
Chapter 15. Air Quality Element

15.1 Purpose

The purpose of this Element is to describe the county's existing air quality, sources of air pollution, and strategies for improving air quality. Policies to reduce greenhouse gas emissions and mitigate climate change are included in this Element.

15.2 Relationship to Other Elements

Air quality considerations, including greenhouse gas emissions, are reflected in policies within the Land Use, Circulation, Energy, and Safety elements and in the Mineral Resources Chapter of the Conservation and Open Space elements.

15.3 Background

Air Quality Standards and Sources of Emissions

As a whole, air quality in this county is better than other parts of the state. Local measurements by the North Coast Unified Air Quality Management District (NCAQMD) reveal that the county currently meets all federal standards for air quality and all state standards except for one pollutant – airborne particles that are 10 microns in diameter and smaller (PM₁₀). Continued review and refinement of national and state standards may require additional control technologies.

Emissions of PM₁₀ come from a number of sources within Humboldt County:

- Stationary sources such as power plants and manufacturing facilities. These sources are not the most significant PM₁₀ contributors locally.
- Area-wide sources in which emissions originate from many points over a wide area. These include emissions from, fireplaces, construction and demolition, road dust, and agricultural operations. Wood stove emissions are a significant source of PM₁₀ emissions during the winter months when the county exceeds PM₁₀ thresholds. Road dust is a significant source during dry months.
- Mobile sources including "on-road sources" such as automobiles, and "off-road sources," such as farm and construction equipment. Automobiles are significant sources of PM₁₀ locally.
- Natural sources include wildfires, sea salts, windblown dust, and biogenic emissions from plants and trees. Along the coast, sea salts are a significant source of PM₁₀.

The emissions from stationary sources are subject to General Plan policies if the project requires discretionary land use permits. Environmental review of new development requires coordination between NCAQMD and the County to ensure project conditions are consistent with state air quality laws and to reduce impacts below levels of significance. There is also direct coordination with NCAQMD on the demolition of

commercial structures that may involve asbestos and on surface mining and grading that occurs in areas containing naturally occurring asbestos. This Plan supports complimentary policies and supports frequent communication between the County and the NCUAQMD to coordinate efforts, avoid regulatory redundancy and minimize permit costs and delays.

Area-wide and mobile source emissions are addressed through General Plan policies that target specific sources. Transportation policies have been designed to reduce area-wide PM₁₀ levels by reducing both the number of vehicle miles traveled and the number of vehicle trips. Grading and road maintenance policies also work to reduce particulates in dust. Incentives for energy efficient building construction will help reduce emissions related to residential and commercial energy consumption, including woodstove emissions.

Naturally occurring PM₁₀ from wildfires may be reduced by decreasing the occurrence and severity of wildfires. Provisions in the Forest Resources Chapter and Safety Element support fuel hazard reduction programs and initial attack on wildfires that may adversely impact the air quality of local population centers.

Greenhouse Gas Emissions and Climate Change

California is the fifteenth largest emitter of greenhouse gases (GHGs) in the world, representing about two percent of worldwide emissions. In an effort to help curb global warming, new state laws regulating GHGs were enacted in 2006. Assembly Bill 32, the Global Warming Solutions Act, requires the state to implement a series of actions to achieve a reduction in GHG emissions to 1990 levels by 2020.

Through AB 32, the statewide cap for 2020 GHG emissions has been set at 427 million metric tons of carbon dioxide equivalents (MMTCO₂E). Reducing GHG emissions to this level means cutting approximately 30% from business-as-usual emission levels projected for 2020, or about 10% from today's levels. On a per-capita basis, that means reducing our annual emissions of 14 tons of carbon dioxide for every person in California down to about 10 tons per person by 2020.

California's draft Climate Change Scoping Plan (June 2008) recommends 2 million metric tons carbon dioxide equivalent MMTCO₂E reduction in GHG emissions by 2020 from local government actions. The Scoping Plan believes local government can directly influence:

- **Energy.** The energy used in local government buildings, equipment, and infrastructure as well as the amount of energy used by community businesses and residents through building codes, conservation programs, and other mechanisms.
- **Waste and Recycling.** Local government's own waste and recycling activities and the carbon footprint of their jurisdiction's waste and recycling operations through collection system adjustments and promotion of waste reduction and recycling.
- **Water and Wastewater Systems.** Water use in municipal operations and through community-wide water conservation and reclamation program efforts.
- **Transportation.** Increases in the carbon efficiency of government fleets and local transportation planning processes to increase the use of transit, carpooling, biking, and walking. New development can be planned and distributed in a carbon-efficient way.

- **Design.** Siting and design of new developments in a way that reduces greenhouse gases associated with energy, water, waste, and vehicle travel.

On December 4, 2007, the Board of Supervisors joined the International Council on Local Environmental Initiatives' (ICLEI) campaign to reduce local carbon emissions using a five-step process:

1. Conduct a baseline emissions inventory and forecast of emissions growth.
2. Set an emissions reduction target.
3. Develop a Climate Action Plan to meet the emissions reduction target.
4. Implement the Climate Action Plan.
5. Monitor and verify progress and results.

Through this process, the County intends to lead by example and reduce GHG emissions in its own operations to 10% below 2003 levels by 2020 (current AB 32 goal). Through this General Plan and participation in a countywide Climate Action Plan, the County intends to reduce GHG emissions in the unincorporated area resulting from its discretionary land use decisions to 10% below 2003 levels by 2020. The County will also partner with local cities to attain this level of reduction for the entire county.

CEQA requires public agencies to identify the potentially significant effects on the environment of projects they intend to carry out, or approve, and to mitigate significant effects whenever it is feasible to do so. AB 32 establishes that GHG emissions cause significant adverse impacts to the environment so the General Plan must include feasible mitigations to offset the GHG emissions associated with the Plan.

The Plan includes a range of mitigations for reducing GHG emissions and mitigations to achieve increased carbon storage within the County. Increasing carbon storage on timber and agricultural lands may be the County's most effective means to combat global warming

The State's 2020 target for California's forest lands is to retain the current carbon storage capacity of California's forests through sustainable management practices, reducing the risk of wildfire, and the avoidance or mitigation of land use changes that reduce carbon storage. This equates to 5 MMTCO₂E of carbon storage, which is more than 10% of all non-transportation reductions planned through 2020, underscoring the role that forest lands will play in California's efforts to reduce GHG emissions.

The state's first forest carbon storage project to be verified through the California Climate Action Registry was located in Humboldt County on 2,100 acres owned by the van Eck Forest Foundation. The project generated more than 500,000 tons of carbon credits that are being sold to interested purchasers. Under AB 32, California is planning to implement a cap-and-trade program by 2012 that could increase the demand for verifiable carbon credits. This may create increased financial opportunities for forest and agricultural landowners in Humboldt County willing to manage their lands consistent with accepted carbon storage protocols.

While timber management is regulated by the state under the Forest Practices Act, this Plan proposes the development of a program that could provide carbon credits to local forest landowners who voluntarily agree to long-term restrictions on land uses that increase GHG emissions. These carbon credits could be registered and potentially sold under a GHG emissions cap-and-trade program and provide a financial incentive to maintain lands in resource production.

15.4 Goals and Policies

Goals

- AQ-G1. **Improved Air Quality.** Air quality that meets state and federal ambient air quality standards.
- AQ-G2. **Particulate Emissions.** Successful attainment of California Ambient Air Quality Standards for particulate matter.
- AQ-G3. **Other Criteria Pollutants.** Maintain attainment of Ambient Air Quality Standards for ozone and other criteria pollutants which may be subject to tightening standards.
- AQ-G4. **Greenhouse Gas Emissions.** Successful mitigation of greenhouse gas emissions associated with this Plan to levels of non-significance as established by the Global Warming Solutions Act and subsequent implementation of legislation and regulations.

Policies

- AQ-P1. **Reduce Length and Frequency of Vehicle Trips.** Reduce the length and frequency of vehicle trips through land use and transportation policies by encouraging mixed-use development, compact development patterns in areas served by public transit, and active modes of travel.
- AQ-P2. **Reduce Localized Concentrated Air Pollution.** Reduce or minimize the creation of "hot spots" or localized places of concentrated automobile emissions.
- AQ-P3. **Fireplace and Woodstove PM₁₀ Emissions.** Support incentives to minimize emissions from fireplaces and woodstoves.
- AQ-P4. **Construction and Grading Dust Control.** Dust control practices on construction and grading sites shall achieve compliance with NCAQMD fugitive dust emission standards.
- AQ-P5. **Air Quality Impacts from New Development.** During environmental review of discretionary permits, reduce emissions of air pollutants from new commercial and industrial development by requiring feasible mitigation measures to achieve the standards of the NCAQMD.
- AQ-P6. **Buffering Land Uses.** During environmental review of discretionary commercial and industrial projects, consider the use of buffers between new sources of emissions and adjacent land uses to minimize exposure to air pollution.
- AQ-P7. **Interagency Coordination.** Coordinate with the NCAQMD early in the permit review process to identify expected regulatory outcomes and minimize delays for projects involving:

- A. CEQA environmental review;
- B. Building demolition projects that may involve removal of asbestos-containing material subject to National Emission Standards for Hazardous Air Pollutants (NESHAP); and
- C. Grading and mining operations subject to State Airborne Toxic Control Measures (ATCM) for naturally occurring asbestos.
Rely on the air quality standards, permitting processes, and enforcement capacity of the NCAQMD to define thresholds of significance and set adequate mitigations under CEQA to the maximum extent allowable.

AQ-P8. **Reduce Air Quality Impacts from Wildfires.** Support and encourage fire suppression of wildfires that may have an acute air quality health impact on local population centers.

AQ-P9. **County Climate Action Plan.** Through public input and review, develop and implement a multi-jurisdictional Climate Action Plan to achieve reductions in greenhouse gas emissions consistent with the state Global Warming Solutions Act and subsequent implementing legislation and regulations.

AQ-P10. **County Government Greenhouse Gas Emission Reductions.** To lead by example, the County of Humboldt shall reduce its 2003 greenhouse gas emissions from governmental operations consistent with the state Global Warming Solutions Act and subsequent implementing legislation and regulations.

AQ-P11. **Review of Projects for Greenhouse Gas Emission Reductions.** The County shall evaluate the GHG emissions of new large scale residential, commercial and industrial projects for compliance with state regulations and require feasible mitigation measures to minimize GHG emissions.

AQ-P12. **Transfer of Development Rights.** The County shall encourage the transfer of development rights from resource lands and other rural areas into areas served with public water and sewer to reduce GHG emissions from new development.

AQ-P13. **Forest Sequestration and Biomass Energy.** Provide incentives for increased carbon sequestration on forest lands and encourage the reduction of smoke production through the utilization of excess forest biomass for sustainable energy generation and other uses.

AQ-P14. **Solar Electric System Capacity.** Encourage and provide incentives to increase solar-electric capacity in residential, commercial, and industrial sectors.

AQ-P15. **Energy Efficient Building Design.** Encourage and provide incentives for construction of buildings and energy saving measures beyond Title 24 requirements for residential and commercial projects.

AQ-P16. **Electric Vehicle Accommodations.** Encourage and provide incentives for commercial and residential design that supports the charging of electric vehicles.

AQ-P17. Preservation and Replacement of On-site Trees. Projects requiring discretionary review should preserve large trees, where possible, and mitigate for carbon storage losses attributable to significant removal of trees.

15.5 Standards

AQ-S1. Construction and Grading Dust Control. Ground disturbing construction and grading shall employ fugitive dust control strategies to prevent visible emissions from exceeding NCAQMD regulations and prevent public nuisance.

AQ-S2. Evaluate Greenhouse Gas Emission Impacts. During environmental review of large scale residential, commercial and industrial projects, include an assessment of the project's GHG emissions and require feasible mitigation consistent with best practices documented by the California Air Pollution Control Officers Association in their 2008 white paper "CEQA & Climate Change" or successor documents.

AQ-S3. Evaluate Air Quality Impacts. During environmental review of discretionary projects, evaluate new commercial and industrial sources of emissions using analytical methods and significance criteria used, or recommended by, the NCAQMD.

AQ-S4. Buffering Land Uses. When considering buffers between new commercial and industrial sources of emissions and adjacent land uses follow the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective* and NCAQMD recommendations.

AQ-S5. Sensitive Receptors. Regulate the location and operation of land uses to avoid or mitigate harmful or nuisance levels of air emissions to the following sensitive receptors: residential uses, hospitals and nursing/convalescent homes, hotels and lodging, schools and day care centers and neighborhood parks. New development shall follow the recommendations for siting new sensitive land uses consistent with the ARB's recommendation as shown in the following Table:

| Source | Category Advisory Recommendations |
|---------------------------------|---|
| Freeways and High-Traffic Roads | Avoid concentrating sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day |
| Distribution Centers | Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points. Rail Yards |
| Rail Yards | Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. |

| Source | Category Advisory Recommendations |
|--------------------------------------|---|
| | Within one mile of a rail yard, consider possible siting limitations and mitigation approaches. |
| Ports | Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks. |
| Refineries | Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation. |
| Chrome Platers | Avoid siting new sensitive land uses within 1,000 feet of a chrome plater. |
| Dry Cleaners Using Perchloroethylene | Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perc dry cleaning operations. |
| Gasoline Dispensing Facilities | Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities. |

Notes:

1. These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
2. Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80 percent with the recommended separation.
3. The relative risk for these categories varies greatly. To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
4. These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
5. Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
6. This table does not imply that mixed residential and commercial development in general are incompatible. Rather it focuses on known problems like dry cleaners using perchloroethylene that can be addressed with reasonable preventative actions.
7. A summary of the basis for the distance recommendations can be found in Table 1-2 (ARB, 2005).

AQ-S6. **Preservation and Replacement of On-site Trees.** Large scale residential, commercial and industrial projects which remove a significant number of large trees (for example, more than 50 trees of greater than 12 inches DBH) shall plant replacement trees on-site or provide offsetting carbon mitigations.

15.6 Implementation Measures

AQ-IM1. Review Attainment Plan Revisions. Review local Attainment Plan revisions to guide future General Plan and Housing Element updates, as necessary, and implement new land use and transportation policies and other regulatory controls as identified by the attainment.

AQ-IM2. North Coast Air Quality Management Permitting Coordination. The County shall maintain efficient and timely procedures for project referral to the North Coast Air Quality Management District for review and consultation.

AQ-IM3. County-wide Climate Action Plan. Develop and implement a Climate Action Plan that effectively mitigates the carbon emissions attributable to this Plan, consistent with the requirements of the state Global Warming Solutions Act and subsequent implementing legislation and regulations.

AQ-IM4. County Government Greenhouse Gas Emission Reductions. The County shall prepare a Climate Action Plan for its governmental operations consistent with the Countywide Climate Action Plan that seeks emission reductions in the following areas:

- A. Energy Efficiency and Conservation
- B. Green Building
- C. Waste Reduction and Recycling
- D. Climate-Friendly Purchasing
- E. Renewable Energy and Low-Carbon Fuels
- F. Efficient Transportation
- G. Offsetting Carbon Emissions
- H. Promoting Community and Individual Action

AQ-IM5. Greenhouse Gas Emissions. Update the General Plan and Land Use Ordinances, as appropriate, to reflect the adopted countywide Climate Action Plan and the new state laws and regulations for greenhouse gas emissions when they become available.

AQ-IM6. Review of Greenhouse Gas Emissions Impacts of New Development. Modify the Zoning and Subdivision Ordinances to assess GHG emissions of discretionary large scale residential, commercial and industrial projects, and require feasible mitigation.

AQ-IM7. Programs to Reduce Air Quality Impacts of Wildland Fires. Support and encourage programs such as fuel reduction, prescribed fires, and vegetation management as recommended in the County's Fire Plan to reduce air quality impacts of wildfires.

AQ-IM8. Transfer of Development Rights Program. The County shall develop a voluntary transfer of development rights program which provides incentives to transfer entitlements from resource lands and other rural areas into areas served with public water and sewer to reduce GHG emissions from new development.

AQ-IM9. Reduce Air Quality Impacts from Surface Mining. To reduce air quality impacts from asbestos and other pollutants, refer all discretionary review actions for new and existing rock quarries and other surface mining activities to the North Coast Air Quality Management District for review and recommendations.

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