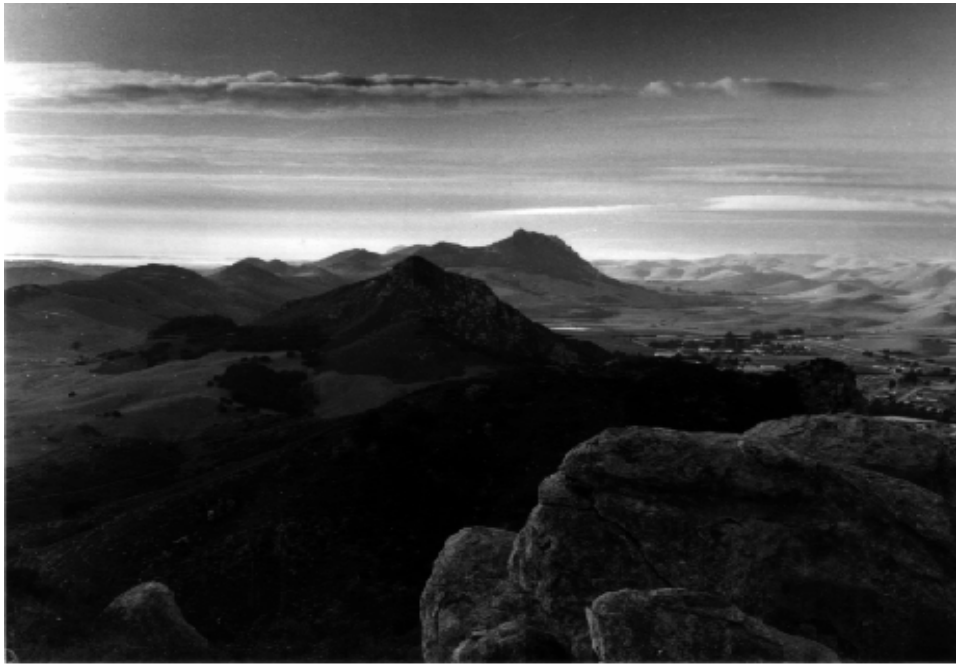


2001
CLEAN AIR PLAN
SAN LUIS OBISPO COUNTY



December 2001



**AIR POLLUTION
CONTROL DISTRICT**
COUNTY OF SAN LUIS OBISPO

2001 CLEAN AIR PLAN SAN LUIS OBISPO COUNTY

AIR POLLUTION CONTROL OFFICER

Robert W. Carr

PROJECT MANAGEMENT

Larry Allen

CONTRIBUTORS

Paul Allen

Jay Courtney

David Dixon

Melissa Guise

Kim Johnson

Barry Lajoie

Heather Tomley

Paul Reitz

Aeron Arlin-Genet

Tom Roemer

Cover photo by Phil Dunsmore

SAN LUIS OBISPO COUNTY
AIR POLLUTION CONTROL DISTRICT BOARD

KATCHO ACHADJIAN, CHAIR
Fourth District Supervisor

TONY FERRARA, VICE-CHAIR
Arroyo Grande City Council

SHIRLEY BIANCHI
Second District Supervisor

JERRY CLAY
Atascadero City Council

JOHN EWAN
San Luis Obispo City Council

JAMES HEGGARTY
Paso Robles City Council

RICH NEUFELD
Grover Beach City Council

HARRY OVITT
First District Supervisor

BILL PIERCE
Morro Bay City Council

PEG PINARD
Third District Supervisor

MARY ANN REISS
Pismo Beach City Council

MIKE RYAN
Fifth District Supervisor

TABLE OF CONTENTS

2001 CLEAN AIR PLAN SAN LUIS OBISPO COUNTY

LIST OF TABLES	iv
LIST OF FIGURES	v
LIST OF APPENDICES	vi
LIST OF ACRONYMS	vii
GLOSSARY	x

EXECUTIVE SUMMARY

Background.....	ES-1
Existing Air Quality.....	ES-2
Baseline Emissions Inventory.....	ES-2
Control Measures.....	ES-3
Emission Forecasts.....	ES-4
Future Air Quality.....	ES-5
The Tasks Ahead.....	ES-6

CHAPTER 1 – INTRODUCTION

Purpose.....	1-1
Previous Planning Efforts.....	1-2
Authority for Current Air Quality Planning.....	1-2
Responsibilities of Affected Agencies.....	1-4
Development and Organization of the 2001 Clean Air Plan.....	1-6

CHAPTER 2 – PLANNING AND AIR BASIN DESCRIPTION

Physical Description of Planning Area.....	2-1
Land Use and Population.....	2-2
Local and Regional Meteorology.....	2-4

CHAPTER 3 – EXISTING AIR QUALITY

Air Quality Standards.....	3-1
Air Quality Monitoring.....	3-1
Local Pollutant Measurements.....	3-2
Nonattainment Pollutant Trends.....	3-6
Local and Regional Pollutant Transport.....	3-8
Nonattainment Severity Classifications.....	3-9

CHAPTER 4 – 1991 REFERENCE YEAR EMISSION INVENTORY

Introduction..... 4-1
Emissions Source Classification System..... 4-1
Emission Inventory Categories..... 4-2
Development of the 1991 Reference Year Inventory..... 4-3
Comparison of Annual and Planning Inventories..... 4-3
Highlights of the 1991 Reference Year Inventory..... 4-4

CHAPTER 5 – STATIONARY SOURCE CONTROL PROGRAM

Introduction..... 5-1
Control Measure Evaluation..... 5-1
Control Measure Recommendations..... 5-3
Measures Already Implemented..... 5-4
Measures Proposed for Retention and Adoption..... 5-12
Measures Proposed for Deferral/Contingency..... 5-12
Measures Proposed for Deletion..... 5-16

CHAPTER 6 – TRANSPORTATION AND LAND USE MANAGEMENT STRATEGIES

Introduction..... 6-1
Transportation Control Options..... 6-2
Description of Existing Programs..... 6-3
Funding for Transportation Measures..... 6-6
Control Measure Evaluation and Recommendations..... 6-8
Adopted Control Measures..... 6-9
Measures Proposed for Deferral/Contingency Study..... 6-18
Measures Proposed for Deletion from Consideration..... 6-18
Summary..... 6-18

CHAPTER 7 – EMISSION FORECASTS

Introduction..... 7-1
Forecast Methods and Assumptions..... 7-1
Comparison of Forecast Emission Scenarios..... 7-3
Summary..... 7-4

CHAPTER 8 – PLAN IMPLEMENTATION

Introduction..... 8-1
Requirements for Plan Approval..... 8-1
Implementing Agencies and Resources..... 8-1
Public and Private Sector Implementation..... 8-3
Timeframe for Implementation..... 8-4
Contingency Measures..... 8-4
Determination of Project Consistency..... 8-4
Emissions Growth and the Clean Air Plan..... 8-5
Annual Progress Reports and Triennial Update..... 8-6
Air Quality Monitoring..... 8-6
District Staff and Resources for Implementation..... 8-7

CHAPTER 9 – PUBLIC INFORMATION AND EDUCATION

Introduction..... 9-1
Description of Existing Programs..... 9-1
New Programs Proposed for Adoption.....9-4
Implementation and Funding.....9-6

LIST OF TABLES

TABLE ES-1	Stationary Source Control Measures List
TABLE 2-1	San Luis Obispo County Population Projections
TABLE 2-2	San Luis Obispo County Projected Population Rate of Growth
TABLE 3-1	State and National Ambient Air Quality Standards
TABLE 3-2	Maximum Pollutant Concentrations in San Luis Obispo County
TABLE 3-3	Maximum 1-Hour Ozone Concentrations
TABLE 3-4	PM ₁₀ Levels in San Luis Obispo County
TABLE 4-1	1991 Annual Emissions Inventory
TABLE 4-2	1991 Planning Emissions Inventory
TABLE 5-1	Stationary Source Control Measure Evaluation
TABLE 5-2	Estimated Emission Reductions from Stationary Source Control Measures
TABLE 5-3	Comparison of Stationary Source Control Measures
TABLE 6-1	Expected Reductions in Average Daily Trips and Vehicle Miles Traveled
TABLE 6-2	Expected Emission Reductions from Transportation Control Measures
TABLE 6-3	Air Resources Board Mobile Source Control Strategies
TABLE 7-1	Projected ROG and NO _x Emissions Without Clean Air Plan
TABLE 7-2	Projected ROG and NO _x Emissions With Clean Air Plan
TABLE 7-3	Clean Air Plan Emission Projections
TABLE 8-1	Stationary Source Control Measures Adoption and Implementation Schedule
TABLE 8-2	Transportation Control Measures Adoption and Implementation Schedule
TABLE 8-3	Land Use Planning Strategies Adoption and Implementation Schedule
TABLE 8-4	Measure Adoption and Implementation Schedule by Agency
TABLE 8-5	Contingency and Further Study Measures

Note: Table and figures can be found at the end of each chapter.

LIST OF FIGURES

FIGURES ES-1	1991 Planning Emissions Inventory
FIGURES ES-2	Forecast ROG Emissions Countywide
FIGURES ES-3	Forecast NO _x Emissions Countywide
FIGURES 2-1	Geographical Regions of San Luis Obispo County
FIGURES 2-2	San Luis Obispo County Planning Areas
FIGURES 2-3	Inversion Characteristics
FIGURES 3-1	Air Monitoring Stations in San Luis Obispo County
FIGURES 3-2	Air Monitoring Locations, Periods and Parameters
FIGURES 3-3	Days Exceeding the State Ozone Standard
FIGURES 3-4	Days Exceeding the PM ₁₀ Standard
FIGURES 3-5	PM ₁₀ Violations by Month
FIGURES 3-6	Number of Hours \geq 0.07 ppm Ozone
FIGURES 3-7	Maximum Hourly Ozone Concentrations
FIGURES 4-1.1	1991 Annual Emissions Inventory for ROG and NO _x
FIGURES 4-1.2	1991 Annual Emissions Inventory for PM ₁₀ and SO ₂
FIGURES 4-1.3	1991 Annual Emissions Inventory for TOG and CO
FIGURES 4-2	1991 Planning Emissions Inventory for ROG and NO _x
FIGURES 5-1	Estimated Emission Reductions from ROG Stationary Source Control Measures
FIGURES 5-2	Estimate Emission Reductions from NO _x Stationary Source Control Measures
FIGURES 6-1	Estimated Emission Reductions from Transportation Control Measures
FIGURES 7-1	Forecast ROG Emissions by Source Group
FIGURES 7-2	Forecast NO _x Emissions by Source Group
FIGURES 7-3	Forecast ROG Emissions Countywide
FIGURES 7-4	Forecast NO _x Emissions Countywide

Note: Tables and figures can be found at the end of each chapter

LIST OF APPENDICES

APPENDIX A	Baseyear Emissions Inventory
APPENDIX B	Forecast Emissions Inventory
APPENDIX C	Stationary Source Control Measures
APPENDIX D	Transportation Control Measures
APPENDIX E	Land Use and Circulation Management Strategies

LIST OF ACRONYMS

<i>AAQS</i>	Ambient Air Quality Standard
<i>AB</i>	Assembly Bill
<i>ADT</i>	Average Daily Trips
<i>APCB</i>	Air Pollution Control Board
<i>APCD</i>	Air Pollution Control District
<i>AQAMP</i>	Air Quality Attainment and Maintenance Plan
<i>ARB</i>	Air Resources Board (California State)
<i>AVR</i>	Average Vehicle Ridership
<i>BACT</i>	Best Available Control Technology
<i>BAR</i>	Bureau of Automotive Repair
<i>BARCT</i>	Best Available Retrofit Control Technology
<i>CAAQS</i>	California Ambient Air Quality Standards
<i>CALTRANS</i>	California Department of Transportation
<i>CAL POLY</i>	California Polytechnic State University, San Luis Obispo
<i>CAP</i>	Clean Air Plan
<i>CAPCOA</i>	California Air Pollution Control Officers Association
<i>CBD</i>	Central Business District
<i>CCAA</i>	California Clean Air Act of 1988
<i>CEQA</i>	California Environmental Quality Act.
<i>CO</i>	Carbon Monoxide

LIST OF ACRONYMS

<i>EIR</i>	Environmental Impact Report
<i>EPA</i>	U.S. Environmental Protection Agency
<i>ISR</i>	Indirect Source Review
<i>LEV</i>	Low Emission Vehicle
<i>MOU</i>	Memorandum of Understanding
<i>MVCP</i>	Motor Vehicle Control Program
<i>MVIP</i>	Motor Vehicle Inspection Program
<i>NAAQS</i>	National Ambient Air Quality Standards
<i>NO_x</i>	Oxides of Nitrogen.
<i>NSR</i>	New Source Review
<i>O₃</i>	Ozone
<i>PM₁₀</i>	Particulate Matter 10 microns or less in diameter
<i>PPM</i>	Parts per Million
<i>RACT</i>	Reasonably Available Control Technology
<i>ROG</i>	Reactive Organic Gases
<i>RTP</i>	Regional Transportation Plan
<i>RTPA</i>	Regional Transportation Planning Agency
<i>SB</i>	Senate Bill
<i>SCCAB</i>	South Central Coast Air Basin
<i>SCM</i>	Stationary Source Control Measure

LIST OF ACRONYMS

<i>SIP</i>	State Implementation Plan
<i>SLOCOG</i>	San Luis Obispo Council Of Governments
<i>SOV</i>	Single occupancy vehicle
<i>SO2</i>	Sulfur Dioxide
<i>TCM</i>	Transportation Control Measure
<i>TDA</i>	Transportation Development Act
<i>TLEV</i>	Transitional Low Emission Vehicle
<i>TMA</i>	Transportation Management Association
<i>TOG</i>	Total Organic Gases
<i>TRP</i>	Trip Reduction Program
<i>TSP</i>	Total Suspended Particulate
<i>ULEV</i>	Ultra Low Emission Vehicle
<i>VMT</i>	Vehicle Miles Traveled
<i>VOC</i>	Volatile Organic Compounds
<i>VRP</i>	Visibility Reducing Particles
<i>ZEV</i>	Zero Emission Vehicle

GLOSSARY OF TERMS

Air Basin - An area of the state, often comprising several counties, which is designated by the Air Resources Board (ARB) based on similar meteorological and geographical conditions, with consideration given to political boundary lines when practical. Using these criteria, the ARB has divided the state into 14 air basins.

Air Pollutant - Any discharge, release, or propagation into the atmosphere of smoke, charred paper, dust, soot, grime, carbon, fumes, noxious or toxic gases, odors, particulate matter, acids, or any combination thereof.

Air Pollution Control District - The local agency governing air quality issues.

Air Resources Board - State of California oversight agency responsible for air quality issues.

Alternate (Clean) Fuels - Blends and/or substitutes for gasoline and diesel fuels. These include ethanol, methanol, compressed natural gas, liquid petroleum gas and electricity.

Ambient Air - Any portion of the atmosphere that is not confined by a structure; i.e., outside air.

Ambient Air Quality Standard - Concentrations of pollutants established by the state or federal government which are set to protect public health and welfare.

Anthropogenic Emissions - Emissions related to human activity or devices.

Area Source - Any source of emissions which, in itself, does not emit a significant amount of emissions, but when considered collectively become significant. Paint and residential wood stoves are examples of area sources.

Attainment - Achieving and not exceeding air quality standards.

Authority to Construct (A/C) - Provides the project applicant with the authority to begin construction. An A/C is normally valid for two years, depending on the District's rule. The A/C is only the first step of approval. The project applicant must construct the project and have it operate within the specified A/C conditions prior to the issuance of a Permit to Operate.

Average Vehicle Ridership - The total number of employees reporting to a worksite, divided by the number of automobiles used to reach the site.

Best Available Control Technology - The technology which gives the maximum degree of reduction of each pollutant emitted from a given type of new emission source, taking into consideration environmental, energy and economic impacts.

GLOSSARY OF TERMS

Best Available Retrofit Control Technology - An emission limitation based on the maximum degree of reduction achievable by existing sources, taking into consideration environmental, energy and economic needs.

Biogenic Emissions - Emissions originating from natural sources such as vegetation and oil seeps.

California Clean Air Act of 1988 - The amendments to the California Health and Safety Code resulting from the passage of Assembly Bill 2595. This Act directs Districts, which are nonattainment for the State AAQS, to achieve attainment of these standards by the earliest feasible date.

California Environmental Quality Act - A law which requires that governmental decision makers be provided with adequate information about the potentially significant environmental impacts of proposed projects. CEQA also mandates ways to avoid or significantly reduce damage to the environment.

Clean Air Plan - A collection of emission control strategies and implementation mechanisms intended to achieve attainment of the AAQS.

Congestion Management Plan - Required for all counties which have a city with a population of > 50,000, this plan contains standards for traffic level of service, transit trip reduction, analysis of land use impacts and a seven year capitol improvement program.

Contingency Measures - Measures which will not be implemented by the District unless interim goals are not achieved.

Control Measure - The means by which air contamination is regulated. Such controls may be legal or technical. Legal Controls are laws and regulations adopted to prevent or abate emissions into the atmosphere. Technical Controls are processes, equipment or devices designed to eliminate or reduce pollutants.

Criteria Pollutants - Named after the process by which standards are set at the National level. Criteria pollutants include: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM₁₀ (a general category of airborne particles 10 microns or less in diameter), and lead, a specific particulate pollutant.

Demand Management - The implementation of measures which encourage people to change their mode of travel, or not to make the trip at all, e.g., ridesharing, pricing incentives and negative incentives, parking management and telecommuting.

GLOSSARY OF TERMS

Emissions Bank - District repository for ownership-transferable emissions reductions.

Emissions Inventory - A list of the type and quantity of pollutants emitted into a community's atmosphere, water, or land.

Emission Forecasting - A estimation of pollutant emissions in future years using population, economic and control projections.

Environmental Impact Report - A document discussing the potential adverse environmental impacts of a project.

Environmental Protection Agency - The federal agency governing air quality and other environmental issues.

Episode Day - A day demonstrating higher than usual ozone formation or activity.

Exceedance - Ambient pollutant concentrations above the ambient air quality standards.

Headways - The waiting period between bus arrivals.

Indirect Source - Any facility, building, structure or installation, or combination thereof which generates or attracts mobile source activity that results in the emissions of any pollutant for which there is a state ambient air quality standard.

Indirect Source Review - A process by which Indirect Sources are evaluated for their potentially adverse environmental impacts with the intent of minimizing those impacts to the maximum extent feasible.

Infrastructure - The underlying foundation or basic framework of a system or organization; Manmade structures, machines, processes, utilities, etc., that serve to support human activities.

Low Emission Vehicle - Passenger cars designed to achieve a 70 percent reduction in gasoline-equivalent hydrocarbon and a 50 percent reduction in NO_x from 1993 standards.

Metropolitan Planning Organization - A regional planning agency which prepares and implements a Congestion Management Plan.

Mitigation - A change or alternative to the proposed project which reduces or eliminates its significant adverse environmental impacts. Mitigation can be in the form of traditional offsets, transportation-based mitigation measures not directly associated with the project under consideration, or mitigation fees to be used to secure offsite mitigation.

GLOSSARY OF TERMS

Mobile Source - Anything that moves and emits pollutants, such as cars, trucks, buses and airplanes.

Nonattainment - Not achieving ambient air quality standards.

New Source Review - Review process conducted by the APCD for new and modified emission sources intended to insure minimal air quality impact.

Oxides of Nitrogen - A precursor pollutant of ozone produced from fossil fuel combustion by a variety of sources; includes nitrogen oxide and nitrogen dioxide.

Ozone - A secondary pollutant formed from the reaction of oxides of nitrogen and reactive organic gases in presence of sunlight. Ozone is the main component of photochemical smog.

Photochemical - Of, relating to, or resulting from the chemical action of radiant energy, especially sunlight.

Pm₁₀ - Particulate Matter 10 microns or less in diameter.

Parts per Million - The number of parts (either by weight or volume) of a given pollutant in a million parts of air; a measure of concentration.

Precursor - A pollutant, that when emitted into the atmosphere, may undergo either a chemical or physical change which then produces another pollutant.

Reactive Organic Gases - Compounds of principally carbon and hydrogen which are precursors to ozone.

Reasonably Available Control Technology - Process changes and/or devices to minimize air pollution from mobile and stationary sources that are cost-effective and readily available.

Receptor - A person, or detector or monitoring device.

Rideshare - The activity of sharing rides and having more than one person per vehicle while commuting to work.

Secondary Pollutants - Pollutants not emitted directly, but formed in the atmosphere through chemical reactions or transformation of other pollutants.

GLOSSARY OF TERMS

Single Occupant Vehicle - A motor vehicle occupied by one person for commute purposes, including motorcycles.

Smog Check - An informal term for a vehicle inspection and maintenance exam.

Solvent - A substance that dissolves another to form a solution.

Stationary Source - A fixed source (not mobile) which emits pollutants.

Stationary Source Control Measures - Measures designed to limit the kind and amount of pollutants emitted from stationary sources.

Stratosphere - The region of the upper atmosphere extending upward from the troposphere to about 15 miles above the earth.

Total Organic Gases - ROG plus nonreactive gases.

Transportation Control Measure - Any strategy to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions.

Transitional Low Emission Vehicle - A vehicle designed to emit 50 percent less hydrocarbon emissions than 1993 model-year conventional gasoline vehicles.

Transport - Emissions from one source being carried by wind to other locations.

Troposphere - Lowest layer of the atmosphere, extending from the earth's surface to a height about 6 to 12 miles above the earth.

Ultra Low Emission Vehicle - Vehicles designed to reduce gasoline equivalent emissions of ROG by 85% percent, CO by 50%, and NO_x emissions by 50%, from 1993 levels.

Volatile Organic Compounds - Generic all encompassing term for any organic compound containing at least one atom of carbon. TOG and ROG are a subset of this.

Vehicle Miles Traveled - Number of miles traveled by a given vehicle in a specified time period. This number is sometimes estimated for the entire fleet of on road vehicles.

Zero Emission Vehicle - A vehicle designed to maintain zero emissions throughout its lifetime.