

plan includes a control strategy that has been implemented to produce annual incremental reductions of emissions and that has thereby provided for RFP toward attainment of the standard by the applicable attainment date (December 31, 2000).

In this action, therefore, we propose to approve the projected emissions inventories, under sections 172(c)(3) and 187(a)(1) of the Act, and approve the 2000 CO plan with respect to the RFP requirements in sections 172(c)(2) and 187(a)(7) of the Act.

D. How Does the CO Plan Show Attainment of the CO Standards?

The attainment demonstration includes both an areawide and a hot-spot modeling analysis at heavily-

traveled intersections. The areawide analysis was conducted using the Urban Airshed Model (UAM), according to our "Guidance for Application of Urban Areawide Models for CO Attainment Demonstrations" (1992). The UAM analysis uses a December 8–9, 1996 episode. This episode predicted an 8-hour concentration of 11.2 ppm after all adjustments were incorporated. In addition to high 8-hour values on this day, the highest one-hour value (11.8 ppm) was also recorded on this episode day.

Emissions inventory data used in the base year (1996) UAM analysis were derived from the data shown in Table 2, above. The emissions inventory data used for the UAM analysis were disaggregated into 5 kilometer grid cells

throughout the modeling domain. On-road emissions were distributed using the 1996 roadway network and emission factors. Model performance for the base year UAM simulation is within our acceptable range of accuracy: +17 percent for the unpaired peak prediction, 0 percent for the paired peak prediction, and 3 hours for the timing error. See 2000 CO plan, page 5–5.

For the attainment year (2000) and for additional future years, on-road emissions were distributed using the Direct Travel Impact Model (DTIM) with latest projected roadway networks including future transportation projects from RTC. Thus, projected changes in Vehicle Miles Traveled (VMT), speed and vehicle occupancy rates were incorporated into the modeling.

TABLE 4.—UAM RESULTS FOR CONTROLLED AND UNCONTROLLED SCENARIOS
Concentrations [ppm]

| Year | Uncontrolled Scenario | Controlled Scenario |
|------------|-----------------------|---------------------|
| 1996 | 11.2 | 11.2 |
| 2000 | 9.1 | 8.1 |
| 2010 | 8.7 | 7.2 |
| 2020 | 10.5 | 8.5 |

Source: 2000 CO plan, Table 6–3.

The table shows the results of the UAM analysis for the 8-hour average (the corresponding NAAQS is 9 ppm). Concentrations for the 8-hour average are shown for the maximum concentration predicted over the modeling domain. The predicted regional maximum 8-hour average CO concentration is 8.1 ppm in the year 2000, assuming implementation of all new control measures. The UAM analysis thus shows attainment with a margin of safety based on fully adopted regulations. However, an additional model, CAL3QHC must be used to

determine the maximum CO levels in the area. CAL3QHC is needed to predict the micro-scale impacts of vehicles operating at congested intersections. Vehicles operating within congested conditions spend more time in idle modes that can contribute to high levels of CO near the roadways.

Microscale modeling was conducted for three intersections within Las Vegas Valley; (1) Charleston Blvd./Eastern Avenue, (2) Charleston Blvd./Fremont Street and (3) Eastern Avenue/Fremont Street. These three intersections comprise the "5 points" area which is

near the Sunrise Acres CO monitoring station. For years 2000, 2010, and 2020, traffic data from the roadways were combined with emission factors from MOBILE5b and meteorological data to predict local hotspot concentrations. These hourly results from the microscale model were then combined with hourly concentrations from the background UAM grid cell to compute maximum running 8-hour concentrations. The combined results of the CAL3QHC and UAM results are shown in Table 5 below.

TABLE 5.—INTERSECTION MAXIMUM PREDICTED COMBINED 8-HOUR CO LEVELS (PPM)

| Intersection | 2000 | 2010 | 2020 |
|--------------------------|------|------|------|
| Charleston/Eastern | 8.3 | 7.3 | 7.6 |
| Charleston/Fremont | 6.7 | 5.9 | 6.4 |
| Eastern/Fremont | 7.6 | 6.6 | 7.4 |

Source: 2000 CO plan, Table 6–4.

In addition to roadway intersections, high microscale CO levels can occur at airports. To model the impact of airport sources, the Emissions and Dispersion Modeling System (EDMS) model was used. This model was developed for evaluating the specific emission sources typically located at airports. As with CAL3QHC, the hotspot results from

EDMS must be combined with the results of the UAM analysis to predict the concentrations at receptors around the airports. The 2000 CO plan presents results of the combined UAM and EDMS models for the base case (uncontrolled). Even without controls, no values above the 9.0 ppm standard are shown for the attainment year

(2000). The peak combined concentration at McCarran International Airport for future years is 9.07 ppm for 2020. However, with the addition of just one of the controls included in the plan (specifically, Cleaner Burning Gasoline), the predicted concentration is reduced to 7.67 ppm, well below the 8-hour standard. Therefore, we propose to grant