



# AIR QUALITY ELEMENT

## INTRODUCTION

This element provides the policy context for Merced County to achieve its vision for air quality and greenhouse gas reduction. Air pollution can adversely affect human health, degrade the natural and built environments, adversely impact the production and quality of agricultural crops, and change the earth's climate. It is a major factor in defining the quality of life for County residents, and the San Joaquin Valley air basin has air pollution levels among the worst in the nation. Cities and counties in the San Joaquin Valley Air Basin are required to amend their general plans to include goals, policies, and feasible implementation strategies to improve air quality and address climate change.

Besides regulating point-source pollution, such as industrial sources of pollution, the primary means for local government to improve air quality is by changing land use patterns and reducing automobile travel. For a rural area like Merced County, the primary role in this strategy is to direct development to existing urban areas and to minimize parcelization and residential development on agricultural and open space land. Goals and policies in this element are organized under the following headings:

- Greenhouse Gas Reduction and Climate Change Adaptation
- Environmental Assessment and Mitigation
- Public Facilities and Operations
- Congestion Management and Transportation Control Measures
- Toxic and Hazardous Emissions
- Fugitive Dust and PM10

## GREENHOUSE GAS REDUCTION AND CLIMATE CHANGE ADAPTATION

Emissions of greenhouse gases into the atmosphere by human activities, predominantly the burning of fossil fuels, is increasing the potency of the greenhouse effect and leading to global climate change. Local efforts to reduce energy consumption and use alternative energy sources can save consumers money and improve air quality. Not only is there a concern for worldwide impacts, but there are new and emerging legal and regulatory issues that local governments in California must address. The most important

of these is Assembly Bill 32 which requires local governments to inventory greenhouse gases. In order to implement AB 32, the San Joaquin Valley Air Pollution Control District has adopted emission reduction targets and best management practices that are required to be met by each jurisdiction, including Merced County. The policies in this section require energy conservation, greenhouse gas emission reduction, and global and local climate change adaptation.

<b>Goal AQ-1</b>	Reduce air pollutants and greenhouse gas emissions and anticipate adaptation due to future consequences of global and local climate change. <i>[Sources: New Goal, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans; GPU Consultants—AB 32 requirement]</i>
------------------	--

**Policy AQ-1.1: Energy Consumption Reduction (RDR) 🌐**

Encourage new residential, commercial, and industrial development to reduce air quality impacts from energy consumption. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

**Policy AQ-1.2: Business Energy Reduction Strategies (RDR) 🌐**

Encourage all businesses to: replace high mileage fleet vehicles with more efficient and/or alternative fuel vehicles; increase the energy efficiency of facilities; transition toward the use of renewable energy instead of non-renewable energy sources; adopt purchasing practices that promote emissions reductions and reusable materials; and increase recycling. *[Source: New Policy, GPU Consultants—AB 32 requirement]*

**Policy AQ-1.3: Agricultural Operations Emission Reduction Strategies (RDR) 🌐**

Promote greenhouse gas emission reductions by encouraging agricultural operators to use carbon efficient farming methods (e.g., no-till farming, crop rotation, cover cropping); install renewable energy technologies; protect grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to other uses; and develop energy-efficient structures. *[Source: New Policy, GPU Consultants—AB 32 requirement]*

**Policy AQ-1.4: Methane Digesters (RDR, JP) 🌐**

Encourage large dairies to capture methane through use of manure digester systems to generate an alternative source of energy, reduce greenhouse gas emissions, and serve as a source of profit for agricultural operations. *[Source: New Policy, GPU Consultants]*

**Policy AQ-1.5: Climate Action Plan (RDR, PSR) 🌐**

Prepare a Climate Action Plan that includes an inventory of 1990 and 2010 greenhouse gas emissions, determines project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPC, and identify strategies to achieve State emission reduction targets. *[Source: MCGPU Alternatives Report, Policy Option CC-1.a; San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

**Policy AQ-1.6: Air Quality Improvement (SO)** 

Support and implement programs to improve air quality throughout the County by reducing emissions related to vehicular travel and agricultural practices. [Source: *MCGPU Alternatives Report, Policy Option CC-1.jj, MARG Comment*]

**Policy AQ-1.7: Heat Island Effect Reduction (RDR)** 

Require increased tree canopy and reflective surface materials in order to reduce the heat island effect (i.e., increased temperatures due to heat radiation off paved surfaces and rooftops). This includes:

- a) Preserving agricultural lands, wildlife habitat and corridors, wetlands, watersheds, groundwater recharge areas, and other open space that provide carbon sequestration benefits;
- b) Establishing a mitigation program for development of those types of open space that provide carbon sequestration benefits;
- c) Requiring like-kind replacement for, or impose mitigation fees on, land development that results in the loss of carbon sequestering open space; and
- d) Using mitigation funds generated to protect existing open space. [Source: *MCGPU Alternatives Report Policy Option CC-2.i*]

**Policy AQ-1.8: Climate Change Adaptation (RDR)** 

Prepare appropriate strategies to adapt to climate change based on peer-reviewed scientific findings of the potential impacts. [Source: *New Policy, GPU Consultants—AB 32 requirement*]

**Policy AQ-1.9: Interagency Coordination (IGC)** 

Coordinate with cities, regional, State, and Federal agencies and organizations to collaborate on a comprehensive approach to planning for climate change. [Source: *New Policy, GPU Consultants—AB 32 requirement*]

**Policy AQ-1.10: Public Awareness (IS)** 

Increase public awareness about climate change and encourage county residents and businesses to become involved in activities and lifestyle changes that will aid in reduction of greenhouse gas emissions. [Source: *New Policy, GPU Consultants—AB 32 requirement*]

**Policy AQ-1.11: Truck-Related Development (RDR)**

Discourage development that causes significant increases in truck traffic on roads that are not capable of accommodating truck traffic due to pavement section deficiency or other capacity limitations, unless adequate mitigation through fees or improvements in required as part of the permit approval. [Sources: *New Policy, MARG comment*]

## ENVIRONMENTAL ASSESSMENT AND MITIGATION

The environmental assessment process required under the California Environmental Quality Act (CEQA) is the most important tool for the County to communicate with other

agencies and the public on the air quality impacts of development. The County can make a significant difference in reducing project-level air quality impacts through the careful identification of potentially significant impacts and adoption of corresponding feasible mitigation measures in compliance with CEQA. The policies in this section guide the County in establishing fair and consistent project review procedures for assessing project impacts on air quality.

### Goal AQ-2

Mitigate significant local and regional air quality impacts of projects through the CEQA process. *[Source: New Goal, GPU Consultants]*

#### Policy AQ-2.1: Air Quality Plan Compliance (RDR)

Require all development projects to comply with applicable regional air quality plans and policies. *[Source: Existing Merced County GP Revised Policy OS.2.26]*

#### Policy AQ-2.2: Development Review Process (RDR)

Use the development review process to achieve measurable reductions in greenhouse gas emissions. *[Source: New Policy, GPU Consultants—AB 32 requirement]*

#### Policy AQ-2.3: Cumulative Impacts (RDR)

Encourage the reduction of cumulative air quality impacts produced by projects that are not significant by themselves, but result in cumulatively significant impacts in combination with other development. *[Source: New Policy, MARG Comment]*

#### Policy AQ-2.4: Mitigation (RDR)

Require that local and regional air quality impacts identified during CEQA review for projects reviewed and approved by the County are consistently and fairly mitigated. *[Sources: New Policy, MARG Comment, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

#### Policy AQ-2.5: Innovative Mitigation Measures (RDR, IGC, JP)

Encourage innovative mitigation measures and project redesign to reduce air quality impacts by coordinating with the San Joaquin Valley Air Pollution Control District, project applicants, and other interested parties. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

#### Policy AQ-2.6: County Decision-Making Process (RDR)

Require climate change planning and program implementation in the County decision-making process. *[Source: New Policy, GPU Consultants—AB 32 requirement]*

#### Policy AQ-2.7: Air District Best Performance Standards (RDR)

Require the County to use the Best Performance Standards adopted by SJVAPCD during the development review and decision-making process to ensure new projects meet the targets set by the district. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

## PUBLIC FACILITIES AND OPERATIONS

Merced County is a large employer and operates a large vehicle fleet. The County takes a leadership role in implementing employer-based trip reduction and fleet operator programs to reduce the County's emissions and provide a model for the private sector. The policies in this section focus on improving air quality by improving County facilities and operations.

### Goal AQ-3

Improve air quality through improved public facilities and operations and to serve as a model for the private sector. *[Source: New Goal, GPU Consultants]*

#### Policy AQ-3.1: Automotive Trip Reduction Program (RDR, PSR) 🌐

Prepare and implement an automotive trip reduction program for County employees, which may include:

- a) Department-sponsored carpooling efforts and rideshare programs;
- b) Preferred parking locations for carpool/rideshare users;
- c) Transit-cost reimbursement or subsidy for employees; and
- d) Incentives for employees who use alternative means of transportation (e.g., train, biking, walking, carpooling).

*[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

#### Policy AQ-3.2: Clean Fleet Vehicles (RDR) 🌐

Require vehicle replacement practices that prioritize the replacement of older higher-emission vehicles and the purchasing of the lowest emission technology vehicles, consistent with cost-effective management of the program. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

#### Policy AQ-3.3: Teleconferencing (RDR) 🌐

Use teleconferencing in lieu of employee travel to conferences and meetings when feasible. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

#### Policy AQ-3.4: Infrastructure for Telecommuting (RDR) 🌐

Develop state-of-the-art communication infrastructure to support telecommuting and secure software programs to allow telecommuting by County employees. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

#### Policy AQ-3.5: Purchasing Preferences (RDR) 🌐

Institute environmentally-responsible purchasing, including giving preference to products that reduce or eliminate indirect greenhouse gas emissions and promote

recycling. [Source: *New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans*]

## CONGESTION MANAGEMENT AND TRANSPORTATION CONTROL MEASURES

Transportation control measures are strategies to lower emissions by reducing vehicle trips, vehicle miles traveled, and idling. Central to this strategy are policies that encourage people to drive less. Congestion management programs improve the efficiency of the transportation system through measures that increase system capacity with minimal capital improvements. State and Federal law requires local governments to include transportation control and congestion management measures in their transportation plans.

Merced County has the opportunity to create performance-based development patterns and codes that by design reduce trip generation, trip length and, as a result, air pollutant emissions related to future commercial and residential development projects. The policies in this section support the reduction of transportation-based emissions.

### Goal AQ-4

Reduce traffic congestion and vehicle trips through more efficient infrastructure and support for trip reduction programs. [Source: *New Goal, GPU Consultant*]

#### Policy AQ-4.1: Decrease Vehicle Miles Traveled (RDR) 🌐

Require diverse, higher-density land uses (e.g., mixed-use and infill development) to decrease vehicle miles traveled. [Source: *MCGPU Alternatives Report, Policy Option NR-5.a*]

#### Policy AQ-4.2: Increasing Road Capacity (RDR) 🌐

Increase the efficiency of the existing road network prior to constructing additional capacity. These measures could include: modifying intersections using turn restrictions or channelization, where feasible; and redirecting truck traffic during peak hours. [Source: *New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans*]

#### Policy AQ-4.3: Public Transport Use Incentives (RDR, PSR) 🌐

Prepare incentives and programs to encourage use of public transit and decrease vehicle miles traveled. [Source: *MCGPU Alternatives Report, Policy Option NR-5.b*]

#### Policy AQ-4.4: Transportation Alternatives (JP) 🌐

Require employers and developers to provide employees and residents with attractive, affordable transportation alternatives, such as transit stops, van pool pick-up and drop-off locations, and biking paths/storage. [Source: *New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans*]

**Policy AQ-4.5: Public Education and Awareness (PI, PSR) 🌐**

Support programs that educate the public regarding the impact of individual transportation, lifestyle, and land use decisions on air quality. *[Source: New Policy, MARG Comment]*

**Policy AQ-4.6: Non-Motorized Transportation (RDR) 🌐**

Encourage non-motorized transportation corridors within and between communities. *[Source: New Policy, MARG Comment]*

**Policy AQ-4.7: Planning Integration (RDR) 🌐**

Require land use, transportation, and air quality planning to be integrated for the most efficient use of resources and a healthier environment *[Source: New Policy, MARG Comment]*

## TOXIC AND HAZARDOUS EMISSIONS

Siting of industrial, agricultural, and heavy commercial projects that generate toxic or hazardous emissions must take into consideration protection of residential and other sensitive land uses. The policies in this section address appropriate areas for development in order to minimize conflicts and promote economic growth.

**Goal AQ-5**

County residents are protected from toxic air pollutants and noxious odors from industrial, manufacturing, and processing facilities, and agricultural operations. *[Source: New Goal, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

**Policy AQ-5.1: Residential Buffers (RDR) 🌐**

Require effective buffers between residential land uses and non-residential land uses that generate hazardous air emissions such as highways, trucking centers, gasoline dispensing facilities, and dry cleaners. *[Source: MCGPU Alternatives Report, Policy Option NR-5.e, BOS/PC Comment]*

**Policy AQ-5.2: New Point Sources (RDR) 🌐**

Require new air pollution point sources such as, but not limited to, industrial, manufacturing, and processing facilities to be located an adequate distance from residential areas and other sensitive receptors. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

## CRITERIA POLLUTANTS

Particulate matter less than 10 microns in diameter (PM10) and less than 2.5 microns (PM 2.5) are major components of air pollution that threaten the health of humans and the environment. These particles are of great concern to public health because they are small enough to be inhaled into the deepest part of the lungs and cause respiratory-related illness. The San Joaquin Valley is classified as a serious nonattainment area for PM10 under Federal criteria. Because of this classification, jurisdictions in the San

Joaquin Valley Air Basin are subject to a series of Federal mandates aimed at achieving the Federal ambient air quality standards. These include adoption of contingency measures and implementation of Best Available Control Measures (BACM). The major sources of these emissions in Merced County are agriculture and dust from construction, industrial activities, and on- and off-road vehicles. The policies in this section support the reduction of PM10 and PM2.5 emissions and other particulates from sources within Merced County.

### Goal AQ-6

Improve air quality in Merced County by reducing emissions of PM10, PM2.5, and other particulates from mobile and non-mobile sources.  
*[Source: New Goal, GPU Consultants]*

#### Policy AQ-6.1: Particulate Emissions from Construction (IGC) 🌐

Support the San Joaquin Valley Air Pollution Control District's efforts to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible and consistent with State and Federal regulations. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

#### Policy AQ-6.2: Emissions from County Roads (RDR) 🌐

Require PM10 and PM2.5 emission reductions on County-maintained roads to the maximum extent feasible and consistent with State and Federal regulations. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

#### Policy AQ-6.3: Paving Materials (RDR) 🌐

Require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use. *[Source: New Policy, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]*

#### Policy AQ-6.4: Agricultural Best Management Practices (RDR, JP) 🌐

Encourage agricultural operations to incorporate Best Management Practices, such as paving roads, screening cropland with windbreaks, limiting tilling and grading on high-wind days, and changing harvesting equipment, to reduce particulate emissions consistent with State and Federal regulations. *[Source: New Policy, GPU Consultant]*

#### Policy AQ-6.5: Industrial Best Management Practices (RDR, JP) 🌐

Require industrial facilities to incorporate economically feasible Best Management Practices and control technology to reduce PM10 and PM2.5 emissions consistent with State and Federal regulations. *[Source: New Policy, GPU Consultant]*

## IMPLEMENTATION PROGRAMS

Air Quality Element Implementation Programs						
		2013-2015	2016-2020	2021-2030	Annual	Ongoing
<p><b>Program AQ-A: Climate Action Plan (MPSP)</b> </p> <p>Prepare, maintain, and implement a Climate Action Plan (CAP) for the County that identifies strategies the County can take to reduce greenhouse gas emissions through land use and transportation planning. The plan shall also address economic and social adaptation to the effects of global and local climate change. The plan shall include:</p> <ul style="list-style-type: none"> <li>a. a baseline analysis to determine 1990 and 2010 (or most appropriate base year) greenhouse gas emission levels in the County;</li> <li>b. actions necessary to reduce Countywide greenhouse gas emissions consistent with State requirements.</li> <li>c. implementation strategies to help the County adapt to the effects of global and local climate change; and</li> <li>d. a program to regularly monitor emissions and verify results a minimum of every five years starting in 2010.</li> <li>e. A provision to amend the General Plan to include the policies and programs of the Climate Action Plan.</li> <li>f. A requirement that County operations and actions, as well as land use approvals, are consistent with the Climate Action Plan.</li> </ul> <p><i>[Source: New Program, GPU Consultants]</i></p>		✓				
Implements Which Policies	All AQ policies, specifically AQ-1.5 and AQ-1.8					
Responsible Department	Planning and Community Development					
Supporting Department	Public Works, Environmental Health, Planning Commission, Board of Supervisors Health Department					
<p><b>Program AQ-B: County Telecommuting Upgrades (RDR)</b> </p> <p>Purchase and regularly update state-of-the-art communication infrastructure and software programs to allow telecommuting by County employees. <i>[Source: New Program, San Joaquin Valley Air Pollution Control District, Air Quality Guidelines for General Plans]</i></p>		✓				
Implements Which Policies	AQ-3.3					
Responsible Department	Information Technology					
Supporting Department						

Air Quality Element Implementation Programs						
		2013-2015	2016-2020	2021-2030	Annual	Ongoing
<b>Program AQ-C: Transit Incentives (PSR) 🌐</b> Establish incentives and programs to encourage the use of public transit in order to decrease automotive vehicle miles traveled. <i>(Source: MCGPU Alternatives Report, Policy Option NR-5.b)</i>		✓				
Implements Which Policies	AQ-3.1, AQ-4.3, AQ-4.4					
Responsible Department	Planning and Community Development					
Supporting Department	Public Works					