

5.5 AIR QUALITY

5.5.4 IMPACTS AND MITIGATION MEASURES

Impacts/ Mitigation

Impact 5.5-1 Construction Emissions

AD, AE Construction of both Alternative D and Alternative E would result in the temporary generation of emissions of ROG, NO_x, and PM₁₀. Construction-related emissions result from construction equipment exhaust, construction employee commute travel, and fugitive dust from land clearing, earthmoving, and wind erosion of exposed soil. Additionally, asphalt paving activity generates emissions of ROG. The total worst-case daily construction-related emissions associated with the interchange, without mitigation measures, would be approximately 12.92 lbs/day of ROG, 102.57 lbs/day of NO_x and 407.51 lbs/day of PM₁₀. The analysis conducted for the proposed interchange project concluded that the emissions of NO_x and PM₁₀ would be a less-than-significant short-term impact with the implementation of mitigation measures. Because the interchange for Alternative D and Alternative E would be the same as for the proposed interchange project, the short-term construction air quality impact for Alternative D and Alternative E would also be less-than-significant with mitigation measures identified in Mitigation Measure 5.5-1 of the 2002 Final EIR.

The analysis of construction air quality impacts conducted for the proposed casino/hotel project in the 2001 NIGC EA concluded that, with mitigation, emissions from construction activities would be less than significant. Mitigation measures include compliance with the intent of Chapter 8.44 of Title 8 of the El Dorado County Ordinance Code, “Naturally Occurring Asbestos and Dust Protection Ordinance.” Section 8.44.030 of this ordinance specifically addresses “General Requirements for Grading, Excavation and Construction Activities.” Additional measures include detailed construction practices to reduce fugitive dust, creation of a Health and Safety Plan, employee training, air monitoring, and the voluntary implementation of the Air Pollution Control District’s (APCD) Rules 215,224,229 and 300.

Development under Alternative D and Alternative E would result in a development footprint that is similar or reduced when compared with the Proposed Project. Accordingly, construction air quality would be less than for

the Proposed Project, but the mitigation measures identified in the 2001 NIGC EA would also apply to Alternative D and Alternative E.

Mitigation 5.5-1 Construction Emissions

No additional mitigation is required beyond that recommended in the 2002 Final EIR and the 2001 NIGC EA and incorporated into the hotel/casino and interchange projects.

Impact 5.5-2 Asbestos Emissions

AD, AE Both construction of the interchange and the on-Rancheria casino/hotel would occur in an area of the Sierra foothills region that includes an abundance of serpentine rock. When serpentine rock is broken or crushed, asbestos may be released from the rock and may become airborne, causing a potential health hazard. This is considered a significant but mitigable impact with the measures identified in the 2002 Final EIR and 2001 NIGC EA.

Mitigation 5.5-2 Asbestos Emissions

No additional mitigation is required beyond that recommended in the 2001 NIGC EA and the 2002 Final EIR and incorporated into the casino/hotel and interchange projects.

Impact 5.5-3 General Conformity with the State Implementation Plan

AB, AC As stated in the 2002 Final EIR, the U.S. EPA has established “de minimis” emissions thresholds of 25 tons per year for VOC emissions, 25 tons per year for NO_x emissions, and 100 tons per year for PM₁₀ emissions. The analysis conducted for the proposed casino complex in the 2001 NIGC EA concluded that emissions would be 2.02 tons per year of VOC emissions, 16.00 tons per year of NO_x emissions, and 55.98 tons per year of PM₁₀ emissions, which are all below the applicable thresholds. Both Alternative D and Alternative E include the same types of uses as the Proposed Project, albeit with a smaller casino in both alternatives, and no hotel in Alternative E. Therefore, both alternatives would generate fewer emissions than the Proposed Project. Therefore, a less than significant impact would result from both Alternative D and Alternative E.

Mitigation 5.5-3 General Conformity with the State Implementation Plan

None required.

Impact 5.5-4 Transportation Conformity with the State Implementation Plan

AD, AE As shown in **Table 5.5-4** of the 2002 Final EIR, the estimated regional mobile source emissions for each of the three analysis years and each of the three types of pollutants are less than the emissions budget. The analysis concluded that since these emission estimates are less than the emissions budgets, the Proposed Project conforms with the SIP. The same conclusion applies for Alternative D and Alternative E since they would produce fewer emissions than the Proposed Project.

Mitigation 5.5-4 Transportation Conformity with the State Implementation Plan

None required.

Impact 5.5-5 Carbon Monoxide Emissions

AD, AE The air quality analysis conducted for the Proposed Project in the 2001 NIGC EA concluded that a less-than-significant impact in carbon monoxide emissions would result for both the Existing Plus Project Conditions and 2025 Cumulative Plus Project Conditions. The emissions resulting from both Alternative D and Alternative E would be less-than-significant because the smaller facilities associated with those alternatives would produce fewer emissions than the Proposed Project.

Mitigation 5.5-5 Carbon Monoxide Emissions

None required.

Impact 5.5-6 Cumulative Carbon Monoxide Impacts

AD, AE As shown in **Table 5.5-5** in the 2002 Final EIR, the highest 1-hour average CO concentration for the Proposed Project is 3.0 ppm and the highest 8-hour average CO concentration is 2.1 ppm. These concentrations are estimated to

occur southeast of the Rancheria. Both the 1-hour value and the 8-hour value under Existing Plus Project Conditions are below the CO air quality standard.

Under 2025 Cumulative Plus Project Conditions, the highest 1-hour average CO concentration is 2.5 ppm and the highest 8-hour average CO concentration is 1.8 ppm. These concentrations are estimated to occur southeast of the Rancheria. Both the 1-hour value and the 8-hour value under 2025 Cumulative Plus Project Conditions are below the CO air quality standard. The same conclusion applies for Alternative D and Alternative E because they would produce fewer emissions than the Proposed Project evaluated in the 2001 NIGC EA.

Mitigation 5.5-6 Cumulative Carbon Monoxide Impacts

None required.

Impact 5.5-7 Project Specific Ozone Precursor Emissions

The Court of Appeal directed Caltrans to disclose and analyze the interchange project's specific traffic-related ROG and NO_x emissions (or estimates), its contribution to the regional emissions budgets, and whether these emissions and contributions are significant. Decision at 57-58. This Section 5.5-7 provides the required analysis.

Because Caltrans lacks jurisdiction over the Shingle Springs Rancheria, and therefore over the hotel/casino project, the 2002 Final EIR considered the impacts of the traffic generated by the hotel/casino and all other land uses on the Rancheria as indirect impacts of the interchange project (acknowledging that all hotel/casino traffic would pass through the interchange). Likewise, this Supplemental EIR analyzes the impacts of all of the traffic generated on the Rancheria that passes through the interchange, including the hotel/casino traffic, as indirect impacts.

5.5-7.1 Estimates of the Interchange Project's Specific Traffic-Related ROG and NO_x Emissions

In response to the Court of Appeal decision, Caltrans has estimated the interchange project's specific traffic-related ozone precursor (ROG and NO_x) emissions. (As explained above, this includes all ozone precursor emissions of the hotel/casino project.)

The calculation of ozone precursor emissions for the 2002 Final EIR was done using Version 7F of the computer modeling software packages known as EMFAC and BURDEN. Specifically, EMFAC 7F was used to generate data for the regional transportation conformity analysis contained in the 2002 Final EIR. EMFAC is used to estimate emission rates, which are then input to BURDEN, which calculates emissions estimates. BURDEN is commonly used to estimate regional emissions, which are then compared to the regional motor-vehicle emissions budgets in the State Implementation Plan to determine conformity with that Plan. BURDEN is also used by the California Air Resources Board and the Sacramento Area Council of Governments to calculate motor-vehicle emission budgets. Because EMFAC is an input to BURDEN, the versions of BURDEN and EMFAC correspond to one another.

Due to its direct compatibility and relationship to EMFAC, and the fact that it is used for regional conformity analyses in many areas of California, including the Sacramento non-attainment area (which includes El Dorado County), Caltrans determined that BURDEN is the appropriate tool for providing the project-specific emissions estimates the Court of Appeal required. Also Burden is geared toward roadway on transportation projects, and is well-suited for estimating ozone precursor emissions for a single project.

During the prior proceedings on the 2002 Final EIR, El Dorado County and Voices for Rural Living (VRL) claimed that the analysis should have been done using Version 2002 of EMFAC (EMFAC 2002). Both the trial court and the Court of Appeal rejected that contention and upheld the use of Version 7F. El Dorado County and VRL also claimed that Caltrans overestimated “pass-by” trips, and that this artificially reduced the amount of traffic, and therefore the ozone precursor emissions associated with the interchange.¹ The trial court and the Court of Appeal rejected those claims. Nonetheless, to be overly conservative, Caltrans has calculated estimates of the interchange project’s specific traffic-related ROG and NOx emissions using both BURDEN 7F and BURDEN 2002, and with and without credit for pass-by trips. **Tables 5.5-6 and 5.5-7** below set forth those project-specific emission estimates for the interchange project.

¹ Pass-by trips are trips that are already passing by the project location and are diverted to the project. In other words, they are existing trips that now visit the project, as opposed to entirely new trips that the project may generate.

5.5-7.2 Contribution of interchange project specific traffic-related ROG and NOx emissions to regional emissions budget

The Court of Appeal directed Caltrans to compare its estimates of the interchange project's specific traffic-related ROG and NOx emissions to the applicable motor-vehicle emissions budgets and to disclose the percentage of those budgets that the project-specific emissions constitute. Those percentages are also set forth in **Tables 5.5-6** and **5.5-7** below. In all cases, they are less than one-half of one percent.

5.5-7.3 Significance of interchange project specific traffic-related ROG and NOx emissions

The significance of ozone precursor emissions is best determined on a regional basis, due to the manner in which ozone is formed. Specifically, ground-level ozone is produced in complex chemical reactions when its precursors, ROG and NOx, react in the presence of sunlight. Ozone is formed over time and distance in a region depending upon the nature and extent of the precursor emissions, the geography over which they travel, and the particular weather conditions. The chemical reactions that create ozone take place while the wind is blowing the pollutants through the air, which means that ozone can be more or less severe many miles away from the source of precursor emissions than it is at the source, and that ozone impacts from the same emissions sources vary infinitely with changing weather conditions. Further, because not all car trips associated with the planned casino/hotel would be new trips, the project would redistribute ozone precursors, rather than simply generating them at the interchange, and those precursors will then move and mix over time and distance before forming ozone, depending upon weather conditions.

Consistent with the foregoing, all recognized measures of the significance of ozone precursor emissions are regional measures. Specifically with respect to CEQA, a regional methodology is most appropriate because the measures of air quality impacts set forth under Appendix G to the CEQA Guidelines relate to existing air quality regulatory standards. For ozone, all of these standards are regional. Therefore, Caltrans believes that the regional conformity analysis in Section 5.5-4 of the 2002 Final EIR is the best and most meaningful methodology to evaluate the interchange project's potential ozone

TABLE 5.5-6. ESTIMATES OF INTERCHANGE PROJECT SPECIFIC TRAFFIC BASED ROG AND NO_x EMISSIONS CALCULATED USING BURDEN 7F

| Emissions Category | With No Credit for Pass-By Trips | With Credit for Pass-By Trips |
|--|----------------------------------|-------------------------------|
| <u>Reactive Organic Gas Emissions</u> | | |
| Project related emissions (in tons per day) | 0.11 | 0.09 |
| Emissions budget (in tons per day) | 31.32 | 31.32 |
| Percent of emissions budget | 0.35% | 0.29% |
| <u>Nitrogen Oxides Emissions</u> | | |
| Project related emissions (in tons per day) | 0.23 | 0.18 |
| Emissions budget (in tons per day) | 61.35 | 61.35 |
| Percent of emissions budget | 0.37% | 0.29% |
| NOTE: All BURDEN 7F emission estimates are for project-opening year 2009 | | |

TABLE 5.5-7. ESTIMATES OF INTERCHANGES PROJECT SPECIFIC TRAFFIC BASED ROG and NO_x EMISSIONS CALCULATED USING BURDEN 2002

| Emissions Category | With No Credit for Pass-By Trips | With Credit for Pass-By Trips |
|--|----------------------------------|-------------------------------|
| <u>Reactive Organic Gas Emissions</u> | | |
| Project related emissions (in tons per day) | 0.08 | 0.06 |
| Emissions budget (in tons per day) | 41 | 41 |
| Percent of emissions budget | 0.20% | 0.15% |
| <u>Nitrogen Oxides Emissions</u> | | |
| Project related emissions (in tons per day) | 0.27 | 0.21 |
| Emissions budget (in tons per day) | 75 | 75 |
| Percent of emissions budget | 0.36% | 0.28% |
| NOTE: All BURDEN 2002 emission estimates are for project-opening year 2009 | | |

impacts. The project-specific emissions have been estimated and disclosed in this Supplemental EIR, however, in response to the Court of Appeal’s ruling.

5.5-7.4 Determination of Appropriate Significance Criteria

Caltrans has determined that the appropriate significance criteria for measuring the project-specific traffic-related ozone precursor emissions is a contribution of greater than one percent of the motor-vehicle emissions budget for the particular precursor in the air quality region.

Given the unprecedented nature of this analysis, Caltrans had to determine an appropriate measure of the potential significance of these project-specific ozone precursor emissions. Caltrans researched air quality statutes, regulations and activities at both the federal and state level to find a relevant comparison to assess the potential significance of the project-specific ozone precursor emissions. Caltrans determined that the following analysis by the United States Environmental Protection Agency (“US EPA”) assessing the significance of ozone precursor emissions on downwind regions provides the best measure of project-specific ozone impacts under these circumstances.

In 1998 and again in 2005, US EPA adopted regulations requiring reductions of NO_x emissions as a precursor to ozone based upon a determination of “significant contributions” from sources in upwind states to nonattainment in downwind states. In the first of these two rulemakings, the “NO_x SIP Call” (63 Fed.Reg. 57355 (October 27, 1998)), US EPA established criteria that it used to make its findings of a “significant” contribution to nonattainment.

In promulgating the NO_x SIP Call as a methodology to evaluate significant contributions of ozone precursors, US EPA considered contributions in terms of parts per billion (ppb) ozone attributable to upwind areas during exceedances at a given monitor based upon two different air quality modeling platforms, calculated the percentage contribution resulting from these mass emissions, and considered the frequency with which upwind areas contributed to elevated downwind monitored levels of ozone. US EPA found the lowest levels of notable contribution to be 2 ppb. *See* 63 Fed.Reg. at 57392-98.

In the second rulemaking, US EPA promulgated the Clean Air Interstate Rule (“CAIR”) at 70 Fed.Reg. 25161 (May 12, 2005). Relying on the analytical criteria adopted in the NO_x SIP call, the CAIR set forth criteria to determine the significance of contributions to downwind nonattainment from upwind states. In the CAIR, US EPA determined that a contribution to downwind nonattainment is significant if it is at least 2 ppb or greater than 1 percent of the emissions under the applicable ozone standard. 70 Fed.Reg. at 25175.

Following US EPA’s NO_x SIP Call and CAIR methodologies, Caltrans determined that a contribution of more than 1 percent of the emissions budget is an appropriate metric for determining the significance of the project’s ozone precursor emissions. The alternative measure, 2 ppb, is equal to 1.6 percent of

the 1-hour ozone standard, applicable at the time that the analyses for the project were performed and to which EMFAC 7F or BURDEN 7F applied, and 2.4 percent of the 8-hour ozone standard, which is applicable now and to which EMFAC 2002 or BURDEN 2002 applies. Given these numbers and the US EPA methodology, using 1 percent as a measure of potential significance is an appropriate and conservative approach.

The application of this 1-percent standard to the emissions estimates developed for the interchange project's traffic-related ROG and NOx emissions in **Tables 5.5-8** and **5.5-9**, below, demonstrates that those emissions are not significant. **Tables 5.5-8** and **5.5-9** also demonstrate that the emissions calculated using BURDEN 2002 are lower as a percentage of the emissions budget than emissions calculated using BURDEN 7F. BURDEN 2002 (lower emissions) is the version for which El Dorado County and VRL previously advocated, whereas BURDEN 7F (higher emissions) is the version Caltrans used in preparing the 2002 Final EIR for the interchange project.

Based on the foregoing facts regarding ozone formation and analysis, Caltrans has concluded that the required project-specific analysis is unprecedented and is of limited value in understanding ozone impacts and their relationship to applicable regulatory standards. Accordingly, the discussion of the significance of project-specific ozone emissions for the interchange project, and the metric used in arriving at those significance conclusions, is not intended to serve as precedent for any future analyses of other transportation projects.

TABLE 5.5-8. SIGNIFICANCE OF INTERCHANGE PROJECT SPECIFIC TRAFFIC-RELATED ROG AND NOX EMISSIONS (TONS PER DAY) WITH NO CREDIT FOR PASS-BY TRIPS

| Model | Interchange Emissions | Emissions Budget | Percentage of Budget | Project Level Significance | Significant? |
|--------------------|-----------------------|------------------|----------------------|----------------------------|--------------|
| BURDEN 7F | | | | 1% | |
| ROG | 0.11 | 31.32 | 0.35% | | No |
| NOx | 0.23 | 61.35 | 0.37% | | No |
| BURDEN 2002 | | | | 1% | |
| ROG | 0.08 | 41.00 | 0.20% | | No |
| NOx | 0.27 | 75.00 | 0.36% | | No |

TABLE 5.5-9. SIGNIFICANCE OF INTERCHANGE PROJECT SPECIFIC TRAFFIC-RELATED ROG AND NOX EMISSIONS (TONS PER DAY) WITH CREDIT FOR PASS-BY TRIPS

| Model | Interchange Emissions | Emissions Budget | Percentage of Budget | Project Level Significance | Significant? |
|--------------------|-----------------------|------------------|----------------------|----------------------------|--------------|
| BURDEN 7E | | | | 1% | |
| ROG | 0.09 | 31.32 | 0.29% | | No |
| NOx | 0.18 | 61.35 | 0.29% | | No |
| BURDEN 2002 | | | | 1% | |
| ROG | 0.06 | 41.00 | 0.15% | | No |
| NOx | 0.21 | 75.00 | 0.28% | | No |

5.5-7.5 Significance of interchange project specific traffic-related ROG and NOx emissions based on comparison against other projects in the region

The Court of Appeal also suggested that Caltrans might measure the potential significance of the interchange project's specific traffic-related ROG and NOx emissions by comparing those to the ROG and NOx emissions of another project in the regional transportation conformity analysis. Decision at 57-58. Without project-specific information about each project in the regional transportation conformity analysis, Caltrans cannot assess the specific ROG and NOx emissions of these projects. Nonetheless, Caltrans has sought a reasonable and appropriate comparison for the interchange/hotel-casino's specific traffic-related ROG and NOx emissions in El Dorado County's analysis of the land uses that will generate the majority of the traffic at the Missouri Flat interchange, which is on Highway 50 near the site of the proposed interchange and casino/hotel.

Tables 4.5-8 through 4.5-10 of El Dorado County's EIR for the "Missouri Flat Area MC&FP and Sundance Plaza and El Dorado Villages Shopping Center Projects," dated April 1998, provide the "Predicted Operational Mobile Source Emissions" for that project. Those emissions are presented in **Table 5.5-10** below, along with the emissions from the interchange project.

This comparison demonstrates that El Dorado County's Missouri Flat Area projects have substantially greater mobile source emissions than the interchange and proposed casino/hotel. In one instance, those emissions are triple the estimated emissions from the interchange. Nonetheless, the County concluded that traffic-related emissions of the Missouri Flat Area projects

were not significant because they did not cause exceedances of the regional emissions budgets.²

TABLE 5.5-10. COMPARISON OF INTERCHANGE PROJECT SPECIFIC TRAFFIC-RELATED ROG AND NOX EMISSIONS WITH THE MISSOURI FLAT AREA PROJECT ROG AND NOX EMISSIONS (TONS PER DAY)

| Model | Interchange Emissions (with no credit for pass-by trips) | Interchange Emissions (with credit for pass-by trips) | Missouri Flat Emissions |
|------------------|--|---|------------------------------|
| <u>BURDEN 7F</u> | | | <u>URBEMIS 5³</u> |
| ROG | 0.11 | 0.09 | 0.27 |
| NOx | 0.23 | 0.18 | 0.49 |

Comparing the impacts of two projects is not a recognized methodology for determining significance under CEQA because no one project provides a meaningful measuring point as to effects on the environment overall. The Court of Appeal listed this as a comparison of interest, however, thus it is provided here. While it may not be useful in determining significance under CEQA, it does demonstrate that the interchange project is far from the largest contributor of ozone precursors among recently proposed major projects in the region.

² In its EIR for the Missouri Flat interchange, El Dorado County concluded that the interchange itself did not have significant operational ozone impacts and failed to acknowledge the emissions generated by these land uses, regardless of the fact that it would carry significant traffic to and from these land uses. Conversely, both the 2002 Final EIR and this Supplement EIR acknowledge that the Shingle Springs interchange will carry and facilitate traffic generated by the casino and consider that traffic and its ozone precursor emissions to be impacts of the interchange itself. This procedure results in the fullest possible disclosure of information.

³ El Dorado County's Missouri Flat EIR uses URBEMIS 5, which uses the emissions factor program EMFAC 7F. Therefore, the Missouri Flat emissions are compared to the interchange project emissions estimated using BURDEN 7F. URBEMIS 5 and BURDEN 7F are different software programs, and are oriented toward different types of projects (URBEMIS toward land use projects and BURDEN toward transportation or roadway projects), but they serve a similar purpose and, provided with the same input values, would typically calculate similar emissions estimates.