4.0 COMPARISON OF ALTERNATIVES

4.1 AIR QUALITY AND GREENHOUSE GASES

This section discusses the potential for the alternatives to impact air quality and increase greenhouse gas (GHG) emissions. This evaluation conforms to procedures and methodologies from the *CEQA Air Quality Handbook* of the South Coast Air Quality Management District (SCAQMD), published in April 1993. SCAQMD is in the process of developing an *Air Quality Analysis Guidance Handbook*[1] to replace the *CEQA Air Quality Handbook*. Modeled air quality levels are based upon vehicle data and existing and expanded aggregate mining trip generation included in the *Traffic Study*[2] prepared for the Proposed Action/Projects. (The Traffic Study is Appendix J of the Conservation District's November 2008 Final EIR). From 2004 through 2008, the Inland Empire experienced a drastic increase in development, thus increasing air quality emissions within the vicinity of the Plan Area. Following that time, a significant decrease in development has occurred. Therefore, the air quality analysis conducted in 2007 is expected to still illustrate a reasonable scenario when compared to current conditions.

Also, due to implementation of existing regulations the fleet of haul trucks and processing equipment that would be in use at the time the Proposed Action/Projects are implemented are anticipated to be cleaner than those used in 2007 when the emissions analysis was conducted. Some statewide regulations proposed to reduce one form of pollutant have the added benefit of reducing other forms of pollution. For example, when the CARB approved the Heavy-Duty Vehicle Greenhouse Gas Reduction Measure in 2008 and the most recent amendments in December 2014 to reduce GHG emissions from heavy-duty trucks, it also reduces NOX emissions. This measure requires a compliance schedule for trucks to be certified under the US EPA SmartWay Program, which reduces fuel consumption by improving fuel efficiency through improvements to tractor and trailer aerodynamics and low-rolling resistance tires. Also, on February 1, 2005, a requirement limiting the idling of diesel-fueled commercial vehicles to five minutes at any location pursuant to Section 2485 of Chapter 10 within Title 13 of CCR was adopted. Similarly, Section 2449 prohibits construction equipment and truck idling times shall be prohibited in excess of five minutes on site.

On August 9, 2011 the US EPA and the National Highway Traffic Safety Administration (NHTSA) issued fuel economy and GHG emissions standards for medium- and heavy-duty trucks, which applies to vehicles from model year 2014-2018.[3] The agencies estimate that the combined standards will reduce CO_2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of vehicles built for 2014 to 2018 model years. Building on the success of the Phase I standards, in August

---

1 South Coast Air Quality Management District, *Air Quality Analysis Guidance Handbook,* found at http://www.aqmd.gov/CEQA/hdbk.html, accessed on January 17, 2007.

2 *Traffic Study, Upper Santa Ana River Wash, San Bernardino County, California*, prepared by LSA Associates, Inc., August 2007.

3 United States Environmental Protection Agency, Office of Transportation and Air Quality. *Regulations for Greenhouse Gas Emissions from Commercial Trucks & Buses.* (Available at https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-commercial-trucks, accessed January 15, 2018)

2016, EPA and NHTSA jointly finalized Phase 2 standards for medium- and heavy-duty vehicles through model year 2027 that will improve fuel efficiency and cut carbon pollution to reduce the impacts of climate change, while bolstering energy security and spurring manufacturing innovation. The final Phase II program promotes a new generation of cleaner, more fuel-efficient trucks by encouraging the development and deployment of new and advanced cost-effective technologies. The product of four years of extensive testing and research, the vehicle and engine performance standards would cover model years 2018-2027 for certain trailers and model years 2021-2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.

Therefore, emissions from the fleet of haul trucks and processing equipment when the Proposed Action/Projects, including expanded aggregate mining, are implemented, are anticipated to be less than what was estimated in the 2008 EIR. The estimated emissions identified in the 2008 EIR and this EIS/SEIR represent a conservative, worst-case scenario.

THRESHOLDS AND CRITERIA

The following thresholds of significance are based on Appendix G of the State *CEQA Guidelines and are consistent with NEPA implementing regulation Section 1508.27*. An alternative would have a significant impact related to air quality and/or GHG emissions if implementation would do any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Result in a significant health risk to nearby sensitive receptors.
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

4.1.1 DIRECT AND INDIRECT EFFECTS

4.1.1.1 Alternative A: No Action Alternative

Air Quality

The No Action Alternative would not directly generate any new impacts to air quality. Under this alternative, mining, and hauling activities on unpaved access roads in the Plan Area would continue to generate potential air emissions. For this analysis, and as outlined in *Section 2.2 Alternative A: No Action Alternative*, aggregate mining operations would continue producing an average of 4.0 to 4.5 million tons per year (MTPY) of aggregate materials. The total average MTPY is the average production numbers of both Cemex and Robertson's operations within the Plan Area. The existing permitted mining would be mined to completion, but no additional mining permitting is presumed. The No Action Alternative would result in a gradual slowing of mining activities in the Plan Area as aggregate resources are depleted under existing permits and leases. The aggregate sources currently available to Robertson's are expected to be depleted in the next 1-2 years. The aggregate sources currently available to Cemex are expected to be depleted in the next 10-15 years (dependent on the market).

Consistency with Local Air Quality Management Plan

The No Action Alternative would be consistent with Local, Regional, State and Federal air quality plans. There would be no violation of local and regional implementation plans because existing mining and water conservation activities would be consistent with the SCAQMD Air Quality Management Plan (AQMP), the *County of San Bernardino General Plan*, SBCTA's Regional Transportation Plans, the *City of Highland General Plan*, and the *City of Redlands General Plan*.

Air Quality Standards

Under the No Action Alternative, ongoing mining activities within the Plan Area would cause emissions of criteria pollutants. Emissions would be generated by on-site mobile sources, on-site stationary sources (aggregate processing equipment), and fugitive dust from ongoing aggregate mining operations and Conservation District operations and maintenance.

On-site exhaust emissions for mining operations, off-site emissions for haul trucks, and fugitive dust sources were estimated and included in the Conservation District's November 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan. As outlined in Section 3.1.7, Existing Emission Sources, the existing on-site and off-site emissions for the Plan Area that were included in the 2008 EIR do not exceed SCAQMD Operations thresholds for CO or VOCs but do exceed thresholds for NO_X, PM_{10} and $PM_{2.5}$.

Under the No Action Alternative, mining and water conservation activities in the Plan Area would continue to utilize vehicles and heavy-duty mobile equipment with exhaust emissions with NOX that is an ozone precursor. Loading and dumping of haul trucks and vehicle travel on unpaved roads during

mining and water conservation activities in the Plan Area would continue to have the potential to release fine soil particles to the atmosphere as fugitive dust (PM10 and PM2.5). Disturbed areas that are treated using dust-control measures and undisturbed areas that are left undisturbed for periods longer than one year are typically no longer a major source of potential wind erosion emissions. Fugitive dust emissions from each of these sources are expected to continue with the No Action Alternative.

All ongoing mining and water conservation operations would be required to comply with standard regional rules—SCAQMD Rule 402, Rule 403, and Rule 1157—that assist in reducing air pollutant emissions. Rules 403 and 1157 recommend controlling fugitive dust through the best-available control measures and dust-suppression techniques so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Rule 402 requires implementation of dust-suppression techniques to prevent fugitive dust from creating a nuisance off-site. Table 4.1-1, *Fugitive Dust Emissions from Continuing Mining Activity*, lists an inventory of fugitive dust emissions from anticipated mining activities in the Plan Area after control measures are applied.

Table 4.1-1: Existing Fugitive Dust Emissions from Continuing Mining Activity

Fugitive Dust Sources	PM10 Estimated Emissions Rate (lbs/day)
All Quarry Operations	750
Ready-Mix Plants	35
Rock Plant	45
Total	**830**

Source: Conservation District's November 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan.

As the existing on-site and off-site emissions from ongoing aggregate mining operations exceed SCAQMD Operations thresholds for NO_X, PM_{10} and $PM_{2.5}$ the No Action Alternative would continue to violate air quality standards and contribute to an existing air quality violation, a significant and unavoidable impact.

The nearest sensitive receptor to the Plan Area is an existing residential development located approximately 1,175 feet away in the City of Highland. Figure 4.1-1 *Sensitive Receptor Map*, shows the nearest sensitive receptor to mining operations in the Plan Area. Table 4.1-2, Existing *Criteria Pollutant Concentrations at Nearest Residences*, shows the estimated concentrations of criteria pollutants at the nearest residences which would result from ongoing mining operation emissions. Table 4.1-2 shows that concentrations of CO and NO_2 are below state and federal standards; however, the concentration of PM_{10} is above state standards and $PM_{2.5}$ is above state and federal standards.

Table 4.1-2: Existing Criteria Pollutant Concentrations at Nearest Residences

Fugitive Dust Sources Exhaust Sources	Maximum Concentration (ug/m^3)			
	CO	NO_2	PM_{10}	PM_{25}
Total Project	47	126	129	40
State Standard	23,000	338	50	35
Federal Standard	40,000	----	150	35

Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan.

As indicated in Table 4.1-1, *Existing Fugitive Dust Emissions from Continuing Mining Activity*, and Table 4.1-2, *Existing Criteria Pollutant Concentrations at Nearest Residences*, fugitive dust emissions from mining are a major contributor of particulate emissions. A major contributor to the $PM_{2.5}$ emissions is the road dust generated from haul trucks transporting material from the quarries to the processing plants on the internal dirt haul roads and from tailpipes. The haul road dust emissions were estimated based on maximum daily production levels, the average distances and aggregate volumes from each quarry, and the size of off-road haul trucks for each operator. During actual operations both mining operators could mine aggregate materials at maximum daily volumes and from the more distant quarries during the same time span such that federal standard for $PM_{2.5}$ could also be exceeded, despite implementation of the required dust-control measures. Ongoing aggregate mining operations associated with the No Action Alternative results in concentrations of PM_{10} above state standards and $PM_{2.5}$ above state and federal standards at the nearest sensitive receptors. These impacts are significant and unavoidable.

Health Risk

There are currently no federal project-level requirements for air toxics analysis, and CEQA only requires a consideration of the risks from toxics, with the SCAQMD providing the *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (March 2003) and the *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588)* (July 2005) for guidance.

The No Action Alternative would not result in a new or increased adverse health risk in the area. Air quality in the Plan Area would continue to be affected, due to indirect long-term air emissions from mobile sources from the foreseeable activities under the No Action Alternative. The principal toxic air contaminant from mining activities would be diesel PM, a known carcinogen, emitted as part of large, heavy-duty diesel-powered equipment exhaust. Aggregate processing plants also emit small amounts of contaminants, such as copper, nickel, and sulfates as fugitive emissions. While there may be other toxic substances in use on-site, compliance with Federal handling regulations would control these emissions. As there would be no expansion of mining activities under the No Action Alternative, there would be no new or increased adverse health risk in the area from diesel PM emitted.

Objectionable Odors

During ongoing mining operations, the various diesel-powered vehicles and equipment in use on the site would create odors. SCAQMD Rule 402 dictates that air discharged from any source shall not cause injury, nuisance, or annoyance to the health, safety, or comfort of the public. With the exception of short-term related odors, the proposed activities do not include uses that would generate objectionable odors.

Global Climate Change (GHG Emissions)

The primary GHG emissions generated by ongoing aggregate mining operations under the No Action Alternative would be carbon dioxide in the form of mining vehicle and equipment exhaust. Other GHG emissions generated by ongoing aggregate mining include methane and nitrous oxide from vehicle and equipment exhaust. As mining activities would not expand under the No Action Alternative, there would be no new or increased GHG emissions generated by aggregate mining vehicle and equipment exhaust.

Ongoing operation and maintenance activities carried out in the Plan Area as part of aggregate mining and water conservation would be consistent with local, regional, state and federal air quality plans. The No Action Alternative would not result in a new or increased adverse health risk or GHG emissions generated by aggregate mining vehicle and equipment exhaust.

However, existing on-site and off-site emissions from ongoing aggregate mining operations exceed SCAQMD Operations thresholds for NO_X, PM_{10} and $PM_{2.5}$ and would continue to violate air quality standards and contribute to an existing air quality violation, a significant and unavoidable impact. Ongoing aggregate mining operations result in concentrations of PM_{10} above state standards and $PM_{2.5}$ above state and federal standards at the nearest sensitive receptors, also a significant and unavoidable impact.

4.1.1.2 Alternative B: Proposed Action/Projects

Air Quality

The *Traffic Study* analyzed expanded mining as proposed in the 2008 Land Management Plan (Alternative C) which included 32 more acres of expanded mining than this alternative (Alternative B: Proposed Action/Projects). Therefore, the truck trips generated, as outlined in the *Traffic Study* for expanded mining under Alternative C would be greater than those generated from Alternative B. Modeled air quality levels were based upon vehicle data and project trip generation included in the *Traffic Study*. Consequently, modeled air quality levels from Alternative B are anticipated to be less than or equal to those modeled for Alternative C.

Consistency with Local Air Quality Management Plan

AQ-1 **Consistency with the Air Quality Management Plan**
Would the proposed project conflict with or obstruct implementation of the applicable AQMP? ***Determination: Less than Significant Impact.***

The control measures and related emission reduction estimates included in the AQMP are based upon emissions projections for a future development scenario derived from land use, population, and employment estimates defined in consultation with local governments. Accordingly, if a project demonstrates compliance with local land use plans and/or population projections, then the AQMP would have taken into account such uses when it was developed, and the Proposed Projects would not conflict with implementation of the plan.

Aggregate Mining

The Proposed Action/Projects would result in changes to the location of future expansion of aggregate mining within the Plan Area. However, the aggregate mining expansion is not expected to substantially increase employment or population, and thus growth inducement, as a result (also refer to *Section 4.6, Socioeconomics, Population and Housing, and Environmental Justice* for more information on projected employment with the mining expansion). Therefore, the proposed uses of the Plan Area have been included in growth projections for the region, which were subsequently used as input in development of the approved AQMP. The Proposed Action/Projects would be consistent with the AQMP and would not obstruct implementation of its programs. All other Proposed Projects would not have a substantial increase in employment or population, and thus growth inducement. A less than significant impact associated with this activity would occur and no mitigation is required.

Water Conservation

Under the Proposed Action/Projects, fewer acres would be available for potential water conservation activities; however, there would be no reduction in groundwater recharge basin acreage. The reduction in total water conservation acreage available for the purpose of habitat conservation would result from the land exchange between the Conservation District and BLM as depicted in Figures 1.0-5 and 1.0-6. As previously described, the AQMP provides a program for obtaining attainment status based on existing and future air pollution emissions resulting from employment and residential growth projections. Because activities associated with water conservation would not increase employment and population, and additional emissions are not anticipated from this activity, it is consistent with the current AQMP and would not obstruct implementation of the attainment plan. Therefore, a less than significant impact associated with this activity would occur and no mitigation is required.

Wells and Water Infrastructure

Activities associated with wells and water infrastructure would not increase employment and population, and additional emissions are not anticipated from this activity, it is consistent with the current AQMP and would not obstruct implementation of the attainment plan. A less than significant impact associated with this activity would occur and no mitigation is required.

Transportation

The Proposed Action/Projects include ongoing maintenance and improvements to Alabama Street, and Orange Street, and Boulder Avenue. These activities would not conflict with the adopted AQMP because no increase in employment or population would be generated as a result. This activity is not considered growth inducing. Therefore, this activity is consistent with the AQMP and would not obstruct implementation of attainment. A less than significant impact associated with this activity would occur and no mitigation is required.

Flood Control

Flood control operations and activities would not change as a result of the Proposed Action/Projects. As in the discussion for water conservation, activities associated with flood control would not increase employment and population. Additional emissions are not anticipated with this activity, consistent with the current AQMP, and would not obstruct the SIPs for attainment for criteria pollutants in nonattainment status. A less-than-significant impact associated with this activity would occur and no mitigation is required.

Trails

The Proposed Action/Projects include the development and operation of a trail system in the Plan Area. These activities would not conflict with the adopted AQMP because no increase in employment or population would occur. These activities are not considered growth inducing. Therefore, these activities are consistent with the AQMP and would not hinder implementation of attainment. A less-than-significant impact associated with these activities would occur and no mitigation is required.

Habitat Enhancement and Monitoring

The Proposed Action/Projects includes a conservation and mitigation strategy designed to mitigate impacts from the Covered Activities on covered species within the Plan Area. These restoration activities include study and monitoring of covered species, the enhancement, restoration and creation of habitat for covered species, and vegetation management within the Plan Area. These activities would not conflict with the current AQMP and would result in a less than significant impact, no mitigation is required.

Agriculture

An existing 6.7-acre citrus grove operates within the Plan Area. Operation of the grove requires maintenance of access roads, irrigation infrastructure, and a sampling well. Applications of herbicide, insecticide, fungicide and fertilizer are necessary. These activities would occur with or without the Proposed Action/Projects and are consistent with the AQMP. A less-than-significant impact associated with this activity would occur and no mitigation is required.

Air Quality Standards

AQ-2 Would the proposed project violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***Determination: Significant and Unavoidable.***

Air quality impacts can be divided into short-term and long-term impacts. Short-term impacts are usually related to construction and grading activities. Long-term impacts are usually associated with build-out conditions and continuing project operations. Both short-term and long-term air quality impacts can be analyzed on a regional and localized level. Regional air quality thresholds examine the

effect of project emissions on the air quality of the Basin, while localized air quality impacts examine the effect of project emissions on any neighborhoods around the Project site. The following information is from the analysis included in the Conservation District's November 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan.

Short-Term Impacts – Regional Significance Threshold (RST) Analysis

Aggregate Mining

Construction activities associated with aggregate mining include the construction of a new paved Access Road, approximately 30 feet wide, along the existing City Creek levee located on the east side of City Creek between 5th Street at the west boundary of the Plan Area. In addition, a new paved road would be constructed, approximately 30 feet wide, connecting Cemex's Orange Street crossing to the proposed 5th Street Access Road described above. The new Access Road would be constructed on an easement granted to Robertson's by the SBCFCD and would be a private roadway. The new levee access road would serve as the ingress and egress route for the trucks serving both Cemex and Robertson's processing plants. Typical grading of a roadway without trenching for utilities is assumed for this construction project.

Grading and other construction activities would result in combustion emissions from heavy-duty construction vehicles, haul trucks, utility engines, and vehicles transporting the construction crew. Exhaust emissions during these construction activities would vary daily as construction activity levels change. Grading and construction activities would cause combustion emissions from utility engines, heavy-duty construction vehicles, haul trucks, and vehicles transporting the construction crew. Peak grading days typically generate a larger amount of air pollutants than during other project construction days. Total emissions that would result from grading activities and from equipment exhaust under the proposed construction scenario do not exceed regional daily SCAQMD thresholds, as outlined in Table 4.1-3 below.

Table 4.1-3: Total Emissions from Access Road Construction Equipment Per Day

	Pollutants[1] (lbs./day)					
	CO	**ROC**	**NO_X**	**SO_X**	**PM_{10}[2]**	**$PM_{2.5}$[2]**
Total	23	7.4	47	0.011	13	3.6
SCAQMD Regional Significance Threshold	550	75	100	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

[1] Emission factors provided in SCAQMD CEQA Handbook, April 1993.

[2] Includes twice daily watering

Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan

No exceedance of established regional daily thresholds for mining access road grading activity would indicate no expected significant impact associated with the other proposed small projects or ongoing maintenance activities on a short-term regional basis. No mitigation is required.

Water Conservation

The Conservation District would continue to operate, maintain, and repair its water conservation facilities (access roads, canals, culverts, dikes, basins, and diversion structures) within the Plan Area in the same manner as existing conditions. Water Conservation construction projects, such as relocation of Observation Well No. 4, would not be expected to require more equipment than used in mining access road grading activities. Because there is no exceedance of established regional daily thresholds for mining access road grading activity, there would be no expected significant impact associated with small water conservation projects or ongoing maintenance activities on a short-term regional basis. No mitigation is required.

Wells and Water Infrastructure

Operation and maintenance activities of the EVWD and RMUD would not change as a result of the Proposed Action/Projects. Infrastructure construction projects would not be expected to require more equipment than used in mining access road grading activities. Because there is no exceedance of established thresholds for mining access road grading activity, there would be no expected significant impact associated with small well and water infrastructure construction projects or ongoing maintenance activities on a short-term regional basis. No mitigation is required.

Transportation

The designation of ROW for and subsequent improvements to Alabama Street, Orange Street, and Boulder Avenue would not be expected to require more equipment than used in mining access road grading activities. Because there is no exceedance of established thresholds for mining access road grading activity, there would be no expected significant impacts associated with these activities on a short-term regional basis. However, prior to construction of these Covered Activities a subsequent analysis of emissions from construction equipment shall be completed to confirm no SCAQMD regional thresholds (or other current thresholds at the time) would be exceeded. If thresholds would be exceeded, a separate CEQA analysis and determination shall be prepared by the applicable lead agency for that project.

Flood Control

Flood control operations would not change as a result of the Proposed Action/Projects. The SBCFCD would not require additional construction work associated with the Santa Ana River, Mill Creek, Plunge Creek, or City Creek as a result of the Proposed Project. The Plunge and Elder Creek Multipurpose Habitat Enhancement and Flood Control Reasonably Foreseeable Project and maintenance of flood control facilities would not be expected to require more equipment than used in mining access road grading activities. Because there is no exceedance of established thresholds for mining grading activity, there would be no expected significant impact associated with ongoing maintenance activities or the Plunge and Elder Creek Multipurpose Habitat Enhancement and Flood Control Reasonably Foreseeable Project on a short-term regional basis. No mitigation is required.

Trails

The designation of ROW for recreational trails does not require construction. As previously described, all trails would be located on existing roads and access easements to minimize physical disturbances. A less than significant impact would occur on a short-term regional basis, and no mitigation is required.

Habitat Enhancement and Monitoring

The Proposed Action/Projects includes a conservation and mitigation strategy designed to mitigate impacts from the Covered Activities on covered species within the Plan Area. These restoration activities include study and monitoring of covered species, the enhancement, restoration and creation of habitat for covered species, and vegetation management within the Plan Area. These activities would not require heavy duty construction equipment and result in a less than significant impact on a short-term regional basis and no mitigation is required.

Agriculture

An existing 6.7-acre citrus grove operates within the Plan Area. Operation of the grove requires maintenance of access roads, irrigation infrastructure, and a sampling well. Applications of herbicide, insecticide, fungicide and fertilizer are necessary. These activities would occur with or without the Proposed Action/Projects and are consistent with the AQMP. A less-than-significant impact associated with this activity would occur and no mitigation is required.

Long-Term Impacts – RST Analysis

Aggregate Mining

Mining and hauling activities would result in combustion emissions from heavy-duty construction vehicles, haul trucks, utility engines, and vehicles transporting the mining crews. Exhaust emissions during these activities would vary daily as mining activity levels change. The proposed expansion would have the combined operations of Cemex and Robertson's producing up to 6.0 million tons per year. The mining operations would continue to include excavation, transport, and processing of materials in the Plan Area. Excavation operations would still require the use of excavators, transporting operations the use of haul trucks and water trucks and materials processing the use of crushers, screens, conveyors, and stacking conveyors. The existing operations as well as the total expanded mining operations emissions for PM_{10} and $PM_{2.5}$ both exceed daily thresholds. All other Proposed Projects, including small construction projects and ongoing operation and maintenance would not be expected to result in long-term regional impacts.

Table 4.1-4: Changes in Regional Emissions Resulting from the Proposed Expansion

Emission Sources	Emission Rate Change (lbs/day)						
	CO	**ROG**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Offsite Exhaust Sources	6.2	2.1	11	0.012	0.78	0.71	1,200
Onsite Exhaust Sources	19	6.1	48	0.081	16	6.2	7,800
Fugitive Dust Sources	—	—	—	—	36	11	—
SCAQMD Daily Thresholds	**550**	**55**	**55**	**150**	**150**	**55**	**No Threshold**
Significant Increase?	**No**	**No**	**Yes**	**No**	**No**	**No**	

Table 4.1-4 shows that the net increase in emissions of the criteria pollutants for expanded mining would all be less than the SCAQMD thresholds, with the exception of NO_X. Although the net increase from expanded mining operations does not result in emissions that would exceed thresholds for PM_{10} and $PM_{2.5}$, the existing operations and the total expanded mining operations emissions for PM_{10} and $PM_{2.5}$ both exceed daily thresholds. This impact is significant and mitigation measures are required.

The following mitigation measure would reduce impacts related to the potential increase in NOX from aggregate mining activities of the Plan Area:

MM AQ-1 The mining operators, Cemex and Robertson's, shall comply with Article 4.8 *In-Use Off-Road Diesel-Fueled Fleets*, Section 2449 *Emission Standards for In-Use Off-Road Diesel-Fueled Fleets* and any other applicable, subsequent rules, regulations, and requirements to the extent that is technologically feasible.

MM AQ-2 The mining operators, Cemex and Robertson's, shall comply with CARB idling restriction requirements for diesel-fueled vehicles to idle for more than 5 minutes.

The emissions of NO_X, PM_{10}, and $PM_{2.5}$ from expanded mining operations are expected to exceed the SCAQMD thresholds and are expected to exceed State AAQS. These emissions control measures for heavy-duty vehicles cannot be quantified to demonstrate the reduction of these emissions. Long-term regional impacts remain significant and unavoidable.

Implementation of Mitigation Measures MM AQ-1 and MM AQ-2 would reduce impacts related to the potential increase in NOX emissions from expanded aggregate mining activities of the Plan Area. However, while control measures regulate emissions of heavy-duty vehicles, there is no way to quantify the reduction of these emissions. Long-term regional impacts remain significant and unavoidable and a Statement of Overriding Considerations would be required.

Water Conservation

The Conservation District would continue to operate, maintain, and repair its water conservation facilities (access roads, canals, culverts, dikes, basins, and diversion structures) within the Plan Area in the same manner as existing conditions. Because operational activities would continue as currently implemented, a less than significant long-term regional impact associated with this activity would occur and no mitigation is required.

Wells and Water Infrastructure

Operation and maintenance activities of the EVWD and RMUD would not change as a result of the Proposed Action/Projects. Because no construction is proposed for these activities and operational activities would continue as currently implemented, no long-term regional impact would occur with this activity and no mitigation is required.

Transportation

Long-term operation of the proposed transportation improvements under the covered activities would not significantly change as a result of the Proposed Action/Projects. Because operational activities would continue as currently implemented, long-term regional impacts would be less than significant, and no mitigation is required.

Flood Control

Flood control operations and maintenance activities would not change as a result of the Proposed Project. Because these operation and maintenance activities would continue as currently implemented, no long-term regional impact associated with this activity would occur and no mitigation is required.

Trails

As previously described, all trails would be located on existing roads or access easements to minimize physical disturbances. No heavy equipment would be required to maintain trails. A less-than-significant long-term regional impact would occur and no mitigation is required.

Habitat Enhancement and Monitoring

The Proposed Action/Projects includes a conservation and mitigation strategy designed to mitigate impacts from the Covered Activities on covered species within the Plan Area. These activities include study and monitoring of covered species, the enhancement, restoration and creation of habitat for covered species, and vegetation management within the Plan Area. These activities would result in a less than significant long-term regional impact and no mitigation is required.

Agriculture

An existing 6.7-acre citrus grove operates within the Plan Area. Operation of the grove requires maintenance of access roads, irrigation infrastructure, and a sampling well. Applications of herbicide, insecticide, fungicide and fertilizer are necessary. These activities would occur with or without the Proposed Action/Projects and are consistent with the AQMP. A less-than-significant impact associated with this activity would occur and no mitigation is required.

Long-Term Microscale (CO Hotspot) Impacts

As previously outlined in Section 3.1 and shown in Table 3.1-2, CO concentrations from existing off-site mobile emissions are below SCAQMD thresholds. However, vehicular trips associated with the projects contribute to the congestion at intersections and along roadway segments in the Plan Area. Localized air quality effects would occur when emissions from vehicular traffic change in local areas as a result of the Proposed Action/Projects. The primary mobile source pollutant of local concern is CO.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. The SCAQMD AQMP has projections for CO concentrations that are lower than existing levels and are not specifically for the area of the Plan Area. Thus, to be conservative, existing ambient CO concentrations measured at the San Bernardino station were used for all future scenarios.

The highest CO concentrations would occur during peak traffic hours; hence, CO impacts calculated during peak traffic conditions represent a worst-case analysis. Based on the *Traffic Study* (LSA Associates, Inc., August 2007), CO hot spot analyses were conducted for future cumulative conditions from expanded aggregate mining activity trips. The impact on local CO levels was assessed with the Caltrans' CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of CO hot spots. Table 4.1-5 shows the future CO concentrations at principal intersections affected by Proposed Action/Projects traffic for 2030.

Table 4.1-5: 2030 Proposed Project CO Concentrations without/ with Proposed Project

Intersection	Receptor Distance to Road Centerline (Meters)	Project-Related Increase 1-hr/8-hr (ppm)	Without/With Project 1-hour CO Concentration (ppm)	Without/With Project 8-hour CO Concentration (ppm)	Exceeds State Standards	
					1-Hr	8-Hr
Palm Avenue and 5th Street	12 / 7	0.3 / 0.2	4.8 / 5.1	3.6 / 3.8	No	No
	12 / 7	0.2 / 0.1	4.8 / 5.0	3.6 / 3.7	No	No
	10 / 7	0.2 / 0.2	4.7 / 4.9	3.5 / 3.7	No	No
	10 / 7	0.2 / 0.2	4.7 / 4.9	3.5 / 3.7	No	No
Palm Avenue and 3rd Street	14 / 14	-0.2 / -0.1	4.8 / 4.6	3.6 / 3.5	No	No
	14 / 12	0.0 / 0.0	4.6 / 4.6	3.5 / 3.5	No	No
	12 / 8	0.0 / 0.0	4.6 / 4.6	3.5 / 3.5	No	No
	7 / 8	0.1 / 0.1	4.5 / 4.6	3.4 / 3.5	No	No
Palm Avenue and Robertson's Access	10 / 15	0.1 / 0.0	4.6 / 4.7	3.5 / 3.5	No	No
	10 / 14	0.0 / 0.0	4.6 / 4.6	3.5 / 3.5	No	No
	10 / 14	-0.1 / -0.1	4.6 / 4.5	3.5 / 3.4	No	No
	10 / 8	-0.1 / -0.1	4.6 / 4.5	3.5 / 3.4	No	No
Palm Avenue and Cemex Access	12 / 7	0.3 / 0.2	4.5 / 3.8	3.4 / 2.9	No	No
	12 / 21	-0.7 / -0.5	4.5 / 3.8	3.4 / 2.9	No	No
	7 / 17	-0.7 / -0.5	4.5 / 3.8	3.4 / 2.9	No	No
	7 / 14	-0.7 / -0.5	4.5 / 3.8	3.4 / 2.9	No	No
Church Avenue and 5th Street	14 / 17	-0.1 / -0.1	4.5 / 4.4	3.4 / 3.3	No	No
	14 / 17	-0.1 / 0.0	4.4 / 4.3	3.3 / 3.3	No	No
	14 / 17	-0.1 / 0.0	4.4 / 4.3	3.3 / 3.3	No	No
	14 / 17	-0.1 / 0.0	4.4 / 4.3	3.3 / 3.3	No	No
Truck Access Road and 5th Street	17 / 21	0.7 / 0.5	3.8 / 4.5	2.9 / 3.4	No	No
	17 / 17	0.6 / 0.4	3.8 / 4.4	2.9 / 3.3	No	No
	17 / 17	0.6 / 0.4	3.8 / 4.4	2.9 / 3.3	No	No
	15 / 15	0.6 / 0.4	3.8 / 4.4	2.9 / 3.3	No	No
State Route 210 Southbound Ramps and 5th Street	10 / 13	-0.1 / 0.0	4.7 / 4.6	3.5 / 3.5	No	No
	10 / 10	0.0 / 0.0	4.6 / 4.6	3.5 / 3.5	No	No
	10 / 10	0.0 / 0.0	4.6 / 4.6	3.5 / 3.5	No	No
	10 / 10	0.1 / 0.1	4.4 / 4.5	3.3 / 3.4	No	No
State Route 210 Northbound Ramps and 5th Street	7 / 7	0.1 / 0.1	4.7 / 4.8	3.5 / 3.6	No	No
	7 / 7	0.1 / 0.0	4.6 / 4.7	3.5 / 3.5	No	No
	7 / 7	0.0 / 0.0	4.6 / 4.6	3.5 / 3.5	No	No
	7 / 7	0.0 / 0.0	4.6 / 4.6	3.5 / 3.5	No	No
Boulder Avenue and Greenspot Road	7 / 7	-0.2 / -0.2	4.9 / 4.7	3.7 / 3.5	No	No
	7 / 7	-0.2 / -0.2	4.9 / 4.7	3.7 / 3.5	No	No
	7 / 7	-0.1 / -0.1	4.8 / 4.7	3.6 / 3.5	No	No
	7 / 7	-0.1 / 0.0	4.7 / 4.6	3.5 / 3.5	No	No
Orange Street and Cemex Access	7 / 7	-0.1 / -0.1	4.8 / 4.7	3.6 / 3.5	No	No
	7 / 7	-0.1 / -0.1	4.8 / 4.7	3.6 / 3.5	No	No
	7 / 7	-0.1 / -0.1	4.8 / 4.7	3.6 / 3.5	No	No
	7 / 7	-0.1 / -0.1	4.8 / 4.7	3.6 / 3.5	No	No

Includes ambient 1-hour concentration of 3.8 ppm and ambient 8-hour concentration of 2.9 ppm. Measured at the 24302 4th Street, San Bernardino, California, Air Quality Monitoring Station (San Bernardino County).
Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan.

The analysis for CO hot spots was conducted because of the direct impact of increased vehicular activity associated with expanded aggregate mining activities; however, the remaining activities would be impacted indirectly as a result. Table 4.1-5 shows that, under the forecast year condition (2030) with the

expanded mining activity trips, none of the ten intersections analyzed would exceed either the 1-hour or the 8-hour CO concentration federal and state standards. The expanded mining trips would contribute at most a 0.7 ppm increase to the 1-hour CO concentrations and 0.5 ppm increase to the 8-hour CO concentrations at these intersections. Because no CO hot spots would occur, the proposed expanded mining would not have a significant impact on local air quality for CO, and no mitigation measures would be required. As all the other Covered Activities/Proposed Projects would utilize nominal numbers of equipment/trips, potential impacts on local air quality from those are anticipated to be less than the proposed expanded mining, and therefore, would not be significant either.

Cumulatively Considerable Net Increase in Criteria Pollutants

As previously stated, the portion of the Basin within which the Plan Area is located is designated as nonattainment for PM_{10} by the state, as well as nonattainment for ozone, and $PM_{2.5}$ under both the state and federal standards. As a result, the SCAQMD is required to develop an AQMP for the Basin to bring the area into attainment for all criteria pollutants.

Ozone is not directly emitted into the atmosphere; rather, it forms via a reaction of VOC and NOX in the atmosphere. Therefore, in evaluating this threshold it is also important to consider these emissions and their potential to contribute to ozone pollution in the region even if the region is not in non-attainment for these constituent pollutants.

SCAQMD considers the thresholds for project-specific impacts and cumulative impacts to be the same. Therefore, projects that exceed project-specific significance thresholds are considered by SCAQMD to be cumulatively considerable. Based on SCAQMD's regulatory jurisdiction over regional air quality, it is reasonable to rely on its thresholds to determine whether there is a cumulative air quality impact.

None of the SCAQMD mass daily significance thresholds are exceeded during Project construction. The daily significance threshold for NO_X, PM_{10}, and $PM_{2.5}$ would be exceeded during expanded aggregate mining operations. Mitigation measures MM AQ-1 and MM AQ-1 shall be implemented to reduce operational emissions; however, they do not have quantitative reductions associated with them. Therefore, operational emissions of NO_X, PM_{10}, and $PM_{2.5}$ would exceed the SCAQMD thresholds, even after implementation of mitigation measures, and thus would have a cumulatively considerable net increase in these emissions. Impacts are significant and unavoidable.

Health Risk

AQ-4 **Health Risks from Project-Related Emission Impacts**
Would the proposed project result in a significant health risk to nearby sensitive receptors? ***Determination: Less than Significant Impact.***

There are currently no federal project-level requirements for air toxics analysis, and CEQA only requires a consideration of the risks from toxics, with the SCAQMD providing the Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality

Analysis (March 2003) and the Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588) (July 2005) for guidance.

Determining how hazardous a substance is depends on many factors, including the amount of the substance in the air, how it enters the body, how long the exposure lasts, and what organs in the body are affected. One major way these substances enter the body is through inhalation of either gas or particulate. While many gases are harmful, very small particles penetrate deep into the lungs, contributing to a range of health problems. Exhaust from diesel engines is a major source of these airborne particles. The Office of Environmental Health Hazard Assessment (OEHHA) has determined that long-term exposure to diesel exhaust particulates (PM) poses the highest cancer risk of any toxic air contaminant (TAC) it has evaluated. Fortunately, improvements to diesel fuel and diesel engines have already reduced emissions of some of the contaminants, which, when fully implemented, would result in an 85 percent reduction by 2020 compared to 2000 levels.

Long-term air emissions from stationary and mobile sources related to the Proposed Action/Projects would affect air quality in the Plan Area. The principal toxic air contaminant in any significant quantity associated with either short-term construction operations or the long-term operation of the Proposed Action/Projects is diesel PM emitted as part of large, heavy-duty diesel-powered equipment exhaust. The aggregate processing plants also emit small amounts of TAC such as copper, nickel and sulfates as fugitive emissions. While there may be other toxic substances in use on site, compliance with state and federal handling regulations control emissions to below a level of significance. According to the California Air Resources Board (CARB), when conducting an Health Risk Assessment (HRA), the surrogate for whole diesel exhaust is diesel PM.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. However, according to the rulemaking on *Identifying Particulate Emissions from Diesel-Fueled Engines as a Toxic Air Contaminant* (CARB 1998), the available data from studies of humans exposed to diesel exhaust are not sufficient for deriving an acute non-cancer health risk guidance value. While the lung is a major target organ for diesel exhaust, studies of the gross respiratory effects of diesel exhaust in exposed individuals have not provided sufficient exposure information to establish a short-term non-cancer health risk guidance value for respiratory effects.

The nearest sensitive receptor, as identified in the Conservation District's November 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan, is an existing residential development located approximately 1,175 feet away in the City of Highland. Figure 4.1-1 shows the nearest sensitive receptor to mining operations. The sensitive receptors identified in the 2008 EIR and Figure 4.1-1 remain up to date and there are no new sensitive receptors in closer proximity to mining operations.

To estimate the potential health risk associated with Project-related emissions, a dispersion model is used to translate an emission rate from a source location to a concentration at a receptor location of interest. Dispersion modeling varies from the simpler, more conservative screening-level analysis to the more complex and refined detailed analysis. The assessment for construction operations was performed using the EPA-approved SCREEN3 plume modeling software.

Aggregate Mining

The mobile equipment used in construction operations only operates in one location a short time, relative to the length of time required for carcinogenic and chronic health impacts to develop, usually six months or less. As shown in Table 4.1-3: *Total Emissions from Access Road Construction Equipment Per Day*, the anticipated level of diesel-powered equipment use would, even on the most intense day, emit no more than 13 lbs/day of diesel exhaust particulate (PM2.5). Using this maximum 13 lbs/day particulate emission rate, SCREEN3 was used to develop concentrations at various distances.

The construction HRA assumed that the mobile equipment operates for 350 days per year and very conservatively spends an entire 6-month period for constructing the aggregate access road in one place. Table 4.1-6 shows potential impacts from air toxics associated with diesel exhaust during proposed construction of the aggregate access road following published OEHHA techniques for health risk assessments. In reality, the equipment moves down the roadway as the road is being built. Even with this overestimation, the health risk for construction operations is below the cancer threshold of ten in one million and the chronic threshold of 1.0; therefore, both health risks would be less than significant.

Table 4.1-6: Construction-Related Health Risks

Distance (feet)	Inhalation Cancer Risk # in a million	Inhalation Chronic Risk Factor
980	4.0	0.35
1300	2.8	0.25
1600	2.1	0.19
2000	1.6	0.14
2300	1.3	0.11
2600	1.1	0.095
3000	0.9	0.080
3300	0.8	0.068
3600	0.7	0.060
3900	0.6	0.053
Health Risk Thresholds	**10**	**1.0**

Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan.

Another computer model, the OEHHA Hot Spots Analysis and Reporting Program (HARP), calculated long-term operational emissions. The HARP software is the model used by the ARB for calculating and presenting HRA results for the Hot Spots Program. HARP combines the tools of emission inventory database, facility prioritization calculation, air dispersion modeling, and risk assessment analysis. A screening-level single pathway analysis has been conducted, analyzing only the inhalation pathway. The HARP analysis follows the procedure according to the OEHHA Air Toxic Hot Spots Program Risk

Assessment Guidelines (August 2003), Appendix D, "Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Vehicles."

Mining operations continue for a limited time compared to the 70-year assessment period, and then cease. New operations begin at a new location. To capture this action, a series of volume sources was distributed over each of the mining areas and the total emissions for each of Cemex and Robertson's spread over the sources for each area. Additionally, two sources of emissions volumes were used to model the emissions from the two aggregate plants. Receptors were placed in a grid extending in all directions, along the property boundary, at all locations of residences as specified in the State-supplied census block database. SCAQMD meteorological data from the Redlands monitoring station were used to determine the ground-level concentrations.

Acute Project-Related Emission Impacts

Copper, nickel, and sulfates are the only TACs with short-term acute health effects in the fugitive emissions from the aggregate plants. However, according to the rulemaking on Identifying Particulate Emissions from Diesel-Fueled Engines as a Toxic Air Contaminant (CARB 1998), the available data from studies of humans exposed to diesel exhaust are not sufficient for deriving an acute non-cancer health risk guidance value. While the lungs are a major target organ for diesel exhaust, studies of the gross respiratory effects of diesel exhaust in exposed workers do not provide sufficient exposure information to establish a short-term non-cancer health risk guidance value for respiratory effects. Table 4.1-8 shows that the total acute hazard index from the proposed aggregate access road construction would be 0.004 compared to the threshold of 1.0. Therefore, the potential for short-term acute health problems as a result of exposure to Project-related TAC emissions would be less than significant.

Table 4.1-7: Long-Term Health Risks from the Proposed Project Operations

Risk Level Location	Inhalation Cancer Risk (# in One Million)	Inhalation Chronic Risk (Hazard Index)	Inhalation Acute Risk (Hazard Index)
MEI[1] at property line	6.1	0.008	0.004
Nearest residence	1.7	0.002	0.001
Thresholds	**10**	**1.0**	**1.0**

MEI = Maximally Exposed Individual
Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan.

Carcinogenic and Chronic Project-Related Emission Impacts

This DEIS/SEIR assesses the environmental impacts of the Proposed Action/Projects using the existing conditions as the baseline, but the health risks to nearby residents are impacted by the total emissions of the existing operations combined with the amount from the proposed expansion. A conservative set of assumptions used here hold that an individual lives in the same house for 70 years and stays there 24 hours a day for 350 out of 365 days for all 70 years. The carcinogenic risk for the MEI is 6.1 in a million at the property line in an area where without existing or foreseeable planned residences. The peak risk for any real or expected resident is 1.7 in a million, below the significance threshold of 10 in a million.

Therefore, the potential for long-term carcinogenic and chronic health problems as a result of exposure to Project-related TAC emissions would be less than significant cumulatively.

The mining operations would use petroleum products, concrete admixtures, oils, fuels, greases, and other toxic substances in the course of operations. Any proposed use or disposal of toxic chemicals by the mining operations would have to comply with state and federal handling regulations. Adherence to these regulations would ensure that emissions of toxic substances remain below the level of significance. Therefore, a less-than-significant impact is expected and no mitigation is required.

All Proposed Projects

As all the other Covered Activities/Proposed Projects would utilize nominal numbers of diesel equipment and trips, the potential for short-term acute health problems or long-term carcinogenic and chronic health problems as a result of exposure to Project-related TAC emissions would be less than significant as well.

Operation and maintenance activities as well as other small construction projects would use petroleum products, concrete admixtures, oils, fuels, greases, and other toxic substances. Any proposed use or disposal of toxic chemicals for construction or operations and maintenance activities would have to comply with state and federal handling regulations. Adherence to these regulations would ensure that emissions of toxic substances remain below a level of significance. Therefore, a less-than-significant impact is expected, and no mitigation is required.

AQ-5 **Expose Sensitive Receptors to Substantial Pollutant Concentrations**
Would the proposed project expose a substantial number of people to substantial pollutant concentrations? ***Determination: Significant and Unavoidable***

Aggregate Mining

The proposed aggregate mining activities would result in potentially significant impacts related to exposure of substantial pollutant concentrations to sensitive receptors.

The East Quarry South is the closest excavation site at approximately 1,690 feet from the nearest existing residence in the City of Redlands. The East Quarry North is the closest excavation site at approximately 1,320 feet from the nearest proposed residence in the City of Highland. The nearest existing residence to the aggregate processing site is located approximately 2,820 feet away. In addition, the nearest sensitive receptors, both from existing and proposed residential developments, are also identified and are located approximately 1,175 and 1,700 feet away in the Cities of Highland and Redlands, respectively. Figure 4.1-1 shows the nearest sensitive receptors to mining operations. Table 4.1-1 lists an inventory of the existing fugitive dust emissions from aggregate mining. Robertson's proposed mining and operations east of Plunge Creek Quarry and north of Silt Pond Quarry would be the closest excavation site to residences adjacent to the Plan Area.

Both the existing and proposed level of aggregate mining operations would result in daily NO_X emissions in excess of the SCAQMD emissions threshold. Since the SCAQMD emissions thresholds for NO_X would still be exceeded, dispersion modeling was conducted to determine whether pollutant concentrations at nearby sensitive receptors would be significant (see Figure 4.1-1).

Using the EPA air dispersion model ISCST3 and the same air dispersion modeling setup as the operational HRA described in Section 4.3.4.5, the existing emission rates were modeled to determine the concentrations of the criteria pollutants at the nearest residences due to emissions from aggregate mining. Table 4.1-8 shows that the concentrations of CO, NO_2, and SO_2 at the nearest residences are below State (and the more lenient Federal) standards; however, the concentrations of PM_{10} and $PM_{2.5}$ are above the State standards, and in the case of PM2.5 also above the Federal AAQS.

Table 4.1-8: Existing Criteria Pollutant Concentrations at Nearest Residences

Emissions Sources Exhaust Sources	Maximum Concentrations (µg/m^3)			
	CO	NO_2	PM_{10}	$PM_{2.5}$
Total Project	47	126	129	40
State Standard	23,000	338	50	35
Federal Standard	40,000	–	150	35

ppm = Parts per million, µg/m^3 = Micrograms per cubic meter
Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan

Table 4.1-9 shows the predicted concentrations at the nearest residence using emission rates from expanded mining activities. Even though the emissions rates of PM_{10} and $PM_{2.5}$ increase, the changes are small enough that the concentrations from expanded mining activities stay the same at the nearest residences. The concentrations of CO, NO_2, and SO_2 would stay below State and Federal standards; however, the concentrations of PM_{10} and $PM_{2.5}$ would stay above State standards, and in the case of PM2.5 also above the Federal AAQS. This is a significant impact on local air quality and mitigation measures would be required.

Table 4.1-9: Proposed Criteria Pollutant Concentrations at Nearest Residences

Fugitive Dust Sources Exhaust Sources	Maximum Concentrations (µg/m^3)			
	CO	NO_2	PM_{10}	$PM_{2.5}$
Total Project	52	140	129	40
State Standard	23,000	338	50	35
Federal Standard	40,000	–	150	35

ppm = Parts per million, µg/m^3 = Micrograms per cubic meter
Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan

A major contributor to the PM_{10} and $PM_{2.5}$ emissions is the road dust generated from haul trucks transporting material from the quarries to the processing plants on the internal dirt haul roads. Haul road dust emissions were based on maximum daily production levels, the average distances and aggregate volumes from each quarry, and the size off-road haul trucks for each operator. During actual operations over the length, both operators could mine aggregate material at maximum daily volumes and from the more distant quarries during the same time span resulting in greater PM_{10} emissions such

that federal standards for PM_{10} could also be exceeded, despite implementation of the required dust control measures.

Standard Regulations. Construction and operations for the Proposed Action/Projects would continue to be required to comply with standard regional rules that assist in reducing fugitive dust air pollutant emissions. See Appendix I for detailed standard regulations.

The following mitigation measures would further reduce the level of fugitive dust/ particulate matter emissions from aggregate mining operations.

MM AQ-3 The two operators, Cemex and Robertson's, shall schedule transportation of material such that both operators are not transporting material on the same day from the south half of the southeast quarter of Section 11, which is the area farthest from both processing plants.

Mitigation Measure AQ-3 shall be implemented by the mining operators to reduce emissions of particulate matter as much as possible.

With implementation of standard regulations associated with SCAQMD Rules 402, 403, and 1157 and the continuation of stationary emission requirements and dust control measures that are required by the SCAQMD, the impacts of on-site mining operations related to PM_{10} and $PM_{2.5}$ levels would be minimized, but still significant. Mitigation Measure AQ-3 would reduce PM_{10} and $PM_{2.5}$ emissions; however, there is no way to quantify any reduction accomplished by this measure. Thus, even with compliance with SCAQMD rules and requirements and implementation of mitigation measure MM AQ-3, the impact is significant and unavoidable, and a Statement of Overriding Considerations would be required.

Water Conservation

Operation and maintenance activities of the Conservation District would continue as currently implemented. On-site mobile emissions would not occur from this activity because the identified sources (vehicles and heavy-duty equipment exhaust) are not included under this activity. Similarly, on-site stationary source emissions would not occur because the identified sources (processing facilities, asphalt plants, electricity generators) are not included in this activity. Fugitive dust emissions that would result from vehicular travel on unpaved roadways would contribute particulate matter emissions; however, the Conservation District enforces speed limits of 15 mph for its service vehicles on all roads within the Plan Area. In addition, water spraying efforts are conducted as often as needed during the day depending on conditions (e.g., during high winds) along with the application of dust-suppressants (e.g., chloride-based salts). Proper and regular maintenance of roads is also implemented to reduce the emission of coarse particulate matter. A less than significant impact is anticipated and no further mitigation is required.

Wells and Water Infrastructure

Similar to the previous discussion, operation and maintenance activities of the EVWD and RMUD would continue as currently implemented. On-site mobile emissions would not occur from this activity because the identified sources are not included under this activity. Similarly, on-site stationary source emissions would not occur because the identified sources are not included in this activity. Fugitive dust emissions that would result from vehicular travel on unpaved roadways would contribute particulate matter emissions; however, the EVWD and RMUD enforce speed limits of 15 mph for their service vehicles on all roads within the Wash Plan Area. In addition, water spraying efforts are conducted as often as needed during the day depending on conditions (e.g., during high winds) along with the application of dust-suppressants (e.g., chloride-based salts). Proper and regular maintenance of roads is also implemented to reduce the emission of coarse particulate matter. A less than significant impact is anticipated and no mitigation is required.

Transportation

The improvements to Alabama Street, Orange Street, and Boulder Avenue would use less equipment than used in mining operations. The predicted concentrations of pollutant concentrations of CO, NO_2, and SO_2 stay below state and the more lenient federal standards for mining operations and therefore would also be expected to below state and federal standards for construction activities for road improvements. Although expanded mining operations would result the concentrations of PM_{10} and $PM_{2.5}$ that stay above state and federal standards, the amount of equipment used and the trips for roadway improvement construction would be substantially less than used for expanded mining and would not be expected to be above state and federal standards. However, prior to construction of these Covered Activities a subsequent analysis of emissions from construction equipment shall be completed to confirm no state and federal standards would be exceeded. If state or federal standards would be exceeded, a separate CEQA analysis and determination shall be prepared by the applicable lead agency for that project.

Flood Control

Similar to the previous discussion, operation and maintenance activities of the SBCFCD would continue as currently implemented. On-site mobile emissions would not occur from this activity because the identified sources are not included under this activity. Similarly, on-site stationary source emissions would not occur because the identified sources are not included in this activity. Fugitive dust emissions that would result from vehicular travel on unpaved roadways would contribute particulate matter emissions; however, the SBCFCD enforces speed limits of 15 mph for its service vehicles on all roads within the Plan Area. In addition, water spraying efforts are conducted as often as needed during the day depending on conditions (e.g., during high winds) along with the application of dust-suppressants (e.g., chloride-based salts). Proper and regular maintenance of roads is also implemented to reduce the emission of coarse particulate matter. A less than significant impact is anticipated and no mitigation is required.

Trails/Habitat Enhancement and Monitoring/ Agriculture

On-site mobile source emissions, on-site stationary source emissions, and substantial fugitive dust emissions would not occur under these activities. Therefore, there would be no impact related to exposure of substantial emissions to sensitive receptors under these activities and no mitigation is required.

Objectionable Odors

AQ-6 Objectionable Odors

Would the proposed project create objectionable odors affecting a substantial number of people? ***Determination: Less than Significant Impact.***

During construction, the various diesel-powered vehicles and equipment in use on the site would create odors. SCAQMD Rule 402 dictates that air discharged from any source shall not cause injury, nuisance, or annoyance to the health, safety, or comfort of the public. With the exception of short-term construction-related odors (e.g., asphalt odors), the proposed activities do not include uses that would generate objectionable odors. While the installation of asphalt may generate odors, these odors are temporary and not likely to be noticeable beyond the Plan Area boundaries. SCAQMD Rule 1108 identifies standards regarding the application of asphalt. Solid waste generated by the proposed activities would be collected by a contracted waste hauler, ensuring that any odors resulting from on-site activities would be adequately managed. Long-term objectionable odors are not expected to occur at the Plan Area.

Aggregate Mining

As previously identified, short-term construction odors that would occur under this activity include odors generated by the various diesel-powered vehicles and equipment used on the site. Adherence to SCAQMD Rule 402 would reduce the discharge of odors so as to not cause injury or annoyance to health, safety, and comfort of the public. In addition, the installation of asphalt associated with the new access road would create odors; however, these odors are temporary and not likely to be noticeable beyond the Plan Area boundaries. A less than significant impact is associated with this activity and no mitigation is required.

Water Conservation

No construction is proposed under this activity; therefore, no odors associated with construction activities (e.g., architectural coatings or installation of asphalt) would occur. Operation and maintenance activities of the Conservation District would continue as currently implemented. No odors are currently generated by the daily operations and maintenance activities of the District. Therefore, no long-term objectionable odors are anticipated and a less than significant impact would occur. No mitigation is required.

Wells and Water Infrastructure

No odors associated with architectural coatings or installation of asphalt would occur. Operation and maintenance activities of the SBCFCD would continue as currently implemented. No significant odors are currently generated by the daily operations and maintenance activities of the SBCFCD. Therefore, no long-term objectionable odors are anticipated and a less than significant impact would occur. No mitigation is required.

Transportation

With the exception of short-term construction-related odors (e.g., asphalt odors), the transportation-related activities do not include uses that would generate objectionable odors. While the installation of asphalt may generate odors, these odors are temporary and not likely to be noticeable beyond the Plan Area boundaries. Similarly, no long-term objectionable odors are anticipated to occur. A less than significant impact would occur and no mitigation is required.

Flood Control

No construction is proposed under this activity; therefore, no odors associated with architectural coatings or installation of asphalt would occur. Operation and maintenance activities of the SBCFCD would continue as currently implemented. No significant odors are currently generated by the daily operations and maintenance activities of the SBCFCD. Therefore, no long-term objectionable odors are anticipated and a less than significant impact would occur. No mitigation is required.

Trails/Habitat Enhancement and Monitoring/Agriculture

No construction is proposed under these activities; therefore, no odors associated with construction activities (e.g., architectural coatings or installation of asphalt) would occur. Similarly, no long-term objectionable odors are anticipated to occur as there is generally no physical activity taking place, only limited grading associated with habitat enhancement. A less than significant impact would occur and no mitigation is required.

Global Climate Change (GHG Emissions)

AQ-7 **Global Climate Change (Green House Gas Emissions)**
Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***Determination: Significant and Unavoidable Impact.***

The primary GHG generated by the Proposed Action/Projects would be carbon dioxide. At buildout in 2030, total unmitigated carbon dioxide equivalents for carbon dioxide, methane, and nitrous oxide would be 21,000 MT CO_2 Eq.

There are currently no direct Federal rules or legislation pertaining to GHG emissions under the CAA.

Project Carbon Dioxide Emissions

The Proposed Action/Projects would generate emissions of carbon dioxide primarily in the form of vehicle exhaust and equipment exhaust. Carbon dioxide emissions from vehicles were calculated using the Project Average Daily Trip (ADT) of 2,412 and assuming an average round trip length of 50 miles combined with EMFAC2007 emission factors. The carbon dioxide emissions are shown in Table 4.1-10. As shown in Table 4.1-10, the Proposed Action/Projects would emit 0.020 teragrams of carbon dioxide equivalents (Tg CO_2 Eq.) or 20,000 Metric Tons CO_2 Eq. (MT CO_2 Eq.) in year 2030. Emissions are converted to carbon dioxide equivalent, which converts the other GHGs into the equivalent mass of carbon dioxide.

Table 4.1-10: Carbon Dioxide Emissions

Emission Source	Carbon Dioxide Emissions						
	2004–08	2009	2010	2011	2012	2013	2030
Vehicles (tons/year)	19,245	19,272	19,272	19,272	19,528	19,528	19,994
Total (MT CO_2 Eq.)	19,000	19,000	19,000	19,000	20,000	20,000	20,000

Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan

Project Methane Emissions

The Proposed Action/Projects would generate some methane gas from vehicle emissions and equipment emissions. Methane emissions from vehicles were estimated using EPA emission factors for on-highway vehicles (EPA 2004) and the same assumptions used to estimate CO_2 emissions above. The emissions are shown in Table 4.1-11. As shown in Table 4.1-11, the Proposed Action/Projects would emit 0.00008 Tg CO_2 Eq. (80 MT CO_2 Eq.) in 2030.

Table 4.1-11: Methane Emissions

Emission Source	Methane Emissions						
	2004-08	2009	2010	2011	2012	2013	2030
Vehicles (tons/year)	3.64	3.64	3.64	3.64	3.64	3.64	3.64
Total (MT CO_2 Eq.)	80	80	80	80	80	80	80

Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan

Nitrous Oxide (N2O)

The Proposed Action/Projects would generate small amounts of nitrous oxide from vehicle emissions. Nitrous oxide from vehicles was estimated using EPA emission factors for on-highway vehicles (EPA 2004) and the same assumptions that were used to estimate CO_2 and CH_4. The emissions are presented in Table 4.1-12. As shown in Table 4.1-12, the Proposed Project would emit 0.0004 Tg CO_2 Eq. (400 MT CO_2 Eq) in year 2030.

Table 4.1-12: Nitrous Oxide Emissions

Emission Source	Nitrous Oxide Emissions						
	2004-08	2009	2010	2011	2012	2013	2030
Vehicles (tons/year)	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Total (Tg CO_2 Eq.)	400	400	400	400	400	400	400

Source: Conservation District's 2008 Final EIR (SCH No. 2004051023) for the Upper Santa Ana River Wash Land Management and Habitat Conservation Plan

Water Vapor

The Proposed Action/Projects does not contribute to this GHG because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks and not emissions from activities associated with the Proposed Action/Projects.

Chlorofluorocarbons

A global ban on chlorofluorocarbons has been in effect since 1996 under the 1987 Montreal Protocol; therefore, the Proposed Action/Projects would not generate emissions of these greenhouse gases and are not considered further in this analysis.

Hydrofluorocarbons

The Proposed Action/Projects may emit a small amount of HFC emissions from leakage and service of refrigeration and air conditioning equipment and from disposal at the end of the life of the equipment. However, the amount of air conditioning and refrigeration equipment is limited for mining operations as it is used in buildings with employees and not used for aggregate production. Therefore, the Proposed Action/Projects are not expected to emit this GHG and is not considered further.

Perfluorocarbons and Sulfur Hexafluoride (SF6)

Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications. Perfluorocarbons are generally associated with refrigeration units and fire extinguishers. Sulfur hexafluoride is generally associated with electrical components. The Proposed Action/Projects does not include additional facilities requiring additional refrigeration units, fire extinguishers, or electrical components. Therefore, it is not anticipated that the Proposed Action/Projects would emit any of these greenhouse gases.

Total GHG Contribution

The primary GHG generated by the Proposed Action/Projects would be carbon dioxide in the form of vehicle exhaust and equipment exhaust. At buildout in 2030, total unmitigated carbon dioxide equivalents for carbon dioxide, methane, and nitrous oxide (vehicle and equipment exhaust from expanded mining operations) would be 21,000 MT CO_2 Eq.

On April 13, 2009, the California Office of Planning and Research (OPR) submitted to the Secretary for Natural Resources its recommended amendments to the State CEQA Guidelines for GHG gas emissions,

as required by Senate Bill 97. Those recommended amendments were developed to provide guidance to public agencies regarding the analysis and mitigation of GHG emissions and the effects of GHG emissions in draft CEQA documents. On July 3, 2009, the Natural Resources Agency published its Notice of Proposed Action and proposed to adopt and amend regulations implementing Division 13 of the Public Resources Code, CEQA, for the analysis and mitigation of GHG emissions.[4] The California Natural Resources Agency noted in its Public Notice for these changes that impacts of GHG should focus on the cumulative impact on climate change. The Public Notice states:

"While the Proposed Amendments do not foreclose the possibility that a single project may result in GHG emissions with a direct impact on the environment, the evidence before [CRNA] indicates that in most cases, the impact will cumulative. Therefore, the Proposed Amendments emphasize that the analysis of GHG emissions should center on whether a project's incremental contribution of greenhouse gases is cumulatively considerable." [5]

Therefore, the significance of GHG emissions is most appropriately considered on a cumulative level.

The total unmitigated carbon dioxide equivalents for carbon dioxide, methane, and nitrous oxide for the Proposed Action/Projects (vehicle/mobile sources and equipment exhaust from expanded mining operations) would be 21,000 MT CO_2eq. on an annual basis. Due to implementation of existing regulations emissions from the fleet of haul trucks and processing equipment for expanded aggregate mining are anticipated to be less than what was estimated in the 2008 EIR. However, the Proposed Action/Projects would generate a substantial amount of GHG emissions annually, that may have a significant impact on the environment. Adverse impacts from the Proposed Action/Projects related to greenhouse gas emissions are significant and unavoidable.

Mobile source emissions are regulated at the federal level by US EPA and NHTSA. The BLM and USFWS as lead federal lead agencies, and the Conservation District, as the CEQA lead agency for the Proposed Action/Projects, do not have jurisdiction over mobile source emissions and cannot require or implement different standards than the US EPA or NHTSA. Therefore, there is no feasible mitigation to reduce GHG emissions from the fleet of haul trucks and processing equipment for aggregate mining operations.

AQ-8 Global Climate Change (Greenhouse Gas Emissions)
Would the proposed project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ***Determination: Less than Significant Impact.***

The Proposed Action/Projects would help meet resource conservation goals in the region for natural habitat and open space and water conservation. The Proposed Action/Projects would not conflict with strategies, goals and policies outlined in these plans to promote energy efficiency, waste reduction,

[4] http://resources.ca.gov/ceqa/guidelines/proposed_guidelines_amendments_and_related_materials.html, accessed on January 17, 2018.

[5] http://resources.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf, accessed on January 17, 2018.

resource conservation, and recycling, and reduce VMTs. The Proposed Action/Projects would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases and potential impacts are less than significant.

RESIDUAL IMPACTS AFTER MITIGATION

Implementation of Mitigation Measures MM AQ-1 and MM AQ-2 would reduce impacts related to the potential increase in NOX emissions from expanded aggregate mining activities of the Plan Area. However, although control measures regulate emissions of heavy-duty vehicles, there is no way to quantify the reduction of these emissions. Long-term regional impacts remain significant and unavoidable and a CEQA Statement of Overriding Considerations would be required.

Mitigation Measure AQ-3 would reduce PM_{10} and $PM_{2.5}$ emissions; however, there is no way to quantify any reduction accomplished by this measure. Thus, even with compliance with SCAQMD rules and requirements and implementation of mitigation measure MM AQ-3, the impact is significant and unavoidable, and a CEQA Statement of Overriding Considerations would be required.

Adverse impacts from the Proposed Action/Projects related to GHG emissions are considered significant and unavoidable, and a CEQA Statement of Overriding Considerations would be required.

Determination: The Proposed Action/Projects would be consistent with the AQMP and would not obstruct implementation of its programs. Total short-term construction emissions that would result from grading activities and from equipment exhaust for the mining haul road and other proposed small projects do not exceed regional daily SCAQMD thresholds. The emissions of NO_X, PM_{10}, and $PM_{2.5}$ from expanded mining operations are expected to exceed the SCAQMD thresholds and are expected to exceed State AAQS and thus, long-term regional impacts remain significant and unavoidable. SCAQMD considers the thresholds for project-specific impacts and cumulative impacts to be the same. Therefore, projects that exceed project-specific significance thresholds are considered by SCAQMD to be cumulatively considerable. Therefore, as operational emissions of NO_X, PM_{10}, and $PM_{2.5}$ would exceed the SCAQMD thresholds, even after implementation of mitigation measures, would have a cumulatively considerable net increase in these emissions. Impacts are significant and unavoidable under NEPA.

The proposed expanded mining would not cause CO hot spots or have a significant impact on local air quality for CO. As all the other Covered Activities/Proposed Projects would utilize nominal numbers of equipment/trips, they would not cause CO hot spots.

Health risk assessments were prepared for both aggregate mining haul road construction and aggregate mining operations diesel emissions. All results were below thresholds and potential acute hazard, short-term acute health problems, long-term carcinogenic, and chronic health problems as a result of exposure to Project-related TAC emissions would be less than significant. The Proposed Action/Projects would not create objectionable odors that would affect a substantial number of people.

The Proposed Action/Projects would generate a substantial amount of GHG emissions annually, that may have a significant impact on the environment. Adverse impacts from the Proposed Action/ Projects related to GHG emissions are significant and unavoidable. However, the Proposed Action/Projects would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases and potential impacts are less than significant.

4.1.1.3 Alternative C: 2008 Land Management Plan Alternative

As outlined above for Alternative B, the *Traffic Study* analyzed expanded mining as proposed in the 2008 Land Management Plan (Alternative C) which included 32 more acres of expanded mining than Alternative B (Proposed Action/Projects Alternative). Although the traffic impacts may be slightly overestimated for Alternative B, they represent anticipated impacts from expanded mining of Alternative C. Modeled air quality levels were based upon vehicle data and project trip generation included in the *Traffic Study*. Consequently, modeled air quality impacts may be slightly overestimated for Alternative B, they represent anticipated impacts from expanded mining of Alternative C. Therefore, potential impacts from implementation of Alternative C would be consistent with the analysis and conclusions outlined above for Alternative B.

Determination: The 2008 Land Management Plan would be consistent with the AQMP and would not obstruct implementation of its programs. Total short-term construction emissions that would result from grading activities and from equipment exhaust for the mining haul road and other proposed small projects do not exceed regional daily SCAQMD thresholds. The emissions of $NO_{X,}$ $PM_{10,}$ and $PM_{2.5}$ from expanded mining operations are expected to exceed the SCAQMD thresholds and are expected to exceed State AAQS and thus, long-term regional impacts remain significant and unavoidable. SCAQMD considers the thresholds for project-specific impacts and cumulative impacts to be the same. Therefore, projects that exceed project-specific significance thresholds are considered by SCAQMD to be cumulatively considerable. Therefore, as operational emissions of $NO_{X,}$ $PM_{10,}$ and $PM_{2.5}$ would exceed the SCAQMD thresholds, even after implementation of mitigation measures, would have a cumulatively considerable net increase in these emissions. Impacts are significant and unavoidable.

The proposed expanded mining would not cause CO hot spots or have a significant impact on local air quality for CO. As all the other 2008 Land Management Plan projects would utilize nominal numbers of equipment/trips, they would not cause CO hot spots.

Health risk assessments were prepared for both aggregate mining haul road construction and aggregate mining operations diesel emissions. All results were below thresholds and potential acute hazard, short-term acute health problems, long-term carcinogenic, and chronic health problems as a result of exposure to Project-related TAC emissions would be less than significant. The 2008 Land Management Plan would not create objectionable odors that would affect a substantial number of people.

The 2008 Land Management Plan would generate a substantial amount of GHG emissions annually, that may have a significant impact on the environment. Adverse impacts from the 2008 Land Management Plan related to GHG emissions are significant and unavoidable. However, the 2008 Land Management

Plan would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases and potential impacts are less than significant.

Table 4.1-13: South Coast AQMD District – San Bernardino County

Summary Category Name	2008	2018
Stationary Sources		
Fuel Combustion		
Electric Utilities	0.466	0.345
Cogeneration	0.001	0.001
Oil And Gas Production (Combustion)	0.000	0.000
Petroleum Refining (Combustion)	0.000	0.000
Manufacturing And Industrial	0.147	0.115
Food And Agricultural Processing	0.011	0.009
Service And Commercial	0.105	0.123
Other (Fuel Combustion)	0.007	0.005
***Total Fuel Combustion**	**0.737**	**0.598**
Waste Disposal		
Sewage Treatment	0.001	0.000
Landfills	0.008	0.020
Incinerators	0.003	0.005
Other (Waste Disposal)	0.018	0.000
***Total Waste Disposal**	**0.030**	**0.025**
Cleaning and Surface Coatings		
Laundering	0.000	0.000
Degreasing	0.000	0.000
Coatings and Related Process Solvents	0.158	0.172
Printing	0.000	0.000
Adhesives and Sealants	0.000	0.000
Other (Cleaning and Surface Coatings)	0.000	0.004
***Total Cleaning and Surface Coatings**	**0.158**	**0.175**
Petroleum Production And Marketing		
Oil and Gas Production	0.000	0.003
Petroleum Refining	0.000	0.000
Petroleum Marketing	0.000	0.000
Other (Petroleum Production and Marketing)	0.000	0.000
***Total Petroleum Production and Marketing**	**0.000**	**0.003**
Industrial Processes		
Chemical	0.054	0.060
Food and Agriculture	0.010	0.015
Mineral Processes	0.758	0.638
Metal Processes	0.090	0.085
Wood and Paper	0.209	0.234
Other (Industrial Processes)	0.165	0.075
*** Total Industrial Processes**	**1.287**	**1.108**
**** Total Stationary Sources**	**2.212**	**1.909**
Area Wide Sources		
Solvent Evaporation		
Consumer Products	0.000	0.000
Architectural Coatings And Related Process Solvents	0.000	0.000
Pesticides/Fertilizers	0.000	0.000
Asphalt Paving / Roofing	0.002	0.003
***Total Solvent Evaporation**	**0.002**	**0.003**
Miscellaneous Processes		
Residential Fuel Combustion	1.231	1.030

Summary Category Name	2008	2018
Farming Operations	0.093	0.090
Construction And Demolition	0.137	0.212
Paved Road Dust	1.866	1.876
Unpaved Road Dust	0.071	0.071
Fugitive Windblown Dust	0.113	0.080
Fires	0.053	0.053
Managed Burning and Disposal	0.316	0.316
Cooking	0.846	1.070
Other (Miscellaneous Processes)	0.000	0.000
***Total Miscellaneous Processes**	**4.725**	**4.797**
****Total Area-wide Sources**	**4.726**	**4.800**
Mobile Sources		
On-Road Motor Vehicles		
Light Duty Passenger (LDA)	0.491	0.506
Light Duty Trucks - 1 (LDT1)	0.077	0.042
Light Duty Trucks - 2 (LDT2)	0.164	0.168
Medium Duty Trucks (MDV)	0.183	0.130
Light Heavy Duty Gas Trucks - 1 (LHDGT1)	0.038	0.018
Light Heavy Duty Gas Trucks - 2 (LHDGT2)	0.006	0.004
Medium Heavy Duty Gas Trucks (MHDGT)	0.007	0.005
Heavy Heavy Duty Gas Trucks (HHDGT)	0.001	0.001
Light Heavy Duty Diesel Trucks - 1 (LHDDT1)	0.042	0.028
Light Heavy Duty Diesel Trucks - 2 (LHDDT2)	0.015	0.011
Medium Heavy Duty Diesel Trucks (MHDDT)	0.303	0.145
Heavy Heavy Duty Diesel Trucks (HHDDT)	1.053	0.123
Motorcycles (MCY)	0.002	0.002
Heavy Duty Diesel Urban Buses (UBD)	0.021	0.016
Heavy Duty Gas Urban Buses (UBG)	0.002	0.002
School Buses - Gas (SBG)	0.002	0.002
School Buses - Diesel (SBD)	0.025	0.011
Other Buses - Gas (OBG)	0.002	0.002
Other Buses - Motor Coach - Diesel (OBC)	0.004	0.001
All Other Buses - Diesel (OBD)	0.005	0.001
Motor Homes (MH)	0.007	0.004
***Total On-Road Motor Vehicles**	**2.450**	**1.220**
Other Mobile Sources		
Aircraft	0.056	0.075
Trains	0.172	0.079
Recreational Boats	0.304	0.195
Off-Road Recreational Vehicles	0.003	0.002
Off-Road Equipment	0.455	0.333
Farm Equipment	0.033	0.023
Fuel Storage and Handling	0.000	0.000
***Total Other Mobile Sources**	**1.023**	**0.706**
****Total Mobile Sources**	**3.473**	**1.927**
Natural (Non-Anthropogenic) Sources		
Natural Sources		
Biogenic Sources	0.000	0.000
Geogenic Sources	0.000	0.000
Wildfires	2.845	2.845
*** Total Natural Sources**	2.845	2.845
**** Total Natural (Non-Anthropogenic) Sources**	**2.845**	**2.845**
Total South Coast AQMD In San Bernardino County	**13.257**	**11.481**