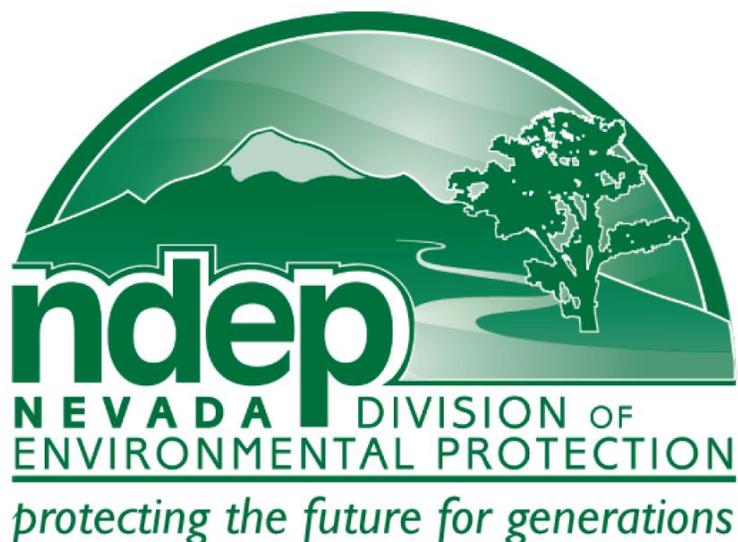


2012 Revision to the Nevada State Implementation Plan for Carbon Monoxide



Updated Limited Maintenance Plan for the **NEVADA SIDE OF THE LAKE TAHOE BASIN** Including Douglas, Carson City and Washoe Counties

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CONTENTS

1.0	BACKGROUND	1
2.0	MAINTENANCE DEMONSTRATION	3
	2.1 Monitoring Data.....	3
	2.2 Air Quality Trends.....	7
	2.3 Monitoring Commitment.....	9
3.0	VERIFICATION OF CONTINUED ATTAINMENT.....	9
	3.1 Population Data.....	9
	3.2 Indicators.....	10
	3.3 State Authority.....	11
4.0	CONTINGENCY MEASURES.....	11
5.0	TRANSPORTATION CONFORMITY REQUIREMENTS	11

APPENDIX: PUBLIC PARTICIPATION PROCESS DOCUMENTATION

List of Tables

Table 1. Monitoring Data From Stateline, 1975-2011: Eight-Hour Non-Overlapping Average CO Concentrations (ppm)	4
Table 2. Design Values for the Federal 8-Hour CO Standard (ppm).....	5
Table 3. Lake Tahoe Basin Population Data.....	10

List of Figures

Figure 1. Lake Tahoe Basin Planning Area	2
Figure 2. Location of Harvey’s Monitoring Site at Stateline.....	6
Figure 3. CO Design Value Trends, Tahoe Basin, 1975-2011.....	7
Figure 4. Monitoring Site Comparison	8

DRAFT

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1. BACKGROUND

Nevada's Lake Tahoe Basin (Basin) planning area is defined by the hydrographic area 90 boundaries and includes portions of Washoe, Carson City and Douglas Counties (Figure 1). In 2003, the Nevada Division of Environmental Protection (NDEP) adopted and submitted a carbon monoxide (CO) Limited Maintenance Plan (LMP) for the Basin and requested that the Basin be redesignated to attainment for the federal 8-hour CO standard. The United States Environmental Protection Agency (USEPA) approved the LMP as a revision to Nevada's applicable state implementation plan (SIP) and formally redesignated the Basin to attainment, effective February 13, 2004 (68FR69611).

The approved LMP covers the period from February 13, 2004 through February 13, 2014. It includes monitoring data from 1989 through 2002, showing that the Basin had not exceeded the 8-hour CO standard during that time period; the Nevada side of the Basin has never violated the 1-hour standard. The LMP also demonstrated that the Basin would continue to attain the standard through 2014. Section 175A of the Clean Air Act (CAA) requires the initial maintenance plan to cover at least a ten-year period after redesignation, with a second SIP revision due within eight years of redesignation to demonstrate that the area will maintain the standard for another ten years (i.e., a full 20 years from the date of redesignation to attainment, or 2024 in this case).

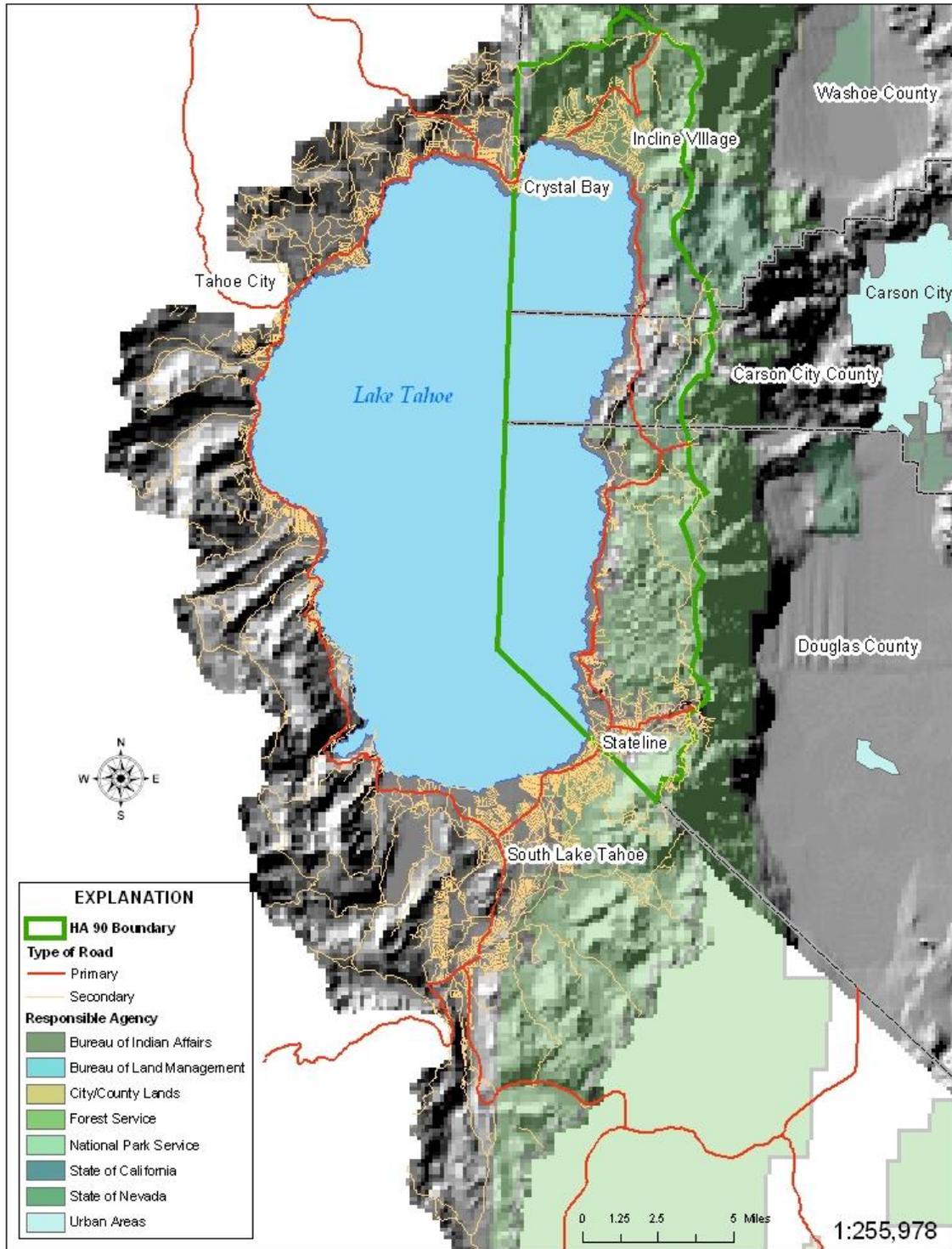
This proposed 2012 LMP revision to the Nevada CO SIP fulfills the section 175A requirement to submit an additional revision of the applicable SIP for maintaining the national primary CO ambient air quality standard from 2014 through 2024. Having already satisfied the five CAA requirements for redesignation (§107(d)(3)(E)), this revision focuses on updating the fifth element by extending the maintenance plan through 2024. This SIP revision includes:

- A maintenance demonstration; air quality data that demonstrate the Basin has been in attainment for the past 33 years and continues to be in attainment.
- Means to verify the attainment status of the redesignated area through 2024.
- Contingency provisions to assure that the State will promptly correct any violation of the standard that may occur after the redesignation of the area as an attainment area.

Projected emissions of CO from 2014 through 2024 are not included. Before the redesignation in 2004, the Basin was designated "nonclassifiable nonattainment" for CO. USEPA guidance provides that for nonclassifiable nonattainment areas using USEPA's LMP approach, a design value that is equal to or below 7.65 ppm is a satisfactory maintenance demonstration; there is no requirement to project emissions over the maintenance period (USEPA guidance memorandum, "Limited Maintenance Plan Option for Nonclassifiable CO Nonattainment Areas," Joseph Paisie, Office of Air Quality and Planning Standards, October 6, 1995). The Nevada side of the Lake Tahoe Basin meets this criterion.

FIGURE 1

LAKE TAHOE BASIN PLANNING AREA



2. MAINTENANCE DEMONSTRATION

The 2012 LMP update relies on a history of clean data to demonstrate maintenance of the CO standard through 2024. Monitoring data show that CO levels in the Basin have been under 80 percent of the CO NAAQS for 33 years, with a clear downward trend.

USEPA guidance states that nonclassifiable CO nonattainment areas seeking redesignation to attainment whose design values are at or below 7.65 ppm (85 percent of the CO NAAQS) at the time of redesignation may choose to submit a less rigorous maintenance plan than was formerly required (USEPA guidance memorandum, “Limited Maintenance Plan Option for Nonclassifiable CO Nonattainment Areas,” Joseph Paisie, Office of Air Quality and Planning Standards, October 6, 1995). This “limited maintenance plan” option was selected for the Nevada side of the Basin. Based on data from Stateline, Nevada, (Table 1) for calendar years 2009-2010 the 8-hour average CO design value is 3.1 ppm (Table 2), substantially under the required maximum of 7.65 ppm and substantially lower than the 6.1 design value in the initial 10-year LMP submitted in 2003. Therefore, there is no requirement to project emissions over the 2014-2024 limited maintenance plan period.

2.1 Monitoring Data

The Nevada side of the Basin has one State and Local Air Monitoring Station (SLAMS) located in Stateline at the southern edge of Lake Tahoe (Figure 2). Stateline, together with the adjacent city of South Lake Tahoe in California, represents the most highly populated area in the Basin. The SLAMS site was located at the Horizon Casino Resort (previously owned by the Sahara Hotel and later the High Sierra Hotel between 1975 and 1982) until mid-1999. It was then relocated and installed at Harvey’s Resort and Hotel as a “microscale” site for CO in the core of the Stateline casino hotel area. The Harvey’s site is designed to monitor the highest CO concentrations in the south shore casino district.

Table 1 shows the first and second highest non-overlapping, eight-hour average monitoring data from the Horizon/Sahara/High Sierra site from 1975 through June 1999 and from the Harvey’s site from October 1999 through December 2011. These data are recorded in USEPA’s Air Quality System (AQS) data base. The data were collected and quality assured in accordance with 40 CFR 58 and support continued attainment of the CO NAAQS in accordance with 40 CFR 50.8.

It is evident from Table 1 that the eight-hour CO NAAQS has not been violated in the Basin in the last 33 years. The Basin was designated nonattainment for CO on November 25, 1977, based on 1976 monitoring data. By 1979, the Basin was attaining the standard. From 1979 on, there have been no exceedances of the CO NAAQS.

TABLE 1

MONITORING DATA FROM STATELINE, 1975-2011:
EIGHT-HOUR NON-OVERLAPPING AVERAGE CO CONCENTRATIONS (ppm)

Year	1 st High	2 nd High	Federal Exceedances
Sahara Hotel/High Sierra Hotel ID#32-005-0002 (roof of the Sahara Hotel ballroom); 32-005-0003 (parking lot of the Sahara/High Sierra Hotel)			
1975	14.8	11.5	6
1976	10.9	10.0	4
1977	13.6	12.1	13
1978	10.6	10.3	4
1979	5.1	4.8	0
1980	7.3	7.1	0
1981	7.1	6.6	0
Horizon Casino Resort, Middle Scale Site ID# 32-005-0004 (SLAMS)			
1982	7.3	7.0	0
1983	3.6	3.5	0
1984	6.8	6.6	0
1985	6.7	6.2	0
1986	6.5	6.4	0
1987	5.4	5.2	0
1988	4.0	3.9	0
1989	5.4	4.8	0
1990 ^a	5.0	4.1	0
1991	3.7	3.4	0
1992	3.4	3.2	0
1993	3.7	3.6	0
1994	3.6	2.8	0
1995	2.6	2.5	0
1996	2.3	2.1	0
1997	1.8	1.7	0
1998	1.9	1.8	0
1999 ^b	2.1	2.0	0
Harvey's Resort and Hotel, Microscale Site ID# 32-005-0009 (SLAMS)			
1999 ^c	4.6	4.3	0
2000	4.4	4.2	0
2001	3.7	3.6	0
2002	8.8 ^d	6.1	0
2003	7.3 ^e	6.5	0
2004	4.4	4.4	0
2005	3.8	3.6	0
2006	3.1	3.0	0
2007	4.5	3.7	0
2008	2.5	2.4	0
2009	3.4	2.6	0
2010	3.3	3.1	0
2011	3.3	2.7	0

^a Power disruptions due to construction & vandalism: incomplete year.

^b Data for January - June; discontinued monitoring at this site after June 1999.

^c New site: 1999 data were collected for October-December only.

^d This average occurred on Friday, July 5 from 12:00 midnight to 7:00 a.m. PDT. Possible causes include: post-fireworks traffic congestion; weather conditions favorable to pollutant build-up; and the Heavenly Gondola fire beginning July 3rd.

^e This average occurred on the Sunday after a popular holiday period when many tourists were leaving the Basin, resulting in increased congestion at Stateline.

Source: State of Nevada, Bureau of Air Quality (Planning), *Trend Reports*, 1980-2010 and USEPA AQS Quick Look Reports.

Table 2 shows design values from 1975 through 2011 and the percent of the level of the 8-hour standard, while Figure 3 shows air quality trends over the same period.

TABLE 2

DESIGN VALUES FOR THE FEDERAL 8-HOUR CO STANDARD (ppm)^a

Years	Design Value	Percent of the 8-hour Standard
1975-76	11.5	128
1976-77	12.1	134
1977-78	12.1	134
1978-79	10.3	114
1979-80	7.1	79
1980-81	7.1	79
1981-82	7.0	78
1982-83	7.0	78
1983-84	6.6	73
1984-85	6.6	73
1985-86	6.4	71
1986-87	6.4	71
1987-88	5.2	58
1988-89	4.8	53
1989-90	4.8	53
1990-91	4.1	46
1991-92	3.4	38
1992-93	3.6	40
1993-94	3.6	40
1994-95	2.8	31
1995-96	2.5	28
1996-97	2.1	23
1997-98	1.8	20
The site was relocated in mid-1999. The new site meets microscale criteria (less than 10 meters from Highway 50), resulting in higher monitored concentrations.		
1998-99 ^b	4.3	48
1999-00 ^b	4.3	48
2000-01	4.2 ^c	47
2001-02	6.1 ^c	68
2002-03	6.5	72
2003-04	6.5	72
2004-05	4.4	49

2005-06	3.6	40
2006-07	3.7	41
2007-08	3.7	41
2008-09	2.6	29
2009-10	3.1	34
2010-11	3.1	34

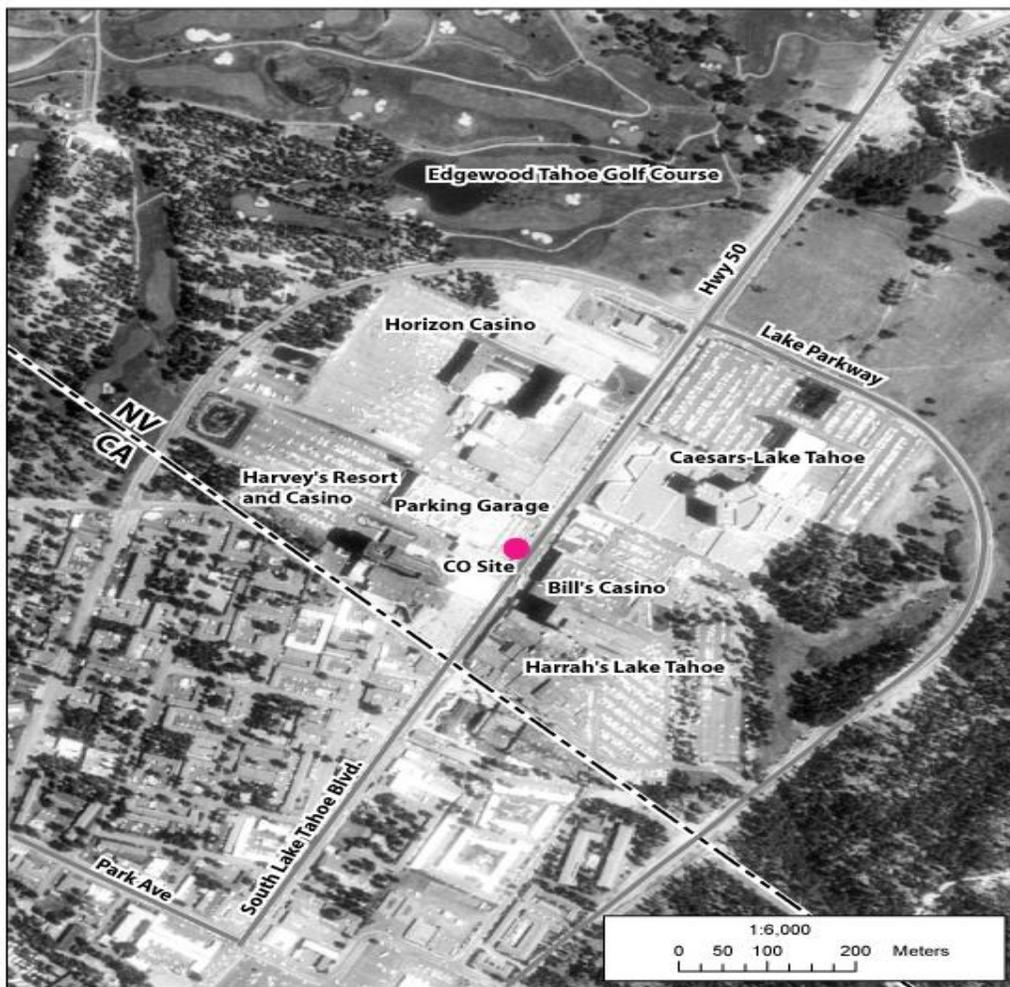
^a The design value is the highest of the second highest eight-hour concentrations observed at any site in the area in a two year period and is the value on which the determination of attainment or nonattainment is based.

^b January - June 1999 data were collected at the Horizon site, while October - December data were collected from the Harvey's microscale site.

^c Affected by the Star Fire, El Dorado National Forest, 8/28-29/01.

FIGURE 2

LOCATION OF HARVEY'S MONITORING SITE AT STATELINE



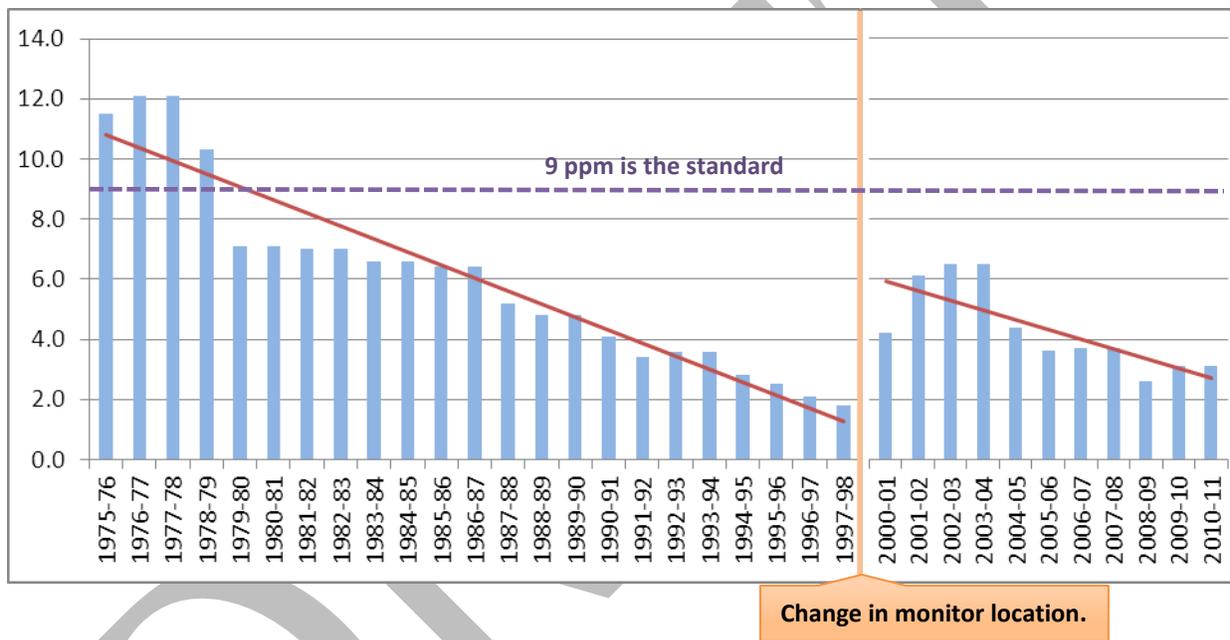
South Lake Tahoe Digital Ortho Phot Quad, USGS, 1992
State Boundary, Nevada Department of Transportation, 2002

2.2 Air Quality Trends

Figure 3 shows a clear downward trend in CO levels measured at the Horizon site from 1979 to 1998. That site was located in a parking lot behind buildings that fronted on Highway 50 (Figure 4). In June of 1999, the Horizon site was closed. Since motor vehicles are the major contributor to CO pollution in the area, a new site was located at Harvey’s Resort and Hotel to meet microscale criteria, i.e., located in a street canyon/corridor between 2 and 10 meters from the edge of the nearest traffic lane. The Harvey’s site is located on the 1st level of Harvey’s parking garage facing Highway 50 (Figure 4).

FIGURE 3

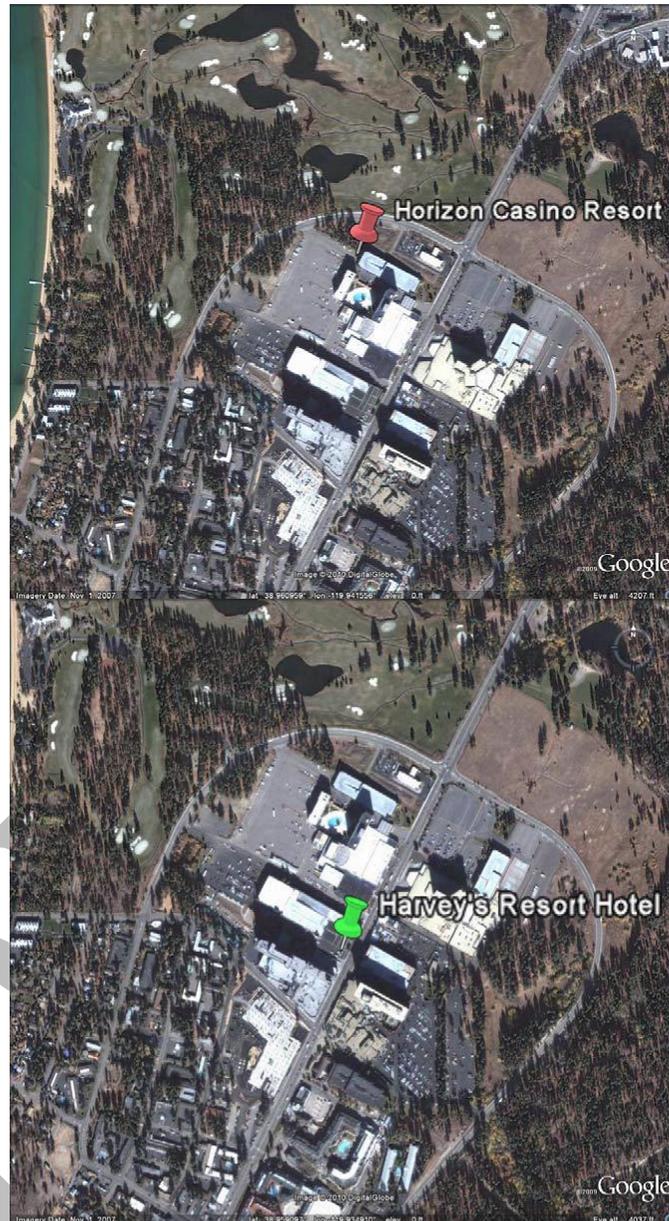
CO DESIGN VALUE TRENDS, TAHOE BASIN, 1975-2011



The Harvey’s site also shows a long term trend of decreasing design values from 2000-2011. The relocation and redesign of the site explain the jump in measured CO concentrations beginning in 2000. The higher design values for 2001-2002 through 2003-2004 may be attributed to exceptional events occurring in those years, including wild fires and conditions surrounding Fourth of July celebrations in 2002. Nevertheless, CO design values for the Basin have declined 30 to 50 percent from the 2002-2003 values to the present. For the past six years, values have been between 2.6 – 3.7 ppm, well below the federal standard.

FIGURE 4

MONITORING SITE COMPARISON



The USEPA has stated that if an area begins the maintenance period at or below 85 percent of exceedance levels, the air quality along with the continued applicability of PSD requirements, any control measures already in the SIP, and federal measures should provide adequate assurance of maintenance over the initial 10-year maintenance period (USEPA guidance memorandum, “Limited Maintenance Plan Option for Nonclassifiable CO Nonattainment Areas,” Joseph Paisie, Office of Air Quality and Planning Standards, October 6, 1995). It is reasonable to assume that this line of reasoning applies to the second 10-year LMP as well. The Basin remains well below 85 percent of exceedance levels with design values under 50 percent of the NAAQS since 2004.

2.3 Monitoring Commitment

The NDEP plans to discontinue CO monitoring at Stateline (located at Harvey's Resort and Hotel on Hwy 50) by June 30, 2012. The NDEP concludes that 33 years of clean data, all of it under 80 percent of the NAAQS and most recently at 34 percent, with on-going downward trends is sufficient evidence of continued attainment through 2024 and, together with the discussion and commitments in Section 3, Verification of Continued Attainment, satisfies 40 CFR 58.14 requirements for discontinuance. USEPA maintains that, ". . . regional office experience has demonstrated that CO monitors can be discontinued even if referenced in maintenance plans and SIPs." (EPA OAQPS power point presentation, "OAQPS Update on Emerging Monitoring Issues," by Chet Wayland and Lewis Weinstock, for WESTAR Council call, January 11, 2012) Further, the State/EPA Workgroup on Work Prioritization notes that, "EPA recognizes that technical, policy, and political considerations can impact the ability to discontinue monitors. Given this reality, EPA and states need to work together to weigh resources in light of revised monitoring requirements, and make appropriate judgments to divest of monitoring assets viewed as low-value." (State/EPA Workgroup on Work Prioritization paper, "Top 10 opportunities for greater efficiency or reduced burden without compromising public health," item 1.c, December 23, 2011)

Continued operation and maintenance of the site would cost on average about \$20,000 a year; additionally, it is likely that the existing 1983 analyzer would have to be replaced before 2024, costing another \$25,000 to \$30,000. The NDEP considers continued CO monitoring at Stateline to be low-value and, instead, will allocate its limited resources to higher priority projects.

3. VERIFICATION OF CONTINUED ATTAINMENT

3.1 Population Data

Population growth in the Basin is controlled by the Tahoe Regional Planning Agency (TRPA Code of Ordinances, Chapter 33). Population estimates for the towns on the Nevada side of the Basin were taken from the U.S. Census Bureau and the Nevada State Demographer (Table 3). The largest population center located totally within the Nevada side of the Basin is the Incline Village-Crystal Bay area of Washoe County. According to the 2010 census, the population of this area is 9,087. Incline Village and Crystal Bay are primarily residential and resort communities along the California state line on the north end of Lake Tahoe.

The other population centers along the Nevada shore are in Douglas County. From north to south, these include Glenbrook with a population of 215, Zephyr Cove with 1,324, Kingsbury with 2,152 and Stateline with 842. The total Douglas County population in the Basin, including outlying areas, according to the 2010 census is 5,402. The Carson City County area within the Basin is considered a rural area with a very minimal population. There are no towns in this area. It was not a "census designated place" in the 2010 census and does not have any population estimates available. Any existing population is expected to remain essentially stable in this rural area.

Altogether, the population on the Nevada side of the Basin was estimated at 14,489 in 2010, a decrease of 13.2 percent from 2000. The population on the California side of South Lake Tahoe declined over the 2000-2010 period as well.

TABLE 3
LAKE TAHOE BASIN POPULATION DATA

Geographic Levels Reported: State; County; Census County Division (CCD); Census Designated Place (CDP).

	2010	2000	1990	1980	1970	1960
Nevada	2,700,551	1,998,257	1,201,833	800,493	488,738	285,278
Douglas County	46,997	41,259	27,637	19,421	6,882	3,481
Zephyr Cove CCD ^a	5,402	6,739	6,115	5,368	3,015	1,017
Glenbrook CDP ^b	215					
Kingsbury CDP	2,152	2,624	2,238	2,695		
Zephyr Cove-Round Hill Village CDP	1,324	1,649	1,434	1,316		
Stateline CDP ^c	842	1,215	1,379			
Washoe County	421,407	339,486	254,667	193,623	121,068	84,743
Incline Village CCD ^d	9,087	9,952	7,567			
Incline Village-Crystal Bay CDP ^e	9,082	9,952	7,119	6,225		
California	37,253,956	33,871,648	29,760,021	23,667,902	19,953,134	15,717,204
Eldorado County	181,058	156,299	125,995	85,812	43,833	29,390
South Lake Tahoe CCD ^f	30,728	34,042	29,552	27,471	14,919	7,897
South Lake Tahoe City	21,403	23,609	21,588	20,681	12,921	

^a Zephyr Cove CCD began in 1990; prior to that it appears to be the Tahoe Township.

^b Glenbrook CDP began in 2010.

^c Stateline CDP began in 1990.

^d Incline Village CCD began in 1990.

^e Incline Village CDP first appears in 1980. Prior to that there are no geographic units assigned to the Washoe County portion of Lake Tahoe.

^f Boundaries for the Census County Divisions were revised in 1980; prior to that the CCD was the Lake Valley Division. Though not exactly the same, it approximates the same area.

Source: U.S. Census Bureau 2010 Census and Jeff Hardcastle, Nevada State Demographer, April 19 & 20, 2011 e-mails.

3.2 Indicators

Local CO levels and national trends for CO concentrations confirm that CO levels in the Basin will remain significantly below federal health standards into the future. On an annual basis, the NDEP provides CO point source emissions data to the USEPA as part of the National Emission Inventory (NEI) process. Additionally, every third year the NDEP provides emission model inputs that allow the USEPA to calculate a comprehensive emissions inventory, including CO emissions from on-road and non-road mobile sources. These inventories will indicate whether levels of CO in Nevada generally are remaining significantly below the NAAQS. The NDEP will

also track available monitored CO levels from nearby monitors, including Reno, NV and Sacramento, CA. If ambient CO levels rise significantly at those sites, the NDEP will conduct field studies using a portable CO monitor to determine whether CO concentrations in the Basin are at or above the 85th percentile of the NAAQS. If concentrations reach 85 percent of the NAAQS, the NDEP will evaluate whether it should re-establish a CO monitoring site and resume analyzing and reporting those data, and commit to developing a contingency program.

Vehicle miles traveled is also an indicator of growth and can be used as a surrogate for monitoring CO concentrations in the Basin. The TRPA is the planning agency for the Basin and is responsible, among other things, for transportation planning. In 2008, the TRPA published *Mobility 2030: Lake Tahoe Regional Transportation Plan* (http://www.trpa.org/documents/docdwnlds/rtp_final.pdf, August 27, 2008). Based on growth assumptions in the report, Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) were modeled for the 2012, 2017, 2022 and 2030 forecast time periods. VMT and VHT are expected to increase by 15.31 and 16.27 percent, respectively, over the forecast period, with the midday time period representing the greatest percentage (40 percent) of travel during the day. Given that the design value for CO at Stateline would have to almost triple to violate the NAAQS, while the VMT is only expected to increase by about 15 percent by 2030, it is a safe assumption that continued monitoring is not necessary. The NDEP will continue to track VMT in the Basin as reported by the TRPA and the Nevada Department of Transportation.

3.3 State Authority

The State has the legal authority to implement and enforce all measures necessary to maintain the CO NAAQS. The State has enforceable emission limitations; delegation of the federal PSD program; preconstruction review of new major stationary sources and modification of existing ones; adequate funding for all staff and resources; and authority to require all major sources to monitor and report.

4. CONTINGENCY MEASURES

One of the federal CAA requirements for maintenance plans is to identify contingency measures to offset any unexpected increases in emissions and ensure maintenance of the standard (CAA 175A). The NDEP is committed to ensuring implementation of all applicable CAA programs that will ensure compliance with the CO NAAQS. If any measures should prove to be insufficient, the State of Nevada will address any violation of the CO standard through the adoption and implementation of control measures as necessary. This approach was used in Nevada's maintenance plan for the sulfur dioxide NAAQS in the Central Steptoe Valley, approved by USEPA on April 2, 2002 (67 FR 17939). Together with future reductions in CO emissions associated with fleet turnover, the NDEP's commitment provides an ample margin of safety to maintain the CO standard on the Nevada side of the Lake Tahoe Basin.

5. TRANSPORTATION CONFORMITY REQUIREMENTS

Under the transportation conformity rule (40 CFR 93 subpart A) and the general conformity rule (40 CFR 93 subpart B), one means of demonstrating conformity is to show that expected emissions from planned actions are consistent with the emissions budget for the area. USEPA guidance asserts that in limited maintenance plan areas emissions budgets may be treated as

essentially not constraining for the initial 10-year maintenance period because the area is unlikely to grow enough that a violation of the NAAQS would occur. In other words, emissions need not be capped for the maintenance period. It follows, then, that any actions requiring transportation or general conformity determinations can either be considered to satisfy the budget test, or conversely, the budget test does not apply. The NDEP believes that it is reasonable to assume that this determination also applies to the second 10-year limited maintenance plan period.

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