applications, and landscape maintenance). Total daily emissions were estimated for summer because summer is the ozone season.

In the analysis of the proposed project and Reduced Density Alternative Option 2, the action includes the demolition of the existing office building on Bishop Ranch 2. In order to account for the reduction of emissions that would come from that demolition, Table 16 shows current level of emissions for that office complex. Where appropriate these emissions will be subtracted from the estimated totals.

Table 16: Existing Bishop Ranch 2 Emissions

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	1	1	3	0	0	0
Mobile Emissions	22	25	262	0	29	6
Emissions Totals (lbs/day)	**23**	**26**	**265**	**0**	**29**	**6**
Source: Michael Brandman Associates, 2007						

Total Emissions from Project without Mitigations

Unmitigated emissions for the proposed project were calculated using the CARB URBEMIS2007 Version 9.2 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 17.

Table 17: Total Emissions from Project without Mitigations

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	38	17	23	>1	>1	>1
Mobile Emissions	287	358	3,625	3	537	103
Emissions Totals (lbs/day)	**326**	**375**	**3,648**	**3**	**537**	**103**
(Bishop Ranch 2 Emissions)	(23)	(26)	(265)	0	(29)	(6)
Adjusted Emissions (lbs/day)	**303**	**349**	**3,383**	**3**	**508**	**97**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 17 indicates that for the proposed project, the BAAQMD total emissions emission thresholds will be exceeded for ROG, NO_x, CO, and PM_{10} emissions. Therefore, without mitigation, the total project long-term emissions are considered to have a significant impact.

Total Emissions from Reduced Density Alternative Option 1 without Mitigations

Unmitigated emissions for the Reduced Density Alternative Option 1 were calculated using the CARB URBEMIS2007 for Windows Version 9.2 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 18.

Table 18: Total Emissions from Reduced Density Alternative Option 1 without Mitigations

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	5	5	9	0	>1	>1
Mobile Emissions	101	124	1,273	1	186	36
Emissions Totals (lbs/day)	**106**	**129**	**1,282**	**1**	**186**	**36**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 18 indicates that for the Reduced Density Alternative Option 1, the BAAQMD total emissions emission thresholds will be exceeded for ROG, NO_X, CO, and PM_{10} emissions. Therefore, without mitigation, the total project long-term emissions are considered to have a significant impact.

Total Emissions from Reduced Density Alternative Option 2 without Mitigations

Unmitigated emissions for the Reduced Density Alternative Option 2 were calculated using the CARB URBEMIS2007 Version 9.2 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 19.

Table 19: Total Emissions from Reduced Density Alternative Option 2 without Mitigations

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	33	12	14	>1	>1	>1
Mobile Emissions	187	234	2,353	2	351	67
Emissions Totals (lbs/day)	**219**	**245**	**2,367**	**2**	**351**	**67**
(Bishop Ranch 2 Emissions)	(23)	(26)	(265)	0	(29)	(6)
Adjusted Emissions (lbs/day)	**196**	**219**	**2,102**	**2**	**322**	**61**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 19 indicates that for the Reduced Density Alternative Option 2, the BAAQMD total emissions emission thresholds will be exceeded for ROG, NO_X, CO, and PM_{10} emissions. Therefore, without mitigation, the total project long-term emissions are considered to have a significant impact.

Total Emissions from the No Project Alternative without Mitigations

Unmitigated emissions for the Reduced Density Alternative Option 2 were calculated using the CARB URBEMIS2007 Version 9.2 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 20.

Table 20: Total Emissions from the No Project Alternative without Mitigations

Pollution Source	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	3	3	4	0	>1	>1
Mobile Emissions	36	43	445	>1	64	13
Emissions Totals (lbs/day)	**39**	**45**	**449**	**>1**	**64**	**13**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	No	No	No		No	
Source: Michael Brandman Associates, 2007						

The information shown in the above table indicates that for the No Project Alternative, the BAAQMD total emissions emission thresholds will not be exceeded. Therefore, without mitigation, the total project long-term emissions are considered to have a less than significant impact.

4.4.2 - Project Operation Mitigations

Due to the magnitude and overall significance of the proposed project, the following mitigations are proposed for implementation.

AQO-1 The project owner shall provide bicycle-enhancing infrastructure that includes bikeways/paths (Class I or II) connecting to a bikeway system, secure bicycle parking, and bicycle storage areas at employment facilities and multifamily residential developments.

AQO-2 The project owner shall ensure that the project will provide multiple and/or direct pedestrian access (e.g., defined paths, “as the crow flies” access, etc.) to adjacent, complementary land uses and throughout the project.

AQO-3 The project owner shall design sidewalks and bikeways to separate pedestrian and bicycle pathways from vehicle paths by use of a barrier or “green” buffer strip. Sidewalks and bikeways shall be designed to be accommodating and appropriately sized for anticipated future pedestrian and bicycle use.

AQO-4 The project owner shall implement design parameters where the project provides a development pattern that eliminates physical barriers such as walls, berms, landscaping, ditches, and slopes between residential and non-residential uses so as not to impede bicycle or pedestrian circulation. Such pathways shall be easy to navigate, designed to facilitate pedestrian movement through the project, and create a safe environment for all potential users (pedestrian, bicycle and disabled) from obstacles and automobiles.

AQO-5 The project owner shall provide Class II bicycle parking facilities on site non-residential land uses. Bicycle parking facilities shall be near destination points (within 50 feet of entrances) and easy to find.

AQO-6 The project owner shall provide Class II bicycle parking at public parking garages.

AQO-7 The project owner shall provide shower and locker facilities to encourage employees to bike and/or walk to work.

AQO-8 The project owner shall encourage the local transit service provider to install appropriate transit enhancing infrastructure on the project site, such as transit shelters, benches, street lighting, route signs and displays, and/or bus turnouts/bulbs.

AQO-9 The project owner shall provide display case or kiosk displaying transportation information in a prominent area accessible to employees or residents. Case/kiosks shall provide ridesharing information, transit schedules, and bicycle route and path information.

AQO-10 The project owner shall ensure that the commercial portions of the project will allow for an adequate buffer (to be determined by the BAAQMD) between any dry cleaning operation or gasoline dispensing facility and any sensitive receptors (e.g., schools, households, etc.).

AQO-11 The project owner shall provide 110-volt and 220-volt outlets at project-loading docks so that trucks can connect with these outlets to power their auxiliary equipment.

AQO-12 The project owner shall provide natural dispersal of CO in parking structures so CO will be directed away from the sensitive receptors by partially enclosing the parking structure and installing a mechanical ventilation system that dispenses the exhaust appropriately.

AQO-13 The project owner shall provide adequate ingress and egress at entrances to public facilities to minimize vehicle idling and traffic congestion and dedicated turn lanes as appropriate.

AQO-14 The project owner shall provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities, adjacent sidewalks, and building entrances.

AQO-15 The project owner shall provide loading and unloading facilities for transit and carpool/vanpool users with clear visible signage.

AQO-16 The project owner shall provide grass paving, tree shading, or reflective surface for unshaded parking lot areas, driveways, or fire lanes that reduce standard black asphalt paving by 10 percent or more.

AQO-17 The project owner shall install cool paving and utilize high albedo and construction materials to increase the reflectivity of roads, driveways, and other paved surfaces.

AQO-18 The project owner shall provide residents low nitrogen oxide-emitting and/or high-efficiency water heaters.

AQO-19 The project owner shall allow only natural gas fireplaces in the development. Conventional open-hearth fireplaces shall not be permitted.

AQO-20 The project owner shall install a central heating, ventilation, and air conditioning (HVAC) to maintain all condominium and apartment units under positive pressure. The HVAC systems should include high-efficiency filters for particulates and a carbon filter to remove other chemical matter.

AQO-21 The project owner shall install cool paving and utilize high albedo and construction materials to increase the reflectivity of roads, driveways, and other paved surfaces.

AQO-22 The project owner shall join a local Transportation Management Association (TMA) and prepare employer-based trip reduction plans and implement feasible travel demand management (TDM) measures for a project of this type. This would include a ride-matching program, guaranteed ride home programs, coordination with regional ridesharing organizations, and a transit incentives program.

AQO-23 The project owner shall provide dedicated daily shuttle trips from/to the project to nearby housing, shopping, health care, public services, and other nearby trip attractors to reduce automobile use.

AQO-24 The project owner shall provide dedicated daily shuttle trips from/to the project to nearby housing, shopping, health care, public services, and other nearby trip attractors to reduce automobile use.

4.4.3 - Total Emissions Mitigated Impacts

URBEMIS was used to estimate emissions reductions from mitigation measures. However, many of the proposed mitigations do not have appropriate calculations in the program; therefore, exact

quantification cannot be accomplished. What are presented in the analysis are the results of emissions reductions from quantifiable mitigations; actual potential reductions would be more than is presented.

Mitigated Emissions Impact from Project

Mitigated emissions for the proposed project were calculated using the CARB URBEMIS2007 Version 9.2 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 21.

Table 21: Mitigated Emissions from Project

Pollution Source	Mitigated Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	38	14	21	0	>1	>1
Mobile Emissions	218	264	2,679	2	397	76
Emissions Totals (lbs/day)	**256**	**278**	**2,700**	**2**	**397**	**76**
(Bishop Ranch 2 Emissions)	(23)	(26)	(265)	0	(29)	(6)
Adjusted Emissions (lbs/day)	**233**	**252**	**2,435**	**2**	**368**	**70**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in the above table indicates that for the proposed project, even with all quantifiable emission reductions included, the BAAQMD total emissions emission thresholds will be still be exceeded for ROG, NO_x, CO, and PM_{10} emissions. Therefore, the total project long-term emissions are considered to have a significant and unavoidable impact.

Mitigated Emissions Impact from Reduced Density Alternative Option 1

Mitigated emissions for the Reduced Density Alternative Option 1 were calculated using the CARB URBEMIS2007 Version 9.2 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 22.

Table 22: Mitigated Emissions from the Reduced Density Alternative Option 1

Pollution Source	Mitigated Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	5	4	8	0	>1	>1

Table 22 (Cont.): Mitigated Emissions from the Reduced Density Alternative Option 1

Pollution Source	Mitigated Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Mobile Emissions	79	95	973	1	143	27
Emissions Totals (lbs/day)	**84**	**99**	**982**	**1**	**143**	**27**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 22 indicates that for the Reduced Density Alternative Option 1, even with all quantifiable emission reductions included, the BAAQMD total emissions emission thresholds will be still be exceeded for ROG, NO_X, CO, and PM_{10} emissions. Therefore, the total project long-term emissions are considered to have a significant and unavoidable impact.

Mitigated Emissions Impact from Reduced Density Alternative Option 2

Mitigated emissions for the Reduced Density Alternative Option 2 were calculated using the CARB URBEMIS2007 Version 9.2 model using trip generation rates supplied by the Traffic Impact Analysis (DMJM Harris/AECOM 2007) and are presented in Table 23.

Table 23: Mitigated Emissions from the Reduced Density Alternative Option 2

Pollution Source	Mitigated Emissions (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Source Emissions	33	9	13	0	>1	>1
Mobile Emissions	135	164	1,646	1	246	47
Emissions Totals (lbs/day)	**167**	**173**	**1,659**	**1**	**246**	**47**
(Bishop Ranch 2 Emissions)	(23)	(26)	(265)	0	(29)	(6)
Adjusted Emissions (lbs/day)	**144**	**147**	**1,394**	**1**	**217**	**41**
BAAQMD Thresholds	80	80	550	N/A	80	N/A
Exceed Threshold	**Yes**	**Yes**	**Yes**		**Yes**	
Source: Michael Brandman Associates, 2007						

The information shown in Table 23 indicates that for the Reduced Density Alternative Option 2, even with all quantifiable emission reductions included, the BAAQMD total emissions emission thresholds will be still be exceeded for ROG, NO_x, CO, and PM_{10} emissions. Therefore, the total project long-term emissions are considered to have a significant and unavoidable impact.

Mitigated Emissions Impact from the No Project Alternative

The No Project Alternative did not require a calculation for mitigated emissions because the unmitigated emissions were less than significant.

4.4.4 - Localized Carbon Monoxide Concentrations

The project and all alternatives are well over the recommended threshold value of 550 lbs/d of CO as established in the BAAQMD CEQA Guidelines. Therefore, further analysis is required. The proposed project has been shown in the Traffic Operations Evaluation for San Ramon City Center Project conducted by DMJM Harris (2007) has the most expected impact on local intersections, so it is the primary focus of this analysis.

Since CO is a localized problem, it sometimes requires additional analysis beyond total project emissions quantification. Projects with sensitive receptors or projects that could negatively impact levels of service (LOS) of existing roads need to use the University of California Davis, Institute of Transportation Studies (ITS) document Transportation Project-Level Carbon Monoxide Protocol (Garza, et al. 1997), hereafter referred to as the CO Protocol, to determine the potential to create a CO hot spot. A CO hot spot is a localized concentration of CO that is above the State or Federal 1-hour or 8-hour ambient air standards. Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The proposed project has the potential to negatively impact the LOS on adjacent roadways as well as have idling vehicles queued in the drive-thru area and, therefore, would require a CO hotspot analysis.

The significance of project-related CO impacts is generally based on guidance presented in the CO protocol. This document presents a series of criteria that are used to determine the significance of impacts. According to the CO Protocol, intersections with Level of Service (LOS) E or F require detailed analysis. In addition, intersections that operate under LOS D conditions in areas that experience meteorological conditions favorable to CO accumulation require a detailed analysis.

As presented in the Traffic Operations Evaluation (DMJM Harris 2007), study area intersections are projected to operate at an LOS D or better during peak hours with the improvements listed. Based on Section 4.7.4 of the CO Protocol, the proposed project is not considered to have the potential for resulting in a significant CO air quality impact. Therefore, this impact is considered less than significant.

4.4.5 - Odors Impacts

Land uses included in the proposed project and the alternatives are residential and commercial. While some relatively minor odor generators may occur, the location of a major odor source is considered unlikely. There were no odors detected during site reconnaissance. The potential exists that future development of land slated for commercial use could result in odor problems depending on how close the odor source is to residences. However, the BAAQMD has a public nuisance rule (Regulation 1-301) designed to prevent odor sources from becoming a problem. Any actions related

to odors are based on citizen complaints to local governments and the local air districts. BAAQMD Regulation 7 would be applicable if the BAAQMD receives odor complaints from ten or more complainants within a 90-day period. Regulation 1-301 reads:

> No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. For purposes of this section, three or more violation notices validly issued in a 30 day period to a facility for public nuisance shall give rise to a rebuttable presumption that the violations resulted from negligent conduct.

The existence of Regulation 1-301 and Regulation 7 will prevent commercially generated odorous emissions—should they occur—from growing into a significant problem, as citizen complaints will force those emissions to be controlled. These Regulations gives the BAAQMD the authority to shut down emission sources, including odorous sources, which the District deems are a nuisance to the community. Consequently, the potential for odor impacts from the commercial properties on the proposed project and all the alternatives is considered less than significant.

4.4.6 - Greenhouse Gases and Impacts on Global Climate Change

Parts of the Earth's atmosphere act as an insulating blanket of just the right thickness, trapping sufficient solar energy to keep the global average temperature in a suitable range. The blanket is a collection of atmospheric gases called greenhouse gases (GHG) based on the idea that the gases also trap heat like the glass walls of a greenhouse. These gases—water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone, chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—act as effective global insulators, reflecting back to Earth visible light and infrared radiation. (For a discussion on each of the greenhouse gases and the regulatory environment surrounding them, please refer to Section 2 – Setting.) Human activities such as producing electricity and driving vehicles have elevated the concentration of these gases in the atmosphere. Many scientists believe that this, in turn, is causing the Earth's temperature to rise, although other scientists disagree. A warmer Earth may lead to changes in rainfall patterns; much smaller polar ice caps; a rise in sea level; and a wide range of impacts on plants, wildlife, and humans.

Project-Specific Impacts

An individual project cannot generate enough greenhouse gas emissions to influence global climate change significantly. The project participates in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases, which when taken together form global climate change impacts.

Cumulative Impacts

The following discussion reviews the project's potential generation of greenhouse gases and its incremental contribution to the cumulative effect of the greenhouse gases. A two-tiered approach is used—project inventory of greenhouse gas emissions and project compliance with the emission reduction strategies contained in the California Climate Action Team's Report to the Governor.

This EIR is one of the first in the State of California to include an analysis of greenhouse gas emissions. This is likely due to the inherent global and international nature of greenhouse gas emissions and to regulation of vehicle emissions and other point sources primarily at the federal level.

Greenhouse Gas Inventory

The emissions are estimated in tons per year, which are converted to teragrams of carbon dioxide equivalents (Tg CO_2 Eq.) using the formula: Tg CO_2 Eq. = (tons of gas) ÷ 1.12 (metric tons per ton) × (GWP) × (1,000,000). One Tg is equal to one million metric tons and one metric ton is equal to 2.24 tons. The global warming potential (GWP) for the gases assessed are located in Table 6.

Note that emissions models such as EMFAC and URBEMIS evaluate aggregate emissions and do not demonstrate, with respect to a global impact, how much of these emissions are "new" emissions specifically attributable to the proposed project in question. For most projects, the main contribution of greenhouse gas emissions is from motor vehicles, but how much of those emissions are new is uncertain. New projects do not create new drivers. Some mixed-use and transportation-oriented projects can actually reduce the number of vehicle miles traveled that a person drives; this reduction is not typically discussed in CEQA documents. Therefore, it is anticipated that the project will not substantially add to the global inventory of greenhouse gas emissions. Nevertheless, greenhouse gas emissions are estimated using procedures similar to those for criteria pollutants (see Appendix C).

Carbon Dioxide: The project will generate emissions of carbon dioxide primarily in the form of vehicle exhaust and in the consumption of natural gas for heating from onsite combustion. Carbon dioxide emissions from vehicles were calculated using URBEMIS2007 assumptions and EMFAC2007 emission factors. Carbon dioxide emissions from natural gas combustion were generated from guidance as presented in the Climate Leaders Greenhouse Inventory Protocol (EPA 2004a). The carbon dioxide emissions, shown in Table 24, indicate that, at buildout, the project will emit 3.99E-02 Tg CO_2 Eq.

Table 24: Project Carbon Dioxide Emissions

Emission Source	Carbon Dioxide Emissions
	2010
Vehicles (lbs/day)	224,499
Natural gas combustion (lbs/day)	16,435

Table 24 (Cont.): Project Carbon Dioxide Emissions

Emission Source	Carbon Dioxide Emissions
	2010
Total (metric tons per year)	39,890
Total (Tg CO_2 Eq.)	3.99E-02
Source: Michael Brandman Associates, 2007	

Methane: The project will generate some methane gas from vehicle emissions and natural gas combustion. Methane emissions from natural gas combustion were generated using guidance as presented in the Climate Leaders Greenhouse Inventory Protocol (EPA 2004a). Methane emissions from vehicles were estimated using EPA emission factors for on-highway vehicles (EPA 2004) and the same assumptions used to estimate criteria pollutants in URBEMIS2007. The emissions are shown in Table 25. As shown in the Table 25, in 2008, emissions would be 3.29E-04 Tg CO_2 Eq.

Table 25: Project Methane Emissions

Emission Source	Methane Emissions
	2010
Vehicles (lbs/day)	93.41
Natural Gas Combustion (lbs/day)	1.14
Total (metric tons/year)	15.65
Total (Tg CO_2 Eq.)	3.29E-04
Source: Michael Brandman Associates, 2007	

Nitrous Oxide: The project generates small amounts of nitrous oxide from vehicle emissions. Emissions from natural gas combustion were generated using guidance as presented in the Climate Leaders Greenhouse Inventory Protocol (EPA 2004a). Nitrous oxide from vehicles was estimated using EPA emission factors for on-highway vehicles (EPA 2004) and the same assumptions that were used to estimate criteria pollutants. The emissions are presented in Table 26. As shown in the Table 26, in 2008 emissions would be 2.36E-03 Tg CO_2 Eq.

Table 26: Project Nitrous Oxide Emissions

Emission Source	Nitrous Oxide Emissions
	2010
Vehicles (lbs/day)	45.91
Natural gas combustion (lbs/day)	2.28E-02
Total (metric tons/year)	7.60
Total (Tg CO_2 Eq.)	2.36E-03
Source: Michael Brandman Associates, 2007	

Water Vapor: The project does not contribute to this greenhouse gas because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks and not emissions from industrial and commercial activities.

Ozone is a greenhouse gas; however, unlike the other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_x and VOC) to global warming (CARB 2004a). Therefore, project emissions of ozone precursors would not significantly contribute to global climate change.

Chlorofluorocarbons: CFCs have no natural source but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Because of the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining level or declining. Because of the ban on chlorofluorocarbons, it is assumed that the project will not generate a significant amount of emissions of these greenhouse gases and is not considered any further in this analysis.

In addition, the San Ramon Municipal Code, Chapter III sets strict standards for chlorofluorocarbon-processed food packaging operations and repackaging prohibitions that will also help neutralize any potential increases that may occur.

Hydrofluorocarbons: The project may emit a small amount of HFC emissions from leakage and service of refrigeration and air conditioning equipment and from disposal at the end of the life of the equipment (EPA 2004b). However, the details regarding the refrigerant used and the capacity are unknown at this time.

Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit any of these greenhouse gases.

Inventory Summary: The primary greenhouse gas generated by the project would be carbon dioxide. At buildout, total unmitigated carbon dioxide equivalents would be 4.26E-02 Tg CO_2 Eq., which is 0.00865 percent of California's 2004 emissions (492 Tg CO_2 Eq) and 0.0502 percent of the Bay Area's 2002 emissions.

4.4.7 - Greenhouse Gas Mitigations

Global warming has been recognized as a viable threat to life on earth. The potential health effects from global climate change may be from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in

warmer climates are likely to experience more stress and heat-related problems, including heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Those diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture, which would have negative human health consequences including the spreading of disease and death. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution (EPA 2006a).

Often, mitigations for greenhouse gases are also beneficial to local criteria air pollution reductions. Many GHG mitigations increase energy efficiency, which would reduce criteria pollutants as well. Many of the mitigations mentioned above in Section 4.4 – Project Operations Impacts of this document will also help reduce GHGs. However, additional mitigations are proposed for the proposed projects to help serve the dual purpose of reducing criteria and GHG emissions

GHG-1 The project owner shall participate in and implement available Pacific Gas and Electricity (PG&E) energy-efficient rebate programs, including air conditioning, gas heating, refrigeration, and lighting programs.

GHG-2 The project owner shall implement innovative Energy-Efficient Technologies or measures exceeding Title 24 energy efficiency standards by 10 percent or more, OR Comply with EPA/DOE Energy Star Home energy standards.

GHG-3 The project owner shall install high albedo and emissive roofs or install EPA “Energy Star” approved roofing materials.

GHG-4 The project owner shall plant trees and shrubs that shed their leaves in winter nearer to these structures to maximize shade to the building during the summer and allow sunlight to strike the building during the winter months.

GHG-5 The project owner shall use recycled water pursuant to the San Ramon Valley Recycled Water Program for landscaping.

GHG-6 The project owner shall use recycled water pursuant to the San Ramon Valley Recycled Water Program for landscaping.

GHG-7 The project owner shall ensure that landscaping will use moisture sensors, rain shut-off devices, check valves, and a WaterSmart™ irrigation controller.

GHG-8 The project owner shall include shade trees near buildings to directly shield them from the sun’s rays and reduce local air temperature and cooling energy demand.

GHG-9 The project owner shall include shade trees near HVAC equipment to directly shield them from the sun's rays and reduce energy demand.

GHG-10 The project owner shall ensure that all dock and delivery areas shall be posted with signs informing truck drivers of the California Air Resources Board (CARB) regulations including the following:

A. Truck drivers shall turn off engines when not in use.

B. All diesel delivery trucks servicing the project shall not idle more than five minutes per truck trip per day.

C. Restrict idling emissions by using auxiliary power units and electrification in the docking areas if provided by the operator.

GHG-11 The project owner shall ensure that at least 50 percent of installed trees and shrubs shall be low-ozone forming potential (Low-OFP) while still using drought-tolerant species as suggested by the East Bay Municipal Utility District (EBMUD). For a list of Low-OFP trees that are listed in EBMUD's "Plants and Landscapes for Summer-Dry Climates", see Appendix B.

Compliance with Strategies

Mitigation of global warming impacts is based on the project's consistency with the strategies proposed in California Environmental Protection Agency Climate Action Team's report (CAT 2006). If the project is consistent with those strategies that the Lead Agency deems are feasible, then a project could be deemed to have a less than significant impact concerning global climate change.

The CAT Report to Governor Schwarzenegger and the Legislature "proposes a path to achieve the Governor's targets that will build on voluntary actions of California businesses, local government and community actions, and State incentive and regulatory programs." (CAT 2006) The report introduces strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05. This is the best information available at this time; it is unknown when and what will be published in the future.

Table 27 contains the CAT strategies that apply to the project. As shown in the table, the project complies with all feasible and applicable measures to bring California to the emission reduction targets.

Table 27: Project Compliance with Greenhouse Gas Emission Reduction Strategies

Agency	Greenhouse Gas Emission Reduction Strategy	Consistency Analysis
California Air Resources Board	Vehicle Climate Change Standards AB 1493 required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light-duty trucks. Regulations were adopted by the ARB in September 2004.	**Consistent**: The vehicles that access the project will comply with any vehicle standards that CARB proposes.
	Diesel Anti-Idling In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	**Consistent**: Mitigation AIR-2 includes provisions intended to prevent idling in loading dock areas.
	Hydrofluorocarbon Reduction (1) Ban retail sale of HFC in small cans; (2) require that only low GWP refrigerants be used in new vehicular systems; (3) adopt specifications for new commercial refrigeration; (4) add refrigerant leak-tightness to the pass criteria for vehicular inspection and maintenance programs; (5) enforce federal ban on releasing HFCs.	**Consistent**: This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations apply to will comply with the measures.
	Transportation Refrigeration Units (TRUs), Off-Road Electrification, Port Electrification Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.	**Consistent**: The project may have TRUs visiting the project site. Mitigation AIR-2 requires that auxiliary power units be provided in loading areas to power TRUs and prevent idling.
	Heavy-Duty Vehicle Emission Reduction Measures Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	**Consistent**: These are CARB-enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
	Achieve 50% Statewide Recycling Goal Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989 (AB 939, Sher, Chapter 1095, Statutes of 1989) will reduce climate change emissions associated with energy-intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48% has been achieved on a statewide basis. Therefore, a 2% additional reduction is needed.	**Consistent**: Mitigation Measures US-4a and US-4b require the proposed project to implement recycling and waste diversion measures during the construction and operation phases, respectively.

Table 27 (Cont.): Ambient Air Quality Standards

Agency	Greenhouse Gas Emission Reduction Strategy	Consistency Analysis
Department of Forestry	Urban Forestry A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	**Consistent**: Mitigation AIR-9 ensures that trees will be both low emitters of ROG and efficient users of water.
Department of Water Resources	Water Use Efficiency Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute, and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.	**Consistent**: The proposed project would incorporate a variety of design features intended to promote sustainability through trip reduction and energy and water conservation. Water conservation measures are designed into the project; including: a recycled water system for landscape irrigation that eliminates the need to use potable water for outdoor watering; re-circulating hot water systems to reduce the need to heat water; tankless hot water heaters that reduce water consumption; green roofs that capture stormwater runoff during the rainy season and keep building interiors cool during warmer months; bioswales that promote percolation of stormwater runoff and reduce the need for pumping stormwater through a conveyance system; evapotranspiration-based water controllers that adjust outdoor irrigation in response to weather conditions; water budgets for landscape irrigation to monitor and regulate outdoor water usage; waterless urinals in non-residential buildings to reduce water usage.
California Energy Commission	Building Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions and alterations to existing buildings).	**Consistent**: The proposed project would incorporate a variety of design features intended to promote sustainability through trip reduction and energy and water conservation. Mitigation Measure US-5 requires implementation of the following energy conservation measures: use of glass windows to promote natural day lighting of interior areas to reduce need for lighting, occupancy sensors that automatically shut off lights when rooms are unoccupied, high-efficiency clothes washers and dishwashing machines, re-circulating hot water systems, and tankless water heaters.

Table 27 (Cont.): Ambient Air Quality Standards

Agency	Greenhouse Gas Emission Reduction Strategy	Consistency Analysis
cont.	Appliance Energy Efficiency Standards in Place and in Progress Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	**Consistent**: Mitigation Measure US-5 requires the use of occupancy sensors that automatically shut off lights when rooms are unoccupied, high-efficiency clothes washers and dishwashing machines, recirculating hot water systems, and tankless water heaters.
Building, Transportation, and Housing Agency	Smart Land Use and Intelligent Transportation Systems (ITS) Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services. Governor Schwarzenegger is finalizing a comprehensive, 10-year strategic growth plan with the intent of developing ways to promote, through State investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity, and a quality environment. Smart land use, demand management, ITS, and value pricing are critical elements in this plan for improving mobility and transportation efficiency. Specific strategies include promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, and incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.	**Consistent**: The proposed project is an in-fill mixed-use project designed to be a pedestrian-oriented environment that is also readily accessible for bicycles and public transit. The project is located within walking distance of several major existing activity centers, including the Bishop Ranch Business Park, The Shop at Bishop Ranch, the Market Place, and Central Park. The proposed project is located next to the Iron Horse Trail and will have pedestrian/bike connections with the trail at several points. The project includes a Transit Center that would be served by County Connection bus service, including routes serving destinations such as the Dublin/ Pleasanton and Walnut Creek BART stations. Mitigation Measure TRANS-8 requires Sunset Development to provide bicycle parking near entrances to project buildings. All of these measures are consistent with smart land use and ITS strategies.

Table 27 (Cont.): Ambient Air Quality Standards

Agency	Greenhouse Gas Emission Reduction Strategy	Consistency Analysis
cont.	Measures to Improve Transportation Energy Efficiency Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools, and information that advance cleaner transportation and reduce climate change emissions.	**Consistent**: The proposed project promotes fuel conservation through design features, which promote pedestrian traffic, and programs that encourage employee carpooling and public transportation use.
State Consumer Services Agency	Green Buildings Initiative Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, compared with 2003 levels. The Executive Order and related action plan spell out specific actions State agencies are to take with State-owned and -leased buildings. The order and plan also discuss various strategies and incentives to encourage private building owners and operators to achieve the 20 percent target.	**Consistent**: Mitigation Measure AIR-9 requires the project to exceed the 2005 Title 24 standards. Mitigation Measure US-1a, US-1b, and US-1c require the project to implement several water conservation measures. Mitigation Measure US-5 requires the project to implement energy conservation measures.
Source: Michael Brandman Associates, 2007.		

4.5 - Cumulative Impacts

The BAAQMD has set the threshold for cumulative significance, as any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. Additionally, for any project that does not individually have significant operational air quality impacts, the determination of significant cumulative impact should be based on an evaluation of the consistency of the project with the local general plan and of the general plan with the regional air quality plan.

Since the project and all the alternatives (except the No Project Alternative) have been shown to have a significant unavoidable impact even with the application of all feasible mitigation measures, the project and all its alternatives (except the No Project Alternative) with have significant but unavoidable cumulative impacts, and no further analysis is necessary.

SECTION 5: REFERENCES

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Appendix A:
URBEMIS Output

Urbemis 2007 Version 9.2.0

Combined Summer Emissions Reports (Pounds/Day)

File Name: E:\MBA\San Ramon\24910007 San Ramon City Center\New URBEMIS Results\CC Plaza Const.urb9

Project Name: CC Plaza Const

Project Location: Contra Costa County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2008 TOTALS (lbs/day unmitigated)	28.46	291.45	128.47	0.12	316.84	13.16	330.00	66.22	12.10	78.33	28,483.22
2008 TOTALS (lbs/day mitigated)	28.46	291.45	128.47	0.12	118.85	6.88	125.73	24.87	6.33	31.20	28,483.22
2009 TOTALS (lbs/day unmitigated)	169.23	290.88	228.41	0.23	314.74	13.20	327.93	65.86	12.12	77.98	40,303.98
2009 TOTALS (lbs/day mitigated)	169.23	290.88	228.41	0.23	116.75	9.10	125.85	24.51	8.35	32.86	40,303.98
2010 TOTALS (lbs/day unmitigated)	168.30	80.91	139.70	0.12	0.58	4.58	5.16	0.21	4.19	4.40	18,079.01
2010 TOTALS (lbs/day mitigated)	168.30	80.91	139.70	0.12	0.58	3.68	4.26	0.21	3.36	3.57	18,079.01

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/3/2008-11/28/2008 Number Active Days: 20	6.30		31.20		2.66	2.64		0.56		2.99	4,611.99
		54.89		0.00			5.30		2.43		
Demolition 11/01/2008-12/07/2008	6.30		31.20		2.66	2.64		0.56	2.43		4,611.99
		54.89		0.00			5.30			2.99	
Fugitive Dust	0.00	0.00	0.00	0.00	2.65	0.00	2.65	0.55	0.00	0.55	0.00
Demo Off Road Diesel	6.07	51.84	28.58	0.00	0.00	2.52	2.52	0.00	2.32	2.32	4,132.45
Demo On Road Diesel	0.18	2.95	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	352.28
Demo Worker Trips	0.06	0.10	1.68	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.26
Time Slice 12/1/2008-12/5/2008 Number Active Days: 5	28.46		128.47		**316.84**	13.16		**66.22**		**78.33**	28,483.22
		291.45		0.12			**330.00**		12.10		
Demolition 11/01/2008-12/07/2008	6.30		31.20		2.66	2.64		0.56	2.43		4,611.99

		54.89		0.00			5.30			2.99	
Fugitive Dust	0.00	0.00	0.00	0.00	2.65	0.00	2.65	0.55	0.00	0.55	0.00
Demo Off Road Diesel	6.07	51.84	28.58	0.00	0.00	2.52	2.52	0.00	2.32	2.32	4,132.45
Demo On Road Diesel	0.18	2.95	0.94	0.00	0.01	0.11	0.13	0.00	0.10	0.11	352.28
Demo Worker Trips	0.06	0.10	1.68	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.26
Fine Grading 12/01/2008-02/12/2009	22.16		97.27		314.18	10.52		65.66	9.68		23,871.23
		236.56		0.11			324.69			75.34	
Fine Grading Dust	0.00	0.00	0.00	0.00	313.75	0.00	313.75	65.52	0.00	65.52	0.00
Fine Grading Off Road Diesel	16.14	138.34	61.20	0.00	0.00	6.76	6.76	0.00	6.22	6.22	11,817.66
Fine Grading On Road Diesel	5.85	97.94	31.23	0.11	0.41	3.75	4.16	0.13	3.45	3.58	11,687.06
Fine Grading Worker Trips	0.16	0.28	4.84	0.00	0.02	0.01	0.03	0.01	0.01	0.01	366.51
Time Slice 12/8/2008-12/31/2008 Number Active Days: 18	22.16		97.27		314.18	10.52		65.66		75.34	23,871.23
		236.56		0.11			324.69		9.68		
Fine Grading 12/01/2008-02/12/2009	22.16		97.27		314.18	10.52		65.66	9.68		23,871.23
		236.56		0.11			324.69			75.34	
Fine Grading Dust	0.00	0.00	0.00	0.00	313.75	0.00	313.75	65.52	0.00	65.52	0.00
Fine Grading Off Road Diesel	16.14	138.34	61.20	0.00	0.00	6.76	6.76	0.00	6.22	6.22	11,817.66
Fine Grading On Road Diesel	5.85	97.94	31.23	0.11	0.41	3.75	4.16	0.13	3.45	3.58	11,687.06
Fine Grading Worker Trips	0.16	0.28	4.84	0.00	0.02	0.01	0.03	0.01	0.01	0.01	366.51
Time Slice 1/1/2009-1/30/2009 Number Active Days: 22	21.11		92.19		314.18	9.79		65.66		74.67	23,871.40
		222.12		0.11			323.96		9.00		
Fine Grading 12/01/2008-02/12/2009	21.11		92.19		314.18	9.79		65.66	9.00		23,871.40
		222.12		0.11			323.96			74.67	
Fine Grading Dust	0.00	0.00	0.00	0.00	313.75	0.00	313.75	65.52	0.00	65.52	0.00
Fine Grading Off Road Diesel	15.44	130.23	58.73	0.00	0.00	6.38	6.38	0.00	5.87	5.87	11,817.66
Fine Grading On Road Diesel	5.51	91.63	28.97	0.11	0.41	3.40	3.80	0.13	3.12	3.26	11,687.06
Fine Grading Worker Trips	0.15	0.25	4.49	0.00	0.02	0.01	0.03	0.01	0.01	0.01	366.68
Time Slice 2/2/2009-2/12/2009 Number Active Days: 9	31.64		**228.41**		314.74	**13.20**		65.86		77.98	**40,303.98**
		290.88		**0.23**			327.93		**12.12**		

Building 02/01/2009-10/14/2010	10.54		136.22		0.56	3.41		0.20	3.11		16,432.58
		68.77		0.12			3.97			3.31	
Building Off Road Diesel	5.53	38.62	18.84	0.00	0.00	2.28	2.28	0.00	2.09	2.09	3,959.98
Building Vendor Trips	1.69	24.48	17.56	0.04	0.16	0.92	1.08	0.05	0.84	0.90	4,313.91
Building Worker Trips	3.32	5.67	99.81	0.08	0.40	0.22	0.62	0.14	0.18	0.32	8,158.69
Fine Grading 12/01/2008-02/12/2009	21.11		92.19		314.18	9.79		65.66	9.00		23,871.40
		222.12		0.11			323.96			74.67	
Fine Grading Dust	0.00	0.00	0.00	0.00	313.75	0.00	313.75	65.52	0.00	65.52	0.00
Fine Grading Off Road Diesel	15.44	130.23	58.73	0.00	0.00	6.38	6.38	0.00	5.87	5.87	11,817.66
Fine Grading On Road Diesel	5.51	91.63	28.97	0.11	0.41	3.40	3.80	0.13	3.12	3.26	11,687.06
Fine Grading Worker Trips	0.15	0.25	4.49	0.00	0.02	0.01	0.03	0.01	0.01	0.01	366.68
Time Slice 2/13/2009-8/31/2009 Number Active Days: 142	10.54		136.22		0.56	3.41		0.20		3.31	16,432.58
		68.77		0.12			3.97		3.11		
Building 02/01/2009-10/14/2010	10.54		136.22		0.56	3.41		0.20	3.11		16,432.58
		68.77		0.12			3.97			3.31	
Building Off Road Diesel	5.53	38.62	18.84	0.00	0.00	2.28	2.28	0.00	2.09	2.09	3,959.98
Building Vendor Trips	1.69	24.48	17.56	0.04	0.16	0.92	1.08	0.05	0.84	0.90	4,313.91
Building Worker Trips	3.32	5.67	99.81	0.08	0.40	0.22	0.62	0.14	0.18	0.32	8,158.69
Time Slice 9/1/2009-12/31/2009 Number Active Days: 88	**169.23**		149.21		0.58	4.91		0.21		4.70	18,074.00
		86.93		0.12			5.49		4.50		
Asphalt 09/01/2009-05/02/2010	3.18		10.73		0.01	1.50		0.00	1.38		1,456.66
		18.03		0.00			1.51			1.38	
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.83	16.86	8.89	0.00	0.00	1.45	1.45	0.00	1.34	1.34	1,195.35
Paving On Road Diesel	0.07	1.09	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	139.08
Paving Worker Trips	0.05	0.08	1.50	0.00	0.01	0.00	0.01	0.00	0.00	0.00	122.23
Building 02/01/2009-10/14/2010	10.54		136.22		0.56	3.41		0.20	3.11		16,432.58
		68.77		0.12			3.97			3.31	
Building Off Road Diesel	5.53	38.62	18.84	0.00	0.00	2.28	2.28	0.00	2.09	2.09	3,959.98
Building Vendor Trips	1.69	24.48	17.56	0.04	0.16	0.92	1.08	0.05	0.84	0.90	4,313.91
Building Worker Trips	3.32	5.67	99.81	0.08	0.40	0.22	0.62	0.14	0.18	0.32	8,158.69