

7.5 AIR QUALITY

This chapter focuses on the impacts to air quality associated with the implementation of the alternatives carried forward for review under the Section 404(b)(1) Guidelines. In general, most impacts to air quality are outside the USACE's statutory authority and responsibility under Section 404 of the Clean Water Act. The primary responsibility of evaluating and regulating impacts to non-aquatic biological resources resides with the local agencies. As part of the NEPA review, the USACE is analyzing impacts on the environment associated with projects that receive authorizations under Section 404 of the Clean Water Act.

7.5.1 THRESHOLDS OF SIGNIFICANCE

An alternative's air quality impacts can be separated into short-term impacts due to construction and long-term permanent impacts from project operations. The lead agency is responsible for making determinations regarding the existence of significant air quality impacts. The South Coast Air Quality Management District (SCAQMD) emission thresholds apply to all federally regulated air pollutants except lead, which is not exceeded in the South Coast Air Basin.

A significant air quality impact would occur if the alternative would:

- Result in a violation of any state or national ambient air quality standard or contribute substantially to an existing or projected air quality violation. The significance thresholds recommended by the SCAQMD in its *CEQA Air Quality Handbook*, as revised in November 1993 and approved by the SCAQMD's Board of Directors, are the basis for determining significance of an impact for this project. Construction and operational emissions are considered by the SCAQMD to be significant if they exceed the thresholds identified in Table 7.5-1.

**TABLE 7.5-1
EMISSIONS THRESHOLDS OF SIGNIFICANCE**

Pollutant	Construction		Operations (pounds/day)
	pounds/day	tons/quarter	
Carbon Monoxide (CO)	550	24.75	550
Sulfur Oxides (SO _x)	150	6.75	150
Nitrogen Oxides (NO _x)	100	2.50	55
Particulate Matter (PM ₁₀)	150	6.75	150
Reactive Organic Compounds (ROC)	75	2.50	55
Source: South Coast Air Quality Management District, <i>CEQA Air Quality Handbook</i> , 1993.			

- Result in an increase in carbon monoxide concentrations where: (1) an increase in CO concentrations is sufficient to cause an exceedance of the most stringent state or national CO standard (20 parts per million for 1-hour concentrations and nine parts per million for 8-hour concentrations); or (2) in an area that already exceeds national or state CO standards, the project increase exceeds 1 part per million (ppm) for a 1-hour average or 0.45 ppm for an 8-hour average.

In addition, the SCAQMD *CEQA Air Quality Handbook* lists additional indicators of potential air quality impacts (Secondary Effects). Projects would have a significant impact if they would:

- 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 a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including release in emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Expose a substantial number of people to objectionable odors. An objectionable odor is defined in the SCAQMD *CEQA Air Quality Handbook* as 1 over 10 dilution to thresholds (D/T).

7.5.2 SAMP PROPOSED PERMITTING PROCEDURES

As discussed previously, the proposed RGP and LOP procedures have been developed for future participants and current participants in the SAMP. The future participants have not yet defined projects for permitting by the RGP or LOP procedures. For projects eligible for authorization by the maintenance RGP, impacts to air quality would be minimal. Such activities would be associated with small maintenance projects, resulting in temporary impacts to a small area located in a mostly degraded landscape. Since effects to air quality would occur from just a few maintenance vehicles, impacts to air quality are not expected under the RGP. For projects proposed by future participants that would be eligible for authorization by the LOP procedures, not enough is known about the project size and location or potential impacts to analyze potential impacts to air quality. Such projects eligible for authorization by the LOP procedures will be subject to future NEPA review before a final permit decision can be made.

Current participants have analyzed their activities—SMWD Proposed Project and RMV Proposed Project—and alternatives that may have significant effects on the environment as noted in Chapter 6.0. Therefore, the authorization pursuant to the proposed permitting procedures may also have an effect on the environment per the thresholds of significance. These potential effects on air quality and minimization/mitigation measures applicable to these potential effects, are further discussed, below.

7.5.3 SMWD PROPOSED PROJECT

7.5.3.1 Impacts

The SMWD, as a special district, would serve as the lead agency for its proposed project and would complete its own CEQA environmental analysis for the proposed Upper Chiquita storage reservoir. The following analysis is based upon the USACE's evaluation of potential environmental effects associated with the construction and operation of the proposed reservoir.

Impact

7.5.3-1: *Construction of the SMWD Upper Chiquita reservoir may result in significant short-term air quality impacts.*

Ongoing operation and maintenance activities conducted by SMWD are not expected to result in significant air quality impacts. Construction of these facilities has already occurred. With respect to the proposed Upper Chiquita domestic water storage reservoir, implementation of this facility would generate short-term construction-related impacts that have the potential to affect

local and regional air quality. Long-term operation of the reservoir facility would not result in air quality impacts due to the nature of the reservoir and the limited number of vehicle trips associated with daily operation of the facility.

7.5.3.2 Mitigation Program

The following mitigation is expected to be required.

AQ-1 SWMD shall require the contractor to comply with the South Coast Air Quality Management District's (SCAQMD) regulations during construction, including Rule 402 which specifies that there be no dust impacts offsite sufficient to cause a nuisance, and SCAQMD Rule 403, which restricts visible emissions from construction. Specific measures to reduce fugitive dust shall include the following:

- a. Moisten soil prior to grading.
- b. Water exposed surfaces at least twice a day under calm conditions and as often as needed on windy days when winds are less than 25 miles per day or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.
- c. Treat any area that will be exposed for extended periods with a soil conditioner to stabilize soil or temporarily plant with vegetation.
- d. Wash mud-covered tires and under-carriages of trucks leaving construction sites.
- e. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud which would otherwise be carried off by trucks departing project sites.
- f. Securely cover loads of dirt with a tight fitting tarp on any truck leaving the construction sites to dispose of excavated soil.
- g. Cease grading during periods when winds exceed 25 miles per hour.
- h. Provide for permanent sealing of all graded areas, as applicable, at the earliest practicable time after soil disturbance.

AQ-2 All contractors shall:

- a. Maintain construction equipment in peak operating condition so as to reduce operation emissions.
- b. Use low-sulfur diesel fuel in all equipment.
- c. Use electric equipment whenever practicable.
- d. Shut off engines when not in use.

7.5.3.3 Level of Significance After Mitigation

It is expected that even with the above-stated mitigation measures, construction impacts associated with grading and excavation would result in significant, unavoidable air quality impacts. These unavoidable impacts are expected as a result of particulate emissions associated with excavation activities.

7.5.4 ALTERNATIVE B-10 MODIFIED

7.5.4.1 Impacts

Impact

7.5.4-1 *Construction-related air quality emissions would result in significant impacts on a daily and quarterly basis.*

Construction-Related Air Quality Emissions

Construction impacts may be regional or local and include (1) airborne dust from demolition, grading, excavation, and dirt hauling; and (2) gaseous emissions from the use of heavy equipment, delivery, and dirt hauling trucks, employee vehicles, and paints and coatings. Regional pollutants, such as ozone, are those where emissions from many sources combine in the atmosphere and impact areas far removed from the emission sources. Local pollutants are those where the impacts occur very close to the source, such as carbon monoxide or large particulate matter (fugitive dust) that settles in the vicinity of the source and does not become airborne.

Because of the similarities in the development assumptions for both the B-10 Modified Alternative and the B-4 Alternative, the latter which was the primary project evaluated in the GPA/ZC EIR 589, the assumptions set forth for the B-4 Alternative are used in this air quality assessment for the B-10 Modified Alternative. Implementation of the B-10 Modified Alternative is projected to take approximately 20 to 25 years to be fully built out and would be developed in seven grading phases (over 19 years) and eight construction phases.

Both construction grading and operation emissions were analyzed with the California Air Resources Board model, URBEMIS2002. This computer model estimates both construction and operational emissions associated with the specific land uses associated with a project, including grading based on the total acreage and the time frame in which grading would occur. The model uses current California Air Resources Board emission factors for automobile and truck emissions and EPA emission factors for equipment emissions and fugitive dust emissions. The model is approved for use on all projects in the South Coast Air Basin. Because the URBEMIS estimates of worker trips and truck trips are based on average construction requirements for total land uses in the project, the worker and truck trip estimates were based on assumed needs in 2014 and include worker trips and truck trips for other activities besides grading. With respect to maximum daily construction emissions during the highest phase of proposed development, Alternative B-10 Modified is expected to generate 1,435 pounds per day (lbs/day) of carbon monoxide (SCAQMD daily significance threshold is 550 lbs/day), 1,417 lbs/day of volatile organic compounds (the threshold is 75 lbs/day), 1,051 lbs/day of oxides of nitrogen (the threshold is 100 lbs/day), and 12,085 lbs/day of particulate matter (the threshold is 150 lbs/day). With respect to quarterly construction emissions, Alternative B-10 Modified is expected to generate 49.7 tons per quarter of carbon monoxide (SCAQMD daily threshold is 24.75 tons per quarter), 46.26 tons per quarter of volatile organic compounds (the threshold is 2.5 tons per quarter), 34.69 tons per quarter of oxides of nitrogen (the threshold is 2.5 tons per quarter), and

398.8 tons per quarter of particulate matter (the threshold is 6.75 tons per quarter). Because the region is in non-attainment for ozone, CO, and NO₂, and project-related increases of these pollutants are above SCAQMD thresholds, operation of Alternative B-10 Modified would result in a significant cumulative air quality impact for CO, NO_x, and ROG (an ozone precursor).

Grading and Excavation

Grading concepts described in the GPA/ZC EIR 589, most specifically for the B-4 Alternative, were developed by EDAW. These concepts were used by the civil engineering firm of Huit-Zollars, Inc. to produce cut and fill quantities, as measured between the proposed landform alterations and existing terrain. The analysis was conducted at varying scales between 1"=200' and 1"= 400' (depending on the size and required detail for the planning area). The raw data was analyzed for adjustments in elevation to allow for the balancing between mass excavation and mass fills for each planning area. The data was also reviewed by the geotechnical consultant for feasibility including the estimations of quantities associated with the removal, replacement, and re-compaction of low-density materials; the stabilization of slopes and landslides, as required, and other buttressing, over-excavation, and remedial work estimated to construct the project in accordance with the County's current standards of practice. This information was also used to determine construction equipment and construction employee requirements. Because the B-10 Modified Alternative is expected to require similar amounts of cut and fill grading when compared to Alternative B-4, these assumptions are used in this EIS.

Alternative B-10 Modified would require approximately 288,461,000 cubic yards (cy) of cut and fill grading, inclusive of remedial grading. Of this amount, 107,957,000 cubic yards of soil movement are expected to occur in one phase, resulting in an average of 26,989,250 cy in the year. Assuming 22 workdays per month, this would average 102,232 cy per day. During each development phase, all soil would be balanced (retained) within the development footprint of the alternative. Therefore, the model assumes no on-road truck travel.

SCAQMD Rule 403, last amended April 2, 2004, governs fugitive dust emissions from construction projects. This rule sets forth a list of control measures that must be undertaken for any activity or man-made condition capable of generating fugitive dust to prevent, reduce, or mitigate fugitive dust emissions. The rule applies to all construction projects with a disturbed area of five or more acres. In addition, large projects, which are defined as active operations on property which contains in excess of 50 acres of disturbed surface area or any operation which exceeds a daily earthmoving or throughput volume of 5,000 cubic yards three times over a 365-day period, must file a fully executed Large Operation Notification Form (Form 403N) with the SCAQMD Executive Officer within 7 days of qualifying as a large operation under the rule. The rule sets forth a number of requirements regarding record keeping, as well as specific mitigation measures that must be contained in an approved dust-control plan. Recommended dust control measures are incorporated in the URBEMIS model. Because the B-10 Modified Alternative would exceed 50 acres and would move at least 5,000 cubic yards of dirt three or more times in a year during construction, this alternative would be required to file a 403N form.

SCAQMD Rule 402, Nuisance, also would apply to the B-10 Modified Alternative. Most of the fugitive dust associated with construction is comprised of particles larger than 10 microns in diameter. While these larger particles settle out quickly and do not cause health effects associated with the smaller sized particles (i.e., PM₁₀ and PM_{2.5}), they can damage plants and property sufficiently to qualify as a nuisance. Rule 402 prohibits visible dust emissions from extending beyond a project site's boundaries. The same mitigation measures used to control PM₁₀ would also effectively control the unwanted transmission of larger particles.

Sensitive Receptors

The California Air Resources Board has identified diesel particulate emissions as carcinogenic air toxics. Because much of the RMV Planning Area is remote from the nearest currently populated area, there are few identified sensitive receptors in the immediate vicinity of where most of the grading would occur. Sensitive receptors would include existing residents contiguous to the RMV Planning Area (e.g., Coto de Caza) and students and faculty at Tesoro High School. However, cancer risk is cumulative, based on lifetime exposure, and the California Air Resources Board has not set a safe level for exposure to diesel exhaust. Therefore, a receptor's exposure to any amount of diesel exhaust should be mitigated. Construction workers would be most at risk because of the large amount of diesel equipment that would be operating simultaneously. Workers should wear masks when working near diesel equipment or diesel trucks; all diesel equipment should be fitted with particulate traps.

Impact

7.5.4-2: *On a regional basis, operational air quality emissions would result in significant impacts, with the exception of sulfur oxides.*

Regional Operational Impacts

The primary source of operational emissions would be vehicle travel; a small amount of gaseous emissions would occur from use of natural gas and other area sources. There would also be some indirect emissions from electricity usage. Landscaping emissions are principally those associated with garden equipment (such as mowers, leaf blowers, etc.) while emissions from consumer products are principally generated by activities associated with typical residential and commercial land uses (e.g., hair sprays, household and industrial cleaning solvents, floor cleaners and waxes, colognes, and deodorants).

Year 2025 + Alternative B-10 Modified Buildout

This scenario assumes buildout of the Alternative B-10 Modified development plus cumulative growth in the study area assumed for the traffic analysis through 2025. Table 7.5-2 identifies the operational air quality emissions associated with this scenario. As shown in this table, operation of Alternative B-10 Modified would result in significant emissions of all pollutants except sulfur oxides on a regional scale based on SCAQMD thresholds of significance. However, because of fleet turnover to vehicles with already implemented emission controls and because of the implementation of already adopted but future effective vehicle emissions controls, total emissions in 2025 would be considerably lower than they would be if the alternative were operative in 2005.

Local Operational Impacts

The purpose of the local analysis is to determine if Alternative B-10 Modified could cause or contribute to CO hot spots (defined as locations where the CO concentrations exceed a state or federal CO standard). Because of carbon monoxide controls that have been implemented in the past decade, the number of potential CO hotspots has been greatly reduced throughout the South Coast Air Basin. It is expected that potential hotspots will continue to decline in the foreseeable future as background CO levels decrease. The entire South Coast Air Basin has been an attainment area for all 1-hour CO standards for more than five years; therefore, the 8-hour CO standards are the critical standards for assessing hotspots. No CO standard has been exceeded in Orange County since 1992; and the SCAQMD's 2003 Air Quality Management Plan demonstrates attainment of all standards throughout the South Coast Air

Basin, as well as continued maintenance of that status. Background CO levels are projected to decline until 2010 and remain stable thereafter despite continued projected population and traffic growth.

**TABLE 7.5-2
YEAR 2025 + PROJECT BUILDOUT
OPERATIONAL EMISSIONS (Pounds per Day)**

Source Category	Pollutant				
	CO	VOC	NO _x	SO _x	PM ₁₀
Traffic Emissions	4,073	495	330	10	1,434
Consumer Products and Landscaping	62	691	1	2	0
Natural Gas Emissions	73	13	173	2	0
Total Project Emissions	4,208	1,199	504	14	1,434
SCAQMD Significance Thresholds for Operation	550	55	55	150	150
Significant	Yes	Yes	Yes	No	Yes
Source: The Ranch Plan EIR 589					

The SCAQMD requires that current or projected background CO concentrations at the air monitoring station nearest a project be added to modeled concentrations. This addition is intended to provide an extra measure of safety to account for any amount of carbon monoxide that might be in the ambient air. In general, this addition is very conservative because CO dissipates within a few hundred feet from where it is emitted. Because cumulative traffic from sources other than Alternative B-10 Modified is included in the traffic analysis, the modeling accounts for almost all the CO that could be present.

The background concentration is indicative of conditions near the monitoring station, which is in an area of high traffic volume, not where the alternative would have the greatest impact. CO concentrations are projected to continue to decline until at least 2010; and the SCAQMD has generated a table of estimated future 1-hour and 8-hour CO concentrations at each of its monitoring stations that accounts for this decrease through the year 2020. In this analysis, 2025 traffic is used with Year 2020 projected background levels. Because background carbon monoxide concentrations have declined substantially, actual 2002 CO concentrations are much lower than those predicted by the SCAQMD for that year. Predicted 2020 concentrations may be similarly overstated.

Existing traffic volumes and future traffic volumes (Alternative B-10 Modified buildout) were used to determine the potential for future hotspots occurring as a result of the alternative. All of the future traffic projections include the cumulative traffic impacts resulting from related projects that may be built in the vicinity of the RMV Planning Area between now and 2025.

The following intersections were modeled with California Air Resources Board's Caline 4 model: Marguerite Parkway at Avery Parkway, I-5 southbound ramps at Avenida Pico, and SR-241 southbound ramps at Oso Parkway. Intersections were selected for modeling on the basis of whether they currently exist, would experience relatively heavy traffic from both the project and other sources, and would experience a level of service (LOS) F when both cumulative traffic and traffic from the project are combined. The SCAQMD has determined that intersections operating at LOS C or better would not exceed existing CO standards. Decreases in CO concentrations at

some intersections between existing levels and those in 2006 are the result of decreases in per-vehicle emissions resulting from fleet turnover with new, better-controlled vehicles.

Eight-hour concentrations were assumed at 70 percent of the modeled 1-hour concentration, consistent with Caltrans, the California Air Resources Board, and SCAQMD guidelines. Emission factors were those contained in EMFAC 2002, V2.2 issued September 23, 2002. Receptors were set at three meters from the roadway edges. A breakdown of 1-hour and 8-hour CO concentrations within these intersections for year 2005 is provided in Table 7.5-3. The table shows that no intersections would exceed the strictest CO standard (i.e., the state 8-hour standard of 9.0 ppm) even after adding background concentrations.

For year 2025, the same intersections were modeled with California Air Resources Board's Caline 4 model. A breakdown of 1-hour and 8-hour CO concentrations within these intersections is provided in Table 7.5-4. The table shows that no intersections would exceed the strictest CO standard (i.e., the state 8-hour standard of 9.0 ppm) even after adding background concentrations. Emission levels are forecast to be lower in 2025 because of new vehicle emission controls. Therefore, there would be no significant adverse impacts on local air quality with implementation of the B-10 Modified Alternative.

Odors

There would be some odors, such as from cooking and gardening, associated with residential uses, but those odors are not considered significant on a regional scale. Local odors would be no different than in any other residential area with supporting services and would not be significant. The proposed land uses would not significantly contribute to background air toxics.

Air Quality Management Plan Consistency

Consistency with an Air Quality Management Plan requires that the project be consistent with the approved Air Quality Management Plan/State Implementation Plan for the region that provides controls sufficient to attain the national ozone standards by the required attainment date. The Air Quality Management Plan is based on growth projections agreed to the five affected counties and SCAG. If the total population accommodated by a new project, together with the existing population and the projected population from all other planned projects in the subarea, does not exceed the growth projections for that subarea incorporated in the most recently adopted Air Quality Management Plan, the completed project is consistent with the Air Quality Management Plan. The entire County of Orange is considered to be one subarea. The Air Quality Management Plan is region-wide and accounts for, and offsets, cumulative increases in emissions that are the result of anticipated growth throughout the region. Because implementation of Alternative B-10 Modified would not exceed growth projections for the subarea, the alternative is considered consistent with the Air Quality Management Plan.

**TABLE 7.5-3
ALTERNATIVE B-10 MODIFIED:
CARBON MONOXIDE CONCENTRATIONS AT IMPACTED INTERSECTIONS (IN PPM) IN 2005**

Intersection	Time	Monitored CO ^a	Modeled Existing Traffic	Adjusted CO Existing Traffic	Projected CO (2005) ^b	Modeled CO Cumulative Without Project	Adjusted CO Cumulative Without Project	Modeled CO Cumulative With Project	Adjusted CO Cumulative With Project ^c
1-Hour									
Marguerite Parkway/Avery Parkway	A.M.	6.0	4.7	10.7	6.0	1.1	7.1	1.1	7.1
I-5 SB Ramps/Avenida Pico	A.M.	6.0	4.9	10.9	6.0	1.1	7.1	1.1	7.1
SR-241 SB Ramp/Oso Parkway	A.M.	6.0	3.3	9.3	6.0	0.6	6.6	1.2	7.2
Marguerite Parkway/Avery Parkway	P.M.	6.0	6.3	12.3	6.0	1.3	7.3	1.3	7.3
I-5 SB Ramps/Avenida Pico	P.M.	6.0	5.9	11.9	6.0	1.3	7.3	1.4	7.5
SR-241 SB Ramps/Oso Parkway	P.M.	6.0	3.1	9.1	6.0	0.6	6.6	1.7	7.7
8-Hour									
Marguerite Parkway/Avery Parkway	A.M.	3.1	2.80	5.90	3.1	0.77	3.87	0.77	3.87
I-5 SB Ramps/Avenida Pico	A.M.	3.1	3.43	6.53	3.1	0.77	3.87	0.77	3.87
SR-241 Ramps/Avenida Pico	A.M.	3.1	2.31	5.41	3.1	0.42	3.52	0.84	3.94
Marguerite Parkway/Avery Parkway	P.M.	3.1	4.41	7.51	3.1	0.91	4.01	0.91	4.01
I-5 SB Ramps/Avenida Pico	P.M.	3.1	4.13	7.23	3.1	0.91	4.01	0.98	4.08
SR-241 SB Ramps/Oso Parkway	P.M.	3.1	2.17	5.27	3.1	0.42	3.52	1.19	4.29
<p>a. CO concentrations measured in 2002 at SRA 19 monitoring station b. SCAQMD projected concentration in 2020 (Source: www.AQMD.org) c. The project would not have a significant impact because no concentration would exceed the most stringent 1-hour CO standard of 20 ppm or the most stringent 8-hour standard of 9 ppm.</p>									
Source: The Ranch Plan EIR 589									

**TABLE 7.5-4
ALTERNATIVE B-10 MODIFIED:
CARBON MONOXIDE CONCENTRATIONS AT IMPACTED INTERSECTIONS (IN PPM) IN 2025**

Intersection	Time	Monitored CO ^a	Modeled Existing Traffic	Adjusted CO Existing Traffic	Projected CO (2025) ^b	Modeled CO Cumulative Without Project	Adjusted CO Cumulative Without Project	Modeled CO Cumulative With Project	Adjusted CO Cumulative With Project ^c
1-Hour									
Marguerite Parkway/Avery Parkway	A.M.	3.0	4.7	7.7	5.1	1.1	6.2	1.1	6.2
I-5 SB Ramps/Avenida Pico	A.M.	3.0	4.9	7.9	5.1	1.1	6.2	1.1	6.2
SR-241 SB Ramp/Oso Parkway	A.M.	3.0	3.3	6.3	5.1	0.6	5.7	1.2	6.3
Marguerite Parkway/Avery Parkway	P.M.	3.0	6.3	9.3	5.1	1.3	6.4	1.3	6.8
I-5 SB Ramps/Avenida Pico	P.M.	3.0	5.9	8.9	5.1	1.3	6.4	1.4	6.5
SR-241 SB Ramps/Oso Parkway	P.M.	3.0	3.1	6.1	5.1	0.6	5.6	1.7	6.8
8-Hour									
Marguerite Parkway/Avery Parkway	A.M.	3.6	2.80	6.40	1.8	0.77	2.57	0.77	2.57
I-5 SB Ramps/Avenida Pico	A.M.	3.6	3.43	7.03	1.8	0.77	2.57	0.77	2.57
SR-241 Ramps/Avenida Pico	A.M.	3.6	2.31	5.91	1.8	0.42	2.22	0.84	2.64
Marguerite Parkway/Avery Parkway	P.M.	3.6	4.41	8.01	1.8	0.91	2.71	0.91	2.71
I-5 SB Ramps/Avenida Pico	P.M.	3.6	4.13	7.73	1.8	0.91	2.71	0.98	2.78
SR-241 SB Ramps/Oso Parkway	P.M.	3.6	2.17	5.77	1.8	0.42	2.22	1.19	2.99
<p>a. CO concentrations measured in 2002 at SRA 19 monitoring station b. SCAQMD projected concentration in 2020 (Source: www.AQMD.org) c. The state CO standards of 20 ppm (1-hour) and 9.0 ppm (8-hour) are the most stringent CO standards. A project would result in a significant impact if it caused a standard to be exceeded in an area that presently does not exceed that standard.</p>									
Source: The Ranch Plan EIR 589									

7.5.4.2 Mitigation Program

Project Design Features

PDF 4.7-1 The project has been designed to minimize the need for external vehicular trips through the provision of residential, commercial, office, and institutional uses within the boundaries of the project site, thereby reducing vehicular air emissions.

Standard Conditions and Regulations

Construction: Fugitive Dust Emissions (PM₁₀)

Alternative B-10 Modified would be considered a “large project” under SCAQMD Rule 403 and the applicant would be required to file a fugitive dust emissions control notice with the SCAQMD. The SCAQMD must determine that a project is implementing controls, as specified by the Rule, prior to the commencement of grading. The Rule 403 Implementation Handbook contains compliance guidelines for large operations and suggests dust control measures for incorporation into the fugitive dust emissions control plans, where applicable. Control measures are incorporated in the URBEMIS model. SCAQMD Rule 402, Nuisance, also would apply to the B-10 Modified Alternative. Rule 402 prohibits visible dust emissions from extending beyond a project site’s boundaries.

SC 4.7-1 All construction contractors shall comply with South Coast Air Quality Management District (SCAQMD) regulations, including Rule 403, Fugitive Dust, and Rule 402, Nuisance. All grading (regardless of acreage) shall apply best available control measures for fugitive dust in accordance with Rule 403. To ensure that the project is in full compliance with applicable SCAQMD dust regulations and that there is no nuisance impact off the site, the contractor would implement each of the following:

- a. Moisten soil not more than 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from traveling more than 100 feet in any direction.
- b. Apply chemical stabilizers to disturbed surface areas (i.e., completed grading areas) within five days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.
- c. Water excavated soil piles hourly or cover with temporary coverings.
- d. Water exposed surfaces at least twice a day under calm conditions. Water as often as needed on windy days when winds are less than 25 miles per day or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.
- e. Wash mud-covered tires and under-carriages of trucks leaving construction sites.

- f. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing from project sites.

Construction: ROC and NO_x Emissions

- SC 4.7-2 The applicant shall comply with the following measures, as feasible, to reduce NO_x and ROC from heavy equipment.
- a. Turn equipment off when not in use for more than five minutes.
 - b. Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications.
 - c. Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.

Mitigation Measures

Construction: Diesel Emissions

- MM 4.7-1 In order to reduce diesel fuel engine emissions, the project applicant shall require that all construction bid packages include a separate "Diesel Fuel Reduction Plan." This plan shall identify the actions to be taken to reduce diesel fuel emissions during construction activities (inclusive of grading and excavation activities). Reductions in diesel fuel emissions can be achieved by measures including, but not limited to, the following: a) use of alternative energy sources, such as compressed natural gas or liquefied petroleum gas, in mobile equipment and vehicles; b) use of "retrofit technology," including diesel particulate traps, on existing diesel engines and vehicles; and c) other appropriate measures. Prior to the issuance of a grading permit, the Diesel Fuel Reduction Plan shall be filed with the County of Orange. The Diesel Fuel Reduction Plan shall include the following provisions:
- a. All diesel fueled off-road construction equipment shall be California Air Resources Board (California Air Resources Board) certified or use post-combustion controls that reduce pollutant emissions to the same level as California Air Resources Board certified equipment. California Air Resources Board certified off-road engines are engines that are three years old or less and comply with lower emission standards. Post-combustion controls are devices that are installed downstream of the engine on the tailpipe to treat the exhaust. These devices are now widely used on construction equipment and are capable of removing over 90 percent of the PM10, carbon monoxide, and volatile organic compounds from engine exhaust, depending on the specific device, sulfur content of the fuel, and specific engine. The most common and widely used post-combustion control devices are particulate traps (i.e., soot filters), oxidation catalysts, and combinations thereof.
 - b. All diesel fueled on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used or older vehicles shall

use post-combustion controls that reduce pollutant emissions to the greatest extent feasible.

- c. The effectiveness of the latest diesel emission controls is highly dependant on the sulfur content of the fuel. Therefore, diesel fuel used by on-road and off-road construction equipment shall be low sulfur (>15 ppm) or other alternative low polluting diesel fuel formulation such as PuriNOx™ or Amber363. Low sulfur diesel fuel shall be required by existing regulations after the year 2007 and it is already being produced and sold as the regulation is phased in.

Local and Regional Operational Impacts

Traffic mitigation measures incorporated into the alternative would reduce local impacts to less than significant levels. No additional feasible mitigation is available to reduce regional operational impacts to a less than significant level.

7.5.4.3 Level Of Significance After Mitigation

As shown in Table 7.5-5, the recommended control measures would substantially reduce short-term, construction-related PM₁₀ emissions. However, short-term, construction-related emissions of NO_x, CO, VOC, and PM₁₀ during the peak construction period would remain significant after mitigation. Heavy-duty equipment emissions are assumed with today’s emissions standards. However, both the California Air Resources Board and the EPA are proposing new controls on off-road diesel equipment that should go into effect prior to the peak construction period. Equipment would be required to comply with all control regulations in force at that time. NO_x emissions identified in the table represent a worst-case assumption.

**TABLE 7.5-5
PEAK DAILY CONSTRUCTION EMISSIONS AFTER MITIGATION
(In Pounds Per Day)**

Source Category	Pollutant				
	CO	VOC	NO _x	SO _x	PM ₁₀
Total Daily Emissions Before Mitigation	1,435	170	1,049	0	12,085
Particulate Emissions Reduced					11,007
Maximum Daily Construction Emissions After Mitigation	1,412	169	1,049	0	1,078
SCAQMD Significance Thresholds for Construction	550	75	100	150	150
Significant	Yes	Yes	Yes	No	Yes
Source: The Ranch Plan EIR 589					

With respect to local operational air emissions, no additional mitigation beyond that assumed in the traffic analysis is assumed for traffic emissions. Alternative B-10 Modified would not result in significant local operational air quality effects. Long-term operational emissions of CO, VOC, NO_x, and PM₁₀ would remain significant and unavoidable.

7.5.5 ALTERNATIVE B-12

7.5.5.1 Impacts

Impact

7.5.5-1 *Construction-related air quality emissions would result in significant impacts on a daily and quarterly basis.*

Construction-Related Air Quality Emissions

Alternative B-12 is very similar to Alternative B-10 Modified. It would allow for the development of a maximum of 14,000 residential units, with a similar mix of single-family attached and detached units, multi-family, and the 6,000 senior housing units (including both single-family units and apartments). This alternative is expected to provide similar employment use when compared to Alternative B-10 Modified. Because of similar grading and construction assumptions between Alternative B-12 and Alternative B-10 Modified, the findings for Alternative B-10 Modified would also be applicable for this alternative. Emissions of all pollutants except sulfur oxides would be significant, based on the thresholds of significance set forth in this EIS. Because the region is in non-attainment for ozone, CO, and NO₂, and project-related increases of these pollutants are above SCAQMD thresholds, operation of Alternative B-12 would result in a significant cumulative air quality impact for CO, NO_x, and ROG (an ozone precursor).

Impact

7.5.5-2: *On a regional basis, operational air quality emissions would result in significant impacts, with the exception of sulfur oxides.*

Regional Operational Impacts

The primary source of operational emissions would be vehicle travel; a small amount of gaseous emissions would occur from use of natural gas and other area sources. There would also be some indirect emissions from electricity usage. Landscaping emissions are principally those associated with garden equipment (such as mowers, leaf blowers, etc.) while emissions from consumer products are principally generated by activities associated with typical residential and commercial land uses (e.g., hair sprays, household and industrial cleaning solvents, floor cleaners and waxes, colognes, and deodorants).

The *Year 2025 + Alternative B-12 Buildout* scenario assumes buildout of the alternative plus cumulative growth in the study area assumed for the traffic analysis through 2025. Operation of Alternative B-12 would result in significant emissions of all pollutants except sulfur oxides on a regional scale based on SCAQMD thresholds of significance. However, because of fleet turnover to vehicles with already implemented emission controls and because of the implementation of already adopted but future effective vehicle emissions controls, total emissions in 2025 would be considerably lower than they would be if the alternative were operative in 2005.

Local Operational Impacts

Existing traffic volumes and future traffic volumes are used to determine the potential for future hotspots occurring as a result of the alternative. All of the future traffic projections include the cumulative traffic impacts resulting from related projects that may be built in the vicinity of the RMV Planning Area between now and 2025. No intersections would exceed the strictest CO

standard (i.e., the state 8-hour standard of 9.0 ppm). Therefore, there would be no significant adverse impacts on local air quality with implementation of the Alternative B-12.

Odors

There would be some odors, such as from cooking and gardening, associated with residential uses, but those odors are not considered significant on a regional scale. Local odors would be no different than in any other residential area with supporting services and would not be significant. The proposed land uses would not significantly contribute to background air toxics.

Air Quality Management Plan Consistency

Consistency with an Air Quality Management Plan requires that the project be consistent with the approved Air Quality Management Plan/State Implementation Plan for the region that provides controls sufficient to attain the national ozone standards by the required attainment date. The Air Quality Management Plan is based on growth projections agreed to the five affected counties and SCAG. If the total population accommodated by a new project, together with the existing population and the projected population from all other planned projects in the subarea, does not exceed the growth projections for that subarea incorporated in the most recently adopted Air Quality Management Plan, the completed project is consistent with the Air Quality Management Plan. The entire County of Orange is considered to be one subarea. The Air Quality Management Plan is region-wide and accounts for, and offsets, cumulative increases in emissions that are the result of anticipated growth throughout the region. Because implementation of Alternative B-12 would not exceed growth projections for the subarea, the alternative is considered consistent with the Air Quality Management Plan.

7.5.5.2 Mitigation Program

The mitigation program identified for Alternative B-10 Modified would also be applicable for Alternative B-12. No additional mitigation is required as part of the SAMP.

7.5.5.3 Level Of Significance After Mitigation

As addressed for the B-10 Modified Alternative, the recommended control measures would substantially reduce short-term, construction-related PM₁₀ emissions associated with Alternative B-12. However, short-term, construction-related emissions of NO_x, CO, VOC, and PM₁₀ during the peak construction period would remain significant after mitigation. With respect to local operational air emissions, no additional mitigation beyond that assumed in the traffic analysis is assumed for traffic emissions. Alternative B-12 would not result in significant local operational air quality effects. Long-term operational emissions of CO, VOC, NO_x, and PM₁₀ would remain significant and unavoidable.

7.5.6 ALTERNATIVE A-4

7.5.6.1 Impacts

Impact

7.5.6-1 *Construction-related air quality emissions would result in significant impacts on a daily and quarterly basis.*

Construction-Related Air Quality Emissions

Alternative A-4 would provide the same level of development as Alternative B-10 Modified. However, permits to authorize discharge or fill in Waters of the U.S. would be processed on a project-by-project basis instead of under the SAMP process. This procedural changes related to Waters of the U.S. would not affect the air quality findings set forth for Alternative B-10 Modified. As such, the air quality impacts for both alternatives would be the same. As noted for Alternative B-10 Modified, emissions of all pollutants except sulfur oxides, would be significant, based on the thresholds of significance set forth in this EIS. Because the region is in non-attainment for ozone, CO, and NO₂, and project-related increases of these pollutants are above SCAQMD thresholds, operation of Alternative A-4 would result in a significant cumulative air quality impact for CO, NO_x, and ROG (an ozone precursor).

Impact

7.5.6-2: *On a regional basis, operational air quality emissions would result in significant impacts, with the exception of sulfur oxides.*

Regional Operational Impacts

The primary source of operational emissions would be vehicle travel; a small amount of gaseous emissions would occur from use of natural gas and other area sources. There would also be some indirect emissions from electricity usage. Emissions of all pollutants, except sulfur oxides, would be significant based on SCAQMD thresholds of significance.

Local Operational Impacts

As noted for the B-10 Modified Alternative, no intersections would exceed the strictest CO standard (i.e., the state 8-hour standard of 9.0 ppm). Therefore, there would also be no significant adverse impacts on local air quality with implementation of Alternative A-4.

Odors

There would be some odors, such as from cooking and gardening, associated with residential uses, but those odors are not considered significant on a regional scale. Local odors would be no different than in any other residential area with supporting services and would not be significant. The proposed land uses would not significantly contribute to background air toxics.

Air Quality Management Plan Consistency

Consistency with an Air Quality Management Plan requires that the project be consistent with the approved Air Quality Management Plan/State Implementation Plan for the region that provides controls sufficient to attain the national ozone standards by the required attainment date. Because implementation of Alternative A-4 would not exceed growth projections for the subarea, the alternative is considered consistent with the Air Quality Management Plan.

7.5.6.2 Mitigation Program

The mitigation program identified for Alternative B-10 Modified would also be applicable for Alternative A-4. No additional mitigation is required as part of the SAMP.

7.5.6.3 Level Of Significance After Mitigation

As addressed for the B-10 Modified Alternative, the recommended control measures would substantially reduce short-term, construction-related PM₁₀ emissions associated with Alternative A-4. However, short-term, construction-related emissions of NO_x, CO, VOC, and PM₁₀ during the peak construction period would remain significant after mitigation. With respect to local operational air emissions, no additional mitigation beyond that assumed in the traffic analysis is assumed for traffic emissions. Alternative A-4 would not result in significant local operational air quality effects. Long-term operational emissions of CO, VOC, NO_x, and PM₁₀ would remain significant and unavoidable.

7.5.7 ALTERNATIVE A-5

7.5.7.1 Impacts

Impact

7.5.7-1 *Construction-related air quality emissions would result in significant impacts on a daily and quarterly basis.*

Construction-Related Air Quality Emissions

Under Alternative A-5, development would occur on approximately 8,000 acres (35 percent) of the 22,815-acre RMV Planning Area. Approximately 14,824 acres (65 percent) of the RMV Planning Area would be in some form of open space. It is estimated that Alternative A-5 could accommodate approximately 2,500 to 3,000 dwelling units. Alternative A-5 assumes total avoidance of state and federal threatened/endangered species (new development would be limited to those portions of RMV Planning Area that are not occupied by state or federally listed species) and regulated waters, access would be dependent on existing arterial highways and the ranch road network (i.e., the existing dirt/gravel roads) with surfacing limited to existing road widths. Because substantially less development would occur associated with this alternative and the avoidance of all state and federal threatened/endangered species is required, this alternative assumes less disturbance activities. However, it is anticipated that emissions of all pollutants except sulfur oxides would be significant, based on the thresholds of significance set forth in this EIS. Because the region is in non-attainment for ozone, CO, and NO₂, and project-related increases of these pollutants are above SCAQMD thresholds, operation of Alternative A-5 would result in a significant cumulative air quality impact for CO, NO_x, and ROG (an ozone precursor).

Impact

7.5.7-2: *On a regional basis, operational air quality emissions would result in significant impacts, with the exception of sulfur oxides.*

Regional Operational Impacts

The primary source of operational emissions would be vehicle travel; a small amount of gaseous emissions would occur from use of natural gas and other area sources. Although the A-5 Alternative would generate less vehicular air emissions than the previously addressed

alternatives, emissions of all pollutants, except sulfur oxides, would be significant based on SCAQMD thresholds of significance.

Local Operational Impacts

As noted for the other alternatives, all which would generate more traffic than Alternative A-5, no intersections would exceed the strictest CO standard (i.e., the state 8-hour standard of 9.0 ppm). Therefore, there would also be no significant adverse impacts on local air quality with implementation of Alternative A-5.

Odors

There would be some odors, such as from cooking and gardening, associated with residential uses, but those odors are not considered significant on a regional scale. Local odors would be no different than in any other residential area with supporting services and would not be significant. The proposed land uses would not significantly contribute to background air toxics.

Air Quality Management Plan Consistency

Consistency with an Air Quality Management Plan requires that the project be consistent with the approved Air Quality Management Plan/State Implementation Plan for the region that provides controls sufficient to attain the national ozone standards by the required attainment date. Because implementation of Alternative A-5 would not exceed growth projections for the subarea, the alternative is considered consistent with the Air Quality Management Plan.

7.5.7.2 Mitigation Program

The mitigation program identified for Alternative B-10 Modified would also generally be applicable for Alternative A-5. However, unlike the B-10 Modified and B-12 Alternatives, PDF 4.7-1 would not be applicable. No additional mitigation is required as part of the SAMP.

7.5.7.3 Level Of Significance After Mitigation

As addressed for the B-10 Modified Alternative, the recommended control measures would substantially reduce short-term, construction-related PM₁₀ emissions associated with Alternative A-5. However, short-term, construction-related emissions of NO_x, CO, VOC, and PM₁₀ during the peak construction period would remain significant after mitigation. With respect to local operational air emissions, no additional mitigation beyond that assumed in the traffic analysis is assumed for traffic emissions. Alternative A-5 would not result in significant local operational air quality effects. Long-term operational emissions of CO, VOC, NO_x, and PM₁₀ would remain significant and unavoidable.