

Chapter Seven – Assessment of Current SIP Strategy for Meeting Reasonable Progress Goals (40 CFR 51.308(g)(6))

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7.1 Status Summary

This progress report clearly demonstrates that the current implementation plan elements and strategies outlined in the 2009 RH SIP are sufficient to enable Nevada to meet the reasonable progress goals for those extinction species that originate from anthropogenic sources. As shown in Chapter Five, 2008 actual emissions are less, and in some cases far less, for all visibility impairing pollutants, except fine soil and coarse mass, than the projected 2018 emissions used to determine Nevada's reasonable progress goal. Moreover, the expected future reductions in anthropogenic emissions based on further controls, shutdowns, and conversions to either natural gas or lower sulfur fuels will serve to enhance this downward trend in the coming years. See Chapter Two.

Chapter Four clearly demonstrates that the visibility benefit from anthropogenic emission reductions is hidden due to contributions from natural sources. Nonetheless, there are improvements in the haze index for the worst days, as well as in light extinction due to sulfate, nitrate and elemental carbon from the baseline to the current planning period. Visibility conditions for the best days show considerable improvement with a significant decrease in the haze index. Light extinction on the best days for all monitored species decreased or held steady from the baseline to the current planning period.

Trend analysis of the 2000 to 2012 nitrate and sulfate annual extinction values demonstrates that the slopes of the trend lines are comparable to (sulfate) or better than (nitrate) the speciated glide slopes. Chapter Four, Section 4.6.

51.308(g) . . . Periodic progress reports must contain at a minimum . . .

(6) An assessment of whether the current implementation plan elements and strategies are sufficient to enable the State, or other States with mandatory Federal Class I areas affected by emissions from the State, to meet all established reasonable progress goals.

7.2 Requirements

40 CFR 51.308(g)(6) requires an assessment of whether the current SIP elements and strategies are sufficient to enable the state, or other Class I areas affected by emissions from the state, to meet all established reasonable progress goals.¹ Because of the large

contributions to visibility impairment due to natural source (non-anthropogenic) emissions, Nevada has focused its assessment of implementation plan elements and strategies on

¹ See the discussion in Chapter One of the correction to the 2018 visibility projection for Jarbidge WA conducted by the Regional Modeling Center. Nevada concludes that it is reasonable to retain the reasonable progress goal of 11.05 deciviews, which aligns closely with the 2018 uniform rate of progress value for Jarbidge WA

impairment due to sulfate and nitrate light extinction resulting from largely anthropogenic emissions of SO₂ and NO_x, although other visibility impairing pollutants are also assessed. The RHR uses the uniform rate of progress (glidepath), measured as a haze index, toward “natural conditions” as the metric for determining whether a state is making reasonable progress. However, this measure puts most western states like Nevada, where visibility impairment from natural sources like wind-blown dust and wildfire overwhelms the visibility benefit from reduction of anthropogenic emissions, in an untenable position. The NDEP urges USEPA to revisit the RHR to establish a more appropriate and meaningful metric for measuring reasonable progress.

7.3 Emissions Analysis

An analysis of emission reductions in Nevada indicates that the state is on track to achieve its emission reduction goals in 2018. Chapter Five presents visibility-impairing pollutant emission data for Nevada, which demonstrate the 2008 emission inventory is less than the projected 2018 inventory with the exception of fine soil and coarse mass. See Table 5-1. Notably, actual 2008 SO₂ emissions are approximately 40 percent of the 2018 projected emissions, while the actual 2008 NO_x emissions are roughly 90 percent of the 2018 projection. Chapter Five compares sector-specific 2008 and 2011 NEI data, demonstrating further reductions in anthropogenic SO₂ and NO_x emissions from Nevada point sources. See Tables 5-6 and 5-8. The expected future reductions in anthropogenic emissions based on further controls, shutdowns, and conversions to natural gas, lower sulfur fuels, or renewables (see Chapter Two) will serve to continue this downward trend in the coming years.

7.4 Visibility Analysis

Improvement in visibility conditions at JARB1 for the worst days has not kept pace with Nevada’s emissions reductions due to large contributions from particulate organic matter. The improvement in visibility impairment, as measured by the haze index at JARB1, is not on the glide path for the worst days as discussed in Chapter Four. However, Table 4-2 shows that the five-year annual average haze index and sulfate, nitrate, and elemental carbon light extinction values all improved from the baseline to the current planning period represented by 2008-2012 for the worst days. In addition, light extinction values for all the visibility-impairing pollutants decreased for the best days.

Figure 4-3 shows the large year-to-year variability of particulate organic matter extinction and its significant contribution and influence on the annual haze index, as well as the relatively flat contributions of the other species’ extinction for the worst days over time. Figure 4-4 demonstrates the downward trends of the haze index and speciated extinction values, indicating continued improvement of visibility for the best days from 2001 to 2012.

Visibility impairment at JARB1 for the worst days is dominated by emissions from natural sources that form particulate organic matter, and coarse mass emissions that originate roughly

equally from anthropogenic and natural sources. Sulfate is the only significant contributor to visibility impairment at JARB1 that originates from anthropogenic sources. Nitrate originates from anthropogenic sources, but has only a small contribution to visibility impairment on the worst days.

Trend analysis of the worst days annual JARB1 sulfate and nitrate monitor data from 2000 to 2012 (see section 4.6) documents that the slopes of the trend lines for sulfate and nitrate are comparable to or better than the corresponding speciated glideslopes. The annual monitored sulfate and nitrate values are expected to continue or improve these trends in the coming years as BART control measures and other reasonable progress controls are implemented throughout the western United States.

7.5 Conclusions

Nevada concludes that the current implementation plan elements and strategies outlined in the 2009 RH SIP are sufficient to enable Nevada and other neighboring states to meet the reasonable progress goals for those extinction species that originate from anthropogenic sources given the following observations:

- Nevada has achieved significant emissions reductions in the first progress period.
- Emissions from natural sources play a much more dominant role in visibility impairment at JARB1 than emissions from anthropogenic sources.
- Visibility impairment resulting from sulfate and nitrate is decreasing at rates comparable or better than the speciated glideslopes.
- BART and other reasonable progress controls have not yet been fully implemented and the corresponding emission reductions have not yet been fully realized. Therefore, corresponding monitor results were not expected for this progress report.

The NDEP committed in the Nevada RH SIP to re-examine the need for additional non-EGU controls during the State's five-year progress report. As evidenced by the current and expected SO₂ and NO_x emissions reductions from EGUs, further reductions from non-utility, industrial point sources are unnecessary at this time.