CHAPTER 4

ALTERNATIVES

4.0 ALTERNATIVES

4.1 INTRODUCTION

This EIR provides a discussion of alternatives to the proposed project as required by the 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)).

The alternatives typically included in CEQA documents 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 Extreme are limited by the nature of the project. The CCAA requires the SJVUAPCD to reduce pollutants contributing to non-attainment to the maximum extent feasible. As such, the proposed Extreme and any acceptable project alternatives must comply with this criterion to attain the basic objectives of the project. Consequently, all viable project alternatives must include all identified feasible control measures.

4.2 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.

4.2.1 SEASONAL SHIFT ALTERNATIVE

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 formation 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. 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 ozone nonattainment by the maximum extent feasible. Furthermore, VOC emissions can also contribute to the formation of fine particulate matter in the winter months, so the shift could exacerbate one air pollution problem while attempting to solve another.

4.2.2 TEMPORAL SHIFT ALTERNATIVE

This alternative would focus on shifting mobile source emissions to a different period in the day that would minimize photochemical oxidant formation. For the SJVAB, this would mean shifting emissions to the nighttime hours, since high ozone levels already tend to occur in late afternoon in the SJVAB. 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. Furthermore, implementing this control strategy would be largely outside the authority of the SJVUAPCD.

4.2.3 VARY NOx/VOC CARRYING CAPACITY

One consideration in developing project alternatives was to evaluate whether or not varying the carrying capacities for NOx and VOC would still achieve the objectives of the Extreme , that is, demonstrate attainment of the federal one-hour ambient air quality standards for ozone (carrying capacity can be defined as the emissions inventory that the atmosphere can "carry" without violating an ambient air quality standard). Because the relationship between the NOx carrying capacity and the VOC carrying capacity is nonlinear, it is possible to increase or decrease one carrying capacity relative to the other carrying capacity and still meet the ozone attainment objectives. This alternative was rejected as not feasible because of the need to fully implement all feasible control measures to reduce pollutants contributing to nonattainment by the maximum extent feasible. All NOx and VOC control measures identified as feasible were needed to demonstrate attainment of the one-hour ozone standard by 2010. In addition, all feasible NOx control measures are expected to be needed to comply with the 2003 PM10 Plan. Therefore, this alternative was rejected as not feasible.

4.3 ALTERNATIVES TO THE 2004 OZONE STRATEGY

The SJVUAPCD is relatively limited with regard to the number of potential alternatives to the Extreme Ozone Attainment Plan because of the requirement in the California Clean Air Act that emissions must be reduced to the maximum extent feasible. As a result, with the exception of the No Project Alternative, all project alternatives include the proposed project control measures because these measures would regulate or further regulate emission sources where emission reductions are feasible.

Alternatives 2 and 3 are unique to U.S. EPA's Phase I 8-hour ozone standard final implementation rule (69 FR 23858). Although U.S. EPA is proceeding with rule implementation as described in the Phase I language, numerous parties have indicated their intent to file lawsuits affecting all or part of the 8-hour ozone rule implementation and associated revocation of the one-hour ozone standard. Consequently, Alternatives 2 and 3 are under a legal cloud that may affect their viability as options in the time frame of interest for the project defined in this EIR. The extent of the uncertainty is dependent on the details of the litigation and U.S. EPA's response, neither of which are known at present.

4.3.1 ALTERNATIVE 1 – NO PROJECT ALTERNATIVE

For this action, "no project" refers to the District taking no further action to meet its one-hour ozone obligations under the federal Clean Air Act and the California Clean Air Act. 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 State Implementation Plan. Adopting the No Project Alternative does not imply that no further action will be taken to implement control measures that reduce emissions that contribute to ozone. The federal and state Clean Air Acts require the SJVUAPCD to prepare, revise and implement plans for attaining ambient air quality standards. A No Project Alternative is not legally viable. The No Project Alternative presented in this EIR is the continued implementation of air quality management programs as they exist in the District as of June 2004. Though the SJVAB was classified as extreme nonattainment effective May 17, 2004, the rule revisions triggered by this change in classification are not due to U.S. EPA until May 17, 2005. Consequently, under the "No Project" alternative, some provisions of the "severe" one-hour ozone air quality planning program (e.g., New Source Review thresholds) are assumed to remain in effect in the SJVAB until modified by sanctions and Federal Implementation Plan.

Under the No Project Alternative, the SJVUAPCD would submit nothing to the U.S. EPA to fulfill federal one-hour ozone attainment plan obligations as specified in 40 Code of Federal Regulations (CFR) 51.905(a)(1)(ii) and 69 Federal Register (FR) 20552, i.e., none of the three options for fulfilling unmet one-hour attainment demonstrations would be submitted. Further, the District would submit nothing to CARB to fulfill California Health and Safety Code requirements for the Triennial Progress Report and Plan Revision.

The consequences of the No Project Alternative include the following. The U.S. EPA could impose federal sanctions and promulgate a FIP for failure to meet requirements for submittal of one-hour ozone plans; however, the imposition of sanctions and a FIP for one-hour ozone during a period of revocation of the one-hour standard and implementation of the 8-hour standard is subject to much uncertainty and speculation. For purposes of this EIR, conservative assumptions were made that the U.S. EPA would start sanctions and FIP clocks (i.e., 18-month clock for imposing emissions offset sanctions, a 24-month clock for imposing highway funding sanctions, and a 24-month

clock for preparing a FIP) for failing to fulfill one-hour ozone attainment demonstration obligations as specified in 40 CFR 51.905(a)(1). Two paths are possible for this scenario:

- The District does not submit the Extreme Ozone Attainment Demonstration Plan for one-hour ozone by November 15, 2004. U.S. EPA may wait to issue the finding of failure to submit until after June 15, 2005 (the due date for the other two planning options), or they could issue it earlier. In either case they could make the start of sanction and FIP clocks retroactive to November 15, 2004.

- The District does not submit any of the three options for fulfilling unmet one-hour ozone attainment demonstration obligations by the due date of June 15, 2005. In this case, U.S. EPA would issue a final rule citing failure to fulfill unmet one-hour ozone attainment obligations, and would start sanction and FIP clocks effective July 2005.

A third scenario that is even more remote and speculative is that U.S. EPA rescinds the reclassification of the SJVAB to extreme, thereby placing it back in the severe nonattainment category with sanction and FIP clocks running; consequences would be as described for the failure to submit an Extreme Ozone Attainment Demonstration Plan. Because of the remoteness of this scenario, and the similarity of its consequences to a failure to submit an Extreme Ozone Attainment Demonstration Plan, this scenario is not evaluated further in this DEIR. The No Project alternative would also fail to comply with California Health and Safety Code requirements for California ambient air quality standards, but in terms of direct and immediate consequences to the physical environment, the consequences of not meeting federal requirements are assumed to dominate.

The No Project Alternative means that control measures in the Amended 2002/2005 Ozone Rate of Progress (ROP) Plan are implemented through 2005, that control measures in the 2003 PM10 Plan are implemented through 2010, and that State measures are implemented through 2010. The environmental impacts of each of these Plans have been addressed in separated CEQA documents (SJVUAPCD 2003a and 2003b; CARB 2003)[1]. Though ozone air quality benefits would result from these control measures, the emissions reductions in ozone precursors would be insufficient to attain the federal one-hour standard in the SJVAB by 2010, thereby violating provisions of federal Clean Air Act. As the Draft Extreme Ozone Attainment Demonstration Plan shows, all identified emissions reductions are needed to demonstration attainment in 2010 (see Chapter 5 of the Draft Extreme Ozone Attainment Demonstration Plan). Failure to implement additional control measures would also violate state of California requirements that areas designated nonattainment for state standards should demonstrate continued reductions in emissions.

[1] California Air Resources Board, Revised, Proposed 2003 State and Federal Strategy for the California State Implementation Plan, Section V, Potential Impacts, August 25, 2003.

It should be noted that, except for air quality, there would be no further incremental impacts on the existing environment (that have not been addressed in prior CEQA documents) if no further action is taken. However, attainment of the federal one-hour ozone standard in the SJVAB could not be demonstrated without the additional state and District emissions reductions identified in the Extreme Ozone Attainment Demonstration Plan. In fact, progress toward attainment of the federal one-hour ozone standard would be slowed if no further emission controls are implemented. The projected baseline air quality would represent a no further action scenario. Furthermore, all areas within the jurisdiction of the SJVUAPCD may not attain or maintain state and national ambient air quality standards as required by the state and federal Clean Air Acts. While this alternative will be evaluated herein, it is not legally feasible.

A FIP may propose additional controls, but U.S. EPA could require additional time to develop and propose measures for the SJVAB. In addition, recent federal proposals have not been as effective in reducing emissions as measures proposed by state and local agencies in California. Lastly, sanctions and FIP requirements may disappear upon revocation of the federal one-hour ozone air quality standard.

4.3.2 ALTERNATIVE 2 – EARLY 8-HOUR REASONABLE FURTHER PROGRESS PLAN

Under Alternative 2, the SJVUAPCD would prepare a Reasonable Further Progress Plan for the federal 8-hour ozone standard that provides a five percent increment of emissions reductions from a 2002 baseline to a 2007 target date, in addition to emissions reductions from measures already in the SIP as of June 15, 2004.

On April 30, 2004, the U.S. EPA issued a final rule that represents Phase I for implementing the 8-hour ozone standard, which includes revoking the federal one-hour ozone standard, effective June 15, 2005 (69 FR 23858). Effective June 15, 2005 the SJVAB would no longer be nonattainment for the federal one-hour standard, and the November 15, 2010 date for attainment would be eliminated. Focus would then shift to the attainment of the federal 8-hour ozone standard.

Under this alternative, instead of preparing the Extreme Ozone Attainment Demonstration Plan, the SJVUAPCD would prepare an 8-hour ozone Reasonable Further Progress Plan . Based on the Phase I final rule for the 8-hour ozone standard, the SJVAB is classified as serious nonattainment for the federal 8-hour ozone standard, and as such is required to attain the standard by June 15, 2013. The SJVUAPCD could prepare a Reasonable Further Progress Plan that would evaluate progress the District would make towards reducing emissions of ozone precursors to comply with the 8-hour ozone standard. State and District measures adopted to date, but not in the SIP as of June 15, 2004, are expected to be adequate to meet the requirement of a five percent emissions reductions over a five year period from 2002 to 2007. These reductions would stem from control measures in the Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone (submitted to U.S. EPA on April 10, 2003 and

under review for eventual SIP inclusion as of August 2004), and the 2003 PM10 Plan (approved by U.S. EPA for inclusion in the SIP as of June 25, 2004). District and state emissions reductions in these two plans would meet the requirements for inclusion in the 8-hour Reasonable Further Progress Plan; preliminary evaluations of the reductions show them to be sufficient to meet the five percent over five year requirement. Note also that these same reductions are assumed to go into effect under "No Project," so Alternative 2 and "No Project" would have some of the same potential effects on the physical environment. The principal difference between the two is that Alternative 2 compiles these measures and submits them to U.S. EPA to fulfill a planning requirement, and the "No Project" alternative would have beneficial and adverse impacts from federal requirements (FIP and sanctions) implemented to attain the standard, as discussed below.

4.3.3 ALTERNATIVE 3 – EARLY 8-HOUR ATTAINMENT DEMONSTRATION PLAN

Under this alternative, the SJVUAPCD would prepare an early 8-hour ozone attainment demonstration plan. This Plan would need to demonstrate attainment of the 8-hour ozone standard by the applicable date (assumed to be 2013). It is considered an "early" plan because the 8-hour attainment demonstration plans are not due to U.S. EPA until June 15, 2007 (based on the proposed rule from June 2003), and the early plan is due June 15, 2005. It is expected that additional control measures over and above those identified in the Extreme Ozone Attainment Plan would be required under this alternative. Although the SJVUAPCD has not yet conducted gridded photochemical modeling for the purposes of demonstrating attainment with the federal 8-hour ozone standards, other studies of 8-hour ozone in the SJVAB have been conducted and reported in the peer-reviewed literature. For example, a paper by Reynolds et al (2003) reports that attainment of the federal 8-hour ozone standard in the SJVAB would require NOx emissions reductions on the order of 70-80 percent of the inventory (S.D Reynolds, C.L. Blanchard, S.D. Ziman, "Understanding the Effectiveness of Precursor Reductions in Lowering 8-hour Ozone Concentrations," J. Air and Waste Manage. Assoc., 53: 195-205, February 2003).

The proposed control measures in the Extreme Ozone Attainment Demonstration Plan or for Alternative 3 are based on implementation of all feasible control measures through the application of available technologies and management practices as well as advanced technologies and control methods. These measures rely on proposed actions to be taken by several agencies that currently have the statutory authority to implement such measures. Each agency is also committed to achieve a total emission reduction target with the ability to substitute for control measures deemed infeasible, so long as equivalent reductions are met by other means. These measures would be designed to satisfy the federal Clean Air Act requirement of reasonably available control technologies [Section 172(c)], and the California Clean Air Act requirements of Best Available Retrofit Control Technologies (BARCT) [Health and Safety Code Section 40919,

Subsection C]. To ultimately achieve ambient air quality standards, and demonstrate attainment, additional emissions reductions will be necessary from sources that could include sources under the jurisdiction of the CARB (e.g., on-road motor vehicles, off-road equipment, and consumer products), and U.S. EPA (e.g., aircraft, ships, trains, and pre-empted off-road equipment). Because of the magnitude of reductions required, identifying the necessary emissions reductions and conducting the required associated photochemical modeling in less than a year is not viable for the SJVAB. Consequently, this alternative is not feasible for the SJVUAPCD at this time.

4.4 ALTERNATIVES ANALYSIS

4.4.1 AIR QUALITY

4.4.1.1 Alternative 1 - No Project Alternative

Under the No Project Alternative, no additional air pollution control measures would be implemented in the SJVUAPCD, other than those already approved as part of the Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone and the 2003 PM10 Plan, state measures, and measures required by other mandates. The control measures and their estimated emission reductions are shown in the respective plans (PM10 measures are also summarized in Table 5-1 of the Extreme Ozone Attainment Demonstration Plan).

The secondary air quality impacts due to the No Project alternative would be minimized and limited to the control measures included in the Amended 2002/2005 ROP Plan and the 2003 PM10 Plan. Fewer secondary air quality impacts would be expected under the No Project Alternative because fewer control measures would be implemented (i.e., none of the new measures identified in the Extreme Ozone Attainment Demonstration Plan would be implemented).

Implementation of the No Project Alternative would not result in demonstrating attainment of the federal one-hour ozone standard. As discussed in Chapter 2, additional NOx and VOC emission reductions (over and above those in the 2002/2005 Ozone ROP Plan and the 2003 PM10 Plan) are required to demonstrate attainment of the one-hour ozone standards. Therefore, this alternative would result in significant adverse air quality impacts by not achieving sufficient ozone precursor emissions reductions needed to attain the federal one-hour ozone standard.

Failing to comply with the federal CAA planning requirements will eventually result in offset sanctions, loss of highway funds, and a FIP in approximately December 2006 or in approximately July 2007. The SJVUAPCD examined this possibility to determine the effect on air quality and concluded that it could make air quality worse or better depending on which highly speculative scenario was used.

Increasing the offset ratio to 2 to 1 would be expected to have the effect of increasing the cost of business expansions due to cost of purchasing additional emission offsets. This could reduce the number of emission reduction credits available and increase the cost per ton of purchasing offsets on the open market. U.S. EPA considers new source review offset requirements to be a growth measure and not an emission control. For example, EPA has noted that the New Source Review Program, under which offsets is a key component, "is a growth measure and is not specifically designed to produce emissions reductions." (69 FR 23986). EPA has also stated that "unlike control measures, States do not rely on the NSR program to generate emissions reductions to move an area further toward attainment." (69 FR 23986). Therefore, emissions would be unchanged since growth is offset under current ratios and under sanction ratios. It would be extremely speculative to predict whether businesses would choose to expand or wait until sanctions are lifted, or choose an alternative location to expand. If a business were to select an alternative location outside of the SJVAB, chances are good that it would locate in an adjacent area and that its emissions would still contribute to SJVAB's ozone nonattainment problem through pollutant transport. If a business delays its expansion, the benefit that would have been derived from providing excess offsets over emissions would be lost. Projects that go forward at the higher offset ratios would provide some additional benefit, but to what extent is unknown. The District has experienced offset ratio sanctions a number of times in the past, and has detected no change in emissions or ambient air quality as a result of being under the offset sanctions. It should also be noted that high offset ratios and high use of offsets can actually produce an emissions increase through use of emission reduction credits at levels in excess of those assumed to be used due to growth (see, for example, Appendix A in the Amended 2002 and 2005 Rate of Progress Report for San Joaquin Valley Ozone, December 2002).

Highway sanctions would prevent new road projects from going forward (transportation projects already approved and funded prior to the effective date of the sanction would move forward). The highway sanctions would do little or nothing to reduce the current mobile source emissions inventory that is often identified as the major source contributing to nonattainment of the one-hour ozone standard in the SJVAB; instead, the sanctions are directed at temporarily suspending potential effects from growth. This could cause emissions related to congestion to increase on roads that are at or near capacity. If the congestion caused a change in travel behavior where motorists drove farther to avoid congested roadways, emissions would also increase. The less likely outcome would be for motorists to not make a trip or to choose an alternative mode instead of driving. The highway sanctions would need to be in place for a long period of time in order for growth in use to have an effect on any given road segment.

There is no certainty that a FIP would result in greater emission reductions than would be contained in the Extreme Ozone Attainment Demonstration Plan. Predicting and analyzing the types of emissions controls that U.S. EPA would put in a FIP for the SJVAB is highly speculative, and any subsequent CEQA analysis of these speculative measures would be of little value to the decisionmaking process. U.S. EPA's recent track record would suggest that it might be more likely to adopt weaker rather than stronger

measures than the District. The District's aggressive emission reduction program has left little in the way of additional emission controls that the U.S. EPA could obtain from stationary sources in the SJVAB. FIP measures proposed by the U.S. EPA in the 1990's for other nonattainment areas in California leaned heavily on emissions reductions expected from state measures. Since state measures can go forward without specific action on the Extreme Ozone Attainment Demonstration Plan, FIP measures that depend on state emission reductions programs would add little to the progress towards attainment. It is also not logical to assume that the District would continue to violate the CAA indefinitely and accept sanctions without correcting the deficiency. Since the draft Extreme Ozone Attainment Demonstration Plan corrects the deficiency, the idea of not submitting it to U.S. EPA in order to gain a questionable air quality benefit from sanctions is ludicrous. Lastly, progress in reducing emissions would actually slow under a FIP because promulgation of a FIP would delay adoption of new emissions reductions commitments by the District; in addition, the U.S. EPA's reductions would take time to develop, propose and implement, which would further delay emission reductions. Also, the U.S. EPA is not required to reach the same attainment date in a FIP as the state subject to the FIP was originally required to meet. Prior experience with proposed FIP measures elsewhere in California demonstrated that U.S. EPA would extend the attainment date if it determines that its own measures canot reach attainment in the time required. Consequently, there is no reason to believe that EPA promulgation of a FIP would result in attainment of the federal one-hour ozone standards any quicker than the District/State programs outlined in the Extreme Ozone Attainment Demonstration Plan.

4.4.1.2 Alternative 2 – Early 8-Hour Reasonable FurtherProgress Report

Under Alternative 2, the District would prepare an early 8-hour Reasonable Further Progress Plan and submit it to U.S. EPA by June 15, 2005. Because this plan would largely depend upon emission reductions from control measures in the Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone and in the 2003 PM10 Plan to show a five percent emission reduction over the period 2002 to 2007, it would have some of the same effects as "No Project", except for the beneficial and adverse impacts from implementing a FIP and sanctions. The potential secondary air quality impacts associated with the Extreme Ozone Attainment Plan were determined to be less than significant. Fewer secondary air quality impacts would be expected under the Early 8-Hour Reasonable Further Progress Plan alternative because fewer control measures would be needed to meet the less stringent five percent per year requirement. This alternative would have the adverse ozone air quality impact of not reducing ozone precursor emissions to the extent needed to attain the federal one-hour ozone standard. It is expected that the air quality impacts associated with Alternative 2 would be less than significant because of the generally strict air pollution control laws that apply to sources that would be controlled.

Implementation of Alternative 2 would be expected to show progress towards complying with the 8-hour ozone standard and would ultimately help demonstrate compliance with the 8-hour standard.

4.4.1.3 Alternative 3 – Early 8-Hour Attainment Demonstration Plan

Under Alternative 3, it is expected that additional air pollution control measures, over and above those required by the Extreme Ozone Attainment Plan and the Early 8-hour ROP Plan, would be required to demonstrate attainment of the 8-hour ozone standard. The secondary air quality impacts associated with Alternative 3 are expected to be greater than the proposed project because additional control measures are expected to be required. The potential secondary air quality impacts associated with the Extreme Ozone Attainment Plan were determined to be less than significant. Additional secondary air quality impacts would be expected under the Early 8-Hour Attainment Demonstration Plan alternative because additional control measures would be implemented to demonstrate attainment of the more stringent federal 8-hour ozone standard. It is expected that the air quality impacts associated with Alternative 3 would be significant because substantial emission reductions would need to be demonstrated through new technology advances, not currently identified, to attain the 8-hour standard. The specific details of these additional control measures have not yet been developed. However, these control measures could be expected to be additional control of mobile sources, including ships, airplanes, railroad engines, vehicles, and trucks. The potential secondary air quality impacts from the Early 8-Hour Attainment Demonstration Plan would include the following:

- Secondary Emissions from Increased Electricity Demand: The Early 8-Hour Attainment Demonstration Plan control measures may require an increase in electricity due to increased electrification of sources (e.g., vehicles). However, the existing air quality rules and regulations are expected to minimize emissions associated with increased generation of electricity. No additional significant impacts from implementation of Early 8-Hour Attainment Demonstration Plan control measures are expected due to increased electricity demand.

- Secondary Emissions from the Control of Stationary Sources: The Early 8-Hour Attainment Demonstration Plan control measures are not expected to result in an increase in the secondary emissions associated with the control of stationary sources. Essentially all feasible control measures for stationary sources have been proposed, although additional control measures may be discovered in the future as new technologies emerge (these are described in the Extreme Ozone Attainment Demonstration Plan as further study measures). So no additional impacts are expected as part of Early 8-hour Attainment Demonstration Plan control measures.

- Secondary Emissions from Mobile Sources: The Early 8-Hour Attainment Demonstration Plan control measures are expected to be aimed at additional emission reductions from mobile sources. Some of these control measures would be more stringent standards (e.g., stricter emission limits on engines and enhanced smog check programs), which would not be expected to have any additional impacts on secondary emissions. Other control measures could result in add-on controls or use of reformulated fuels. Implementation of the additional control measures could result in

increased use of alternative or reformulated fuels, requiring increased transport of oxygenates or other fuel additive or material (e.g., gasoline blending stocks). Therefore, some Early 8-Hour Attainment Demonstration Plan control measures could result in additional emissions associated with transportation of oxygenates and other similar materials, over and above those evaluated for the proposed project control measures. This impact would be considered significant.

In should be noted that implementation of the additional control strategies should result in additional reductions in ozone precursor emissions that are many times greater than the increase in secondary emissions.

- Construction Activities: The emissions associated with construction activities from the proposed project control measures were considered to be less than significant. Implementation of the Early 8-Hour Attainment Demonstration Plan control measures are expected to result in additional construction activities associated with the development of additional infrastructure (e.g., new power requirements, alternative fueling sites, etc.), thus resulting in additional emissions from construction activities. Therefore, implementation of the Early 8-Hour Attainment Demonstration Plan control measures will generate additional construction emissions, which would be considered potentially significant.

4.4.2 UTILITIES/ AND SERVICE SYSTEMS

4.4.2.1 Alternative 1 – No Project Alternative

The implementation of the proposed project alternative would not result in an increase electricity demand, natural gas demand or water demand over and above the current requirements, and over and above the increases predicted by the Amended 2002/2005 ROP Plan and 2003 PM10 Plan. The impacts of the 2002/2005 ROP Plan on utilities and service systems were considered less than significant (SJVUAPCD, 2003c). It was expected that the implementation of some rules may result in additional energy use. The increased energy use was not expected to cause a considerable demand or increase in services. The increase in demand for natural gas was not expected to result in substantial alterations to utility systems. Therefore, the 2002/2005 ROP Plan was not expected to result in any demand for new utilities or service systems, or result in any substantial demand on existing sources (SJVUAPCD, 2003c).

4.4.2.2 Alternative 2 – Early 8-Hour Reasonable Further Progress Plan

Under Alternative 2, control measures in the Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone and in the 2003 PM10 Plan identified in the Extreme Ozone Attainment Demonstration Plan would be required. The utility impacts of measures from these programs were evaluated in prior CEQA documents and were found to be not significant. Therefore, compared to the Extreme Ozone Attainment

Demonstration Plan, no additional energy in the form of electricity and natural gas would likely be required.

The potential energy impacts associated with the Extreme Ozone Attainment Demonstration Plan were determined to be less than significant. No additional energy impacts would be expected under the Early 8-Hour ROP alternative because no additional control measures would be implemented. The actual energy impacts would depend on the additional control measures imposed; however, it is expected that the energy impacts associated with Alternative 2 would also be less than significant and could generally be handled within the population growth projections of the region.

The potential impacts on water demand associated with Alternative 2 are also expected to be less than significant, primarily because the alternative requires fewer control measures than the Extreme Ozone Attainment Demonstration Plan. Potential impacts of Alternative 2 on water resources were evaluated in state and District CEQA documents for the control measures in the Amended 2002 and 2005 Rate of Progress Plan for San Joaquin Valley Ozone and in the 2003 PM10 Plan, and were found to be not significant.

Alternative 2 would not generate additional quantities of solid or hazardous materials by resulting in early scrapping of mobile sources or engines. The potential impacts on solid/hazardous materials landfills from Alternative 2 are expected to be less than significant as the regulations would apply to new sources and/or because it would represent a one-time disposal in waste materials. Impacts in this area for Alternative 2 would be less than those from the Extreme Ozone Attainment Demonstration Plan for reasons given above.

4.4.2.3 Alternative 3 – Early 8-Hour Attainment Demonstration Plan

Under this Alternative 3, additional control measures over and above those identified in the Extreme Ozone Attainment Demonstration Plan would be required. Therefore, additional energy in the form of electricity and natural gas would likely be required. At this time, the emissions reductions needed in the SJVAB to attain the federal 8-hour ozone standard are not known, but are likely to be substantially more than those contained in the Extreme Ozone Attainment Demonstration Plan.

The potential energy impacts associated with the Extreme Ozone Attainment Plan were determined to be less than significant. Additional energy impacts would be expected under the Early 8-Hour Attainment Demonstration Plan because additional control measures would be implemented. The actual energy impacts would depend on the additional control measures imposed. It is expected that this alternative would require additional mobile source control measures and potentially generate significant increases in electricity and natural gas use due to increase electrification of sources or use of alternative fuels (e.g., natural gas). Under this alternative, additional energy sources (e.g., power plants) are likely to be required and are, therefore, considered significant..

The potential impacts on water demand associated with Alternative 3 are expected to be less than significant. Most of the additional control measures are expected to be related to controls on mobile sources and not on stationary sources. The potential control options 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 is no expected impact to hydrology from the affected potential control options and a potential impairment to the water quality from improper disposal of batteries from electric vehicles. Mobile source control measures would not be expected to require water, so no significant increase in water demand would be expected.

The potential 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 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 emissions 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. Emissions reductions from federal sources such as planes, trains, ships, 49-state vehicles, and farm and construction equipment also could be included in this control strategy. A portion of the wastes generated is expected to be recyclable so that the impacts of this alternative are expected to be less than significant.

4.4.3 COMPARISON

Pursuant to CEQA Guidelines §15126.6(d), an EIR should include sufficient information about each alternative to allow meaningful comparison with the proposed project. Section 15126.6(d) also recommends the use of a matrix to summarize the comparison. Table 4.4-1 provides this matrix comparison.

Since the No Project Alternative would not ultimately achieve the long-term benefits of the Extreme Ozone Attainment Demonstration Plan, would not attain the state and federal ambient air quality standards, and is not a legally viable alternative, it generally has greater environmental impacts than the proposed project or other alternatives. .

Under Alternative 2, the early Reasonable Further Progress Plan, emission reductions would be less than those of the Proposed Project, i.e., Extreme Ozone Attainment Demonstration Plan, and Alternative 2 would not demonstrate attainment of the federal one-hour ozone standard. Thus, anticipated air quality benefits achieved under the Proposed Project (attainment of the federal one-hour ozone standard) would be greater than the negative impacts from the Proposed Project. Overall, the Proposed Project is environmentally superior to Alternative 2 because the negative impacts of additional control measures are offset by the attainment of the one-hour federal ozone standard. Alternative 2 depends on control measures already in the Amended 2002 and 2005 ROP

Plan and the 2003 PM10 Plan to meet a five percent emission reduction requirement over the period 2002 to 2007. It does not demonstrate attainment of the standard, nor does it meet the standard reasonable further progress reductions specified in the federal Clean Air Act. It only meets the emissions reductions requirements specified in the 8-hour ozone Phase I rule for the early Reasonable Further Progress Plans for 8-hour ozone. Alternative 3 has the environmental benefit of demonstrating attainment for a more stringent standard (federal 8-hour ozone), but the District would not be able to identify and evaluate control measures in time to prepare and submit the 8-hour Ozone Attainment Demonstration Plan by June 15, 2005; consequently, this alternative is much less feasible and borders on being rejected for that reason. Alternative 1 has fewer control measures than the Proposed Project, but also has the imposition of federal measures that may imposed on local systems without much dovetailing with existing infrastructure capacity, thereby leading to greater adverse impacts.

TABLE 4.4-1

Comparison of Alternatives

ENVIRONMENTAL RESOURCE	Proposed Project	Alternative 1	Alternative 2	Alternative 3
Air Quality				
Secondary Air Quality Impacts	NS	NS(-)	NS(-)	PS(+)
Attainment of AAQS	NS	PS(+)	NS(-)	NS(+)
Utilities and Service Systems				
Electricity Demand	NS	NS(=)	NS(-)	PS(+)
Natural Gas Demand	NS	NS(=)	NS(-)	PS(+)
Water Demand	NS	NS(=)	NS(-)	NS(=)
Solid/Hazardous Waste Impacts	NS	NS(=)	NS(-)	NS(+)

NS = Not Significant Impact
PS = Potentially Significant Impact
(+) = Impacts are greater than the proposed project
(-) = Impacts are less than the proposed project
(=) = Impacts are equal to the proposed project