AIR QUALITY IMPACT ANALYSIS

ALBERHILL VILLAGES SPECIFIC PLAN

CITY OF LAKE ELSINORE, CALIFORNIA

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METEOROLOGICAL SETTING

The climate of the Lake Elsinore area in Riverside County, technically called an interior valley sub-climate of Southern California's Mediterranean-type climate, is characterized by warm summers, mild winters, infrequent rainfall, moderate afternoon breezes, and generally fair weather. The clouds and fog that form along the area's coastline rarely extend as far inland as the project area, and if they do, they usually burn off quickly after sunrise. The most important weather pattern is associated with the warm season airflow across populated areas of the Los Angeles Basin that brings polluted air into western Riverside County late in the afternoon. This transport pattern creates unhealthful air quality when the fringes of this "urban smog cloud" extend to the project site during the summer months.

Temperatures in the project area average a very comfortable 65ºF year-round, with warm summer afternoons (95+ degrees) and often cool winter mornings (around 35 degrees). Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April. Rainfall in the Lake Elsinore area averages 11.6 inches per year, but varies markedly from one year to the next.

Winds are an important factor in characterizing the local air quality environment because they both determine the regional pattern of air pollution transport and control the local rate of pollution dispersion. Daytime winds are from the NW at 6-8 mph as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but they may bring air pollutants from urbanized coastal areas into interior valleys. Strong thermal convection in the summer ultimately dilutes the smog cloud from urbanized development, but the project area is too close to Los Angeles Basin emissions sources to completely escape the regional air quality degradation.

Light nocturnal winds result mainly from drainage of cool air off mountains toward the valley floor. Such winds are characterized by stagnation and poor local mixing. However, the origin of these winds in unpopulated mountain areas does not generally impair air quality.

In addition to winds that control the rate and direction of pollution dispersal, Southern California is notorious for strong temperature inversions that limit the vertical depth through which pollution can be mixed. In summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the basin.

A second inversion type forms on clear winter nights when cold air off the mountains sinks to the valley floor while the air aloft over the valley remains warm. This forms radiation inversions. These inversions, in conjunction with calm winds, trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Thus, while summers are periods of hazy visibility and occasionally unhealthful air, winter is often a period of spectacular visibility and excellent air quality in the project area.

AIR QUALITY SETTING

AMBIENT AIR QUALITY STANDARDS (AAQS)

In order to gauge the significance of the air quality impacts of the proposed Alberhill Villages Specific Plan project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 1. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		Revoked (2006)		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	15 µg/m³		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	–
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m³)		0.100 ppm (189 µg/m³)		
Lead	30-Day average	1.5 µg/m³	Atomic Absorption	–	–	–
	Calendar Quarter	–		1.5 µg/m³	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m³)	–	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)	–	
	3 Hour	–		–	0.5 ppm (1,300 µg/m³)	
	1 Hour	0.25 ppm (655 µg/m³)		–	–	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer– visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

California ARB (06/26/08)

Table 2

Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide ($NO_{2)}$ that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA has proposed a further strengthening of the 8-hour standard. Draft standards have been published. The likely future 8-hour standard will be 0.065 ppm. Environmental organizations generally praise this proposal. Most manufacturing, transportation or power generation groups oppose the new standard as economically unwise in an uncertain fiscal climate.

A new federal one-hour standard for nitrogen dioxide (NO_2) has also recently been adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in the South Coast Air Basin, the basin will likely be designated as "non-attainment". That designation will require the inclusion of NO_2 in the basin air quality management plan.

BASELINE AIR QUALITY

There are no baseline air quality data available directly from the proposed project site. Long-term air quality monitoring is carried out by the South Coast Air Quality Management District (SCAQMD) at various monitoring stations. There are no nearby stations that monitor the full spectrum of pollutants. Ozone and nitrogen oxides are monitored at the Lake Elsinore facility, while 10-micron diameter particulate matter (PM-10) is measured at the Perris Valley station. The closest data resource for other particulate species is in Riverside (Rubidoux). Table 3 summarizes the last six years of monitoring data from a composite of available data resources.

The following conclusions can be drawn from these data:

1. Photochemical smog (ozone) levels often exceed standards. The 1-hour state standard was violated an average of 41 times a year in the last six years near Lake Elsinore. The 8-hour state ozone standard has been exceeded an average of 56 times a year in the past six years. The Federal eight-hour ozone standard has averaged around 24 violations per year since 2003. While ozone levels are still high, they are much lower than 10 to 20 years ago. Ozone trends have become very "flat" throughout this decade. From 2004 through 2008, annual 8-hour maxima have varied by less than plus or minus five percent from their 5-year average with negligible downward trend. Attainment of all clean air standards in the project vicinity is therefore not likely to occur soon, but the severity and frequency of violations is expected to continue to slowly decline during the coming decade.

2. Carbon monoxide (CO) measurements at the Rubidoux station have declined since 2003 and were lowest in 2008. Federal and state CO standards have not been exceeded in the last 10+ years. Despite continued basin-wide growth, maximum one- or 8-hour CO levels at the closest air monitoring station are currently less than 25 percent of their most stringent standards because of continued vehicular improvements. These data suggests that baseline CO levels in the project area are generally healthful and can accommodate a reasonable level of additional traffic emissions before any adverse local air quality effects would be expected.

3. PM-10 levels as measured at Perris periodically exceed the state standard, but no measurements in excess of the national particulate standard have been recorded in the last six years. Particulate levels have traditionally been high in Riverside County because of agricultural activities, dry soil conditions and upwind industrial development. Although the maximum concentrations had been slowly increasing in more recent years, there was significant improvement in 2008. State PM-10 standards are exceeded an average of 33 percent of all days per year.

Table 3

Project Area Air Quality Monitoring Summary – 2003-2008
(Days Standards Were Exceeded and Maximum Observed Levels)

Pollutant/Standard	2003	2004	2005	2006	2007	2008
Ozone[1]						
1-Hour > 0.09 ppm (S)	50	41	37	40	26	49
1-Hour > 0.12 ppm (F)*	7	2	4	3	-	-
8-Hour > 0.07 ppm (S)	35	51	46	58	55	92
8- Hour > 0.08 ppm (F)	35	21	15	24	19	32
Max. 1-Hour Conc. (ppm)	0.15	0.13	0.15	0.14	0.13	0.14
Max. 8-Hour Conc. (ppm)	0.137	0.116	0.119	0.109	0.108	0.118
Carbon Monoxide[3]						
1-Hour > 20. ppm (S)	0	0	0	0	0	0
1-Hour > 9. ppm (S, F)	0	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	4.5	4.3	3.4	3.0	4.0	3.0
Max. 8-Hour Conc. (ppm)	3.7	3.0	2.5	2.1	2.1	2.0
Nitrogen Dioxide[1]						
1-Hour > 0.18 ppm (S)	0	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.07	0.06	0.07	0.07	0.06	0.06
Inhalable Particulates (PM-10)[2]						
24-Hour > 50 $\mu g/m^3$ (S)	19/58	15/59	19/60	19/54	32/59	12/45
24-Hour > 150 $\mu g/m^3$ (F)	0/58	0/59	0/60	0/54	0/59	0/45
Max. 24-Hr. Conc. ($\mu g/m^3$)	135.	79.	75.	125.	120.	85.
Ultra-Fine Particulates (PM-2.5)[3]						
24-Hour > 65 $\mu g/m^3$ (F)	8/350	5/343	4/332	1/300	3/295	0/348
24-Hour > 35 $\mu g/m^3$ (F)**	75/350	53/343	36/337	32/300	33/295	14/348
Max. 24-Hr. Conc. ($\mu g/m^3$)	104.3	91.7	98.7	68.4	75.7	57.7

* standard revoked in 2006 ** new standard since 2006

Source: South Coast AQMD – [1]Lake Elsinore, [2]Perris and [3]Rubidoux Air Monitoring Station Data Summaries.

4. A substantial fraction of PM-10 is comprised of ultra-small diameter particulates capable of being inhaled into deep lung tissue (PM-2.5). Both the frequency of violations of particulate standards, as well as high percentage of PM-2.5, are air quality concerns in the project area. With the revision of the national 24-hour PM-2.5 standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$, the frequency of days exceeding the 24-hour federal PM-2.5 standard increased substantially. Approximately 1% of all days exceeded the old standard of 65 $\mu g/m^3$ in the past six years, but slightly less than 13% of all days exceeded the new standard of 35 $\mu g/m^3$. Year 2008 showed the fewest violations of the federal standard and the lowest maximum 24-hour concentration in the past 6 years.

5. More localized pollutants such as nitrogen oxides, lead, etc. are likely very low near the project site because background levels even near downtown Riverside never exceed allowable levels. There is substantial excess dispersive capacity to accommodate localized vehicular air pollutants such as NOx without any threat of violating the applicable standards.

AIR QUALITY PLANNING

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The SCAB could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with air-sheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised and approved over the past decade. The most current regional attainment emissions forecast for ozone precursors (ROG and NOx) and for carbon monoxide (CO) and for particulate matter are shown in Table 4. Substantial reductions in emissions of ROG, NOx and CO are forecast to continue throughout the next several decades. Unless new particulate control programs are implemented, PM-10 and PM-2.5 are forecast to slightly increase.

The Air Quality Management District (AQMD) adopted an updated clean air "blueprint" in August 2003. The 2003 AQMP was approved by the EPA in 2004. The Air Quality Management Plan (AQMP) outlined the air pollution measures needed to meet federal health-based standards for ozone by 2010 and for particulates (PM-10) by 2006. The 2003 AQMP was based upon the federal one-hour ozone standard which was revoked late in 2005 and replaced by an 8-hour federal standard. Because of the revocation of the hourly standard, a new air quality planning cycle was initiated.

With re-designation of the air basin as non-attainment for the 8-hour ozone standard, a new attainment plan was developed. This plan shifted most of the one-hour ozone standard attainment strategies to the 8-hour standard. As previously noted, the attainment date will "slip" from 2010 to 2021. The updated attainment plan also includes strategies for ultimately meeting the federal PM-2.5 standard.

Because projected attainment by 2021 requires control technologies that do not exist yet, the SCAQMD has requested a voluntary "bump-up" from a "severe non-attainment" area to an "extreme non-attainment" designation for ozone. An extreme designation would allow a longer time period for these technologies to develop. If attainment cannot be demonstrated within the specified deadline without relying on "black-box" measures, EPA would be required to impose sanctions on the region. With an anticipated further strengthening of the federal eight-hour ozone standard, action on the bump-up request may be delayed until possible new standards are finalized. If/when that happens, new planning deadlines will be adopted.

Table 4

South Coast Air Basin Emissions Forecasts
(Emissions in tons/day)

Pollutant	2005[a]	2010[b]	2015[b]	2020[b]
NOx	985	742	580	468
ROG	735	576	526	505
CO	4124	2950	2476	2203
PM-10	281	286	297	307
PM-2.5	103	102	102	103

[a]2005 Base Year.
[b]With current emissions reduction programs and adopted growth forecasts.

Source: California Air Resources Board, The 2009 California Almanac of Emission & Air Quality.

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The currently applicable AQMP was adopted in June 2007, after extensive public review. The 2007 AQMP recognizes the interaction between photochemical processes that create both ozone and the smallest airborne particulates (PM-2.5). The 2007 AQMP is therefore a coordinated plan for both pollutants. Key emissions reductions strategies in the updated air quality plan include:

- Ultra-low emissions standards for both new and existing sources (including on-and-off-road heavy trucks, industrial and service equipment, locomotives, ships and aircraft).
- Accelerated fleet turnover to achieve benefits of cleaner engines.
- Reformulation of consumer products.
- Modernization and technology advancements from stationary sources (refineries, power plants, etc.)

Projects such as the proposed Alberhill Villages Specific Plan development do not directly relate to the AQMP in that there are no specific air quality programs or regulations governing "general" development. Conformity with adopted plans, forecasts and programs relative to population, housing, employment and land use is the primary yardstick by which impact significance of master planned growth is determined. If a given project incorporates any available transportation control measures that can be implemented on a project-specific basis, and if the scope and phasing of a project are consistent with adopted forecasts as shown in the Regional Comprehensive Plan (RCP), then the regional air quality impact of project growth would not be significant because of planning inconsistency. The SCAQMD, however, while acknowledging that the AQMP is a growth-accommodating document, does not favor designating regional impacts as less-than-significant just because the proposed development is consistent with regional growth projections. Air quality impact significance for the proposed project has therefore been analyzed on a project-specific basis.

AIR QUALITY IMPACT

STANDARDS OF SIGNIFICANCE

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following five tests of air quality impact significance. A project would have a potentially significant impact if it:

a. Conflicts with or obstructs implementation of the applicable air quality plan.

b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation.

c. Results in a cumulatively considerable net increase of any criteria pollutants 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).

d. Exposes sensitive receptors to substantial pollutant concentrations.

e. Creates objectionable odors affecting a substantial number of people.

Primary Pollutants

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM-10, an aggressive dust control program is required to control fugitive dust.

Secondary Pollutants

Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based upon a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

Because of the chemical complexity of primary versus secondary pollutants, the South Coast Air Quality Management District (SCAQMD) has designated significant emissions levels as surrogates for evaluating regional air quality impact significance independent of chemical transformation processes. Projects with daily emissions that exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant under CEQA guidelines:

SCAQMD Emissions Significance Thresholds
(pounds/day)

Pollutant	Emissions (Construction)	Emissions (Operational)
ROG	75	55
NOx	100	55
CO	550	550
PM-10	150	150
PM-2.5	55	55
SOx	150	150
Lead	3	3

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

Additional Indicators

In its CEQA Handbook, the SCAQMD also states that additional indicators should be used as screening criteria to determine the need for further analysis with respect to air quality. The additional indicators are as follows:

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation

- Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP and in other than planned locations for the project's build-out year.

- Project could generate vehicle trips that cause a CO hot spot.

The SCAQMD CEQA Handbook also identifies various secondary significance criteria related to toxic, hazardous or odorous air contaminants. Hazardous air contaminants are also contained

within the small diameter particulate matter ("PM-2.5") fraction of diesel exhaust. Such exhaust will be generated by heavy construction equipment.

For PM-2.5 exhaust emissions, recently adopted policies require the gradual conversion of delivery fleets to diesel alternatives, or the use of "clean" diesel if their emissions are demonstrated to be as low as those from alternative fuels. Because health risks from toxic air contaminants (TAC's) are cumulative over an assumed 70-year lifespan, measurable off-site public health risk from diesel TAC exposure would occur for only a brief portion of a project lifetime, and only in dilute quantity.

SENSITIVE RECEPTORS

Air quality impacts are analyzed relative to those persons with the greatest sensitivity to air pollution exposure. Such persons are called "sensitive receptors". Sensitive population groups include young children, the elderly and the acutely and chronically ill (especially those with cardio-respiratory disease).

Residential areas are considered to be sensitive to air pollution exposure because they may be occupied for extended periods, and residents may be outdoors when exposure is highest. Schools are similarly considered to be sensitive receptors. The Alberhill Villages Specific Plan project site abuts residential uses to the southeast and northwest. There are no sensitive receptors immediately adjacent to the north or south of the project site. The proposed project is anticipated to be built out over an extended period of time. Construction activities for new development may occur adjacent to already completed residential uses. Such uses may also be built in close proximity to I-15. Some project residences may therefore be considered as sensitive receptors.

CONSTRUCTION ACTIVITY IMPACTS

Dust is typically the primary concern during construction of new buildings and infrastructure. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions." Emission rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). These parameters are not known with any reasonable certainty prior to project development and may change from day to day. Any assignment of specific parameters to an unknown future date is speculative and conjectural.

Because of the inherent uncertainty in the predictive factors for estimating fugitive dust generation, regulatory agencies typically use one universal "default" factor based on the area disturbed assuming that all other input parameters into emission rate prediction fall into midrange average values. This assumption may or may not be totally applicable to site-specific conditions on the proposed project site. As noted previously, emissions estimation for project-specific fugitive dust sources is therefore characterized by a considerable degree of imprecision.

Average daily PM-10 emissions during site grading and other disturbance are stated in the SCAQMD Handbook to be 26.4 pounds/acre. This estimate is based upon required dust control measures in effect in 1993 when the AQMD CEQA Air Quality Handbook was prepared. Rule 403 was subsequently strengthened to require use of a greater array of fugitive dust control on construction projects. All construction projects in the SCAQMD are required to use strongly enhanced control procedures. Use of enhanced dust control procedures such as continual soil wetting, use of supplemental binders, early paving, etc. can achieve a substantially higher PM-10 control efficiency. Daily emissions with use of reasonably available control measures (RACMs) for PM-10 can reduce emission levels to around ten (10) pounds per acre per day. With the use of best available control measures (BACMs) the California Air Resources Board URBEMIS2007 computer model predicts that emissions can be reduced to 1-2 pounds per acre per day. Because of the PM-10 non-attainment status of the air basin, construction activity dust emissions are considered to have a cumulatively significant impact. Use of BACMs is thus required even if SCAQMD individual CEQA thresholds are not exceeded by use of RACMs.

Current research in particulate-exposure health suggests that the most adverse effects derive from ultra-small diameter particulate matter comprised of chemically reactive pollutants such as sulfates, nitrates or organic material. A national clean air standard for particulate matter of 2.5 microns or smaller in diameter (called "PM-2.5") was adopted in 1997. A limited amount of construction activity particulate matter is in the PM-2.5 range. PM-2.5 emissions are estimated by the SCAQMD to comprise 20.8 percent of PM-10. Other studies have shown that the fugitive dust fraction of PM-2.5 is closer to 10 percent.

In addition to fine particles that remain suspended in the atmosphere semi-indefinitely, construction activities generate many larger particles with shorter atmospheric residence times. This dust is comprised mainly of large diameter inert silicates that are chemically non-reactive and are further readily filtered out by human breathing passages. These fugitive dust particles are therefore more of a potential soiling nuisance as they settle out on parked cars, outdoor furniture or landscape foliage rather than any adverse health hazard. The deposition distance of most soiling nuisance particulates is less than 100 feet from the source (EPA, 1995). There are no sensitive receptors within 100 feet from the primary construction site.

Exhaust emissions will result from on and off-site heavy equipment. The types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. Initial clearing and will gradually shift toward building construction and then for finish construction, paving, landscaping, etc. The project build-out schedule will depend upon market demand and total build-out is predicted to occur over a 20-30 year period. For this analysis, as a conservative estimate, a 20-year build-out was assumed. Various construction activities were allocated to distinct years for ease of presentation. In reality, there may be overlap of activities in some years and no activity at all in others. The URBEMIS2007 computer model was used to calculate emissions from the following prototype construction equipment fleet:

Grading	2 Graders
	3 Dozers
	6 Scrapers
	1 Compactor
	2 Water Truck
Paving	1 Water Truck
	1 Paver
	2 Compactors
	2 Roller
	2 Paving Equipment
Construction	1 Welders
	3 Forklifts
	1 Crane
	1 Generator Set
	3 Tractor/Loader/Backhoes

Utilizing the above equipment fleet and provided grading quantities the following emissions are calculated by URBEMIS2007:

Construction Activity Emissions
(pounds/day)

Activity	**ROG**	**NOx**	**CO**	**SO_2**	**PM-10**	**PM-2.5**	**CO_2**
Grading 2011							
No Mitigation	18.2	163.8	79.5	0.0	3,152.9	663.2	16,322.5
With Mitigation	18.2	139.2	79.5	0.0	337.5	71.2	16,322.5
Grading 2012							
No Mitigation	17.4	153.7	74.6	0.0	3,152.5	662.8	16,322.4
With Mitigation	17.4	130.7	74.6	0.0	337.5	71.2	16,322.4
Grading 2013							
No Mitigation	16.9	144.3	70.0	0.0	3,152.1	662.4	16,322.4
With Mitigation	16.9	122.7	70.0	0.0	337.4	71.1	16,322.4
Grading 2014							
No Mitigation	16.1	133.8	66.3	0.0	3,151.6	662.0	16,322.3
With Mitigation	16.1	113.8	66.3	0.0	337.3	71.0	16,322.3
Construction 2015							
No Mitigation	40.1	196.3	987.6	1.9	19.1	12.5	191,663.3
With Mitigation	40.1	193.9	987.6	1.9	18.2	11.7	191,663.3
Construction 2016							
No Mitigation	36.7	175.8	922.4	1.9	18.3	11.8	191,647.2
With Mitigation	36.7	173.6	922.4	1.9	17.6	11.1	191,647.2

Construction 2017							
No Mitigation	33.7	158.3	860.5	1.9	17.7	11.2	191,636.8
With Mitigation	33.7	156.2	860.5	1.9	17.0	10.6	191,636.8
Construction 2018							
No Mitigation	30.9	143.1	803.1	1.9	17.2	10.7	191,630.1
With Mitigation	30.9	141.3	803.1	1.9	16.6	10.2	191,630.1
Construction 2019							
No Mitigation	28.5	130.0	749.9	1.9	16.7	10.3	191,626.0
With Mitigation	28.5	128.3	749.9	1.9	16.2	9.8	191,626.0
Painting 2020							
No Mitigation	107.0	0.1	1.6	0.0	0.0	0.0	375.0
With Mitigation	19.4	0.1	1.6	0.0	0.0	0.0	375.0
Painting 2021							
No Mitigation	106.9	0.1	1.1	0.0	0.0	0.0	375.0
With Mitigation	19.3	0.1	1.1	0.0	0.0	0.0	375.0
Painting 2022							
No Mitigation	106.9	0.1	1.1	0.0	0.0	0.0	375.0
With Mitigation	19.3	0.1	1.1	0.0	0.0	0.0	375.0
Painting 2023							
No Mitigation	106.9	0.1	1.1	0.0	0.0	0.0	375.0
With Mitigation	19.3	0.1	1.1	0.0	0.0	0.0	375.0
Painting 2024							
No Mitigation	106.9	0.1	1.1	0.0	0.0	0.0	375.0
With Mitigation	19.3	0.1	1.1	0.0	0.0	0.0	375.0
Paving 2025							
No Mitigation	2.7	13.0	12.0	0.0	0.9	0.8	2,604.0
With Mitigation	2.7	11.1	12.0	0.0	0.2	0.2	2,604.0
Paving 2026							
No Mitigation	2.7	12.9	11.8	0.0	0.9	0.8	2,604.0
With Mitigation	2.7	11.0	11.8	0.0	0.2	0.1	2,604.0
Paving 2027							
No Mitigation	2.7	12.9	11.8	0.0	0.9	0.8	2,604.0
With Mitigation	2.7	11.0	11.8	0.0	0.2	0.1	2,604.0
Paving 2028							
No Mitigation	2.7	12.9	11.8	0.0	0.9	0.8	2,604.0
With Mitigation	2.7	11.0	11.8	0.0	0.2	0.1	2,604.0
Paving 2029							
No Mitigation	2.7	12.9	11.8	0.0	0.9	0.8	2,604.0
With Mitigation	2.7	11.0	11.8	0.0	0.2	0.1	2,604.0
SCAQMD Threshold	75	100	550	150	150	55	-

Source: URBEMIS2007 Model, Output in Appendix

NOx, ROG, CO, PM-10 and PM-2.5, emissions for all may exceed the SCAQMD significance thresholds, primarily during grading and construction, even with the application of mitigation

measures such as utilizing diesel equipment fitted with ultra-low NOx engines. NOx emissions can be reduced by 25 percent if a large portion of the equipment fleet were comprised of ARB-certified "Tier 3" engines. Even if all heavy equipment were Tier 3 certified, it would still not be possible to maintain NOx emissions at less than 100 pounds per day (not significant). Given the possibility of activity overlap (grading one phase while constructing another), and the fact that construction will occur over a long period, NOx impacts should be considered significant and unavoidable.

"Excess" NOx from construction equipment is a regional (ozone) concern because NOx is an ozone precursor which has been shown to cause adverse health effects. The following NOx and ozone-related health effects are as shown in Table 2 for sensitive receptors and for emergent plant tissue:

- Aggravation of respiratory illness
- Reduced visibility
- Reduced plant growth
- Formation of acid rain
- Aggravation of respiratory and cardiovascular diseases
- Irritation of the eyes
- Impairment of cardiopulmonary function
- Plant leaf injury

As noted above, PM-10 and PM-2.5 emissions from fugitive dust released during site grading, plus the diesel exhaust particulates, will exceed the SCAQMD CEQA Handbook threshold. Even with the use of enhanced dust control measures, particulate emission levels will exceed the SCAQMD CEQA threshold by a wide margin. Such emissions are primarily from fugitive dust and are similar to the dust generated by on-site aggregate mining and processing operations. They are not "new" emissions in either a local or regional sense. Although grading activity dust may exceed the adopted CEQA thresholds, they likely have historically been exceeded. With application of all available mitigation, PM-10 and PM-2.5 impacts are considered less-than-significant with mitigation.

As previously noted, construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. Public exposure to heavy equipment emissions will be an extremely small fraction of the above dosage assumption. Diesel equipment is also becoming progressively "cleaner" in response to air quality rules on new off-road equipment.

The SCAQMD does not generally require the analysis of construction related diesel emissions relative to health risk due to the short period for which the majority of diesel exhaust would occur. The majority of diesel exhaust would occur during the grading phase which typically lasts for a period of approximately 3 months for any individual project. Health risk analyses are typically assessed over a 9, 30 or 70 year time frame and not over a period of months due to the lack of health risk associated with such a brief exposure.

Because of the large number of planned homes (8,244 units) and extensive planned non-residential development (4.37 million square feet), ROG emissions from the application of paints and coatings may also exceed SCAQMD CEQA thresholds. The degree of excess ROG for an assumed 5-year cycle of painting and coating (using coatings with required low-VOC content) is such that use of ultra-low VOC paint will still exceed the significance threshold. ROG is an ozone precursor. The health effects of ozone exposure are shown in Table 2 and detailed above for NOx emissions.

In order to best protect public health, the SCAQMD has developed local significance thresholds (LSTs) LSTs are the level of air pollution that would cause a new violation of standards (CO and NOx), or substantially worsen an existing violation (PM-10 and PM-2.5). LSTs depend upon background air pollution levels within a given Source-Receptor Area (SRA) of the air basin. They also depend upon the exact geometrical relationship between a source of air pollution and a downwind receptor. For general development (residential/commercial), LSTs normally only apply to construction activities.

At this point in time, development of Alberhill Villages is defined only in terms of general land use at some unspecified future date. There is insufficient detail by which to conduct an LST analysis. Construction activity impacts have already been designated as having a significant and not fully mitigable regional air quality impact. They may have temporary locally significant impacts during construction. Any estimate of location, severity or timeframe of such impacts is speculative.

OPERATIONAL IMPACTS

The greatest project-related air quality concern derives from the new vehicle trips that will be generated by residential and other uses at project completion. At project build-out, proposed residential, commercial, office, recreational and educational uses at the Alberhill Villages development may generate 158,924 net daily trips with an associated 1,510,000 vehicles miles traveled per day.

Project energy demand met by burning fossil fuels in regional power plants will add a NOx increment from project operations and other pollutants. Residential uses also generate small quantities of organic compounds from cleaning products, personal care products, landscape maintenance, cooking, etc. The individual residential contribution of each such source is small, but becomes significant when summed over a large quantity of residences.

Operational emissions for project-related traffic were calculated using a computerized procedure developed by the California Air Resources Board (CARB) for urban growth mobile source emissions. The URBEMIS2007 model was run using the trip generation factors specified by the project traffic consultant for this project. The model was used to calculate area source emissions and the resulting vehicular operational emissions for an assumed project build-out year of 2030. The results are shown in Table 5.

As seen in Table 5, the Alberhill Villages development will cause the SCAQMD's recommended CEQA threshold levels to be exceeded. Emissions of CO, ROG, NOx and PM-10 are all forecast

Table 5
Project-Related Emissions Burden

`	Emissions (lbs/day)						
Year 2030	**ROG**	**NOx**	**CO**	**SO_2**	**PM-10**	**PM-2.5**	**CO_2**
Area Sources	488.4	126.8	183.3	0.0	0.6	0.6	158,103.7
Mobile Sources	500.9	469.4	5,227.1	16.0	2,605.5	505.0	1,575,772.2
Total	**989.3**	**596.2**	**5,410.4**	**16.0**	**2,606.1**	**505.6**	**1,733,875.9**
SCAQMD Threshold	55	55	550	150	150	55	-
Exceeds Threshold?	Yes	Yes	Yes	No	Yes	Yes	-

to exceed their respective SCAQMD significance thresholds by a substantial margin. By project completion, project related emissions will compare to SCAQMD thresholds by as much as 17 times the threshold.

These levels of emissions in excess of standards would presumably occur at other developments in Riverside County if not at Alberhill Villages. While the project represents a significant regional emissions contributor, it does not generate emissions that have not been adequately anticipated in the regional air quality plan. The project's level of development for Lake Elsinore has been anticipated in the Riverside County Projections 2006 by the Riverside County Center for Demographic Research and the Western Riverside Council of Governments (WRCOG), which predicted a substantial growth of people, households and jobs in the City of Lake Elsinore between 2010 and 2030.

For the time period of 2010 to 2030, for Lake Elsinore, the projections anticipated a growth of 5,810 jobs, 12,275 housing units and a population increase of 26,909.

The Alberhill Villages Specific Plan would add 3,810 residential apartments, 2,075 condominiums and 2,319 single family units to Lake Elsinore housing. This represents approximately 67% of the total forecasted growth between 2010 and 2030 for Lake Elsinore. Additionally the project would add 836,000 square feet of office space, and 1,671,000 square feet of commercial space. Job creation from commercial and office uses would account for a significant portion of forecast employment growth between 2010 and 2030.

In a regional sense the project is likely air quality positive by providing commercial, retail, and recreational and educational facilities close to onsite residential users, as well as reducing the length of home-to-work trips. The convenience of the on-site project commercial uses and schools and parks is expected to reduce traffic through internal trips from one project use to another. Additionally the proposed General Plan Update notes that Lake Elsinore is currently heavily comprised of single family dwelling units and that there is a mismatch between household income and housing costs such that residents may accept smaller-sized housing or need to double up with other families to afford housing costs. The Alberhill Villages project will provide a significant quantity of apartments and condominiums which will help alleviate this housing constraint.

Although the mobile source emissions will have a regionally significant and non-mitigable air quality impact, the air quality benefits of a positive jobs-retail/commercial-housing balance contribution thereby reducing the regional vehicle miles traveled should be noted in any statement of overriding considerations.

In addition to mobile sources, this project causes air pollution to be generated from on-site energy consumption (natural gas combustion) and from other "area source" emissions. Area source emissions for 2030 by themselves will exceed the ROG significance threshold by 800 percent. The inclusion of such emissions contributes to the total significant project-related emissions burden as shown in Table 5.

MICROSCALE IMPACT ANALYSIS

Micro-scale air quality impacts have traditionally been analyzed in environmental documents whene the air basin was a non-attainment area for carbon monoxide (CO). However, the SCAQMD has demonstrated in the CO attainment redesignation request to EPA that there are no "hot spots" anywhere in the air basin, even at intersections with much higher volumes, much worse congestion, and much higher background CO levels than anywhere in the project area. If the worst-case intersections in the air basin have no "hot spot" potential, any local impacts near the project site will be well below thresholds with an even larger margin of safety.

To verify this conclusion, a CO screening analysis was performed at intersections surrounding the project. One-hour CO concentrations were calculated on the sidewalks adjacent to these intersections. The A.M and P.M. peak one-hour levels (ppm above background) are shown in Table 6.

Existing peak one-hour local CO background levels in 2008 in the project vicinity were 3.0 ppm. Combined worst-case background (3.0 ppm) plus local (1.5 ppm) concentrations equate to one-hour CO levels of 4.5 ppm which are far below the one-hour standard of 20 ppm . Micro-scale impacts are not significant.

TABLE 6
Project-Related One-hour CO Concentrations (ppm) Above Background
AM Peak Hour

Intersection:		**Existing**	**Build-Out**	**Build-Out & Project**
Horsethief Canyon Rd/	Temescal Canyon Rd	0.2	0.5	0.5
Lake Street/	I-15 NB Ramps	0.6	0.4	0.6
Lake Street/	I-15 SB Ramps	0.6	0.8	1.2
Lake Street/	Temescal Canyon Rd	0.7	NA	NA
Lake Street/	Nichols Rd	0.5	0.5	0.8
Lake Street/	Alberhill Ranch Rd	0.5	0.3	0.3
Lake Street/	Mountain St	0.6	0.4	0.4
Lake Street/	Lakeshore Dr	0.6	0.5	0.6
Grand Ave/	Lincoln St	0.4	0.3	0.4
Terra Cotta Rd/	Lakeshore Dr	0.4	0.6	0.6
Collier Ave/	Nichols Rd	0.2	0.7	1.0
I-15 SB Ramps/	Nichols Rd	0.2	0.8	0.8
I-15 NB Ramps/	Nichols Rd	0.2	1.0	1.1
Temescal Canyon Rd/	A St	NA	0.4	0.6
Temescal Canyon Rd/	B St	NA	NA	0.3
Temescal Canyon Rd/	F St	NA	NA	0.2
Temescal Canyon Rd/	Nichols Rd	NA	0.1	0.2
C St/	B St	NA	NA	0.2
C St/	Nichols Rd	NA	NA	0.2
D St/	Nichols Rd	NA	NA	0.2
Lake Street/	A St	NA	0.5	1.4
Lake Street/	B St	NA	0.3	0.5
Lake Street/	D St	NA	0.4	0.6
Lake Street/	D St	NA	NA	0.4
Alberhill Ranch Rd/	Nichols Rd	NA	0.2	0.4
Terra Cotta Rd/	Nichols Rd	NA	0.5	0.6

NA=Not Available

Table 6 (continued)
Project-Related One-hour CO Concentrations (ppm) Above Background
PM Peak Hour

Intersection:		**Existing**	**Build-Out**	**Build-Out & Project**
Horsethief Canyon Rd/	Temescal Canyon Rd	0.2	1.0	1.0
Lake Street/	I-15 NB Ramps	0.2	0.3	0.5
Lake Street/	I-15 SB Ramps	0.5	1.1	1.5
Lake Street/	Temescal Canyon Rd	0.6	NA	NA
Lake Street/	Nichols Rd	0.6	1.0	1.1
Lake Street/	Alberhill Ranch Rd	0.5	0.4	0.5
Lake Street/	Mountain St	0.6	0.6	0.7
Lake Street/	Lakeshore Dr	0.4	0.6	0.9
Grand Ave/	Lincoln St	0.5	0.7	0.9
Terra Cotta Rd/	Lakeshore Dr	0.4	0.9	1.1
Collier Ave/	Nichols Rd	0.3	1.0	1.2
I-15 SB Ramps/	Nichols Rd	0.3	1.3	1.2
I-15 NB Ramps/	Nichols Rd	0.2	1.4	1.5
Temescal Canyon Rd/	A St	NA	0.7	0.9
Temescal Canyon Rd/	B St	NA	NA	0.5
Temescal Canyon Rd/	F St	NA	NA	0.4
Temescal Canyon Rd/	Nichols Rd	NA	0.2	0.4
C St/	B St	NA	NA	0.2
C St/	Nichols Rd	NA	NA	0.3
D St/	Nichols Rd	NA	NA	0.3
Lake Street/	A St	NA	1.0	1.3
Lake Street/	B St	NA	0.5	0.6
Lake Street/	D St	NA	0.6	1.1
Lake Street/	D St	NA	NA	0.5
Alberhill Ranch Rd/	Nichols Rd	NA	0.7	1.1
Terra Cotta Rd/	Nichols Rd	NA	1.1	1.3

NA=Not Available

GREENHOUSE GAS EMISSIONS

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. The Governor's Office of Planning and Research is in the process of developing CEQA significance thresholds for GHG emissions but thresholds have yet to be established. GHG statutes and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, to be achieved by 2020.
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

Greenhouse Gas Emissions Significance Thresholds

There are currently no adopted GHG significance thresholds for project CEQA clearance. The California Governor's Office of Planning and Research (OPR) has amended the State CEQA Guidelines to incorporate GHG. These amendments were adopted by the California Natural Resources Agency on December 30, 2009 and became effective in March, 2010. They contain requirements to characterize the GHG setting, quantify the impacts resulting from the proposed project, determine impact significance, and mitigate as appropriate. They leave the determination of significance to the Lead Agency.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons CO_2 equivalent/year. As part of the Interim GHG Significance Threshold development process for industrial projects, the SCAQMD established a working group of stakeholders that also considered thresholds for commercial or residential projects. The working group established a goal of capturing ninety percent of new growth of GHG under the CEQA process. As discussed in the Interim GHG Significance Threshold guidance document, the focus for residential projects is on performance standards and a screening level threshold. For discussion purposes, the SCAQMD's working group considered performance standards primarily focused on energy efficiency measures beyond Title 24 .

A screening level of 3,000 metric tons (MT) CO_2 equivalent/year based on the relative GHG emissions contribution between non-industrial sectors versus stationary source (industrial) sectors was tentatively adopted. The working group and staff ultimately decided that additional analysis was needed to further define the performance standards and to coordinate with CARB staff's interim GHG proposal. Staff, therefore, did not recommend action for adopting an interim threshold for non-industrial projects but rather recommended bringing this item back to the Board for discussion and possible action in March 2009. As of this date, no final action on a quantitative significance threshold has been taken, but use of 3,000 MT per year is recommended as a *de facto* screening threshold.

Impacts - Greenhouse Gas Emissions

Implementation of the proposed project would directly contribute to long-term increases in greenhouse gases (GHGs) as a result of traffic increases (mobile sources) and secondary fuel combustion emissions from space heating, etc. Development occurring as a result of the proposed project would also result in secondary operational increases in GHG emissions as a result of electricity generation to meet project-related increases in energy demand. Electricity generation in California is mainly from natural gas-fired power plants. However, since California imports about 20 to 25 percent of its total electricity (mainly from the northwestern and southwestern states), GHG emissions associated with electricity generation could also occur outside of California. Space or water heating, water delivery, wastewater processing and solid waste disposal also generate GHG emissions. Short-term GHG emissions will also derive from construction activities.

The General Reporting Protocol (GRP) in the California Climate Action Registry (CCAR) divides project-related operational GHG emissions into three categories. These three sources include the following:

Source 1- On-site combustion of fossil fuels (space and water heating, fireplaces, landscape utility equipment, etc.)

Source 2- Consumption of purchased energy (electricity)

Source 3- Indirect emissions (transportation, solid waste disposal, fresh-and wastewater conveyance and treatment)

For general residential and commercial development projects such as the proposed project, Source 3 is typically a much larger contributor to the GHG burden than Sources 1 and 2. For convenience, Alberhill Villages project-related GHG emissions were aggregated into transportation and non-transportation sources. The transportation component is calculated and reported in the URBEMIS2007 computer model. The non-transportation sources require additional analysis, as shown below.

Construction Activity GHG Emissions

The build-out timetable for this project will depend upon market conditions. It is anticipated that full build-out may occur over 20 years. For ease of calculations, various construction elements were assigned to discrete years. Whether such activities would occur exactly within assumed years is speculative. For each generic construction activity, the URBEMIS2007 computer model predicts that the following activities will generate the following annual CO_2 emissions:

Activity	**CO_2 in Short Tons**	**CO_2 in Metric Tons**
Grading (4 yrs)	2,130	1,936
Construction (5 yrs)	25,007	22,734
Painting (5 yrs)	49	45
Paving (5 yrs)	340	309

*Output provided in appendix

Equipment exhaust also contains small amounts of methane and nitric oxides which are also GHGs. Non-CO_2 GHG emissions represent approximately a three percent increase in CO_2-equivalent emissions from diesel equipment exhaust. For screening purposes, the temporary (one-time) construction activity GHG emissions were compared to the chronic operational emissions in the SCAQMD's interim thresholds. The screening level operational threshold is 3,000 metric tons (MT) of CO_2-equivalent (CO_2(e)) per year. Worst year building construction activities are well above this threshold. Construction emissions will cease after the project is built.

Project Operational GHG Emissions

Transportation-related GHG emissions from project implementation were based upon URBEMIS2007 outputs. Non-transportation sources were calculated by combining established resource consumption factors with the size of various project elements. The results are

summarized in Table 7 for non-transportation GHG sources and transportation GHG emissions are shown in Table 8. Given the size/scope of this planned project, the annual GHG emissions burden far exceeds the threshold screening level of 3,000 MT per year. Annual GHG emissions of almost 300,000 metric tons are almost 100 times the screening level. They are, in fact, 0.06 percent of the current (most recent) statewide inventory of around 500,000,000 metric tons per year.

The estimates in Tables 7 and 8 do not take into account GHG emissions reduction programs that have been or will be implemented at the state and national level. Those programs are expected to reduce GHG emissions by 24 percent from the "business-as-usual" (BAU) scenario assumed in the development of the project GHG burden. However, meeting the AB-32 goal of returning to the 1990 GHG baseline required a reduction of 29 percent from the BAU trend. The "extra" 5 percent are expected to come from brand new technologies or from local initiatives.

Greenhouse Gas Emissions Reduction Measures

GHG reduction options on a project-level basis are similar to those measures designed to reduce criteria air pollutants (those with ambient air quality standards). Measures that reduce trip generation or trip lengths, measures that optimize the transportation efficiency of a region, and measures that promote energy conservation within a development will reduce GHG emissions. Additionally, carbon sequestering can be achieved through urban forestry measures.

For the proposed project the transportation component will comprise approximately 83 percent of the project-related GHG emissions. Reductions in the vehicular contribution are therefore critical in achieving the goals of statewide/national GHG minimization programs. However, substantial mobile source trip/VMT reduction or increases in vehicular fuel efficiency are not achievable on a project-specific basis. State or national programs are in place to significantly upgrade fuel efficiencies. Most discretionary actions for GHG reduction must therefore focus on energy conservation.

The City of Lake Elsinore has established four goals related to GHG and climate change in the most recent update of the general plan. Project design to comply with these goals will likely achieve the local 5 percent GHG reduction needed for AB-32 compliance. These goals and the project level opportunities to meet these objectives are as follows:

Table 7
Non Transportation Consumption/Generation

Commercial (1,671,000 ft^2)	**Rate**	**Annual Use**
Electricity	13.6 KWH/ft^2/yr	22,725,600 KWH
Natural Gas	34.8 cubic ft/ft^2/yr	58,150,800 cubic ft
Solid Waste	9.4 lb/ft^2/yr	15,707,400 lb
Water	87.8 gal/ft^2/yr	146,713,800 gal

Office (836,000 ft^2)	**Rate**	**Annual Use**
Electricity	12.9 KWH/ft^2/yr	10,784,400 KWH
Natural Gas	24.0 cubic ft/ft^2/yr	40,104,000 cubic ft
Solid Waste	9.4 lb/ft^2/yr	7,858,400 lb
Water	87.8 gal/ft^2/yr	73,400,800 gal

SF Residential (2,319 units)	**Rate**	**Annual Use**
Electricity	5,600 KWH/unit/yr	12,986,400 KWH
Natural Gas	6,665 cubic ft/unit/yr	15,456,100 cu ft
Solid Waste	3,650 lb/unit/yr	8,464,400 lb
Water	200,000 gal/unit/yr	463,800,000 gal

MF Residential (5,885 units)	**Rate**	**Annual Use**
Electricity	3,500 KWH/unit/yr	20,597,500 KWH
Natural Gas	4,000 cubic ft/unit/yr	23,540,000 cubic ft
Solid Waste	1,500 lb/unit/yr	8,827,500 lb
Water	120,000 gal/unit/yr	706,200,000 gal

Educational (9,650 students)	**Rate**	**Annual Use**
Electricity	1,000 KWH/student/yr	1,044,750 KWH
Natural Gas	1,800 cubic ft/student/yr	6,048,000 cubic ft
Solid Waste	90 lb/student/yr	868,500 lb
Water	2,000 gal/student/yr	19,300,000 gal

Table 7 Continued

Total Non-Transportation Project-Related GHG Emissions

New Land Use	*Electricity (KWH)*	*Nat. Gas (cu ft)*	*Solid Waste (lbs)*	*Water (gallons)*
Commercial	22,725,600	58,150,800	15,707,400	146,713,800
Office	10,784,400	40,104,000	7,858,400	73,400,800
SF Residential	12,986,400	15,456,100	8,464,400	463,800,000
MF Residential	20,597,500	23,540,000	8,827,500	706,200,000
Educational	9,650,000	17,370,000	868,500	19,300,000
Total	**76,743,900**	**154,620,900**	**41,726,200**	**1,409,414,600**

	Unit	**Electricity (MWH)**	**Nat. Gas (10^6 cu ft)**	**Solid Waste (tons)**	**Water (MG))**
Total					
Conversion Factor		*0.331*	*54.6*	*0.42*	*4.20*
Metric CO_2(e) tons/yr		25,402	8,442	8,763	5,920

Table 8

Project-Related GHG Emissions

Total Transportation

Residential (365 days/yr) = 634,465 lbs day = 105,295 metric tons/year

Educational (200 days/yr) = 177,179 lbs/day = 16,107 metric tons/yr

Office (260 days/yr) = 98,137 lbs/day = 11,598 metric tons/yr

Commercial (365 days/yr) = 640,885 lbs day = 106,329 metric tons/yr

Total Transportation =	**239,329 metric tons/yr**
Total Non-Transportation =	**48,527 metric tons/yr**
Total =	**287,856 metric tons/year**
Transportation Share	**83.0 %**

Goal 14- Increased Efficiency

- Construct buildings to LEED standards
- Energy efficiency performance standards exceeding code minimums
- Lighting efficiency enhancement (LED lights, shielded, timers)
- Prohibit wood burning fireplaces
- "Cool roofs", open grid paving, covered parking

15- Alternative Energy

- Renewable energy projects allowed within open space zoning
- Renewable energy projects on all large buildings (rooftop, solar, etc.)
- South facing roofs for future solar installation
- Day lighting and passive solar heating
- Energy purchase exceeding the Renewable Portfolio Standard minimums

Goal 16-Municipal Operations*

- New municipal space must be LEED certified
- Access to alternative fuels and/or electric charging
- Electric landscape maintenance equipment
- Bicycle programs
- Parking management with a parking fee for single-occupant vehicles
- Higher density along major transit corridors
- Urban forestry projects for carbon sequestration

Goal 17- Public Education and Outreach

- Promote alternative transportation, energy conservation, solid waste reduction and water resource reduction

*Although these are focused on municipal operations, they are applicable to all of Alberhill Villages

AIR QUALITY MANAGEMENT PLAN (AQMP) CONSISTENCY

A project is consistent with the regional AQMP if it does not create new violations of clean air standards, exacerbates any existing violations, or delays a timely attainment of such standards. The magnitude of project-related emissions were shown to be far in excess of SCAQMD CEQA significant thresholds. However, the AQMP is a growth accommodating document. The AQMP incorporates the development plans for various sub-regions of the air basin. It does not, however, necessarily assign a specific quantity of development on any single parcel of land, but rather it is based on the General Plan of the appropriate jurisdiction. The recently completed General Plan Update recognizes the Lake Elsinore has the potential to triple in population from existing levels. That assumption was carried forward into the current version of the AQMP. Although Alberhill Villages is a very large project, it does not constitute an unanticipated source of air pollution in a regional sense.

The project is therefore, regionally growth-accommodating and not growth-inducing. While the air quality impact is considered significant because of the sheer scope of the project, it has several design features that actually are air quality positive. The project contributes positively to an existing jobs:housing imbalance, and promotes alternative transportation/shorter trip lengths though a mixed-use land use plan. The project will be built with an enhanced level of energy conservation to be consistent with the City of Lake Elsinore Climate Action Plan (CAP). The reduced reliance on fossil-fueled energy resources will create a reduction in combustion pollution from energy providers. To the extent that Alberhill Villages becomes a "green" community, it will be consistent with the goals and measures of the AQMP.

MITIGATION

CONSTRUCTION EMISSIONS MITIGATION

Construction activities may cause NOx, ROG, PM-10 and PM-2.5 emissions to substantially exceed SCAQMD CEQA thresholds. Reasonable and feasible mitigation cannot likely reduce impacts to a less-than-significant level. Mitigation required to achieve a reduced level of impact includes:

Dust Control

- Apply soil stabilizers to inactive areas.
- Prepare a high wind dust control plan and implement plan elements and terminate soil disturbance when winds exceed 25 mph.
- Stabilize previously disturbed areas if subsequent construction is delayed.
- Water exposed surfaces 3 times/day.
- Cover all stock piles with tarps if left undisturbed for more than 72 hours.
- Replace ground cover in disturbed areas as soon as feasible.
- Provide water spray during loading and unloading of earthen materials.

Diesel exhaust particulates and NOx emissions would t have a significant impact during construction because of the size scope of the project. Measures to reduce exhaust emissions include:

Exhaust Emissions

- Require 90-day low-NOx tune-ups for off-road equipment.
- Limit allowable idling to 5 minutes for trucks and heavy equipment.
- Utilize equipment whose engines are equipped with diesel oxidation catalysts if available.
- Utilize diesel particulate filter on heavy equipment where feasible.

Painting and Coatings

- Use low VOC coatings and high pressure-low volume sprayers.

OPERATIONAL EMISSIONS MITIGATION

Operational emissions will exceed adopted significance thresholds. Measures to reduce trips generated and vehicle miles traveled in low occupant liquid fueled vehicles are incorporated into Climate Action Plan compliance. Those same measures would reduce criteria pollutant emissions as much as possible.

GREENHOUSE GAS/CLIMATE CHANGE

After adoption of the City of Lake Elsinore CAP, and before the issuance of any discretionary development permits (grading, etc.) the applicant shall submit a CAP compliance document to the Director of Planning. The compliance report shall outline those project design features that substantially bring Alberhill Villages Specific Plan implementation into agreement with CAP goals and measures.

APPENDIX

URBEMIS2007 Computer Model Output

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\Sara Gerrick\Application Data\Urbemis\Version9a\Projects\Aberhill Villages.urb924

Project Name: Aberhill Villages

Project Location: South Coast AQMD

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
2011 TOTALS (tons/year unmitigated)	2.37	21.29	10.33	0.00	409.01	0.87	409.88	85.42	0.80	86.22	2,121.93
2011 TOTALS (tons/year mitigated)	2.37	18.10	10.33	0.00	43.75	0.13	43.88	9.14	0.12	9.26	2,121.93
Percent Reduction	0.00	14.98	0.00	0.00	89.30	84.85	89.29	89.30	84.86	89.26	0.00
2012 TOTALS (tons/year unmitigated)	2.27	20.05	9.73	0.00	410.58	0.82	411.40	85.75	0.75	86.50	2,130.08
2012 TOTALS (tons/year mitigated)	2.27	17.05	9.73	0.00	43.92	0.12	44.04	9.17	0.11	9.29	2,130.08
Percent Reduction	0.00	14.98	0.00	0.00	89.30	84.84	89.29	89.30	84.85	89.26	0.00
2013 TOTALS (tons/year unmitigated)	2.20	18.83	9.13	0.00	410.58	0.76	411.35	85.75	0.70	86.45	2,130.07
2013 TOTALS (tons/year mitigated)	2.20	16.01	9.13	0.00	43.92	0.12	44.03	9.17	0.11	9.28	2,130.07
Percent Reduction	0.00	14.98	0.00	0.00	89.30	84.83	89.30	89.30	84.84	89.27	0.00
2014 TOTALS (tons/year unmitigated)	2.10	17.47	8.65	0.00	410.58	0.70	411.29	85.75	0.65	86.39	2,130.06

2014 TOTALS (tons/year mitigated)	2.10	14.85	8.65	0.00	43.92	0.11	44.02	9.17	0.10	9.27	2,130.06
Percent Reduction	0.00	14.98	0.00	0.00	89.30	84.80	89.30	89.30	84.81	89.27	0.00
2015 TOTALS (tons/year unmitigated)	5.23	25.62	128.88	0.25	1.10	1.40	2.49	0.39	1.24	1.63	25,012.06
2015 TOTALS (tons/year mitigated)	5.23	25.30	128.88	0.25	1.10	1.28	2.38	0.39	1.13	1.52	25,012.06
Percent Reduction	0.00	1.24	0.00	0.00	0.00	8.14	4.56	0.00	8.45	6.42	0.00
2016 TOTALS (tons/year unmitigated)	4.79	22.94	120.37	0.25	1.10	1.30	2.39	0.39	1.15	1.54	25,009.96
2016 TOTALS (tons/year mitigated)	4.79	22.65	120.37	0.25	1.10	1.20	2.30	0.39	1.06	1.45	25,009.96
Percent Reduction	0.00	1.27	0.00	0.00	0.00	7.50	4.07	0.00	7.82	5.83	0.00
2017 TOTALS (tons/year unmitigated)	4.38	20.58	111.86	0.25	1.09	1.21	2.30	0.39	1.06	1.45	24,912.79
2017 TOTALS (tons/year mitigated)	4.38	20.31	111.86	0.25	1.09	1.12	2.22	0.39	0.99	1.38	24,912.79
Percent Reduction	0.00	1.29	0.00	0.00	0.00	7.06	3.71	0.00	7.38	5.40	0.00
2018 TOTALS (tons/year unmitigated)	4.03	18.68	104.80	0.25	1.10	1.15	2.24	0.39	1.01	1.40	25,007.73
2018 TOTALS (tons/year mitigated)	4.03	18.43	104.80	0.25	1.10	1.07	2.17	0.39	0.94	1.33	25,007.73
Percent Reduction	0.00	1.31	0.00	0.00	0.00	6.49	3.32	0.00	6.81	4.91	0.00
2019 TOTALS (tons/year unmitigated)	3.72	16.96	97.86	0.25	1.10	1.09	2.18	0.39	0.95	1.34	25,007.19
2019 TOTALS (tons/year mitigated)	3.72	16.74	97.86	0.25	1.10	1.02	2.12	0.39	0.89	1.28	25,007.19
Percent Reduction	0.00	1.31	0.00	0.00	0.00	5.79	2.88	0.00	6.09	4.32	0.00
2020 TOTALS (tons/year unmitigated)	14.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13

2020 TOTALS (tons/year mitigated)	2.54	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Percent Reduction	81.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021 TOTALS (tons/year unmitigated)	13.96	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94
2021 TOTALS (tons/year mitigated)	2.51	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94
Percent Reduction	81.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022 TOTALS (tons/year unmitigated)	13.90	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
2022 TOTALS (tons/year mitigated)	2.51	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Percent Reduction	81.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023 TOTALS (tons/year unmitigated)	13.90	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
2023 TOTALS (tons/year mitigated)	2.51	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Percent Reduction	81.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024 TOTALS (tons/year unmitigated)	14.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
2024 TOTALS (tons/year mitigated)	2.53	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Percent Reduction	81.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025 TOTALS (tons/year unmitigated)	0.36	1.70	1.56	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
2025 TOTALS (tons/year mitigated)	0.36	1.45	1.56	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Percent Reduction	0.00	14.29	0.00	0.00	0.00	82.65	80.52	0.00	82.71	81.90	0.00
2026 TOTALS (tons/year unmitigated)	0.36	1.68	1.54	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82

2026 TOTALS (tons/year mitigated)	0.36	1.44	1.54	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Percent Reduction	0.00	14.40	0.00	0.00	0.00	82.97	80.82	0.00	83.03	82.21	0.00
2027 TOTALS (tons/year unmitigated)	0.36	1.68	1.54	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
2027 TOTALS (tons/year mitigated)	0.36	1.44	1.54	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Percent Reduction	0.00	14.40	0.00	0.00	0.00	82.97	80.82	0.00	83.03	82.21	0.00
2028 TOTALS (tons/year unmitigated)	0.35	1.68	1.53	0.00	0.00	0.12	0.12	0.00	0.11	0.11	338.51
2028 TOTALS (tons/year mitigated)	0.35	1.44	1.53	0.00	0.00	0.02	0.02	0.00	0.02	0.02	338.51
Percent Reduction	0.00	14.40	0.00	0.00	0.00	82.97	80.82	0.00	83.03	82.21	0.00
2029 TOTALS (tons/year unmitigated)	0.36	1.68	1.54	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
2029 TOTALS (tons/year mitigated)	0.36	1.44	1.54	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Percent Reduction	0.00	14.40	0.00	0.00	0.00	82.97	80.82	0.00	83.03	82.21	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	105.21	23.91	77.75	0.12	6.96	6.70	29,910.45

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	92.88	91.49	934.23	2.76	475.51	92.17	278,358.71

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	198.09	115.40	1,011.98	2.88	482.47	98.87	308,269.16

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	2.37	21.29	10.33	0.00	409.01	0.87	409.88	85.42	0.80	86.22	2,121.93
Mass Grading 01/01/2011-12/31/2014	2.37	21.29	10.33	0.00	409.01	0.87	409.88	85.42	0.80	86.22	2,121.93
Mass Grading Dust	0.00	0.00	0.00	0.00	409.01	0.00	409.01	85.42	0.00	85.42	0.00
Mass Grading Off Road Diesel	2.36	21.26	9.89	0.00	0.00	0.87	0.87	0.00	0.80	0.80	2,065.34
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.01	0.03	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.59
2012	2.27	20.05	9.73	0.00	410.58	0.82	411.40	85.75	0.75	86.50	2,130.08
Mass Grading 01/01/2011-12/31/2014	2.27	20.05	9.73	0.00	410.58	0.82	411.40	85.75	0.75	86.50	2,130.08
Mass Grading Dust	0.00	0.00	0.00	0.00	410.58	0.00	410.58	85.75	0.00	85.75	0.00
Mass Grading Off Road Diesel	2.26	20.03	9.32	0.00	0.00	0.82	0.82	0.00	0.75	0.75	2,073.28
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.01	0.02	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.80

2013	2.20	18.83	9.13	0.00	410.58	0.76	411.35	85.75	0.70	86.45	2,130.07
Mass Grading 01/01/2011-12/31/2014	2.20	18.83	9.13	0.00	410.58	0.76	411.35	85.75	0.70	86.45	2,130.07
Mass Grading Dust	0.00	0.00	0.00	0.00	410.58	0.00	410.58	85.75	0.00	85.75	0.00
Mass Grading Off Road Diesel	2.19	18.81	8.75	0.00	0.00	0.76	0.76	0.00	0.70	0.70	2,073.28
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.01	0.02	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.79
2014	2.10	17.47	8.65	0.00	410.58	0.70	411.29	85.75	0.65	86.39	2,130.06
Mass Grading 01/01/2011-12/31/2014	2.10	17.47	8.65	0.00	410.58	0.70	411.29	85.75	0.65	86.39	2,130.06
Mass Grading Dust	0.00	0.00	0.00	0.00	410.58	0.00	410.58	85.75	0.00	85.75	0.00
Mass Grading Off Road Diesel	2.08	17.45	8.29	0.00	0.00	0.70	0.70	0.00	0.65	0.65	2,073.28
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.01	0.02	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.78
2015	5.23	25.62	128.88	0.25	1.10	1.40	2.49	0.39	1.24	1.63	25,012.06
Building 01/01/2015-12/31/2019	5.23	25.62	128.88	0.25	1.10	1.40	2.49	0.39	1.24	1.63	25,012.06
Building Off Road Diesel	0.35	2.11	1.67	0.00	0.00	0.13	0.13	0.00	0.12	0.12	294.84
Building Vendor Trips	1.74	17.48	16.67	0.06	0.21	0.70	0.91	0.07	0.64	0.71	5,934.36
Building Worker Trips	3.14	6.02	110.54	0.20	0.89	0.56	1.45	0.32	0.47	0.79	18,782.86
2016	4.79	22.94	120.37	0.25	1.10	1.30	2.39	0.39	1.15	1.54	25,009.96
Building 01/01/2015-12/31/2019	4.79	22.94	120.37	0.25	1.10	1.30	2.39	0.39	1.15	1.54	25,009.96
Building Off Road Diesel	0.32	1.94	1.65	0.00	0.00	0.11	0.11	0.00	0.11	0.11	294.84
Building Vendor Trips	1.59	15.44	15.46	0.06	0.21	0.62	0.83	0.07	0.57	0.64	5,934.50
Building Worker Trips	2.88	5.57	103.26	0.20	0.89	0.56	1.45	0.32	0.47	0.79	18,780.63

2017	4.38	20.58	111.86	0.25	1.09	1.21	2.30	0.39	1.06	1.45	24,912.79
Building 01/01/2015-12/31/2019	4.38	20.58	111.86	0.25	1.09	1.21	2.30	0.39	1.06	1.45	24,912.79
Building Off Road Diesel	0.29	1.77	1.62	0.00	0.00	0.10	0.10	0.00	0.09	0.09	293.71
Building Vendor Trips	1.45	13.69	14.33	0.06	0.21	0.55	0.76	0.07	0.50	0.57	5,911.95
Building Worker Trips	2.64	5.12	95.91	0.20	0.88	0.56	1.44	0.32	0.47	0.79	18,707.13
2018	4.03	18.68	104.80	0.25	1.10	1.15	2.24	0.39	1.01	1.40	25,007.73
Building 01/01/2015-12/31/2019	4.03	18.68	104.80	0.25	1.10	1.15	2.24	0.39	1.01	1.40	25,007.73
Building Off Road Diesel	0.27	1.63	1.60	0.00	0.00	0.09	0.09	0.00	0.08	0.08	294.84
Building Vendor Trips	1.34	12.32	13.44	0.06	0.21	0.50	0.71	0.07	0.45	0.53	5,934.91
Building Worker Trips	2.43	4.74	89.76	0.20	0.89	0.56	1.45	0.32	0.47	0.79	18,777.98
2019	3.72	16.96	97.86	0.25	1.10	1.09	2.18	0.39	0.95	1.34	25,007.19
Building 01/01/2015-12/31/2019	3.72	16.96	97.86	0.25	1.10	1.09	2.18	0.39	0.95	1.34	25,007.19
Building Off Road Diesel	0.25	1.49	1.58	0.00	0.00	0.07	0.07	0.00	0.07	0.07	294.84
Building Vendor Trips	1.24	11.11	12.59	0.06	0.21	0.45	0.66	0.07	0.41	0.48	5,935.15
Building Worker Trips	2.23	4.36	83.69	0.20	0.89	0.56	1.45	0.32	0.47	0.79	18,777.21
2020	14.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Coating 01/01/2020-12/31/2024	14.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Architectural Coating	14.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
2021	13.96	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94
Coating 01/01/2020-12/31/2024	13.96	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94
Architectural Coating	13.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94

2022	13.90	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Coating 01/01/2020-12/31/2024	13.90	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Architectural Coating	13.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
2023	13.90	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Coating 01/01/2020-12/31/2024	13.90	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Architectural Coating	13.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
2024	14.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Coating 01/01/2020-12/31/2024	14.01	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Architectural Coating	14.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
2025	0.36	1.70	1.56	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
Asphalt 01/01/2025-12/31/2029	0.36	1.70	1.56	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.62	1.43	0.00	0.00	0.11	0.11	0.00	0.11	0.11	259.48
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90
Paving Worker Trips	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.43
2026	0.36	1.68	1.54	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
Asphalt 01/01/2025-12/31/2029	0.36	1.68	1.54	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.62	1.43	0.00	0.00	0.11	0.11	0.00	0.11	0.11	259.48
Paving On Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90
Paving Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.43

2027	0.36	1.68	1.54	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
Asphalt 01/01/2025-12/31/2029	0.36	1.68	1.54	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.62	1.43	0.00	0.00	0.11	0.11	0.00	0.11	0.11	259.48
Paving On Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90
Paving Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.43
2028	0.35	1.68	1.53	0.00	0.00	0.12	0.12	0.00	0.11	0.11	338.51
Asphalt 01/01/2025-12/31/2029	0.35	1.68	1.53	0.00	0.00	0.12	0.12	0.00	0.11	0.11	338.51
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.61	1.43	0.00	0.00	0.11	0.11	0.00	0.11	0.11	258.49
Paving On Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.72
Paving Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.31
2029	0.36	1.68	1.54	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
Asphalt 01/01/2025-12/31/2029	0.36	1.68	1.54	0.00	0.00	0.12	0.12	0.00	0.11	0.11	339.82
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.62	1.43	0.00	0.00	0.11	0.11	0.00	0.11	0.11	259.48
Paving On Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90
Paving Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.43

Phase Assumptions

Phase: Mass Grading 1/1/2011 - 12/31/2014 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 1258.47

Maximum Daily Acreage Disturbed: 314.62

Fugitive Dust Level of Detail: Default

10 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

3 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

6 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2025 - 12/31/2029 - Default Paving Description

Acres to be Paved: 314.62

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

2 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 1/1/2015 - 12/31/2019 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2020 - 12/31/2024 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

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Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	2.37	18.10	10.33	0.00	43.75	0.13	43.88	9.14	0.12	9.26	2,121.93
Mass Grading 01/01/2011-12/31/2014	2.37	18.10	10.33	0.00	43.75	0.13	43.88	9.14	0.12	9.26	2,121.93
Mass Grading Dust	0.00	0.00	0.00	0.00	43.75	0.00	43.75	9.14	0.00	9.14	0.00
Mass Grading Off Road Diesel	2.36	18.07	9.89	0.00	0.00	0.13	0.13	0.00	0.12	0.12	2,065.34
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.01	0.03	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.59
2012	2.27	17.05	9.73	0.00	43.92	0.12	44.04	9.17	0.11	9.29	2,130.08
Mass Grading 01/01/2011-12/31/2014	2.27	17.05	9.73	0.00	43.92	0.12	44.04	9.17	0.11	9.29	2,130.08
Mass Grading Dust	0.00	0.00	0.00	0.00	43.91	0.00	43.91	9.17	0.00	9.17	0.00
Mass Grading Off Road Diesel	2.26	17.03	9.32	0.00	0.00	0.12	0.12	0.00	0.11	0.11	2,073.28
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.01	0.02	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.80

2013	2.20	16.01	9.13	0.00	43.92	0.12	44.03	9.17	0.11	9.28	2,130.07
Mass Grading 01/01/2011-12/31/2014	2.20	16.01	9.13	0.00	43.92	0.12	44.03	9.17	0.11	9.28	2,130.07
Mass Grading Dust	0.00	0.00	0.00	0.00	43.91	0.00	43.91	9.17	0.00	9.17	0.00
Mass Grading Off Road Diesel	2.19	15.99	8.75	0.00	0.00	0.11	0.11	0.00	0.11	0.11	2,073.28
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.01	0.02	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.79
2014	2.10	14.85	8.65	0.00	43.92	0.11	44.02	9.17	0.10	9.27	2,130.06
Mass Grading 01/01/2011-12/31/2014	2.10	14.85	8.65	0.00	43.92	0.11	44.02	9.17	0.10	9.27	2,130.06
Mass Grading Dust	0.00	0.00	0.00	0.00	43.91	0.00	43.91	9.17	0.00	9.17	0.00
Mass Grading Off Road Diesel	2.08	14.83	8.29	0.00	0.00	0.11	0.11	0.00	0.10	0.10	2,073.28
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.01	0.02	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.78
2015	5.23	25.30	128.88	0.25	1.10	1.28	2.38	0.39	1.13	1.52	25,012.06
Building 01/01/2015-12/31/2019	5.23	25.30	128.88	0.25	1.10	1.28	2.38	0.39	1.13	1.52	25,012.06
Building Off Road Diesel	0.35	1.79	1.67	0.00	0.00	0.02	0.02	0.00	0.02	0.02	294.84
Building Vendor Trips	1.74	17.48	16.67	0.06	0.21	0.70	0.91	0.07	0.64	0.71	5,934.36
Building Worker Trips	3.14	6.02	110.54	0.20	0.89	0.56	1.45	0.32	0.47	0.79	18,782.86
2016	4.79	22.65	120.37	0.25	1.10	1.20	2.30	0.39	1.06	1.45	25,009.96
Building 01/01/2015-12/31/2019	4.79	22.65	120.37	0.25	1.10	1.20	2.30	0.39	1.06	1.45	25,009.96
Building Off Road Diesel	0.32	1.65	1.65	0.00	0.00	0.02	0.02	0.00	0.02	0.02	294.84
Building Vendor Trips	1.59	15.44	15.46	0.06	0.21	0.62	0.83	0.07	0.57	0.64	5,934.50
Building Worker Trips	2.88	5.57	103.26	0.20	0.89	0.56	1.45	0.32	0.47	0.79	18,780.63

2017	4.38	20.31	111.86	0.25	1.09	1.12	2.22	0.39	0.99	1.38	24,912.79
Building 01/01/2015-12/31/2019	4.38	20.31	111.86	0.25	1.09	1.12	2.22	0.39	0.99	1.38	24,912.79
Building Off Road Diesel	0.29	1.51	1.62	0.00	0.00	0.02	0.02	0.00	0.01	0.01	293.71
Building Vendor Trips	1.45	13.69	14.33	0.06	0.21	0.55	0.76	0.07	0.50	0.57	5,911.95
Building Worker Trips	2.64	5.12	95.91	0.20	0.88	0.56	1.44	0.32	0.47	0.79	18,707.13
2018	4.03	18.43	104.80	0.25	1.10	1.07	2.17	0.39	0.94	1.33	25,007.73
Building 01/01/2015-12/31/2019	4.03	18.43	104.80	0.25	1.10	1.07	2.17	0.39	0.94	1.33	25,007.73
Building Off Road Diesel	0.27	1.38	1.60	0.00	0.00	0.01	0.01	0.00	0.01	0.01	294.84
Building Vendor Trips	1.34	12.32	13.44	0.06	0.21	0.50	0.71	0.07	0.45	0.53	5,934.91
Building Worker Trips	2.43	4.74	89.76	0.20	0.89	0.56	1.45	0.32	0.47	0.79	18,777.98
2019	3.72	16.74	97.86	0.25	1.10	1.02	2.12	0.39	0.89	1.28	25,007.19
Building 01/01/2015-12/31/2019	3.72	16.74	97.86	0.25	1.10	1.02	2.12	0.39	0.89	1.28	25,007.19
Building Off Road Diesel	0.25	1.26	1.58	0.00	0.00	0.01	0.01	0.00	0.01	0.01	294.84
Building Vendor Trips	1.24	11.11	12.59	0.06	0.21	0.45	0.66	0.07	0.41	0.48	5,935.15
Building Worker Trips	2.23	4.36	83.69	0.20	0.89	0.56	1.45	0.32	0.47	0.79	18,777.21
2020	2.54	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Coating 01/01/2020-12/31/2024	2.54	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Architectural Coating	2.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
2021	2.51	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94
Coating 01/01/2020-12/31/2024	2.51	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94
Architectural Coating	2.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94

2022	2.51	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Coating 01/01/2020-12/31/2024	2.51	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Architectural Coating	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
2023	2.51	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Coating 01/01/2020-12/31/2024	2.51	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
Architectural Coating	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.75
2024	2.53	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Coating 01/01/2020-12/31/2024	2.53	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
Architectural Coating	2.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.13
2025	0.36	1.45	1.56	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Asphalt 01/01/2025-12/31/2029	0.36	1.45	1.56	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.37	1.43	0.00	0.00	0.02	0.02	0.00	0.02	0.02	259.48
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90
Paving Worker Trips	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.43
2026	0.36	1.44	1.54	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Asphalt 01/01/2025-12/31/2029	0.36	1.44	1.54	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.37	1.43	0.00	0.00	0.02	0.02	0.00	0.02	0.02	259.48
Paving On Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90
Paving Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.43

2027	0.36	1.44	1.54	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Asphalt 01/01/2025-12/31/2029	0.36	1.44	1.54	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.37	1.43	0.00	0.00	0.02	0.02	0.00	0.02	0.02	259.48
Paving On Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90
Paving Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.43
2028	0.35	1.44	1.53	0.00	0.00	0.02	0.02	0.00	0.02	0.02	338.51
Asphalt 01/01/2025-12/31/2029	0.35	1.44	1.53	0.00	0.00	0.02	0.02	0.00	0.02	0.02	338.51
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.37	1.43	0.00	0.00	0.02	0.02	0.00	0.02	0.02	258.49
Paving On Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.72
Paving Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.31
2029	0.36	1.44	1.54	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Asphalt 01/01/2025-12/31/2029	0.36	1.44	1.54	0.00	0.00	0.02	0.02	0.00	0.02	0.02	339.82
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.26	1.37	1.43	0.00	0.00	0.02	0.02	0.00	0.02	0.02	259.48
Paving On Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90
Paving Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.43

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2011 - 12/31/2014 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Graders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Scrapers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Scrapers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Plate Compactors, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Plate Compactors, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 1/1/2025 - 12/31/2029 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Plate Compactors, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Plate Compactors, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/1/2015 - 12/31/2019 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 1/1/2020 - 12/31/2024 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	1.74	22.90	12.02	0.00	0.04	0.04	28,818.97
Hearth	16.08	0.76	44.30	0.12	6.86	6.60	1,056.53
Landscape	3.62	0.25	21.43	0.00	0.06	0.06	34.95
Consumer Products	76.81						
Architectural Coatings	6.96						
TOTALS (tons/year, unmitigated)	105.21	23.91	77.75	0.12	6.96	6.70	29,910.45

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Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	13.72	13.80	144.31	0.42	71.88	13.95	42,279.48
Apartments mid rise	16.01	15.43	161.39	0.47	80.39	15.60	47,283.38
Condo/townhouse general	7.78	7.36	77.03	0.22	38.37	7.45	22,566.50
Elementary school	1.03	0.64	6.48	0.02	3.32	0.64	1,943.49
Junior high school	2.21	1.51	15.32	0.05	7.86	1.52	4,594.18
High school	2.14	1.67	16.84	0.05	8.68	1.68	5,068.10
Junior college (2 yrs)	10.24	7.87	78.99	0.24	40.83	7.91	23,822.76
City park	0.13	0.09	0.89	0.00	0.46	0.09	267.91
Regnl shop. center	34.11	37.45	374.88	1.12	194.11	37.59	113,196.96
General office building	5.51	5.67	58.10	0.17	29.61	5.74	17,335.95
TOTALS (tons/year, unmitigated)	92.88	91.49	934.23	2.76	475.51	92.17	278,358.71

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	773.00	9.74	dwelling units	2,319.00	22,587.06	228,192.54
Apartments mid rise	100.26	6.63	dwelling units	3,810.00	25,260.30	255,199.76
Condo/townhouse general	129.69	5.81	dwelling units	2,075.00	12,055.75	121,796.83
Elementary school		1.29	students	850.00	1,096.50	10,559.29
Junior high school		1.62	students	1,600.00	2,592.00	24,960.96
High school		2.48	students	1,200.00	2,976.00	27,572.64
Junior college (2 yrs)		2.38	students	6,000.00	14,280.00	129,698.10
City park		1.59	acres	101.00	160.59	1,458.56
Regnl shop. center		41.12	1000 sq ft	1,671.00	68,711.52	616,548.43
General office building		11.05	1000 sq ft	836.00	9,237.80	94,017.71
					158,957.52	1,510,004.82

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	49.4	0.0	100.0	0.0
Light Truck < 3750 lbs	7.3	0.0	100.0	0.0
Light Truck 3751-5750 lbs	23.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	83.3	16.7
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.6	0.0	0.0	100.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.7	33.3	66.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	90.9	9.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Junior high school				20.0	10.0	70.0
High school				10.0	5.0	85.0
Junior college (2 yrs)				5.0	2.5	92.5
City park				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
General office building				35.0	17.5	47.5

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\Sara Gerrick\Application Data\Urbemis\Version9a\Projects\Aberhill Villages.urb924

Project Name: Aberhill Villages

Project Location: South Coast AQMD

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
2011 TOTALS (lbs/day unmitigated)	18.23	163.77	79.50	0.00	3,146.22	6.73	3,152.95	657.06	6.19	663.25	16,322.51
2011 TOTALS (lbs/day mitigated)	18.23	139.24	79.50	0.00	336.53	1.02	337.54	70.28	0.94	71.22	16,322.51
2012 TOTALS (lbs/day unmitigated)	17.41	153.68	74.58	0.00	3,146.22	6.27	3,152.49	657.06	5.77	662.83	16,322.43
2012 TOTALS (lbs/day mitigated)	17.41	130.65	74.58	0.00	336.53	0.95	337.48	70.28	0.87	71.16	16,322.43
2013 TOTALS (lbs/day unmitigated)	16.87	144.31	69.98	0.00	3,146.22	5.85	3,152.07	657.06	5.38	662.44	16,322.38
2013 TOTALS (lbs/day mitigated)	16.87	122.69	69.98	0.00	336.53	0.89	337.41	70.28	0.82	71.10	16,322.38
2014 TOTALS (lbs/day unmitigated)	16.06	133.84	66.31	0.00	3,146.22	5.39	3,151.61	657.06	4.96	662.02	16,322.34
2014 TOTALS (lbs/day mitigated)	16.06	113.78	66.31	0.00	336.53	0.82	337.35	70.28	0.75	71.04	16,322.34
2015 TOTALS (lbs/day unmitigated)	40.09	196.29	987.60	1.94	8.40	10.71	19.10	3.00	9.48	12.48	191,663.26

2015 TOTALS (lbs/day mitigated)	40.09	193.87	987.60	1.94	8.40	9.83	18.23	3.00	8.68	11.68	191,663.26
2016 TOTALS (lbs/day unmitigated)	36.69	175.81	922.36	1.94	8.40	9.94	18.33	3.00	8.77	11.77	191,647.22
2016 TOTALS (lbs/day mitigated)	36.69	173.58	922.36	1.94	8.40	9.19	17.59	3.00	8.09	11.08	191,647.22
2017 TOTALS (lbs/day unmitigated)	33.67	158.29	860.47	1.94	8.40	9.30	17.70	3.00	8.19	11.19	191,636.85
2017 TOTALS (lbs/day mitigated)	33.67	156.24	860.47	1.94	8.40	8.64	17.04	3.00	7.59	10.58	191,636.85
2018 TOTALS (lbs/day unmitigated)	30.88	143.12	803.07	1.94	8.40	8.79	17.19	3.00	7.71	10.70	191,630.11
2018 TOTALS (lbs/day mitigated)	30.88	141.26	803.07	1.94	8.40	8.22	16.62	3.00	7.18	10.18	191,630.11
2019 TOTALS (lbs/day unmitigated)	28.50	129.97	749.91	1.94	8.40	8.32	16.72	3.00	7.28	10.27	191,625.98
2019 TOTALS (lbs/day mitigated)	28.50	128.26	749.91	1.94	8.40	7.84	16.24	3.00	6.83	9.83	191,625.98
2020 TOTALS (lbs/day unmitigated)	106.95	0.08	1.56	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.04
2020 TOTALS (lbs/day mitigated)	19.36	0.08	1.56	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.04
2021 TOTALS (lbs/day unmitigated)	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
2021 TOTALS (lbs/day mitigated)	19.27	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
2022 TOTALS (lbs/day unmitigated)	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
2022 TOTALS (lbs/day mitigated)	19.27	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
2023 TOTALS (lbs/day unmitigated)	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01

2023 TOTALS (lbs/day mitigated)	19.27	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
2024 TOTALS (lbs/day unmitigated)	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
2024 TOTALS (lbs/day mitigated)	19.34	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
2025 TOTALS (lbs/day unmitigated)	2.74	13.00	11.95	0.01	0.02	0.90	0.93	0.01	0.83	0.84	2,603.95
2025 TOTALS (lbs/day mitigated)	2.74	11.14	11.95	0.01	0.02	0.16	0.18	0.01	0.14	0.15	2,603.95
2026 TOTALS (lbs/day unmitigated)	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
2026 TOTALS (lbs/day mitigated)	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
2027 TOTALS (lbs/day unmitigated)	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
2027 TOTALS (lbs/day mitigated)	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
2028 TOTALS (lbs/day unmitigated)	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
2028 TOTALS (lbs/day mitigated)	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
2029 TOTALS (lbs/day unmitigated)	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
2029 TOTALS (lbs/day mitigated)	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	488.36	126.85	183.28	0.01	0.56	0.55	158,103.69

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OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	500.89	469.38	5,227.07	16.00	2,605.53	505.02	1,575,772.21

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	989.25	596.23	5,410.35	16.01	2,606.09	505.57	1,733,875.90

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 1/3/2011-12/30/2011 Active Days: 260	18.23	163.77	79.50	0.00	3,146.22	6.73	3,152.95	657.06	6.19	663.25	16,322.51
Mass Grading 01/01/2011-12/31/2014	18.23	163.77	79.50	0.00	3,146.22	6.73	3,152.95	657.06	6.19	663.25	16,322.51
Mass Grading Dust	0.00	0.00	0.00	0.00	3,146.20	0.00	3,146.20	657.05	0.00	657.05	0.00
Mass Grading Off Road Diesel	18.12	163.57	76.08	0.00	0.00	6.72	6.72	0.00	6.18	6.18	15,887.22
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.11	0.20	3.41	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.29
Time Slice 1/2/2012-12/31/2012 Active Days: 261	17.41	153.68	74.58	0.00	3,146.22	6.27	3,152.49	657.06	5.77	662.83	16,322.43
Mass Grading 01/01/2011-12/31/2014	17.41	153.68	74.58	0.00	3,146.22	6.27	3,152.49	657.06	5.77	662.83	16,322.43
Mass Grading Dust	0.00	0.00	0.00	0.00	3,146.20	0.00	3,146.20	657.05	0.00	657.05	0.00
Mass Grading Off Road Diesel	17.31	153.50	71.40	0.00	0.00	6.26	6.26	0.00	5.76	5.76	15,887.22
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.10	0.18	3.18	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.21

Time Slice 1/1/2013-12/31/2013 Active Days: 261	16.87	144.31	69.98	0.00	3,146.22	5.85	3,152.07	657.06	5.38	662.44	16,322.38
Mass Grading 01/01/2011-12/31/2014	16.87	144.31	69.98	0.00	3,146.22	5.85	3,152.07	657.06	5.38	662.44	16,322.38
Mass Grading Dust	0.00	0.00	0.00	0.00	3,146.20	0.00	3,146.20	657.05	0.00	657.05	0.00
Mass Grading Off Road Diesel	16.78	144.14	67.03	0.00	0.00	5.84	5.84	0.00	5.37	5.37	15,887.22
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.09	0.17	2.95	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.16
Time Slice 1/1/2014-12/31/2014 Active Days: 261	16.06	133.84	66.31	0.00	3,146.22	5.39	3,151.61	657.06	4.96	662.02	16,322.34
Mass Grading 01/01/2011-12/31/2014	16.06	133.84	66.31	0.00	3,146.22	5.39	3,151.61	657.06	4.96	662.02	16,322.34
Mass Grading Dust	0.00	0.00	0.00	0.00	3,146.20	0.00	3,146.20	657.05	0.00	657.05	0.00
Mass Grading Off Road Diesel	15.98	133.68	63.56	0.00	0.00	5.38	5.38	0.00	4.95	4.95	15,887.22
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.08	0.15	2.75	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.12
Time Slice 1/1/2015-12/31/2015 Active Days: 261	40.09	196.29	987.60	**1.94**	8.40	10.71	19.10	3.00	9.48	12.48	191,663.26
Building 01/01/2015-12/31/2019	40.09	196.29	987.60	1.94	8.40	10.71	19.10	3.00	9.48	12.48	191,663.26
Building Off Road Diesel	2.69	16.17	12.80	0.00	0.00	1.03	1.03	0.00	0.94	0.94	2,259.28
Building Vendor Trips	13.35	133.95	127.72	0.44	1.60	5.40	6.99	0.54	4.93	5.47	45,474.04
Building Worker Trips	24.05	46.17	847.08	1.51	6.80	4.28	11.08	2.45	3.61	6.06	143,929.93
Time Slice 1/1/2016-12/30/2016 Active Days: 261	36.69	175.81	922.36	**1.94**	8.40	9.94	18.33	3.00	8.77	11.77	191,647.22
Building 01/01/2015-12/31/2019	36.69	175.81	922.36	1.94	8.40	9.94	18.33	3.00	8.77	11.77	191,647.22
Building Off Road Diesel	2.47	14.84	12.61	0.00	0.00	0.88	0.88	0.00	0.81	0.81	2,259.28
Building Vendor Trips	12.17	118.29	118.46	0.44	1.60	4.78	6.37	0.54	4.36	4.90	45,475.08
Building Worker Trips	22.06	42.68	791.30	1.51	6.80	4.28	11.08	2.45	3.61	6.06	143,912.86

Time Slice 1/2/2017-12/29/2017 Active Days: 260	33.67	158.29	860.47	**1.94**	8.40	9.30	17.70	3.00	8.19	11.19	191,636.85
Building 01/01/2015-12/31/2019	33.67	158.29	860.47	1.94	8.40	9.30	17.70	3.00	8.19	11.19	191,636.85
Building Off Road Diesel	2.25	13.62	12.45	0.00	0.00	0.77	0.77	0.00	0.71	0.71	2,259.28
Building Vendor Trips	11.15	105.28	110.27	0.44	1.60	4.25	5.84	0.54	3.87	4.41	45,476.58
Building Worker Trips	20.28	39.39	737.76	1.51	6.80	4.28	11.08	2.45	3.61	6.06	143,900.99
Time Slice 1/1/2018-12/31/2018 Active Days: 261	30.88	143.12	803.07	**1.94**	8.40	8.79	17.19	3.00	7.71	10.70	191,630.11
Building 01/01/2015-12/31/2019	30.88	143.12	803.07	1.94	8.40	8.79	17.19	3.00	7.71	10.70	191,630.11
Building Off Road Diesel	2.03	12.45	12.26	0.00	0.00	0.67	0.67	0.00	0.62	0.62	2,259.28
Building Vendor Trips	10.26	94.37	102.99	0.44	1.60	3.82	5.42	0.54	3.48	4.02	45,478.27
Building Worker Trips	18.59	36.30	687.82	1.51	6.80	4.29	11.10	2.45	3.61	6.06	143,892.56
Time Slice 1/1/2019-12/31/2019 Active Days: 261	28.50	129.97	749.91	**1.94**	8.40	8.32	16.72	3.00	7.28	10.27	191,625.98
Building 01/01/2015-12/31/2019	28.50	129.97	749.91	1.94	8.40	8.32	16.72	3.00	7.28	10.27	191,625.98
Building Off Road Diesel	1.88	11.39	12.14	0.00	0.00	0.57	0.57	0.00	0.52	0.52	2,259.28
Building Vendor Trips	9.50	85.17	96.46	0.44	1.60	3.46	5.05	0.54	3.15	3.69	45,480.07
Building Worker Trips	17.12	33.41	641.31	1.51	6.80	4.29	11.10	2.45	3.61	6.06	143,886.64
Time Slice 1/1/2020-12/31/2020 Active Days: 262	106.95	0.08	1.56	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.04
Coating 01/01/2020-12/31/2024	106.95	0.08	1.56	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.04
Architectural Coating	106.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.08	1.56	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.04

Time Slice 1/1/2021-12/31/2021 Active Days: 261	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Coating 01/01/2020-12/31/2024	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Architectural Coating	106.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Time Slice 1/3/2022-12/30/2022 Active Days: 260	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Coating 01/01/2020-12/31/2024	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Architectural Coating	106.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Time Slice 1/2/2023-12/29/2023 Active Days: 260	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Coating 01/01/2020-12/31/2024	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Architectural Coating	106.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Time Slice 1/1/2024-12/31/2024 Active Days: 262	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Coating 01/01/2020-12/31/2024	106.94	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Architectural Coating	106.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Time Slice 1/1/2025-12/31/2025 Active Days: 261	2.74	13.00	11.95	0.01	0.02	0.90	0.93	0.01	0.83	0.84	2,603.95
Asphalt 01/01/2025-12/31/2029	2.74	13.00	11.95	0.01	0.02	0.90	0.93	0.01	0.83	0.84	2,603.95
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	12.38	10.97	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,988.36
Paving On Road Diesel	0.06	0.58	0.24	0.00	0.01	0.02	0.03	0.00	0.02	0.02	367.08
Paving Worker Trips	0.02	0.04	0.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.51

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Time Slice 1/1/2026-12/31/2026 Active Days: 261	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
Asphalt 01/01/2025-12/31/2029	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	12.38	10.97	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,988.36
Paving On Road Diesel	0.06	0.49	0.21	0.00	0.01	0.01	0.03	0.00	0.01	0.02	367.08
Paving Worker Trips	0.01	0.03	0.58	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.52
Time Slice 1/1/2027-12/31/2027 Active Days: 261	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
Asphalt 01/01/2025-12/31/2029	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	12.38	10.97	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,988.36
Paving On Road Diesel	0.06	0.49	0.21	0.00	0.01	0.01	0.03	0.00	0.01	0.02	367.08
Paving Worker Trips	0.01	0.03	0.58	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.52
Time Slice 1/3/2028-12/29/2028 Active Days: 260	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
Asphalt 01/01/2025-12/31/2029	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	12.38	10.97	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,988.36
Paving On Road Diesel	0.06	0.49	0.21	0.00	0.01	0.01	0.03	0.00	0.01	0.02	367.08
Paving Worker Trips	0.01	0.03	0.58	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.52

Time Slice 1/1/2029-12/31/2029 Active Days: 261	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
Asphalt 01/01/2025-12/31/2029	2.73	12.90	11.76	0.01	0.02	0.90	0.92	0.01	0.83	0.84	2,603.96
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	12.38	10.97	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,988.36
Paving On Road Diesel	0.06	0.49	0.21	0.00	0.01	0.01	0.03	0.00	0.01	0.02	367.08
Paving Worker Trips	0.01	0.03	0.58	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.52

Phase Assumptions

Phase: Mass Grading 1/1/2011 - 12/31/2014 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 1258.47

Maximum Daily Acreage Disturbed: 314.62

Fugitive Dust Level of Detail: Default

10 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

3 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

6 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2025 - 12/31/2029 - Default Paving Description

Acres to be Paved: 314.62

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

2 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 1/1/2015 - 12/31/2019 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2020 - 12/31/2024 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 1/3/2011-12/30/2011 Active Days: 260	18.23	139.24	79.50	0.00	336.53	1.02	337.54	70.28	0.94	71.22	16,322.51
Mass Grading 01/01/2011-12/31/2014	18.23	139.24	79.50	0.00	336.53	1.02	337.54	70.28	0.94	71.22	16,322.51
Mass Grading Dust	0.00	0.00	0.00	0.00	336.50	0.00	336.50	70.28	0.00	70.28	0.00
Mass Grading Off Road Diesel	18.12	139.04	76.08	0.00	0.00	1.01	1.01	0.00	0.93	0.93	15,887.22
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.11	0.20	3.41	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.29
Time Slice 1/2/2012-12/31/2012 Active Days: 261	17.41	130.65	74.58	0.00	336.53	0.95	337.48	70.28	0.87	71.16	16,322.43
Mass Grading 01/01/2011-12/31/2014	17.41	130.65	74.58	0.00	336.53	0.95	337.48	70.28	0.87	71.16	16,322.43
Mass Grading Dust	0.00	0.00	0.00	0.00	336.50	0.00	336.50	70.28	0.00	70.28	0.00
Mass Grading Off Road Diesel	17.31	130.47	71.40	0.00	0.00	0.94	0.94	0.00	0.86	0.86	15,887.22
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.10	0.18	3.18	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.21
Time Slice 1/1/2013-12/31/2013 Active Days: 261	16.87	122.69	69.98	0.00	336.53	0.89	337.41	70.28	0.82	71.10	16,322.38
Mass Grading 01/01/2011-12/31/2014	16.87	122.69	69.98	0.00	336.53	0.89	337.41	70.28	0.82	71.10	16,322.38
Mass Grading Dust	0.00	0.00	0.00	0.00	336.50	0.00	336.50	70.28	0.00	70.28	0.00
Mass Grading Off Road Diesel	16.78	122.52	67.03	0.00	0.00	0.88	0.88	0.00	0.81	0.81	15,887.22
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.09	0.17	2.95	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.16

Time Slice 1/1/2014-12/31/2014 Active Days: 261	16.06	113.78	66.31	0.00	336.53	0.82	337.35	70.28	0.75	71.04	16,322.34
Mass Grading 01/01/2011-12/31/2014	16.06	113.78	66.31	0.00	336.53	0.82	337.35	70.28	0.75	71.04	16,322.34
Mass Grading Dust	0.00	0.00	0.00	0.00	336.50	0.00	336.50	70.28	0.00	70.28	0.00
Mass Grading Off Road Diesel	15.98	113.63	63.56	0.00	0.00	0.81	0.81	0.00	0.74	0.74	15,887.22
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.08	0.15	2.75	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.12
Time Slice 1/1/2015-12/31/2015 Active Days: 261	40.09	193.87	987.60	**1.94**	8.40	9.83	18.23	3.00	8.68	11.68	191,663.26
Building 01/01/2015-12/31/2019	40.09	193.87	987.60	1.94	8.40	9.83	18.23	3.00	8.68	11.68	191,663.26
Building Off Road Diesel	2.69	13.75	12.80	0.00	0.00	0.15	0.15	0.00	0.14	0.14	2,259.28
Building Vendor Trips	13.35	133.95	127.72	0.44	1.60	5.40	6.99	0.54	4.93	5.47	45,474.04
Building Worker Trips	24.05	46.17	847.08	1.51	6.80	4.28	11.08	2.45	3.61	6.06	143,929.93
Time Slice 1/1/2016-12/30/2016 Active Days: 261	36.69	173.58	922.36	**1.94**	8.40	9.19	17.59	3.00	8.09	11.08	191,647.22
Building 01/01/2015-12/31/2019	36.69	173.58	922.36	1.94	8.40	9.19	17.59	3.00	8.09	11.08	191,647.22
Building Off Road Diesel	2.47	12.61	12.61	0.00	0.00	0.13	0.13	0.00	0.12	0.12	2,259.28
Building Vendor Trips	12.17	118.29	118.46	0.44	1.60	4.78	6.37	0.54	4.36	4.90	45,475.08
Building Worker Trips	22.06	42.68	791.30	1.51	6.80	4.28	11.08	2.45	3.61	6.06	143,912.86
Time Slice 1/2/2017-12/29/2017 Active Days: 260	33.67	156.24	860.47	**1.94**	8.40	8.64	17.04	3.00	7.59	10.58	191,636.85
Building 01/01/2015-12/31/2019	33.67	156.24	860.47	1.94	8.40	8.64	17.04	3.00	7.59	10.58	191,636.85
Building Off Road Diesel	2.25	11.58	12.45	0.00	0.00	0.12	0.12	0.00	0.11	0.11	2,259.28
Building Vendor Trips	11.15	105.28	110.27	0.44	1.60	4.25	5.84	0.54	3.87	4.41	45,476.58
Building Worker Trips	20.28	39.39	737.76	1.51	6.80	4.28	11.08	2.45	3.61	6.06	143,900.99

Time Slice 1/1/2018-12/31/2018 Active Days: 261	30.88	141.26	803.07	**1.94**	8.40	8.22	16.62	3.00	7.18	10.18	191,630.11
Building 01/01/2015-12/31/2019	30.88	141.26	803.07	1.94	8.40	8.22	16.62	3.00	7.18	10.18	191,630.11
Building Off Road Diesel	2.03	10.59	12.26	0.00	0.00	0.10	0.10	0.00	0.09	0.09	2,259.28
Building Vendor Trips	10.26	94.37	102.99	0.44	1.60	3.82	5.42	0.54	3.48	4.02	45,478.27
Building Worker Trips	18.59	36.30	687.82	1.51	6.80	4.29	11.10	2.45	3.61	6.06	143,892.56
Time Slice 1/1/2019-12/31/2019 Active Days: 261	28.50	128.26	749.91	**1.94**	8.40	7.84	16.24	3.00	6.83	9.83	191,625.98
Building 01/01/2015-12/31/2019	28.50	128.26	749.91	1.94	8.40	7.84	16.24	3.00	6.83	9.83	191,625.98
Building Off Road Diesel	1.88	9.68	12.14	0.00	0.00	0.09	0.09	0.00	0.08	0.08	2,259.28
Building Vendor Trips	9.50	85.17	96.46	0.44	1.60	3.46	5.05	0.54	3.15	3.69	45,480.07
Building Worker Trips	17.12	33.41	641.31	1.51	6.80	4.29	11.10	2.45	3.61	6.06	143,886.64
Time Slice 1/1/2020-12/31/2020 Active Days: 262	19.36	0.08	1.56	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.04
Coating 01/01/2020-12/31/2024	19.36	0.08	1.56	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.04
Architectural Coating	19.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.08	1.56	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.04
Time Slice 1/1/2021-12/31/2021 Active Days: 261	19.27	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Coating 01/01/2020-12/31/2024	19.27	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Architectural Coating	19.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Time Slice 1/3/2022-12/30/2022 Active Days: 260	19.27	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Coating 01/01/2020-12/31/2024	19.27	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Architectural Coating	19.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01

Time Slice 1/2/2023-12/29/2023 Active Days: 260	19.27	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Coating 01/01/2020-12/31/2024	19.27	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Architectural Coating	19.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Time Slice 1/1/2024-12/31/2024 Active Days: 262	19.34	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Coating 01/01/2020-12/31/2024	19.34	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Architectural Coating	19.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.06	1.12	0.00	0.02	0.01	0.03	0.01	0.01	0.02	375.01
Time Slice 1/1/2025-12/31/2025 Active Days: 261	2.74	11.14	11.95	0.01	0.02	0.16	0.18	0.01	0.14	0.15	2,603.95
Asphalt 01/01/2025-12/31/2029	2.74	11.14	11.95	0.01	0.02	0.16	0.18	0.01	0.14	0.15	2,603.95
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	10.52	10.97	0.00	0.00	0.13	0.13	0.00	0.12	0.12	1,988.36
Paving On Road Diesel	0.06	0.58	0.24	0.00	0.01	0.02	0.03	0.00	0.02	0.02	367.08
Paving Worker Trips	0.02	0.04	0.74	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.51
Time Slice 1/1/2026-12/31/2026 Active Days: 261	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
Asphalt 01/01/2025-12/31/2029	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	10.52	10.97	0.00	0.00	0.13	0.13	0.00	0.12	0.12	1,988.36
Paving On Road Diesel	0.06	0.49	0.21	0.00	0.01	0.01	0.03	0.00	0.01	0.02	367.08
Paving Worker Trips	0.01	0.03	0.58	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.52

Time Slice 1/1/2027-12/31/2027 Active Days: 261	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
Asphalt 01/01/2025-12/31/2029	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	10.52	10.97	0.00	0.00	0.13	0.13	0.00	0.12	0.12	1,988.36
Paving On Road Diesel	0.06	0.49	0.21	0.00	0.01	0.01	0.03	0.00	0.01	0.02	367.08
Paving Worker Trips	0.01	0.03	0.58	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.52
Time Slice 1/3/2028-12/29/2028 Active Days: 260	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
Asphalt 01/01/2025-12/31/2029	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	10.52	10.97	0.00	0.00	0.13	0.13	0.00	0.12	0.12	1,988.36
Paving On Road Diesel	0.06	0.49	0.21	0.00	0.01	0.01	0.03	0.00	0.01	0.02	367.08
Paving Worker Trips	0.01	0.03	0.58	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.52
Time Slice 1/1/2029-12/31/2029 Active Days: 261	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
Asphalt 01/01/2025-12/31/2029	2.73	11.05	11.76	0.01	0.02	0.15	0.18	0.01	0.14	0.15	2,603.96
Paving Off-Gas	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.03	10.52	10.97	0.00	0.00	0.13	0.13	0.00	0.12	0.12	1,988.36
Paving On Road Diesel	0.06	0.49	0.21	0.00	0.01	0.01	0.03	0.00	0.01	0.02	367.08
Paving Worker Trips	0.01	0.03	0.58	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.52

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2011 - 12/31/2014 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Graders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Scrapers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Scrapers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Plate Compactors, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Plate Compactors, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 1/1/2025 - 12/31/2029 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Plate Compactors, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Plate Compactors, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/1/2015 - 12/31/2019 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 1/1/2020 - 12/31/2024 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	9.55	125.50	65.85	0.00	0.24	0.23	157,912.19
Hearth - No Summer Emissions							
Landscape	19.82	1.35	117.43	0.01	0.32	0.32	191.50
Consumer Products	420.87						
Architectural Coatings	38.12						
TOTALS (lbs/day, unmitigated)	488.36	126.85	183.28	0.01	0.56	0.55	158,103.69

Area Source Changes to Defaults

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	73.51	70.77	808.05	2.43	393.87	76.43	239,302.85
Apartments mid rise	86.54	79.14	903.69	2.72	440.48	85.48	267,625.01
Condo/townhouse general	42.22	37.77	431.29	1.30	210.22	40.79	127,726.91
Elementary school	6.00	3.28	36.28	0.11	18.22	3.53	11,002.52
Junior high school	12.72	7.74	85.76	0.26	43.07	8.34	26,008.69
High school	12.04	8.58	94.19	0.29	47.57	9.21	28,692.86
Junior college (2 yrs)	57.90	40.40	441.68	1.37	223.75	43.33	134,874.89
City park	0.77	0.45	4.97	0.02	2.52	0.49	1,516.78
Regnl shop. center	179.79	192.19	2,095.61	6.50	1,063.60	205.97	640,884.69
General office building	29.40	29.06	325.55	1.00	162.23	31.45	98,137.01
TOTALS (lbs/day, unmitigated)	500.89	469.38	5,227.07	16.00	2,605.53	505.02	1,575,772.21

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	773.00	9.74	dwelling units	2,319.00	22,587.06	228,192.54

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments mid rise	100.26	6.63	dwelling units	3,810.00	25,260.30	255,199.76
Condo/townhouse general	129.69	5.81	dwelling units	2,075.00	12,055.75	121,796.83
Elementary school		1.29	students	850.00	1,096.50	10,559.29
Junior high school		1.62	students	1,600.00	2,592.00	24,960.96
High school		2.48	students	1,200.00	2,976.00	27,572.64
Junior college (2 yrs)		2.38	students	6,000.00	14,280.00	129,698.10
City park		1.59	acres	101.00	160.59	1,458.56
Regnl shop. center		41.12	1000 sq ft	1,671.00	68,711.52	616,548.43
General office building		11.05	1000 sq ft	836.00	9,237.80	94,017.71
					158,957.52	1,510,004.82

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	49.4	0.0	100.0	0.0
Light Truck < 3750 lbs	7.3	0.0	100.0	0.0
Light Truck 3751-5750 lbs	23.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	83.3	16.7
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.7	33.3	66.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	90.9	9.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
Junior high school				20.0	10.0	70.0
High school				10.0	5.0	85.0
Junior college (2 yrs)				5.0	2.5	92.5
City park				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
General office building				35.0	17.5	47.5

Operational Changes to Defaults