

10. Air Quality Element DRAFT

Good, clean air is a critical environmental resource and is essential to the quality of life in Portola. Not only does the quality of air affect the residents on a daily basis, the naturally high level of air quality, along with other amenities, attracts visitors and new business that sustain the economic viability of the community. As a small, mountain community, Portola inherently avoids many air quality problems that plague more populous, warmer environs. Yet, the rural mountain setting brings other air quality problems. There is a propensity for atmospheric inversion layer formation in mountain valleys leading to trapped air pollution, as well as the propensity for smoke to settle into low areas. These strong inversions and stagnant conditions are especially prevalent during the winter. Many residents use wood burning heating devices and smoke gets trapped in the breathing zone during an inversion. The fundamental goal of the Air Quality Element is to protect the health and welfare of the community by promoting air quality standards in all aspects of development, transportation, and activity affected by this General Plan.

Authority

The Air Quality Element is an optional element (outside the San Joaquin Valley Air Pollution Control District) of the General Plan under Section 65303 of the Government Code.

The general plan may include any other elements or address any other subjects which, in the judgment of the legislative body, relate to the physical development of the county or city.

Relationship to Other General Plan Elements

This Element incorporates policies and concepts that are linked with the Land Use Element, Community Design Element, Circulation Element, Public Services and Facilities Element, and Safety Element.

Primary Sources and Ambient Air Quality Standards

The California and Federal Clean Air Acts establish air quality standards for several pollutants, primarily ozone and particulate matter. These state and federal acts require jurisdictions in areas that violate these standards to prepare and implement plans to achieve the standards. Relevant California and federal Ambient Air Quality Standards are shown in Table 10-1.

Ozone

Ozone is a public health concern because it is a respiratory irritant that increases human susceptibility to respiratory infections. Ozone also causes substantial damage to natural vegetation, including the forest, and damages many materials by acting as a chemical oxidizing agent.

Ground-level ozone is the principal component of smog. Ozone is not directly emitted into the atmosphere, but is formed by the photochemical reaction of ozone precursors, reactive organic gases (ROG) and nitrogen oxides (NOx), in the presence of sunlight. Ozone levels are highest during late spring and early summer when precursor emissions are high and meteorological conditions are favorable for the complex photochemical reactions to occur. Generally, the majority of reactive organic gas and nitrogen oxide emissions come from motor vehicles.

Plumas County is currently considered to be unclassified for ozone. The current standards are not exceeded.

Table 10-1
Ambient Air Quality Standards

| Pollutant | Average Time | California Standards | Federal Standards |
|---|--------------|----------------------|-------------------|
| Ozone | 1- Hour | 0.09 ppm | - |
| | 8-Hour | 0.070 ppm | 0.070 ppm |
| California standards for ozone are not to be exceeded. The ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. | | | |

Particulate Matter (PM 10 and PM 2.5)

There are two size ranges of particulate matter (PM) for which state and federal health-based standards have been developed: PM 10 and PM 2.5. The numbers 10 and 2.5 refer to particle diameter in microns. PM 10 includes PM 2.5 but also includes particles larger than 2.5 microns, up to 10 microns.

Portola's PM 2.5 is mostly smoke particles from open burning, wildfires, wood stoves and fireplaces. Exhaust from motor vehicles, off-road equipment, trains and generators, as well as aerosol particles of natural and man-made origin, are also components. PM 10 includes dust, which in Portola's case is mostly windblown natural dust and dust from

sanding roads in the winter. Some pollen and mold spores are also smaller than 10 microns.

Table 10-2
Federal and State Particulate Matter Standards

| Pollutant | Average Time | California Standards | Federal Standards |
|--------------------------------------|----------------|----------------------|------------------------|
| Fine Particulate Matter (PM 2.5) | 24-Hour | NA | 35 µg/m ³ |
| | Annual Average | 12 µg/m ³ | 12.0 µg/m ³ |
| Respirable Particulate Matter (PM10) | 24-Hour | 50 µg/m ³ | 150 µg/m ³ |
| | Annual Average | 20 µg/m ³ | - |

Fine particulate matter (PM 2.5) is the main pollutant of concern in Portola. PM 2.5 has been shown to contribute to asthma development, lung capacity reduction among children, breathing difficulty, eye irritation, exacerbation of cardiovascular problems, and even premature death. It is especially damaging for sensitive individuals such as children, elderly citizens, individuals with pre-existing health conditions, and people who are exercising outdoors. PM 2.5 is considered to be more dangerous than PM 10 because smaller particles travel deeper into the lungs and include some compounds with toxic properties.

Table 10-2 lists both the state and federal ambient air quality standards for PM10 and PM 2.5.

Greenhouse Gases (GHGs)

Global climate change has been clearly documented and is predicted to have substantial effects on the world we live in, not only in parts of the world that are far away, but here in California. Emissions of greenhouse gases (GHGs) must be curtailed if we hope to minimize the extent and impact of climate change. The majority of GHG emissions come from combustion of fossil fuels for energy and transportation. While renewable energy sources, cleaner fuels, and green technology will help to reduce GHG emissions, we also need significant changes in how we design and construct our “built environment” to meet our climate protection goals.

The State of California is leading the country in efforts to reduce greenhouse gases and the impacts on the global climate. The California legislature has passed and the Governor has signed the landmark greenhouse gas and climate change legislation, Assembly Bill 32 (AB 32), commonly known as the "California Global Warming Solutions Act of 2006," that will have substantial impacts on the City of Portola. In addition, the California Attorney General has initiated legal action against local governments for not addressing greenhouse gas and climate change issues in California Environmental Quality Act (CEQA) documents prepared for General Plan updates and development projects. The Air Quality Element provides a focal point for the City of Portola's General Plan efforts to reduce greenhouse gases and climate change impacts.

Under the current AB 32 "business as usual" scenario developed by the California Air Resources Board (ARB), statewide greenhouse gas emissions are increasing at a rate of approximately 1 percent per year as noted below. The following estimates represent the average statewide reductions needed from all emission sources (including all existing sources) to reduce greenhouse gas emissions back to 1990 levels.

- 1990: 427 Million Metric Tons of Carbon Dioxide Equivalent (MMTCO_{2e})
- 2008: 495 MMTCO_{2e} (an average 14 percent statewide reduction needed to achieve 1990 base)
- 2020: 596 MMTCO_{2e} "Business As Usual"(an overall 29 percent reduction needed to achieve 1990 base)

Senate Bill 375 was signed in September 2008 and establishes a process to develop regional targets for reducing projected year 2020 greenhouse gas emissions from passenger vehicles and light-duty trucks back to 1990 levels.

Greenhouse Gases and Their Sources

Carbon dioxide is the most dominant greenhouse gas; however a number of other gases also contribute significantly to climate change, including methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrochlorofluorocarbons (HFCs) and perfluorocarbons (PFCs). Each gas has a different heat trapping capacity compared to CO₂. For instance, methane is 21 times more effective at trapping heat in the atmosphere compared to the same mass of CO₂, while some of the fluorocarbons have thousands of times more heat trapping capacity as CO₂. To account for these differences when comparing emissions for the different compounds, the emissions are generally expressed in terms of CO₂ equivalents (CO_{2e}). Thus, generic references to GHG emissions generally mean CO₂ equivalent emissions.

From a land use standpoint, carbon dioxide, and methane are the most important GHGs the City of Portola has the potential to significantly influence and will be the primary focus of general plan goals, policies, and reduction implementation strategies (CAPCOA) Model Policies for GHGs.

Existing Conditions in Portola

The Northern Sierra Air Quality Management District (NSAQMD) includes Plumas County. As of 2019, there are five air pollution monitors in Portola: One for near real-time PM 2.5 hourly data, two with filters for PM 2.5 24-hour data (used by EPA for attainment designations) and two for information on the types of particulate matter present in the ambient air.

In January 2015, the U.S. EPA designated the City of Portola and surrounding parts of Plumas County as a federal nonattainment area for the annual PM_{2.5} health-based standard.

The consequences of violating the federal PM 2.5 standard are serious. A federal non-attainment designation for Plumas County necessitates the preparation of, and adherence to, a PM 2.5 control plan to reduce emissions. Specifically, all Reasonably Available Control Technologies and other strategies that could reduce emissions must be implemented. This means the imposition of new rules to govern industry, motor vehicles, residential heating appliances, new development projects, open burning, and other sources of PM 2.5. After an area is designated as non-attainment, if all of the required rules and demonstrations are inadequate or not implemented quickly enough, federal sanctions kick in. For instance, federal highway money is withheld, emission offsets for new or modified pollution sources are raised, and ultimately EPA can step in and take over parts of the air pollution control program.

Finally, if an area is designated non-attainment and progress toward attainment does not proceed rapidly enough, the area has to “bump up” to a worse non-attainment classification, with even more stringent requirements, and when a non-attainment area finally reaches attainment, the rules cannot be relaxed.

Therefore, it is crucial that PM 2.5 emissions in the Portola area be reduced, not only for the benefit of public health but also in order to achieve federal attainment designation.

Consistency with Other Elements

The General Plan is the gateway to transforming our communities into more efficient, low-carbon, sustainable, vital places for us, our families, and our neighbors to live, work, and play. The City of Portola General Plan contains 10 distinct standalone elements (Land Use, Housing, Community Design, Safety, Noise, Economic Development, Conservation, Circulation, Public Facilities, and Air Quality). However, it is important to remember that each of these elements weaves together to create the comprehensive long-range plan for the City. Many policies already exist within these other elements which support the City's future goals of improving air quality within the City, region, and State, including Land Use, Community Design, Conservation, Circulation, and Public Facilities.

Air Quality Goals

New visitors, businesses and residents in the community will contribute to conditions that could ultimately result in nonattainment of federal or state air quality goals. Once air quality monitors record violations of the state or federal standard, an area is designated by either California or U.S. EPA as nonattainment for that pollutant.

Because of the federal nonattainment designation, NSAQMD was awarded a \$2.48 million Targeted AirShed grant from the US EPA to improve air quality by replacing old, uncertified wood stoves with EPA certified heating devices. Federal nonattainment designation requires air pollution control strategies to be implemented, targeting the air pollution sources that cause the greatest degradation of air quality to clean the air and stop exceedances of the standard. Being in nonattainment of an ambient air quality standard means higher rates of respiratory ailments and related health care costs, higher rates of premature deaths, and may require the implementation of control strategies to reduce the emissions of the pollutant. Being designated as a federal nonattainment area is generally more economically burdensome to an area than being designated nonattainment due to violations of a California Ambient Air Quality Standard (CAAQS).

Because air pollution is typically a regional problem, the city must undertake feasible policy and implementation plans to minimize the existing air pollution events and avoid increased air pollution that would accompany economic and population increases. These policies and implementation cover a wide range of common daily activities, such as burning slash outdoors and wood stoves, as well as transportation and land use planning that have a strong, but indirect, effect on air pollution.

| | |
|------------|--|
| Goal AQ-1. | Improve Portola's air quality by: a. Achieving and maintaining ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board; b. Minimizing public exposure to toxic or hazardous air pollutants; and c. Minimizing public exposure to pollutants that create a public nuisance, such as unpleasant odors. |
| Goal AQ-2. | Integrate air quality planning with land use and transportation planning processes. |
| Goal AQ-3. | Although the automobile is the primary form of transportation, the City of Portola should make a commitment to other modes of transportation. |
| Goal AQ-4. | Reduce air emissions through energy conservation. |

Policies: Air Quality-General

- AQ-P-1.** Cooperate with other agencies to develop a consistent and coordinated approach to reduction of air pollution.
- AQ-P-2.** Encourage energy efficient building designs.
- AQ-P-3.** New construction will be managed to minimize fugitive dust and construction vehicle emissions.
- AQ-P-4.** Woodburning devices shall meet current standards for controlling particulate air pollution.
- AQ-P-5.** Burning of any combustible material within the City Limits will be strictly controlled to minimize particulate air pollution. Alternatives to open burning of waste vegetation shall be encouraged.

Implementation: Air Quality-General

- AQ-I-1.** Work with the Northern Sierra Air Quality Management District (NSAQMD) to implement programs and strategies to reduce levels of PM2.5 to achieve federal attainment and provide assistance with public outreach and education to reduce the harmful health effects associated with fine particulate matter.
- AQ-I-2.** In accordance with CEQA, submit development proposals to the Northern Sierra Air Quality Management District (NSAQMD) for review and comment prior to decision.
- AQ-I-3.** Locate air pollution point sources, such as manufacturing and extracting facilities, in areas designated for industrial development and separated from residential areas and sensitive receptors (e.g., homes, schools, and hospitals).
- AQ-I-4.** Use best available control technology for stationary industrial sources of air pollution.
- AQ-I-5.** Cooperate with the Plumas County Environmental Health Department in identifying hazardous material users and in developing a hazardous materials management plan.
- AQ-I-6.** Establish buffer zones (e.g., setbacks, landscaping) within residential and other sensitive receptor site plans to separate those uses from highways, arterials, hazardous material locations and other sources of air pollution or odor.

- AQ-I-7.** Promote the use of new and replacement fuel storage tanks at refueling stations that are clean fuel compatible, if technically and economically feasible.
- AQ-I-25.** All residences built in a new subdivision or housing development shall be equipped with conventional heating devices with sufficient capacity to heat all areas of the building without reliance on woodburning heating devices.
- AQ-I-26.** All woodburning heating devices installed shall be EPA II certified or meet EPA standards applicable at the time of project approval.
- AQ-I-27.** Require the removal of existing older woodburning stoves that are not EPA certified at the time a residence is sold or a major alteration or addition is initiated, in accordance with City of Portola Ordinance 354, 2019.
- AQ-I-28.** Ban the burning of any combustible material, including vegetative slash, within City limits is banned, in accordance with City of Portola Ordinance 354, 2019.

Policies: Air Quality-Land Use

- AQ-P-6.** Develop a land use plan which will minimize daily travel and air pollution.

Implementation: Air Quality-Land Use

- AQ-I-29.** Encourage mixed-use and pedestrian-oriented development and circulation systems that promote use alternatives to the automobile for transportation, including bicycles and bus transit, along with carpooling.
- AQ-I-30.** Design land uses which locate daily employment, school, and shopping destinations near residential areas, where feasible.
- AQ-I-31.** Consider increased intensity of development along existing and proposed transit corridors.

Policies: Air Quality-Transportation

- AQ-P-7.** Develop transportation systems that minimize air pollution from automobile emissions.
- AQ-P-8.** Coordinate and integrate all forms of public transportation.

Implementation: Air Quality-Transportation

- AQ-I-32.** Develop a Transportation Systems Management (TSM) Ordinance which will reduce motor vehicle emissions through decreases in vehicle delay, average daily trips and vehicle miles traveled.
- AQ-I-33.** Maintain acceptable levels of service as specified in the Circulation Element.
- AQ-I-34.** In new subdivisions, require internal street design to include the installation of dedicated pedestrian/bicycle pathways connecting to adjacent residential and commercial areas as well as schools, parks and recreational areas.
- AQ-I-35.** Provide adequate pedestrian and bikeway facilities for present and future transportation needs throughout the city.
- AQ-I-36.** Locate public facilities in areas easily served by current and planned public transportation.