CHAPTER 6

ALTERNATIVES

6.0 ALTERNATIVES

6.1 INTRODUCTION

This EIR provides a discussion of alternatives to the proposed project as required by CEQA. According to the CEQA guidelines, alternatives should include realistic measures to attain the basic objectives of the proposed project and provide means for evaluating the comparative merits of each alternative (CEQA, Guidelines, § 15126.6(a)). In addition, though the range of alternatives must be sufficient to permit a reasoned choice, they need not include every conceivable project alternative (CEQA Guidelines §15126.6(a)). The key issue is whether the selection and discussion of alternatives fosters informed decision making and public participation. An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (CEQA Guidelines, § 15126.6(f)(3)).

6.2 DEVELOPMENT OF ALTERNATIVES

6.2.1 METHODOLOGY FOR DEVELOPMENT OF ALTERNATIVES

The alternatives typically included in CEQA documents for proposed SCAQMD rules, regulations, or plans are developed by breaking down the project into distinct components (e.g., emission limits, compliance dates, applicability, exemptions, etc.) and varying the specifics of one or more of the components. Different compliance approaches that generally achieve the objectives of the project may also be considered as project alternatives.

The possible alternatives to the proposed 2007 AQMP are limited by the nature of the project. The objectives of the 2007 AQMP is to demonstrate attainment of the federal PM2.5 ambient air quality standard by 2015 and the federal eight-hour ozone standard by 2024 while making expeditious progress toward attainment of state standards. Consequently, all viable project alternatives must demonstrate attainment of the federal PM2.5 and eight-hour ozone standards, and include the remaining 2003 AQMP Control Measures, and the New Control Measures identified in the 2007 AQMP.

Similar to previous AQMPs, the differences among the alternatives included and analyzed in this EIR appear mainly in the later years of the AQMP when implementation of potential long-term control measures (including “blackbox” measures) is scheduled to occur. Ozone control strategies rely primarily on reducing emissions of VOC and/or NOx. There is no defined strategy or “path” to follow in federal or state guidance. In previous AQMPs, a combined NOx and VOC control strategy was proposed and implemented with the expressed goal of attaining the one-hour ozone standard while reducing NOx levels to assure attainment of the PM10 standard. The control strategy is usually defined after reviewing an ozone isopleth analysis that maps ozone as a function of VOC and NOx reductions. Unlike previous AQMPs, the 2007 AQMP relies more heavily on NOx emission reductions than VOC (also known as ROG) emission

reductions because reducing NOx emission provide a greater ozone reduction benefit than similar reductions of VOC emissions (see Figure 6-1).

The isopleth is created by simulating future year ozone concentrations under specified levels of emissions reductions. The output of the simulations is then plotted to generate a diagram that specifies future year ozone in terms of tonnage reductions of VOC and NOx. The isopleths are typically generated using "across the board" reductions of emissions that do not fully account for time and space considerations and specific source measures. As a consequence, the ozone isopleth analysis provides an educated road map to potential attainment and estimated emission reductions needed to demonstrate attainment of the ozone standard. As shown in Figure 6-1, heavy reliance on NOx emission reductions is the shortest path to attaining the eight-hour standard. Tonnage reductions of precursor emissions specified in the final control strategy will often differ from the target defined by the isopleth analysis, but not typically by a great amount.

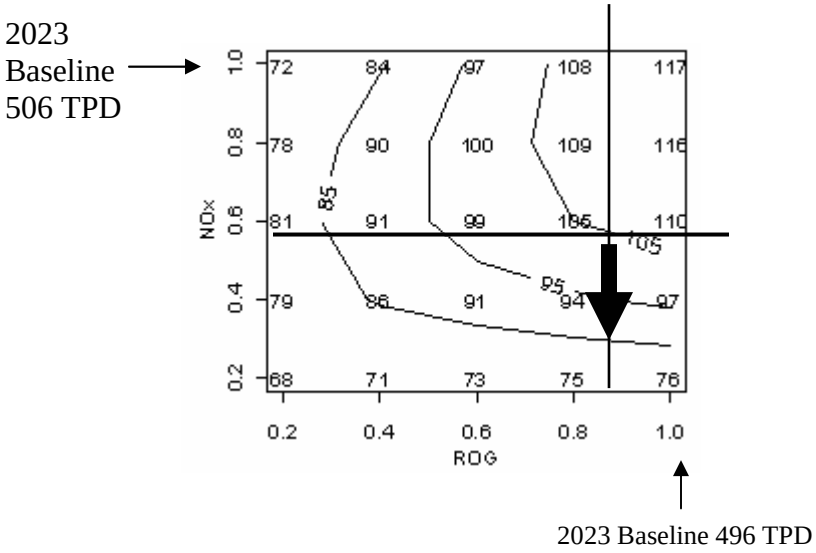

FIGURE 6-1
2007 AQMP Plan: NOx Heavy 2024
Eight-Hour Average Ozone Strategy
(parts per billion – ppb)

Development of the ozone attainment control strategy typically begins at the future year baseline emissions specified by the inventory. Reductions of VOC and/or NOx emissions are made based upon such issues as the extent of readily available controls, access to new technology as well as the cost of the control measure. In some instances, the path may be determined by the availability of off-the-shelf technology – essentially short-term measures that can be readily implemented. In other instances, development of new technology that will reduce VOCs and potentially some toxic compounds may present the most desired route to lowering ozone. In general, the key element in the

analysis is the future year starting levels of VOC and NOx emissions compared to the future year baseline (see Figure 6-1 for future baseline estimations).

The shortest routes for ozone control are usually a NOx or VOC only approach. In reality, this premise is typically modified to a NOx "heavy" (i.e., more emphasis on NOx emission reductions) or VOC "heavy" (i.e., more emphasis of VOC emission reductions) control strategy. A combined approach is also viable, but may require additional net tonnages of both VOC and NOx.

6.2.2.1 LESS SOx REDUCTIONS; MORE NOx REDUCTIONS (2014)

If full SOx control is not achieved (due to challenges in controlling ocean-going marine vessels), additional NOx measures would be needed in order to attain the federal PM2.5 ambient air quality standard by 2014. An alternative scenario has ocean-going marine vessels achieving 80 percent of the targeted total SOx emission reductions (approximately 20 tons) from the burning of lower sulfur marine fuels. This would result in the need to offset the loss of approximately four TPD of SOx emissions by increasing NOx reductions by approximately 14 TPD.

This potential alternative could be achieved with fewer SOx emission reductions from marine vessels, e.g., requiring marine fuels to contain 0.2 percent sulfur content and that not every vessel would be using the 0.2 percent sulfur fuel. Additional NOx emission reductions could potentially be achieved by requiring greater NOx control retrofits on heavy-duty on-road mobile sources, off-road equipment, accelerated turnover of the existing legacy fleets, and/or greater penetration of these types mobile source retrofits. Specifically, for on-road heavy-duty vehicles, SCONRD-05 could result in an additional five tons/day of NOx emissions reduction if about 50 percent of the oldest, pre-2010 heavy-duty vehicles are targeted to be replaced or retrofitted to meet 2010 on-road NOx emission standards. This would be another five percent of the pre-2010 vehicles beyond the 15 percent targeted under control measure SCONRD-05 or about an additional 5,500 vehicles. Similarly, an additional 3,600 older, off-road equipment could be turnover to currently available Tier 3 engines, which could result in about another three to five tons/day of NOx emissions reductions. Marine main propulsion engine emissions could be reduced further through greater use of NOx control technologies such as slide valves, water emulsification, SCR, and sea-water scrubbing currently in use in Europe. This would result in about 3 tons/day of NOx reductions. Lastly, accelerated replacement of an additional 15,000 older, 2-stroke pleasure craft engines with newer 4-stroke engines could result in an additional one ton/day of NOx reductions and about 0.5 tons/day of direct PM emission reductions. Since these measures do not rely on known control technologies, but much more aggressive turnover of existing older vehicles and equipment, this approach is, therefore, considered to be technologically feasible, but at a greater cost.

This control option is not considered as a separate alternative because it relies on accelerating the implementation of some of the proposed NOx control approaches under Policy Option 1 or CARB's proposed mobile source control strategy that would be fully

achieved by 2023, as provided in the 2007 AQMP to demonstrate attainment of 8-hour ozone ambient air quality standard. Since this control option is similar to the 2007 AQMP, it is considered to be within the scope of the 2007 AQMP and analysis of a separate alternative is not considered to be necessary.

6.2.2 ALTERNATIVE EIGHT-HOUR OZONE CONTROL STRATEGIES

As part of its submittal to CARB and the U.S. EPA, the SCAQMD will seek a voluntary change of attainment designation status from "Severe-17" to "Extreme" non-attainment. The action will enable the development of a control strategy that will include "long-term measures" (including "blackbox" measures) that are expected to become available in the future. The long-term measures will enable additional emissions reductions to be targeted beyond those that are detailed in the control strategy. The eight-hour average ozone plan has been designed to take the shortest route to attainment through the NOx "heavy" approach. The impact of the PM2.5 control strategy and the net impacts of controls and fleet turnover from 2015 through 2023 place the starting point for further emissions reductions at levels lower than the projected 2023 baseline emissions of 496 tons per day (TPD) of VOC and 506 TPD of NOx.

The starting point for additional reductions to attain the eight-hour ozone standard are estimated at approximately 430 TPD for VOC and 290 TPD for NOx, and is represented as the crossing point of the solid lines in the isopleth (see Figure 6-1). Again, the shorted route to the 85 ppb contour line is a NOx heavy control strategy.

6.2.3 ALTERNATIVE PM2.5 CONTROL STRATEGIES

The PM2.5 control strategy is designed to maximize the SOx and directly emitted PM2.5 reductions, which are deemed most effective in reducing ambient PM2.5 concentrations based on modeling analysis. However, to attain PM2.5 standards, NOx reductions are clearly required prior to 2014. The difference between the CARB and SCAQMD strategies lies in the timing of implementing and extent of emissions reductions. The SCAQMD strategy requires approximately 70 TPD more NOx reductions by 2014 than the proposed project. The CARB strategy does not attain the PM2.5 standard. The commitment to attain the PM2.5 standard by 2015 places the greatest reductions of ozone precursors in the NOx category. Consequently, focusing on additional NOx controls is the preferred approach to attaining the eight-hour ozone standard in the Basin. Many NOx controls are commercially available and are undergoing refinement to improve efficiency. Low NOx burners, energy efficient heating systems (water and air) provide promise for residential and small- to medium-size industrial applications. Selective catalytic reduction (SCR) devices are being adapted to mobile sources including small IC engines, auxillary ship engines, and locomotives. Additionally, electrification or "amping" has become an alternative to hotelling for ships and idling restrictions with smart shutdown and startup technology is available for locomotives.

6.3 ALTERNATIVES REJECTED AS INFEASIBLE

In accordance with CEQA Guidelines §15126.6(c), a CEQA document should identify any alternatives that were considered by the lead agency, but were rejected as infeasible during the scoping process and briefly explain the reason underlying the lead agency's determination. Section 15126.6(c) also states that among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (1) failure to meet most of the basic project objectives; (2) infeasibility; or (3) inability to avoid significant environmental impacts.

6.3.1 NO PROJECT ALTERNATIVE (NO 2007 AQMP)

CEQA documents typically assume that the adoption of a no project alternative would result in no further action on the part of the project proponent or lead agency. For example, in the case of a proposed land use project such as a housing development, adopting the No Project Alternative terminates further consideration of that housing development or any housing development alternative identified in the associated CEQA document. In that case, the existing setting would remain unchanged.

The concept of taking no further action (and thereby leaving the existing setting intact) by adopting a No Project Alternative does not readily apply to an update of an already adopted and legally mandated plan such as the AQMP. Adopting a no project alternative for an update to the AQMP does not imply that no further action will be taken (i.e., halting implementation of the existing AQMP). The federal and state Clean Air Acts require the SCAQMD to revise and implement the AQMP in order to attain ambient air quality standards.

It should be noted that, except for air quality, there would only be incremental impacts on the existing environment if no further action is taken, as the control measures outlined in Table 6-1 would still be implemented. There would, however, be no further improvements in air quality if no emissions controls beyond those currently required are implemented. In fact air quality would be expected to deteriorate substantially if no further emission controls are implemented. The projected baseline air quality would represent a no further action scenario. Further all areas within the jurisdiction of the SCAQMD would not attain the federal PM2.5 or eight-hour ozone standards, and would not make further progress towards achieving the state standards, as required by the federal and state Clean Air Acts, respectively.

A no further action No Project Alternative, in the case of the AQMP, is not a legally viable alternative and will not be considered further. Consequently, the No Project Alternative presented in this EIR is the continued implementation of the remaining control measures from the 2003 AQMP, which would supposedly meet the one-hour ozone standard by 2010 reaching an emission level of 530 TPD of NOx. However, it would not sufficient to meet the PM2.5 or eight-hour ozone standard.

6.3.2 MORE (HEAVY) VOC REDUCTIONS ALTERNATIVE (2023)

The More VOC Reductions Alternative scenario would build upon the VOC "heavy" approach or more VOC reduction approach to ozone attainment. NOx levels are held at or nearly constant and attainment is dependent upon the reduction of VOC emissions, primarily in the areas of cleaner mobile sources, consumer products and lower VOC solvents. The VOC heavy approach is technically more uncertain, because it would require technology break through in formulations of solvents or consumer products, which are not currently available. One result of the strategy may be the development of potentially new toxic formulations; however, replacement of solvents with low VOC formulations tends to be less toxic than conventional solvents.

The initial scenario under this alternative called for a reduction of VOC emissions to 150 TPD level (while holding NOx at approximately 250 TPD); however, this total and two subsequent modeling attempts to reduce VOC further failed to demonstrate attainment of the eight-hour ozone standard. The effect of reducing VOC emissions to very low levels (e.g. the 100 TPD or less) is negated by the influence of natural biogenic VOC emissions. As a consequence, all simulations in the VOC "heavy" alternative failed to reach 84 ppb, falling short by about four percent (or 4 ppb) (see Figure 6-2). Thus, the more VOC Reductions Alternative cannot be considered a valid alternative to the 2007 AQMP because it would fail to achieve the federal eight-hour standard.

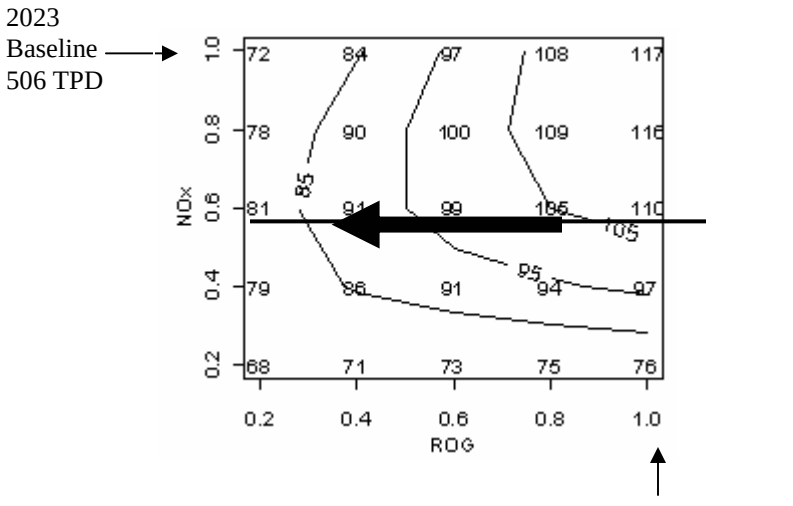

FIGURE 6-2

More or "Heavy" VOC Reductions Alternative
2024 8-Hour Average Ozone Strategy (ppb)

6.3.3 ALTERNATIVE PM2.5 ATTAINMENT DEMONSTRATION

Unlike ozone, the PM2.5 designation for the Basin is non-attainment and the Clean Air Act has no provisions for the inclusion of black box or long-term measures into the particulate control strategy. The severity of the PM2.5 problem in the Basin requires an aggressive plan to reduce VOC, NOx, SOx and directly emitted PM2.5 emissions by the year 2014.

The 2014 PM2.5 attainment demonstration will require additional aggressive emissions reductions of VOC, NOx, SOx and PM2.5 beyond the program defined by CARB as their State Mobile Source Control Strategy. The emissions reductions provided by CARB's control measures coupled with the SCAQMD's non-mobile source element will not result in attainment of the federal standard. The SCAQMD has proposed a mobile source element that would overlay the CARB plan to achieve an additional 72 TPD of NOx emissions reductions, eight TPD VOC, one TPD of SOx and three TPD of PM2.5. The emissions reductions identified in the overlay represent an aggressive penetration of the CARB mobile source plan. This strategy is included in the 2007 AQMP and will attain the PM2.5 standard (15.0 $\mu g/m^3$) by 2014.

Several alternative PM2.5 control strategies were considered including lowering the SOx emissions reductions and offsetting them with additional NOx or directly emitted PM2.5 emissions reductions. The problems with this concept were twofold: first there were some NOx emissions reductions are available, but at a much greater cost, and second, the relative impact of reducing NOx versus directly emitted PM2.5 or NOx was not equitable. PM2.5 emissions reductions have more than double the impact of NOx emissions reductions and SOx emissions reductions were almost four times as effective as NOx emission redutions. As a consequence, a nominal shift of emissions reductions in the strategy of 10 TPD or less SOx emissions reductions would need to be offset by almost 40 additional TPD of NOx emission reductions. Therefore, alternative PM2.5 attainment strategies are not considered to be feasible.

6.3.4 SHIFTING EMISSIONS OR LOCAL CONTROLS

Selected sensitivity analyses were also conducted to test the implementation of local scale emissions reductions for selected point sources near nearby critical receptor areas. The impact of reducing future year growth by limiting emissions to the permitted levels achieved a nominal reduction in future year PM2.5 for a very limited impact area. Additionally, several gross tests were conducted to zero-out emissions of NOx in either the western portion of the Basin (Los Angeles and Orange counties and offshore) or the eastern portion of the Basin (Riverside and San Bernardino counties). The net outcome of this analysis indicated that wind driven movement and dispersion of emissions spread PM2.5 through the full domain at low concentrations; however, the lower PM2.5 levels were a product of an unrealistic emission reduction scenario. The need for all emissions reductions essentially eliminated shifts in the emission reduction control strategy by pollutant similar to the analysis of the PM2.5 alternative in subsection 6.3.3. Therefore, shifting emissions or local controls are not considered to be a feasible alternative.

6.3.5 SEASONAL CONTROLS

VOC emissions control measures in this alternative would allow affected facilities to shift emissions from the high ozone formation season (summer) to the low ozone formations season (winter) defined as November through April. The mechanism by which this alternative could occur would be through a seasonal emissions trading program or economic incentives. Sensitivity runs were performed as part of the evaluation of the SCAQMD intercredit trading program (Rule 2501) that showed there could be some air quality benefits from shifting VOC emissions to the winter. This alternative was rejected because of the need to fully implement all feasible control measures and there was concern that it might not be consistent with the California CAA to reduce pollutants contributing to nonattainment by five percent per year or the maximum extent feasible.

6.3.6 TEMPORAL CONTROLS

This alternative would focus on shifting mobile source emissions to different periods of the day, e.g., late afternoon or night. The idea for shifting mobile source pollutant emissions to later in the day was that the emissions would undergo less photochemical reactions during the night. This alternative was rejected because of the substantial traffic congestion impacts that would result in the peak afternoon commute periods. It is also not likely that air quality dispersion modeling could be performed for this alternative.

6.3.7 NO REQUEST TO "BUMP UP" TO EXTREME

If the SCAQMD does not apply for a "bump up" request, the eight-hour ozone standard would have to be achieved by 2020 (for a 2021 deadline). The models, however, demonstrated that the ozone standard cannot be achieved without the additional years needed to fully implement short-term, long-term and black box measures. This alternative would require even faster penetration of clean technologies than the aggressive penetration rate identified in SCAQMD overlay control measures. More aggressive penetration of clean technologies may not be credible and, therefore, may not be possible. Thus, to achieve all necessary reductions via defined short-term measures by 2020 (no "bump up" request) is not feasible..

6.4 ALTERNATIVES TO THE 2007 AQMP

Because of the substantial emission reductions necessary to bring the region into attainment with the federal eight-hour ozone and PM2.5 standards, the SCAQMD is relatively limited with regard to the number of potential feasible alternatives to the 2007 AQMP. As a result, with the exception of the No Project Alternative, all project alternatives include the same short-term control measures because these measures are necessary to regulate or further regulate emission sources where emission reductions are feasible.

Although all alternatives include long-term measures, the primary difference between the various alternatives is the extent to which the AQMP will rely on specific emission

source categories to obtain future emission reductions. This means that the AQMP may rely to a lesser extent on emission reductions from some source categories (e.g., combustion sources), or to a greater extent on other source categories (e.g., consumer products, solvent and coatings categories, etc.). The following subsections provide brief descriptions of the alternatives.

6.4.1 ALTERNATIVE 1 – NO PROJECT ALTERNATIVE

CEQA requires the specific alternative of no project to be evaluated. A No Project Alternative consists of what would occur if the project was not approved; in this case, not adopting the 2007 AQMP. The net effect of not adopting the 2007 AQMP would be a continuation of the 2003 AQMP. The No Project Alternative analyzed here will take into account the most current air quality setting (2003) and will include updated and refined control measures from the 2003 AQMP, but no new control measures.

The No-Project Alternative for the year 2023 attainment of the eight-hour average ozone standard assumes that there are no new control measures implemented beyond those specified in the 2003 AQMP. The remaining 2003 AQMP Control Measures that would be implemented under the No Project Alternative are shown in Table 6-1. This approach is consistent with CEQA Guidelines §15126.6(e)(3)(A), which states "When no project is the revision on an existing land use or regulatory plan, policy or ongoing operation, the 'no project' alternative will be the continuation of the existing plan, policy, or operation into the future. Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan."

The 2024 carrying capacity of approximately 283 TPD VOC and 273 TPD NOx would place ozone concentrations within the Basin at approximately 97 ppb in the year 2024. This alternative will leave the district ozone at roughly 14 percent above the federal ozone standard.

The No-Project Alternative for the year 2015 attainment of the PM2.5 standard assumes that there are no new control measures implemented beyond those specified in the 2003 AQMP (see Table 6-1). The proposed 2014 remaining emissions levels of 291 TPD VOC and 460 TPD NOx, 43 TPD of SOx and 98 TPD of directly emitted PM2.5 will result in a maximum annual average concentration of 16.77 $\mu g/m^3$ or 112 percent of the standard. The Basin will not attain the PM2.5 standard with the No-Project Alternative. Therefore, Alternative 1 would not achieve project objectives of complying with the federal eight hour ozone standard or the PM2.5 standard.

Although a No Project Alternative, consisting of the 2003 AQMP, is consistent with CEQA Guidelines §15126.6(e)(3)(A), it was developed to comply with different federal ambient air quality standards. The 2003 AQMP was developed primarily to attain the federal ozone standard by 2010. The 2003 AQMP was not required to demonstrate attainment of the federal PM2.5 or eight-hour ozone standards, which require emission

reductions beyond those required to attain the one-hour ozone standard. For this reason, it is not able to demonstrate attainment of the federal PM2.5 and eight-hour ozone standards. However, CEQA requires analysis of a No Project Alternative and the 2003 AQMP is the appropriate No Project Alternative. Even those it is unable to achieve the basic objectives of the proposed project (2007 AQMP) is analyzed herein by comparing the relative merits of the proposed project and impacts to the 2007 AQMP.

TABLE 6-1

Remaining 2003 AQMP Control Measures

Control Measure No.	Title
SCAQMD's Short-Term and Mid-Term Stationary and Mobile Sources	
FUG-02	Emission Reductions from Gasoline Transfer and Dispensing Facilities [VOC]
BCM-03	Emission Reductions from Wood-Burning Fireplaces and Wood Stoves [PM2.5]
BCM-05	Emission Reductions from Under-Fired Charbroilers [PM]
MCS-02	Urban Heat Island [All Pollutants]
CMB-04	Natural Gas Fuel Specifications [NOx]
MCS-04	Emissions Reduction from Green Waste Composting [VOC, PM]
FLX-01	Economic Incentive Programs [All Pollutants]
FLX-02	Petroleum Refinery Pilot Program [VOC, PM2.5]
MOB-01	Mitigation Fee for Federal Sources [All Pollutants]
PRC-03	Restaurant Operations
LT1-DIST	Mid-Term District Measures
Measures for State and Federal Jurisdiction	
CONS-2	Consumer Products Limits to 2010
FVR-1	Vapor from Aboveground Storage Tanks
FVR-2	Vapor from Gasoline Dispensing at Marinas
FVR-3	Gasoline Dispenser Hoses
LMD-1	Passenger Cars and Light Duty Trucks
ONHD-1	Truck and Bus Highway Inspections
ONHD-2	Vapor from Gasoline Cargo Tanks
OFCI-1	Clean-up Existing IC Engines (Diesel)
OFCI-2	Off-Road Equipment Inspection Program
MARINE-1	Clean-up Existing Harbor Craft
EPA-01	Clean-up Existing Truck/Bus Fleet
EPA-02	Harbor Craft and Ocean-Going Ship Standards
EPA-03	Clean-up Existing Ocean-Going Ships
EPA-04	Reductions from Jet Aircraft
LT-1	Long Term Measures 1
LT-2	Long Term Measures 2

6.4.2 ALTERNATIVE 2 – COMBINED VOC AND NOx REDUCTIONS ALTERNATIVE (LEAST TOXIC ALTERNATIVE)

Alternative 2 recreates the traditional AQMP reductions strategy to determine attainment whereby VOC and NOx emissions are reduced in approximate equal combinations to ensure both ozone and particulate matter concentrations are lowered. The basic concept focuses on the VOC reductions to benefit ozone attainment while minimizing NOx reductions beyond what is needed for PM2.5 attainment. Like the 2007 AQMP, this alternative contains all of the same short-term control measures. The carrying capacity under this alternative that attains the standard at all sites using the CAMx simulations for the six meteorological episodes is 200 TPD of VOC and 160 TPD of NOx. Alternative 2 demonstrates attainment by reducing approximately 45 TPD less NOx emissions than the attainment demonstration for the proposed project but requires an additional 230 TPD of VOC emission reduction. Figure 6-3 illustrates the pathway of VOC and NOx emissions reductions to achieve attainment under Alternative 2 using the eight-hour average ozone isopleth diagram. The modeling analysis demonstrates that Alternative 2 is considered to be a feasible alternative. Therefore, the relative merits of Alternative 2 will be evaluated and compared to the 2007 AQMP. Alternative 2 is expected to implement all control measures as the 2007 AQMP in order to reach PM2.5 attainment by 2004.

VOCs in many cases, e.g., combustion by-products; reformulated coatings, solvents, and consumer products; etc., may also be toxic. As a result, this is also considered the Least Toxic Alternative because if more VOC measures are imposed, toxic risk would be reduced in most cases.

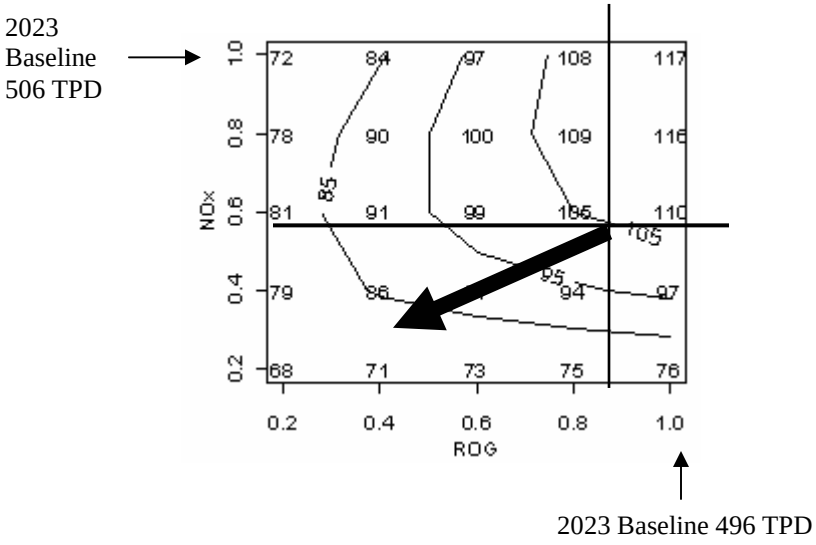

FIGURE 6-3
Combined VOC and NOx Alternative
2024 8-Hour Average Ozone Strategy (ppb)

6.5 ALTERNATIVES ANALYSIS

6.5.1 AIR QUALITY

Two alternatives in addition to the 2007 AQMP, are defined for the environmental impact analysis (see Figure 6-4). The CAMx Model was used to project future VOC, NOx, CO, SOx, and PM2.5 air quality in the Basin and to determine the effectiveness of the proposed control measures for the alternatives in addition to the 2007 AQMP.

A comparison of the proposed project and the alternatives is provided in Figure 6-4. The analysis shows that the air quality analysis for Alternative 1 – No Project Alternative is expected to result in ozone concentrations exceeding the eight-hour ozone standard, thus, not achieving the basic objectives of the 2007 AQMP. Alternative 2 and the proposed 2007 AQMP are both expected to achieve the eight-hour ozone standard, thus, achieving the basic objectives of the proposed project.

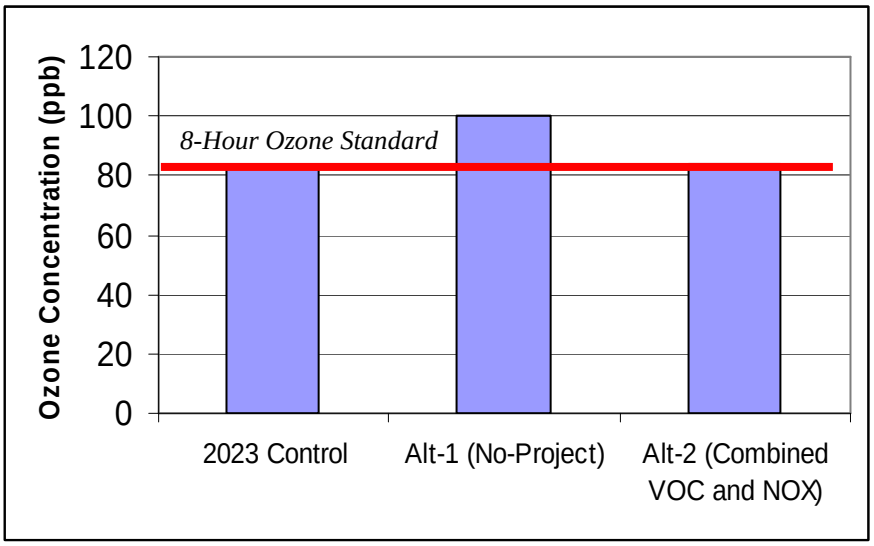

FIGURE 6-4
Comparison of Ozone Attainment Alternatives

6.5.2 ENERGY

The energy impacts associated with Alternative 1 – No Project would require less energy to implement than the 2007 AQMP because less control measures with additional pollution control technologies or use of alternative energy sources would be included (see Table 6-1).

The energy impacts associated with Alternative 2 are expected to be equivalent to the 2007 AQMP or slightly greater because they would include the same short-term control measures and there would be long-term control measures requiring slightly less NOx

emission reductions, but greater VOC emission reductions. Therefore, the energy impacts for Alternative 2 are expected to be less than significant.

6.5.3 HAZARDS

Alternative 1 – No Project would generate less hazard impacts than the 2007 AQMP) because only a few additional control measures would be included that require future reformulation of fuels, or control of combustion sources using SCRs that require ammonia, etc. (see Table 6-1).

The impacts of Alternative 2 are expected to be very similar to or slightly greater than the proposed project (2007) because it includes the same short-term control measures. Some long-term control measures in Alternative 2 may require less combustion control and fewer SCRs that use ammonia. Therefore hazard impacts in this area would be less. Alternative 2 has control measures resulting in greater VOC emission reductions, which could increase hazards from reformulation of products. The potential long-term control options that could produce hazard impacts are expected to be limited to the potential use of NOx catalysts, SCR, and alternative fuels for existing federal emission sources (e.g., planes, trains, ships, trucks, farm equipment, and construction equipment). Less reliance on long-term NOx control measures from the alternatives may reduce the number of sources controlled, but would be expected to have similar impacts as the proposed project, because all feasible control measures are needed to demonstrate attainment for all feasible alternatives (i.e., Alternative 2).

6.5.4 HYDROLOGY/WATER QUALITY

Alternative 1 – No Project would generate less hydrology and water quality impacts if implemented than the proposed project (2-7 AQMP) because only a few additional control measures would be included (see Table 6-1).

The impacts of Alternative 2 are expected to very similar to the proposed project or slightly greater. The potential long-term control options associated with the proposed project that could result in hydrology/water quality impacts are expected to be limited to the potential use of electric vehicles (e.g., increased use of batteries) and alternative fuels. There are no expected impacts to hydrology from the affected potential long-term control options and a potential impairment to the water quality from improper disposal of batteries from electric vehicles can be mitigated to less than significant. Less reliance on long-term NOx control measures may reduce the number of sources controlled, but would be expected to have similar impacts as the proposed project, because all feasible control measures are needed to demonstrate attainment for all feasible alternatives. Alternative 2 could increase the potential for adverse water quality as more reformulated coatings, solvents and products would be required under this Alternative. Nonetheless, the hydrology and water quality impacts under Alternative 2 are expected to be less than significant.

6.5.5 SOLID/HAZARDOUS WASTE

Alternative 1 – No Project would generate less solid and hazardous waste impacts, if implemented, because only a few additional control measures would be included (see Table 6-1).

The alternatives are very similar to the project with the exception of the exclusion of some of the long-term control measures. The potential long-term control options that could result in solid/hazardous waste impacts are expected to be limited to aggressive development and commercialization of advanced mobile source control technologies. Examples of the potential control options for mobile sources under the long-term strategy that could result in solid/hazardous waste impacts include: (1) accelerated retirement of older vehicles; (2) retrofit of existing vehicles such as passenger cars and light- and medium-duty trucks with advanced emission control; (3) retrofitting heavy-duty diesel trucks and buses with NOx reducing catalysts; (4) repowering construction and industrial equipment with cleaner diesel engines or alternative fuels; and, (5) replacing 2-stroke lawn and garden equipment and recreation boats with 4-stroke or electric alternatives, where feasible. However, a portion of the wastes generated under the long-term control measures are expected to be recyclable so that the impacts of this alternative are similar to the proposed project. Alternative 2 is expected to have similar impacts as the proposed project, because all feasible control measures are needed to demonstrate attainment for all feasible alternatives.

6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Pursuant to CEQA Guidelines §15126.6(e)(2), if the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. Since the no project alternative would not ultimately achieve the long-term benefits of the AQMP, would not attain the state and federal ambient air quality standards and, technically, is not a legally viable alternative, it is not the environmentally superior alternative.

The environmentally superior alternative is considered to be Alternative 2, Combined VOC and NOx Alternative. Under Alternative 2, about 45 TPD less NOx emission reductions are required than the proposed project, but an additional 230 TPD of VOC emission reductions are required than the proposed project. Thus, anticipated air quality benefits achieved under Alternative 2 is the only identified alternative to the proposed project that would also achieve the federal eight-hour ozone and PM2.5 standards, so Alternative 2 is considered the environmentally superior alternative. However, Alternative 2 is not expected to be environmentally superior to the proposed project because an additional 230 TPD of VOC emission reductions would be required, with the related increase in environmental impacts. Further, an additional 230 tons per day of VOC emission reductions would be more challenging to achieve.

6.7 CONCLUSION

The CEQA document shall include sufficient information about each alternative to all meaningful evaluation, analysis, and comparison with the proposed project (CEQA Guidelines §15126.6(d)). A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. Table 6-2 lists the alternatives considered by the SCAQMD and how they compare to proposed fleet vehicle rules. Table 6-2 presents a matrix that lists the significant adverse impacts as well as the cumulative impacts associated with the proposed project and the project alternatives for all environmental topics analyzed. The table also ranks each section as to whether the proposed project or a project alternative would result in greater or lesser impacts relative to one another.

TABLE 6-2

Environmental Impacts of Alternatives
As Compared to Proposed Project

ENVIRONMENTAL TOPIC	Proposed Project 2007 AQMP	No Project Alternative 1[(1)]	Alternative 2[(1)]
Air Quality			
Construction Activities	S	S (-)	S (=)
Electricity Generation	NS	NS (-)	NS (+)
Use of Lower VOC Materials	NS	NS (-)	NS (+)
Impacts from Mobile Sources	NS	NS (-)	NS (-)
Impacts from Misc. Sources	NS	NS (-)	NS (-)
Non-Criteria Pollutants	NS	NS (-)	NS (+)
GHG Emissions	B	PS (+)	NS (-)
Ambient Air Quality	B	S (+)	B(=)
Energy			
Electricity Demand	NS	NS (-)	NS (-)
Natural Gas Demand	NS	NS (-)	NS (-)
Petroleum Fuel Use	NS	NS (+)	NS (+)
Alternative Fuels	NS	NS (-)	NS (-)
Hazards			
Reformulated Coatings	NS	NS (-	NS (+)
Refinery Hazards	S	NS (-)	S (=)
Alternative Fuels	NS	NS (-)	NS (-)
Ammonia Use	NS	NS (-)	NS (=)
Fuel Additives	NS	NS (-)	NS (=)

TABLE 6-2 (Concluded)

Environmental Impacts of Alternatives
As Compared to Proposed Project

ENVIRONMENTAL TOPIC	Proposed Project 2007 AQMP	No Project Alternative 1[(1)]	Alternative 2[(1)]
Hydrology/Water Quality			
Wastewater Discharge	MNS	NS (-)	MNS (+)
Chemical Dust Suppressants	NS	NS (-)	NS (=)
Alternative Fuel Use	NS	NS (-)	NS (=)
Illegal Battery Disposal	S	NS (-)	S (=)
Add-on Control Equipment	NS	NS (-)	NS (=)
Water Demand	NS	NS (-)	NS (+)
Solid/Hazardous Waste			
Spent Batteries	NS	NS (-)	NS (=)
Air Pollution Control Equip.	NS	NS (-)	NS (=)
Additional Filters/PM	NS	NS (-)	NS (=)
Catalytic Oxidation	NS	NS (-)	NS (=)
Old Equipment/Vehicle Disposal	NS	NS (-)	NS (=)

Notes:
S = Significant
NS = Not Significant
MNS = Mitigated Not Significant
B = Beneficial
(-) = Potential impacts are less than the proposed project.
(+) = Potential impacts are greater than the proposed project.
(=) = Potential impacts are approximately the same as the proposed project.