

2011 Periodic Emissions Inventory  
Executive Summary

Statutory Requirement

The U.S. Environmental Protection Agency (EPA) establishes health-based national ambient air quality standards (NAAQS) for six criteria pollutants. Areas that have violated these NAAQS are designated as “non-attainment areas.” All areas of Washoe County currently attain these NAAQS, however, portions of the county have previously violated the 24-hour particulate matter less than 10 microns in diameter (PM10), 8-hour carbon monoxide (CO), and 1-hour ozone NAAQS.

The 1990 Clean Air Act Amendments require areas such as Washoe County to prepare and periodically update an emissions inventory (EI) for each non-attainment pollutant or precursor. The 2011 periodic EI satisfies these requirements. Emission inventories are a comprehensive accounting of all sources of air pollutant emissions. Washoe County has two distinct air pollution seasons - Ozone is a pollutant of concern in summertime, and both particulate matter (PM) and CO are pollutants of concern in wintertime. Summer and winter EI’s were developed to evaluate air pollutant emission contributions during these seasons. The 2011 EI will be formally submitted to EPA as a revision to the Washoe County portion of the Nevada State Implementation Plan (SIP).

2011 Inventory - Summer

Ozone is not a directly emitted pollutant, but formed from volatile organic compounds (VOC) and oxides of nitrogen (NOx) in the presence of sunlight. The summer EI represents emissions from a typical summer day when ozone concentrations are typically highest during the year. On-road mobile sources account for a significant portion of the summertime ozone precursors (VOC and NOx) emissions. Refueling these vehicles is also a large source of VOC emissions. Inspection/maintenance (Smog Check) programs have been an effective control strategy, but future increases in vehicle miles traveled could result in an overall increase in motor vehicle emissions. Non-road mobile sources (i.e., construction equipment, lawn and garden equipment) also account for a large portion of ozone precursors. Within the non-point category, consumer products (i.e., deodorants, household cleaning products) and architectural coatings are large contributors of VOCs.

Table 1  
2011 Summer Emissions (pounds/day)  
Washoe County

Category	PM10	PM2.5	CO	VOC	NOx	SOx	Pb
Point	1,839	40	6,579	3,003	9,140	883	0
Non-Point	103,603	33,362	261,904	27,686	7,956	2,165	3
Non-Road Mobile	1,689	1,605	212,546	22,856	16,690	25	0
On-Road Mobile	<u>2,454</u>	<u>,640</u>	<u>182,540</u>	<u>16,993</u>	<u>52,123</u>	<u>338</u>	<u>0</u>
Total	109,586	36,648	663,570	70,538	85,908	3,411	3

## 2011 Inventory - Winter

The wintertime pollutants of concern in the Truckee Meadows are PM10, particulate matter less than 2.5 microns in diameter (PM2.5), and CO. During temperature inversions, a layer of warm air traps and concentrates these pollutants in the valley. When PM2.5 levels exceed the 24-hour NAAQS, the Health District activates its Emergency Episode Plan and Red Burn Code. Residential wood combustion (Fireplaces, woodstoves, and pellet stoves) is a significant source of wintertime PM10, PM2.5, and CO. On-road mobile sources are a major source of CO and NOx. Local studies have indicated that NOx emissions can contribute to secondary formation of PM2.5 in the form of ammonium nitrate particles.

Table 2  
2011 Winter Emissions (pounds/day)  
Truckee Meadows

Category	PM10	PM2.5	CO	VOC	NOx	SOx	Pb
Point	27	27	3,372	313	1,498	142	0
Non-Point	35,665	18,850	154,956	36,837	9,120	1,221	3
Non-Road Mobile	606	578	50,706	5,173	6,057	4	0
On-Road Mobile	<u>1,568</u>	<u>1,183</u>	<u>176,195</u>	<u>11,627</u>	<u>31,038</u>	<u>143</u>	<u>0</u>
Total	37,866	20,638	385,228	53,950	47,712	1,510	3

## 2011 EI in the Air Quality Planning Process

Inventories are the foundation for developing control strategies in order to maintain attainment of the NAAQS. They identify categories for emission reduction opportunities as well as measuring the progress of existing programs such as the smog check and residential wood burning programs. The 2011 EI will be used as the baseline for the CO and PM10 maintenance plans. These maintenance plans must demonstrate that the control strategies in the current SIPs are adequate to continue attainment of the CO and PM10 NAAQS until at least 2025.