

1.8.5 Air Quality Subelement

Overview

Air quality is one of four program areas in which the Compact specifically directs TRPA to ensure that environmental Thresholds are attained and maintained. The Compact states that the *“regional plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards,”* and that the Agency *“may adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the Region.”*

In the 1987 Regional Plan’s Air Quality Subelement, there are no Goals and Policies. Instead, the Subelement identifies air quality Control Measures for various sources, including combustion heaters and vehicle emissions. It contains Threshold standards for air quality, visibility, and emissions of oxides of nitrogen (NO_x). The emphasis is on improving air quality through the implementation of control measures to reduce vehicle emissions and vehicle miles traveled (VMT).

The Code requires that current and future air quality impacts be analyzed for all projects and programs that have the potential to affect air quality. All localized, regional, and cumulative air quality impacts must be mitigated under current regulations for new, expanded, or revised developments, projects, and programs. Additional details on air quality provisions in Code Chapters 24 (Driveway and Parking), 72 (Prescribed Burning), 91 (Air Quality Control), 93 (Traffic and Air Quality Mitigation Program), 95 (Rental Car Mitigation Program), and 97 (Employer-Based Trip Reduction Program) are provided below:

- TRPA works with the affected state agencies to plan how to apply state vehicle inspection and maintenance programs to the Tahoe Region.
- Requirements are specified for the use of natural gas or propane-fired water heaters or central furnaces, wood heaters, and other combustion appliances.
- Performance standards are listed for open-burning activities other than recreational burning, such as prescribed fires, disposal practices, hazard reduction and pest control, burning of wood waste, and practice burns.
- New sources of air pollution are subject to an assessment of their impacts. These sources may be prohibited or may require emissions offsets, the use of best-available technology for emissions control, or both.
- Modified sources of air pollution are subject to an assessment of their impacts similar to the assessment for new sources. These sources may require emissions offsets, the use of best-available retrofit control technology, or both.
- Measures are specified to improve emissions from idling vehicles. These measures stipulate limits on idling times, prohibitions for drive-up windows, and implementation of an educational program.

The primary air quality pollutants in the Region include hydrocarbons, NO_x, carbon monoxide (CO), and particulate matter (PM). These pollutants account for the majority of the human and ecosystem health issues such as heart, lung, and brain tissue damage, lake clarity and vegetation damage, and scenic degradation. The primary source of these pollutants is emissions associated with transportation activities (such as motor vehicles, watercraft, and road debris) and stationary sources (such as home heating, fuel reduction projects, and fugitive dust).

The proposed changes include the development and incorporation of an air quality-specific vision statement and associated new Goals and Policies. These changes were directly influenced by input from the Pathway process, including the Air Quality Technical Working Group, members of the Pathway Forum, and the general public. Since the causes and effects of air pollution are complex, the Goals and Policies have been developed as general guiding statements that allow maximum flexibility as conditions change, thus promoting maximum benefits to human and ecosystem health.

Alternative 1—Continuation of Existing Regional Plan

Summary

Alternative 1, the “No Action” Alternative, assumes the continuation of the goals, policies, regulations, and programs of the 1987 Regional Plan, including those in place for Air Quality. We will also be implementing new ambient air quality standards adopted by the state of California and the federal government in the applicable areas of the Region.

Goals and Policies

No changes are proposed to this Subelement under Alternative 1.

Implementation Measures

Implement new ambient air quality standards adopted by the state of California and the federal government in the applicable areas of the Region.

Alternative 2

Summary

The emphasis of Alternative 2 is on accelerating the achievement of air quality Thresholds and maintaining human and ecosystem health by implementing collaborative, innovative, and incentive-based policies and practices. Alternative 2 emphasizes the role of the public and private sectors in advancing environmental improvement measures. It organizes the air quality objectives within one section in order to streamline and improve TRPA practices and allow the Agency to implement programs that achieve Thresholds in a more effective and efficient manner.

Under Alternative 2, a new air quality vision statement would be adopted along with four new goals and associated policies related to human and ecosystem health. Another fundamental change is that TRPA’s Air Quality Program will recognize the Region as a single air basin, similar to how the Water Quality Program considers the Lake. Since air pollution moves freely between states, and emissions from one area affect the air quality in the other, a single set of standards and implementation strategies will be implemented throughout the Region. This would improve the air quality for all residents and allow TRPA to streamline its efforts by reducing the number of parameters that are monitored and simplifying the regulatory process that currently exists.

Goals and Policies

The first new goal would be to attain and maintain air quality in the Tahoe Region at healthy levels for humans and the ecosystem. The following policies are proposed to support this goal:

- reduce health and ecosystem risks, emissions, and pollutant exposures through plans, discretionary project review, and permitting;
- promote programs and projects such as biomass, pellet manufacturing, and transportation improvements that achieve an overall decrease in air quality pollutants through new methods, technologies, and strategies;
- promote non-burning methods to reduce forest fuels including but not limited to the use of forest fuels materials for the manufacture of goods and renewable power;
- promote greater energy efficiency, conservation, and use of renewable resources to reduce air pollution;
- update the 1992 Air Quality Plan to address current conditions and needs;
- implement BMPs, community design, maintenance practices, transportation control measures, and controls on forest fuels burning activities;
- implement programs for improving air quality into land-use plans and regulations;
- incorporate public sidewalks and Class II bike lanes in projects along major roadways and in areas with high pedestrian or bicycle access needs such as PTOD-designated districts;
- Implement Best Available Control Strategies (BACT) and Best Available Retrofit Control Strategies (BARCT) on all new or retrofitted air pollution sources;
- conduct pile burning only on appropriate days to minimize health and ecosystem impacts and eliminate smoke;
- provide incentives for individuals and businesses to eliminate all but the cleanest-burning technologies for home heating to improve human and ecosystem health;
- promote public and private spaces through community design standards that facilitate non-motorized travel modes.
- encourage travel by means other than motor vehicles;
- reduce emissions from combustion engines and other sources;
- update the trip reduction program to specifically address air quality improvements;
- improve air quality by reducing traffic conflicts;
- reduce the amount of re-entrained dust in the atmosphere resulting from human or natural activities on paved and unpaved areas, streets, parking lots, parcels, and construction sites; and
- educate the public regarding the effects of air pollution and provide real-time and historical monitoring information on air quality conditions in the Region.

The second new goal in the Air Quality Subelement would focus on reducing emissions associated with mobile sources to the greatest extent possible and at the earliest practicable date. The following policies support this goal:

- update the 1992 Air Quality Plan to include Transportation Control Measures (TCMs) that include strategies to reduce vehicle trips, vehicle use, VMT, vehicle idling, and traffic congestion to reduce emissions from motor vehicles;

- promote travel modes that result in the lowest emissions per person per mile;
- promote zero emissions mass transit projects and facilities, including fixed guideway systems and dedicated highways/areas for zero emission and/or human powered transportation;
- integrate and synchronize traffic signals and provide priority to bicycles and pedestrians at projects, facilities, intersections, and driveways;
- install Class II bike lanes on all major roadways. This would include a requirement to install these facilities when the curb line is altered or improved, or when work is performed;
- install and maintain year-round bicycle and pedestrian facilities in urbanized areas and along transportation routes used for commuting;
- attain and maintain functional vehicle-delay standards for roads and signalized intersections to maintain human health; and
- participate in state and local transportation planning efforts to ensure consistency with state and local air quality objectives and strengthen linkages between air quality and transportation.

The third new goal in the Air Quality Subelement is focused on maintaining visibility in the Tahoe Region at levels that do not interfere with residents' or visitors' visual experience. New policies supporting this goal would promote efforts to:

- reduce or limit sources of pollutants that degrade visibility;
- use the most advanced equipment and sweep roads frequently enough to prevent accumulation and distribution of harmful materials;
- pave or treat unpaved roads, driveways, and parking areas; and
- conduct burning on appropriate days to ensure that air quality standards are maintained and that the maximum dispersion and elimination of pollutants occurs.

The fourth new goal in the Air Quality Subelement is focused on implementing adequate air quality mitigation and incentive programs, including air quality mitigation fees and fees that could be used for incentive programs. The following policies support this goal:

- require projects, development, programs, equipment installations, and land uses to document their air quality impacts both to raise awareness of the effects of the development and to set the payment amounts for any required mitigation fees;
- adopt, collect, and distribute mitigation fees to offset air quality impacts associated with projects and development, and prioritize the distribution of fees according to the most cost-effective reduction strategies; and
- encourage energy efficient design elements and promote or provide incentives for "Green Building" programs.

Implementation Measures

Alternative 2 includes air quality implementation measures that would be designed to utilize programs and principles proven effective in other areas for achieving similar air quality goals. These measures are incentive based, innovative and strive to improve the environmental, societal, and economic conditions in the Region at an accelerated pace. The following measures have been organized by incentive-based measures and by the targeted pollutant(s) and would be contained in Code Chapters 24, 72, 91, 93, 95, and 97. The following measures are described above:

Incentive-Based Measures

- Provide monetary incentives of up to 80% of the replacement cost to encourage the installation of wood stoves and fireplaces with those that are certified by EPA to emit approximately 50% less particulate emissions than those currently required. (Estimated costs \$4,000 to \$6,000 each.)
- Zero emission transportation programs and projects would be given priority in terms of funding and permitting practices.
- Forest fuel reduction projects utilizing air curtain burners for 100% of the burning process would not be subject to burn day restrictions.
- Vehicles certified as Advanced Technology Partial Zero Emissions Vehicles (AT-PZEV), Zero Emissions Vehicles (ZEV), and Partial Zero Emissions Vehicles (PZEV) would be exempt from TRPA's Rental Car Mitigation Program. The collected fees would be used for the movement of people in programs that ensure the lowest emissions per person per mile of travel.
- The Region's agencies and businesses with over 70 employees will provide incentives for their employees to use zero emission transportation methods in their duties and for their commute to and from work.
- TRPA will reduce its permit fees as an incentive for air quality improvements by:
 - 15% for all LEED Silver Certified construction
 - 25% for all LEED Gold Certified construction
 - 50% for all LEED Platinum Certified construction.
- Bicycles and pedestrians would be given priority at facilities, intersections, and driveways.
- Offer incentives for carpooling, such as better parking spots or providing cars or vans for carpooling, and encourage employees to take the bus by providing bus passes.
- Provide incentives for the purchase of hybrid or electric-powered passenger vehicles.
- Provide incentives to install approved non-asphalt materials and paving blocks in parking lots, sidewalks, and driveways rather than petroleum-based blacktop. This could reduce the amount of ozone precursors released into the air.

PM Emission Reduction

- Require application of a tackifier or other suitable measure(s) during ground-disturbing activities in construction and industrial areas.
- Require that all new sweepers use BACT and be certified by ETV Canada or other suitable verification agency to advance emissions protocols.

- Require all highways and major streets to be swept twice a month, and the remaining streets to be swept once per month.
- Implement improved diesel idling restrictions for commercial and transit diesel vehicles, limiting idling to no more than 5 minutes. In cases where idling for more than 5 minutes would be necessary, require the use of auxiliary (shorepower) HVAC hookups.

PM and CO Emission Reduction

- All parties reducing forest fuels through burning must reduce their PM emissions levels by 40% compared to emissions levels associated with pile-burning the equivalent amount of fuels.
- Prohibit installation of wood stoves in new building construction or remodels.
- Require that existing wood stoves and fireplaces be replaced within 10 years by appliances that are certified by EPA to emit less than 4.5 g/hr of PM for non-catalyst and 2.5 g/hr of PM for catalyst-equipped stoves.
- Wood stove replacements would occur at time of sale and the property certified as part of the escrow process.
- Implement an air quality mitigation program to offset emissions from wood stoves.

Hydrocarbon, NO_x, CO, and PM Emission Reduction

- All jurisdictions must maintain the use and condition of sidewalks and bike facilities year round. This includes maintenance for cracks, potholes, striping, snow removal, and other pavement defects.
- Class II bike lanes would be required along major highways and areas where bicycle travel is present.
- All traffic signals must be synchronized or timed where practicable.
- Eliminate traffic lights and remove left turns on green arrow lights when possible to reduce idling and promote smoother traffic flow.
- Require each transportation project and program to include the expected emissions reductions or additions, measured in pounds for each criteria pollutant.
- Pedestrian and Class II bicycle facilities must be constructed, upgraded, and maintained along major travel routes.
- When a TRPA permit is obtained or by 2020 (whichever is sooner), driveways affecting traffic flow on major travel routes must be eliminated or combined whenever possible.

- Implement a single set of Region-wide air quality standards, control strategies, and implementation plans.
- Air quality mitigation fees would be prioritized and distributed by the Air Quality Program to provide the most beneficial reductions in emissions. Prior to release of mitigation fees, applicants will provide an estimate of air quality pollutant reductions associated with their proposed project.
- Require new projects, programs, and planning efforts to mitigate their air quality impacts at the following ratios:
 - 1.0 to 1.0 for all air pollutants currently in attainment.
 - 2.0 to 1.0 for all air pollutants currently in non-attainment.

Alternative 3

Summary

The emphasis of Alternative 3 is on achievement of air quality Thresholds and maintaining human and ecosystem health by implementing the current practices in association with new incentive based implementation elements. Another area of significance for Alternative 3 is that this alternative would allow the continuation of a dual set of air quality standards for each side of the Region.

Goals and Policies

The Goals for Alternative 3 would be the same as those proposed for Alternative 2. The following new policies are proposed under Alternative 3:

- Reduce health and ecosystem risks, emissions, and pollutant exposures, through plans, discretionary project review and permitting.
- Update the 1992 Air Quality Plan to address current conditions and needs.
- Reduce the amount of re-entrained dust in the atmosphere resulting from human or natural activities on paved and unpaved areas, streets, parking lots, parcels, and construction sites.
- Educate the public regarding the effects of air pollution in the Region.
- New, expanded or revised developments and land uses shall fully mitigate their regional and cumulative traffic impacts.
- Driveways shall be designed and sited to minimize impacts on public transportation, adjacent roadways and intersections, and bicycle and pedestrian facilities.
- Develop and encourage the use of pedestrian and bicycle facilities as a safe and viable alternative to automobile use.

- The Regional Transportation Plan will attain and maintain the Environmental Threshold Carrying Capacities.

Implementation Measures

The implementation measures for Alternative 3 are currently in existence and would be relocated in Code of Ordinance Chapters 24, 72, 91, 93, 95, and 97. They include the following:

- Forest fuel reduction projects utilizing air curtain burners for 100% of the burning process would not be subject to burn day restrictions;
- Offer incentives for carpooling, such as better parking spots or providing cars or vans for carpooling, and encourage employees to take the bus by providing bus passes;
- Implement improved diesel idling restrictions on the California side of the Region for commercial and transit diesel vehicles, limiting idling to no more than 5 minutes;
- Wood stove replacements would occur at time of sale and the property certified as part of the escrow process;
- Require each transportation project and program to include the expected emissions reductions or additions, measured in pounds for each criteria pollutant;
- Require new projects, programs, and planning efforts mitigate their air quality impacts;
- Pedestrian and bicycle facilities shall be constructed, or upgraded, and maintained along major travel routes;
- Level of service (LOS) criteria for the Region's road system and signalized intersections during peak periods shall be:
 - Level of service "C" on rural recreational/scenic roads.
 - Level of service "D" on rural developed area roads.
 - Level of service "D" on urban developed area roads.
 - Level of service "D" for signalized intersections.
 - Level of service "E" may be acceptable during peak periods in urban areas, not to exceed four hours per day
- Employers shall implement vehicle trip reduction programs, including carpool and vanpool matching programs, employee shuttles, flexible work hours, and transit use incentives.

Alternative 4

Summary

The emphasis of Alternative 4 is on accelerated achievement of air quality Thresholds and maintaining human and ecosystem health by implementing a more robust system of regulations to control pollution. As in Alternative 2, a single set of standards and implementation strategies is proposed to be implemented throughout the Region.

Goals and Policies

The goals and policies under this alternative would be the same as those proposed for Alternative 2.

Implementation Measures

Implementation measures contained in Alternative 4 would utilize stringent regulations to achieve air quality objectives at the earliest possible date. Implementation measures under this alternative include all those in Alternative 2 plus the following additions and modifications:

PM Emission Reduction

- Fugitive dust BMPs would be required at the time of sale for all properties.
- All unpaved driveways must be paved within 5 years.
- The use of leaf blowers would be prohibited.
- All sweepers operating in the Region must use BACT and be certified by ETV Canada or other suitable verification agencies to advanced emissions protocols.
- All highways and major streets must be swept once per week and the remaining streets must be swept twice per month.
- Street sweeping to recover salt and sand applied during winter months would be required immediately after a storm event and be completed within 4 days.
- Track-out devices would be required for construction and industrial areas to prevent materials from being tracked onto other properties or roadways by vehicles leaving the site.
- All dirt roads must be decommissioned or BMPs in place by 2015.
- Motorized off-road use would be prohibited on all roads without BMPs.

PM and CO Emission Reduction

- All parties reducing forest fuels through burning must reduce their PM emissions levels by 60% compared to emissions levels associated with pile burning the equivalent amount of fuels.

- Burning for forest fuels reductions would be prohibited on slopes less than 30% within ¼ mile of a road or suitable staging area. Instead, forest fuels must be removed from these areas.
- All non-pellet wood stoves and fireplaces shall be removed within 5 years.
- An air quality mitigation program to offset emissions from wood stoves would be implemented.

Hydrocarbon, NO_x, CO, and PM Emission Reduction

- Class I bike trails would be required on both sides of the street in redevelopment areas.
- Driveways must be located along side streets whenever possible.
- 50% of Government sponsored/financed mass transit would need to have lower emissions per person per mile than private modes by 2018.
- Government sponsored mass transit having emissions per person per mile greater than private modes would be prohibited by 2025.
- Reduce emissions from watercraft by limiting the number of fossil fueled motorized watercraft, limiting the horsepower, and limiting the number of days of use of watercraft in the lakes of the Region.
- New projects, programs, and planning efforts will need to mitigate their air quality impacts at the following ratios:
 - 3.0 to 1.0 for all air pollutants currently in non-attainment.
- Implement a \$10/motor vehicle “congestion pricing” air quality fee in congested areas to encourage reductions in transportation-related air quality impacts. Fees will be used for air quality monitoring and incentive-based air quality programs.
- Require employers to operate a vanpool if more than 20 employees live outside a 20-mile radius of their work location.
- Require that CMAQ funding in the Region be limited to attainment or maintenance of the most stringent air quality standards applicable in the Region for ozone, CO, and PM.¹⁴

¹⁴ The current purpose of the Congestion Mitigation and Air Quality Improvement (CMAQ) program is to fund transportation projects or programs that will contribute to attainment or maintenance of the **federal** ambient air quality standards (NAAQS) for ozone, CO, and PM. It ignores transportation programs designed to meet State and Local ambient air quality standards.

- Require that permeable paving blocks or concrete be used in parking lots, sidewalks, and driveways rather than petroleum-based blacktop. This will reduce the amount of ozone precursors released into the air.
- Require each transportation project and program to include the expected emissions reductions or additions, measured in pounds for each criteria pollutant and be prioritized for implement according to its improvement.
- Amend Regional Transportation Plan and documents to require attainment with state and local air quality standards.

