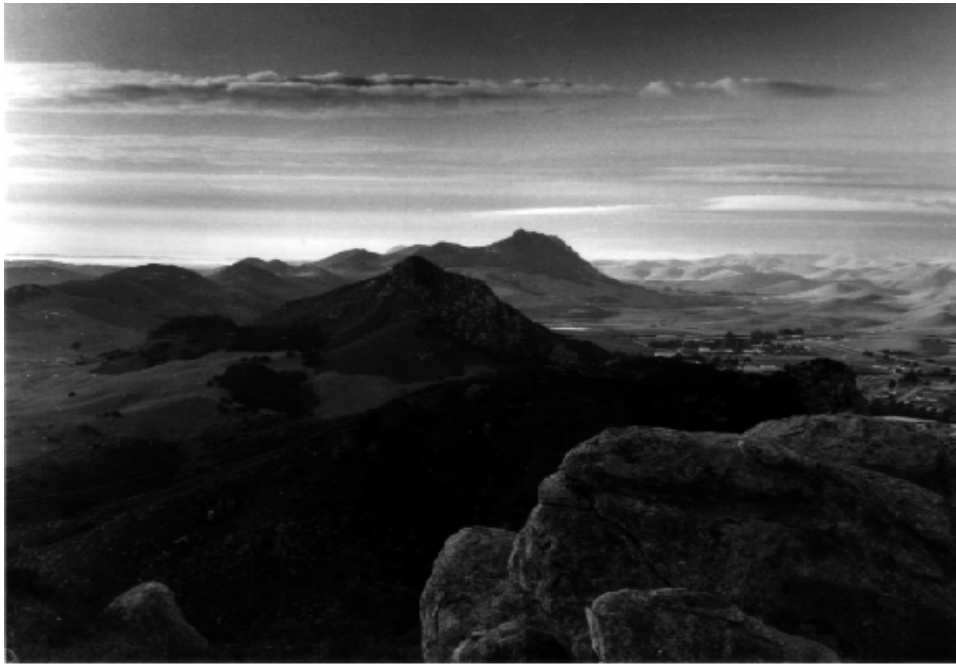


DRAFT
2001
CLEAN AIR PLAN
SAN LUIS OBISPO COUNTY



December 2001



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

2001 CLEAN AIR PLAN SAN LUIS OBISPO COUNTY

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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.

CHAPTER 1

INTRODUCTION

PURPOSE

PREVIOUS PLANNING EFFORTS

AUTHORITY FOR CURRENT AIR QUALITY PLANNING

RESPONSIBILITIES OF AFFECTED AGENCIES

DEVELOPMENT AND ORGANIZATION OF THE 2001
CLEAN AIR PLAN

1.1 PURPOSE

Clean air is a valuable and essential resource which affects many aspects of our daily lives. It is vital to our health and welfare, to the local agricultural economy, and to the aesthetic beauty and quality of life enjoyed by county residents. The capacity of the air to absorb environmental contaminants is limited, however, and must be managed wisely to avoid significant deterioration of the resource.

The 2001 Clean Air Plan (CAP or Plan) for San Luis Obispo County addresses the attainment and maintenance of state and federal ambient air quality standards. These standards are adopted to protect public health, vegetation, materials and visibility. State standards for ozone and fine particulate matter (PM10) are currently exceeded within the District, and violation of federal standards may occur in future years without adequate planning and air quality management.

Ozone is a colorless and highly reactive gas. It is created naturally in the stratosphere, high above the earth, where it forms a protective shield which absorbs damaging ultra-violet radiation from the sun before it reaches the ground. However, in the lower atmosphere ozone is a serious pollutant, formed through complex chemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NOx) in the presence of sunlight. In San Luis Obispo County, the primary sources of ROG are motor vehicles, organic solvents, the petroleum industry and pesticides. Major sources of NOx are motor vehicles, public utility power generation and fuel combustion by various industrial sources.

Ozone can damage vegetation and cause rubber to crack at relatively low concentrations. At higher concentrations, ozone can impact public health by directly affecting the lungs, causing respiratory irritation and changes in lung function. Asthma, bronchitis and other respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to ozone. When ozone levels are high, people with respiratory and cardiac difficulties, the elderly and children are advised to remain indoors. Outdoor exercise by healthy adults is also discouraged since strenuous activity may cause shortness of breath and chest pains.

Although breathing impairment is the primary and most noticeable health effect, symptoms of sore throat, nausea or dizziness, coughing and headaches may occur in healthy individuals exposed to high ozone concentrations. Such effects are generally temporary if the duration of exposure is limited. However, recent studies have shown that routine exposure to lower concentrations of ozone can cause chronic lung damage in children; permanent reductions in lung capacity of up to 50% have been measured.

Ozone is also a serious threat to California agriculture and native vegetation due to its pervasive nature. Many sensitive plant species are known to suffer damage at concentrations below human health standards. Ozone interferes with photosynthesis by attacking leaves, causing them to yellow, develop dead areas and drop prematurely. With many crop varieties ozone stunts growth, reduces yields, or causes aesthetic damage which lowers market value. Many of the crops grown within this county are particularly sensitive to ozone injury, including orchard crops, lettuce and several grape varieties. The state Air Resources Board (ARB) has determined that ozone pollution costs California farmers and consumers over \$500 million each year in reduced crop yields.

Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes and mists. The particles of primary concern are fine particulate matter less than ten microns in diameter (PM10). These small particles have the greatest likelihood of being inhaled deep into the lungs. A variety of human activities can generate PM10 emissions including agricultural operations, industrial processes, combustion of fossil fuels, construction and demolition operations, and entrainment of road dust into the atmosphere. Natural sources of PM10 include wind blown dust, wildfire smoke, and salt from sea spray.

The 2001 Plan primarily addresses the ozone nonattainment problem. It is a comprehensive planning document intended to provide guidance to the Air Pollution Control District, the county, and other local agencies on how to attain and maintain the state standard for ozone. The Plan presents a detailed description of the sources and pollutants which impact the county, future air quality impacts to be expected under current growth trends, and an appropriate control strategy for reducing ozone precursor emissions, thereby improving air quality.

Most of the ozone control measures described in this Plan have already been implemented through previous planning efforts. Many of these measures provide a secondary benefit of reducing ambient PM₁₀ levels by reducing ROG and NO_x emissions. ROG and NO_x can be transformed in the atmosphere to aerosols, a major constituent of PM₁₀. The District expects to formally address PM₁₀ nonattainment in future planning efforts.

1.2 PREVIOUS PLANNING EFFORTS

In 1978 San Luis Obispo County was designated a federal nonattainment area due to periodic violations of the 0.08 parts per million (ppm) federal oxidant standard; the Salinas River Valley portion of the county was further designated nonattainment for the federal secondary standard for particulate matter. With the San Luis Obispo Area Council of Governments acting as lead agency, the County prepared an Air Quality Attainment and Maintenance Plan (AQAMP) in 1979 as required by federal law. This Plan was the first comprehensive air quality planning effort in San Luis Obispo county. It proposed the adoption and implementation of an extensive set of stationary source and transportation control measures designed to attain the primary federal oxidant standard by the end of 1987.

Just after adoption of the 1979 AQAMP, the federal Environmental Protection Agency (EPA) changed the 0.08 ppm oxidant standard to a 0.12 ppm ozone standard. Because there had been no violations of the revised standard within the previous three years, San Luis Obispo County then qualified for redesignation as an attainment area for ozone. The Area Council of Governments and the ARB agreed that adoption and implementation of the AQAMP was still important to maintain attainment in view of the projected increase in population and industrial emissions. However, without a regulatory mandate for implementation, less than half of the proposed stationary source controls were adopted. Only 4 of the 18 recommended transportation controls were implemented, primarily through state or local programs.

In 1989, San Luis Obispo County was designated a nonattainment area for the state ozone and PM₁₀ standards. State law requires the District to develop a plan designed to achieve the state standards by the earliest practical date; this plan must be updated every three years. The 1991 Clean Air Plan (CAP) was adopted by the Air Pollution Control District Board in January, 1992, and was approved by the Air Resources Board in August of 1992. The 1991 CAP contained 44 control measures designed to reduce ozone precursor emissions from a wide variety of stationary and mobile sources and bring the county into attainment of the state ozone standard by the end of 1997. Comprehensive updates of the CAP were completed in 1995 and 1998.

1.3 AUTHORITY FOR CURRENT AIR QUALITY PLANNING

Federal Clean Air Act Amendments

Air quality protection at the national level is provided through the federal Clean Air Act Amendments (CAAA). The most current version was signed into law by President Bush on November 15, 1990. These amendments represent the fifth major effort by the U.S. Congress to improve air quality. The 1990 CAAA is generally less stringent than the California Clean Air Act. However, unlike the California law, the CAAA sets statutory deadlines for attaining federal standards.

CHAPTER 1 INTRODUCTION

The 1990 Amendments added several new sections to the law, including requirements for the control of toxic air contaminants; reductions in pollutants responsible for acid deposition; development of a national strategy for stratospheric ozone and global climate protection; and requirements for a national permitting system for major pollution sources. In addition, the 1990 CAAA transfers authority for regulation of air quality on the Outer Continental Shelf from the Minerals Management Service to the EPA. The law allows local APCDs to apply to EPA for delegation of that authority. Our District applied for and was granted such authority in 1994.

San Luis Obispo County has been designated as attainment or unclassified for the federal air quality standards and is not mandated to develop a federal nonattainment plan. However, some rules and regulations adopted by the District are submitted to the ARB for inclusion in the State Implementation Plan (SIP), which defines the measures to be implemented throughout the state to ensure expeditious attainment of the national ambient air quality standards. Thus, some of the control strategies proposed in this document may ultimately become part of the SIP following their adoption as District rules.

California Clean Air Act

The California Clean Air Act (CCAA) was signed into law in September of 1988. It requires all areas of the state to achieve and maintain the California ambient air quality standards by the earliest practicable date. These standards are generally more stringent than the federal standards; thus, emission controls to comply with the state law are more stringent than necessary for attainment of the federal standard. State and federal standards for ozone and other pollutants are presented in Table 3-1.

The ARB has formally designated all air pollution control districts as attainment or nonattainment for each state air quality standard. Nonattainment designations are further categorized into four levels of severity: moderate, serious, severe and extreme. For districts identified as receptors of transported pollutants from other areas, these definitions are based on violations which would still occur without the transport contribution. San Luis Obispo was classified as a serious ozone nonattainment area for the 1991 planning effort. However, amendments to the CCAA enacted in January of 1993 resulted in our reclassification to a moderate nonattainment status.

Districts designated nonattainment for the state ozone, carbon monoxide, sulfur dioxide, or nitrogen dioxide standards must prepare attainment plans or attainment plan updates every three years and submit them to the ARB for approval. Areas designated nonattainment for PM10, sulfates, lead, hydrogen sulfide, or visibility are not expressly required to develop attainment plans for those pollutants. However, the mandate to achieve and maintain the standards applies to all nonattainment pollutants and their precursors. Thus, all reasonable actions possible should be taken to meet those pollutant standards not specifically addressed in the attainment plans.

Under the Act, the ARB and APCD's share primary responsibility for improving air quality. Regulatory agencies are to pursue new and better controls of pollution sources in their respective jurisdictions. The extent of the planning effort depends on the severity classification, with higher classifications having progressively more stringent requirements. As a moderate nonattainment area for ozone, San Luis Obispo county is required to implement the following:

- Application of Best Available Control Technology for any new or modified stationary source with the potential to emit 25 pounds/day of any nonattainment pollutants or their precursor. The District's permitting program must also be designed to allow no net increase in emissions of nonattainment pollutants or their precursors from new or modified stationary sources which emit or have the potential to emit 25 tons per year or more of nonattainment pollutants or their precursors. (Health & Safety Code 40918(a)(1)).

- Application of Best Available Retrofit Control Technology to existing sources which emit 5 tons or more per day, or 250 tons or more per year; application of Reasonably Available Control Technology for all other existing emission sources (H&SC 40918(a)(2)).
- Implement reasonably available transportation control measures sufficient to substantially reduce the growth rate of motor vehicle trips and miles traveled (H&SC 40918(a)(3)).
- Development of control programs for area sources (e.g., industrial coatings and solvents) and indirect sources (e.g., increased automobile emissions from new residential and commercial development) (H&SC 40918(a)(4)).
- Sufficient control strategies to achieve at least a 5% per year reduction in both ROG and NO_x emissions countywide, averaged every consecutive 3-year period; at least a 20% overall reduction in both pollutants compared to 1990 emission levels (H&SC 40914).
- Preparation of annual progress reports for submittal to ARB, with a comprehensive plan update in December 1994 and every three years thereafter until attainment is reached (H&SC 40924).
- Moderate nonattainment areas that are not below the pollutant concentrations for a moderate classification by December 31, 1997, shall comply with the control requirements for a serious nonattainment area if the ARB demonstrates that the additional requirements will substantially expedite the district's attainment of the state ambient air quality standards. (H&SC 40918(b)). (ARB has determined that such additional requirements will not substantially expedite our attainment efforts.)

These requirements must be implemented to the extent necessary to achieve and maintain the state ozone standard by the earliest practicable date. The 2001 Clean Air Plan for San Luis Obispo County is designed to meet these requirements.

San Luis Obispo County Resource Management System

Air quality has been identified as a limiting resource in the Resource Management System (RMS) of the San Luis Obispo County General Plan. The RMS is an information tool used by the County to balance land development with the resources necessary to sustain such development. The focus of the RMS is on data collection, problem identification and development of appropriate solutions. When a deficiency becomes evident, three courses are available to avoid jeopardizing public health or welfare: the resource capacity may be expanded; the rate of depletion may be slowed using conservation measures; or, development may be restricted or redirected to areas with remaining resource capacity.

The RMS utilizes three alert levels to identify the severity of a resource deficiency. Level I occurs when sufficient lead time exists to either expand the capacity of the resource or decrease its rate of depletion. Level II identifies the crucial point at which some moderation of the rate of resource use must occur to prevent exceeding the resource capacity. Level III indicates that the demand for the resource equals or exceeds the supply.

The formal designation of the county as a nonattainment area for the state ozone standard triggered an RMS Level II alert, based on criteria adopted by the San Luis Obispo County Board of Supervisors. Level II status requires the development of a resource capacity study. The Clean Air Plan serves as the resource capacity study for air quality by identifying the causes and extent of the existing problem and by recommending appropriate corrective actions.

1.4 RESPONSIBILITIES OF AFFECTED AGENCIES

Numerous agencies with direct and indirect interest in air quality participate in the planning process.

Environmental Protection Agency

CHAPTER 1 INTRODUCTION

The EPA administers the federal Clean Air Act and other related legislation. As a regulatory agency, EPA's principal functions include setting federal ambient air quality standards; preparing guidance for and approval of State Implementation Plans to meet and/or maintain those standards; establishing national emission limits for major sources of air pollution; inspecting and monitoring emission sources, enforcing federal air quality laws, and promulgating new regulations; and, providing financial and technical support for air quality research and development programs.

The federal Clean Air Act requires EPA to review and approve state implementation plans. The California SIP is a compilation of individual plans developed at the regional or local level. Each of these plans is independently reviewed and approved by EPA prior to incorporation into the SIP.

California Air Resources Board

The California Air Resources Board is the state agency responsible for the coordination and administration of both state and federal air pollution control programs in California. The ARB undertakes research, sets state ambient air quality standards, provides technical assistance to local districts, compiles emission inventories, develops suggested control measures, and provides oversight of district control programs.

A key function of the ARB is to coordinate and guide regional and local air quality planning efforts required by the California Clean Air Act, and to prepare and submit the SIP to EPA. The ARB also establishes emission standards for motor vehicles. The federal Clean Air Act allows California to adopt more stringent vehicle emission standards than the rest of the nation due to our severe air pollution problem.

San Luis Obispo County Air Pollution Control District

The San Luis Obispo County Air Pollution Control District shares responsibility with the ARB for ensuring that all state and federal ambient air quality standards are achieved and maintained within the county. State law assigns to local districts the primary responsibility for control of air pollution from stationary sources, while reserving an oversight role for the ARB. This is typically accomplished through the adoption and implementation of rules and regulations. Generally, the districts must meet minimum state and EPA program requirements; in most instances, districts can implement more stringent regulations than EPA or the State require. The District is also responsible for the inspection of stationary sources, monitoring of ambient air quality, development and updating of attainment plans, and maintenance of the emission inventory. Districts in state nonattainment areas must also develop and implement reasonably available transportation control measures.

San Luis Obispo Council of Governments

The San Luis Obispo Council of Governments (SLOCOG) is a regional agency representing San Luis Obispo County and the incorporated cities. SLOCOG participates in the development of numerous regional plans, including housing and hazardous waste management. They also prepare employment and population forecasts which are used in regional planning programs. As the designated Metropolitan Planning Organization and Regional Transportation Planning Agency for San Luis Obispo County, SLOCOG is also responsible for developing and implementing the regional transportation plan, including coordination with the District on transportation control measures.

Cities and County

While the cities and county do not participate directly in developing the Clean Air Plan, local land use decisions affect air quality. This Plan contains several transportation control measures and land use management strategies designed to reduce the air quality impacts of urban development. The success of many of these measures is dependent on their adoption and implementation by the cities and county.

Another important function of these agencies is the preparation of population forecasts based on expectations of local growth and development. This data is used by the District to forecast population-related emissions (i.e. motor vehicles, gasoline dispensers, etc.). City and county planning agencies are required by law to determine that new development is consistent with the CAP prior to granting project approval.

Other Agencies and Organizations

Several other agencies and organizations also play important roles, directly or indirectly, in the air quality planning and implementation process. The California Department of Transportation (Caltrans) is responsible for many aspects of transportation planning and roadway development and maintenance in California. Caltrans has oversight over the Regional Transportation Plans and Congestion Management Plans developed by MPOs. SLO Regional Rideshare provides carpool and vanpool match-listing services and has a strong outreach program to inform and educate the business community and the general public on various transportation alternatives to the private vehicle. Several public and private transportation providers are currently operating in this county and offer convenient and safe alternatives to private vehicle travel; these include the local and regional transit agencies, Dial-a-Ride, Ride-On TMA and the Consolidated Transportation Services Agency (CTSA).

1.5 DEVELOPMENT AND ORGANIZATION OF THE 2001 CLEAN AIR PLAN

The 2001 Clean Air Plan is an update of the 1998 CAP and a status report on progress toward attainment of the state ozone standard. Many of the control measures identified in previous Plans have already been adopted and implemented. Thus, preparation of this update primarily involved re-analysis of long-term air quality trends to see where we stand; updating the baseline emissions inventory and emissions forecasts to incorporate the most current emission factors, growth projections and control information; and evaluating the effectiveness of measures already implemented to determine the potential timeframe for reaching attainment.

This 2001 Clean Air Plan is organized into chapters covering the general sequence of Plan development:

- CHAPTER 2 - PLANNING AREA AND AIR BASIN DESCRIPTION: Physical geography, land use and population distributions, and local and regional meteorology.
- CHAPTER 3 - EXISTING AIR QUALITY: The nature and extent of the ozone problem in San Luis Obispo County.
- CHAPTER 4 - 1991 REFERENCE YEAR EMISSIONS INVENTORY: Sources and distribution of ozone precursor (ROG and NO_x) emissions.
- CHAPTER 5 - STATIONARY SOURCE CONTROL PROGRAM: Methods for controlling emissions of ROG and NO_x from these sources.
- CHAPTER 6 - TRANSPORTATION AND LAND USE MANAGEMENT STRATEGIES: Methods for reducing motor vehicle emissions and use.
- CHAPTER 7 - EMISSION FORECASTS: Forecasts of ozone precursors to the year 2010 that include the effects of urban growth and proposed emission controls.
- CHAPTER 8 - PLAN IMPLEMENTATION: Agency responsibilities for Plan implementation and related issues.

CHAPTER 1 INTRODUCTION

- CHAPTER 9 - PUBLIC INFORMATION AND EDUCATION: Development schedule for annual reports, Plan updates and an enhanced public education program.
- APPENDICES - Technical Appendices were prepared for various topics, providing supporting information for the body of the Plan. A list of the appendices is provided in the table of contents at the front of this document.

CHAPTER 2
PLANNING AREA AND AIR BASIN
DESCRIPTION

PHYSICAL DESCRIPTION OF PLANNING AREA

LAND USE AND POPULATION

LOCAL AND REGIONAL METEOROLOGY

2.1 PHYSICAL DESCRIPTION OF PLANNING AREA

San Luis Obispo County constitutes a land area of approximately 3,316 square miles with varied vegetation, topography and climate. The diversity of environmental conditions found in the county is greater than its size would suggest. It is bordered by Monterey County to the north, Santa Barbara County to the south, and Kern County to the east, with the Pacific Ocean as the western border. From a geographical and meteorological standpoint, the county can be divided into three general regions: the Coastal Plateau, the Upper Salinas River Valley, and the East County Plain (Figure 2-1). Air quality in each of these regions is characteristically different, although the physical features which divide them provide only limited barriers to transport of pollutants between regions. Predominant features of each region are discussed in the following section.

Geographical Regions in the County

About 75% of the county population and a corresponding portion of the commercial and industrial facilities are located within the coastal plateau. With higher population density and closer spacing of urban areas, emissions of air pollutants per unit area are generally higher here than in other regions of the county.

The coastal plateau is about five to ten miles wide and varies in elevation from sea level to about 500 feet. It is bounded on the northeast by the Santa Lucia Mountain Range, which extends almost the entire length of the county. Rising sharply to about 3,000 feet at its northern boundary, the Santa Lucia Range gradually winds southward away from the coast, finally merging into a mass of rugged features on the north side of Cuyama Canyon.

Point Buchon juts into the Pacific just south of Morro Bay to form the protective harbor of San Luis Obispo Bay. The Irish Hills are the dominant feature on this knob of land, rising abruptly from the shore to form steep cliffs and generally complex terrain from the Los Osos/Montana de Oro State Park area to Pismo Beach. These headlands have a pronounced influence on local windflow patterns. Winds on the lee side of the point often flow perpendicular to the prevailing winds and funnel back and forth through Price Canyon and the Highway 101 corridor. This effect is markedly reduced south of Grover Beach.

South of Point Buchon lies the Nipomo Dune system, which begins in the vicinity of Pismo Beach and extends to Mussel Rock, near Point Sal. This natural landmark plays host to a large number of endemic and rare plant species, as well as an unparalleled array of dune uplands, lakes and wetlands. The Nipomo Mesa is an old dune sheet that rises precipitously from the Santa Maria River floodplain on the south, and the Arroyo Grande Creek floodplain to the north.

Estuaries are also a notable feature of the coastal areas, occurring wherever flowing streams meet the ocean. Morro Bay contains the region's largest estuary, with a saltwater marsh located on the east side where Chorro and Los Osos creeks enter the bay. This is one of the most significant wetlands remaining on the California coast and has been designated part of the National Estuary Program. It provides nesting habitat for blue herons, cranes and other important types of woodland birds and wildlife. Smaller coastal lagoons and marshes are also scattered along the county's shoreline.

The Upper Salinas River Valley, located in the northern one-third of the county, houses 25% of the county's population. Historically, this region has experienced the highest ozone and particulate levels in the county. Transport of ozone precursors from the coastal plateau and from the San Joaquin Valley may contribute to this condition.

This area of plains and low rolling hills is bounded on the west by the Santa Lucia Range and to the east by the Cholame Hills, a northern extension of the Temblor Range. Southward, the La Panza Range gradually rises east of Santa Margarita and runs roughly parallel to the coast, merging with the Caliente Range near the southern border of the county. Caliente Mountain, the highest peak in the county at 5,104 feet, is found in this range.

The Upper Salinas River Valley is characterized by a variety of vegetation communities including riparian, oak woodlands, wetlands, native and nonnative grasslands, and chaparral. Coastal Live Oak and Blue Oak are dominant features of the landscape, with a wide variety of wildlife supported by the oak woodlands scattered throughout the area. Riparian trees such as cottonwoods and willows are common along drainage channels, streams, reservoirs, and marshes. Grassland vegetation is widespread on the rolling hills and flat areas that are either too dry to support oak woodland or have been cleared of oaks in the past.

The East County Plain is the largest region by land area, but only one percent of the county population resides there. Dryland farming and unpaved roads in this region contribute to county totals for particulate emissions, but these emissions rarely affect other regions of the county.

A significant portion of this area is a landlocked drainage basin called the Carrizo Plain, which lies between the La Panza and Caliente Ranges on the west and the Temblor Range to the east. These mountains join together to close the basin at the southeastern tip of the county. The Diablo Range occupies the extreme northeastern portion of this region and, like the Temblors, lies adjacent to the San Joaquin Valley.

The basin of the Plain is a dry, salt lake with alkali flats and saltbush-scrub as the principal vegetation. The upland areas are characteristic of an arid prairie, with little vegetation except dry grass. This region is best described as a steppe, a dry grass covered area with wide temperature fluctuations.

2.2 LAND USE AND POPULATION

Land Use

The predominant land use in San Luis Obispo County is agriculture, with the production and processing of vegetable crops, wine grapes, dryland grains and livestock as the major components. The southern and coastal areas of the county are primarily devoted to the production of row crops (lettuce, broccoli, peas and other vegetables), although cattle ranching prevails along the north coast. Vineyards, grain production, livestock grazing, and show and thoroughbred horse ranching are the dominant land uses in the Upper Salinas River Valley; the East County Plain supports some cattle ranches and dryland grain farms. Much of the county's agricultural land is property committed to agricultural use for periods of up to 20 years under the Williamson Act. In 1999, agricultural acreage totaled approximately 1,198,771 acres, with a gross crop value of \$393,023,000. Production in the animal industry was valued at \$36,031,000 for the same period. The largest change in agricultural uses in recent years has been a substantial increase in vineyard plantings for wine grapes. In 1998 there were 11,897 bearing acres; this increased to 16,272 bearing acres in 1999, with an additional 24,660 acres planted that year.

As the income from agricultural production is dispersed through other sectors of the local economy, its value to the region multiplies two to four times. Thus, the involvement of related businesses such as production equipment and products, agricultural financing, energy usage, packaging and marketing is estimated to have contributed between \$786 million and \$1.6 billion dollars in local agribusiness-related commerce in 1999.

CHAPTER 2 PLANNING AREA AND AIR BASIN DESCRIPTION

The county's urban areas exist as separate and uniquely distinct clusters of development. San Miguel, Templeton, Atascadero, Cambria, Cayucos, Los Osos, Oceano and Nipomo are primarily residential communities; of these Atascadero is the only incorporated city. In contrast, San Luis Obispo, Morro Bay, the Five Cities area and Paso Robles have a much broader mix of commercial and residential uses. Residential development has been limited in some areas of the county as a result of moratoriums, growth management issues, and resource constraints.

The City of San Luis Obispo is the county seat and commercial center of the region, with 21.6% of the employment opportunities and a commercial airport located there. Commercial and industrial development has been growing steadily in the northern areas of the county, particularly in Atascadero which now boasts 11.9% of the employment opportunities and Paso Robles which follows with 8%. Industrial and commercial activities important to the region include agriculture, tourism, trade and services, government agencies, power generation, petroleum production, construction, and commercial fishing.

Institutional uses occupy significant portions of the regional land area and are important to the economic well-being of the county. Higher education facilities include California Polytechnic State University and Cuesta Community College. The County Office of Education provides special education for handicapped children as well as an Environmental Education Center for use by various groups to foster better understanding of the environment. Major institutional facilities include Atascadero State Hospital, California Mens Colony, Paso Robles Boys School, and National Guard facilities at Camp San Luis and Camp Roberts. Industrial land uses include a 1,000 megawatt fossil-fuel fired power plant in Morro Bay, a 2,000 megawatt nuclear power plant at Diablo Canyon, a petroleum refinery and coke calcining complex on the Nipomo Mesa, several large oil fields and tank farms, and many smaller industrial operations described in further detail in Chapter 5.

A substantial amount of land in San Luis Obispo County is dedicated to open space and recreational uses. The county boasts several state and regional parks, the Morro Bay Wildlife Refuge, the Nipomo Dunes, the Los Padres National Forest, and many coastal and inland recreation areas. The Hearst San Simeon State Historical Monument contains a large portion of open space land in addition to Hearst Castle, and is a significant generator of revenue for the state and local economies.

Population

San Luis Obispo County had a 1999 population of approximately 241,600 people, an increase of about 14,375, or 6%, since 1995. Over 75% of the residents live along the Highway 101 corridor, which services six of the county's seven incorporated cities and five unincorporated communities. Most of the remaining populace lives to the west of that corridor. The estimated median age in San Luis Obispo County has increased from about 29.9 years in 1980, to 33.3 years in 1990, to 37.3 years in 2000. Cambria, Cayucos, Morro Bay and Pismo Beach have the highest percentage of residents aged 65 and above; Oceano, Nipomo and most north county communities have the highest percentage of residents less than 17 years old. The City of San Luis Obispo has the lowest median age in the county, primarily due to a large resident population of college students attending Cal Poly and Cuesta College.

Table 2-1 shows the distribution of county population between incorporated cities and unincorporated county areas, together with projections of their growth. Growth projections are based on the SLO County Planning Department and San Luis Obispo Council of Governments population estimates for January 1, 1999; local evaluation of historical growth rates; national, state, and local economic forecasts; and the availability of resources to support additional growth. Estimates for incorporated cities are based on growth projections and policies provided by the cities. Figure 2-2 shows the location of the planning

areas listed in the population tables. These geographic boundaries are used by the County for land use planning purposes and for monitoring population and demographic trends.

Between 1990 and 1999, the county's population grew 11% or at an average rate of 1.3% per year. Current estimates project the number of county residents to increase 25% by the year 2015, with rate of growth in the unincorporated rural areas out pacing incorporated cities. Table 2-2 ranks the cities, unincorporated communities and planning areas by the projected percent increase in population from 1995 to the year 2015. As shown in the table, Nipomo, Cambria, Paso Robles, Nacimiento and Templeton are projected to experience the highest percent increase in population. The cities of Pismo Beach and Atascadero are also expected to show significant growth during this period.

The region's top three employment sectors - retail trade, government, and services - account for 25%, 25% and 24% of total employment, respectively. Employment growth is expected to continue in most sectors of the local economy, with most new jobs occurring in retail trade, education and health services. Employment in the farming industry has also been on the rise over the past several years due to the ongoing expansion of the wine grape and production industry. Although the recession in the early 1990s had significant impacts throughout the region, our overall unemployment rate remains among the lowest in the state.

2.3 LOCAL AND REGIONAL METEOROLOGY

The climate of the county can be generally characterized as Mediterranean, with warm, dry summers and cooler, relatively damp winters. Along the coast, mild temperatures are the rule throughout the year due to the moderating influence of the Pacific Ocean. This effect is diminished inland in proportion to distance from the ocean or by major intervening terrain features, such as the coastal mountain ranges. As a result, inland areas are characterized by a considerably wider range of temperature conditions. Maximum summer temperatures average about 70 degrees Fahrenheit near the coast, while inland valleys are often in the high 90s. Minimum winter temperatures average from the low 30s along the coast to the low 20s inland.

Regional meteorology is largely dominated by a persistent high pressure area which commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause seasonal changes in the weather patterns of the area. The Pacific High remains generally fixed several hundred miles offshore from May through September, enhancing onshore winds and opposing offshore winds. During spring and early summer, as the onshore breezes pass over the cool water of the ocean, fog and low clouds often form in the marine air layer along the coast. Surface heating in the interior valleys dissipates the marine layer as it moves inland.

From November through April the Pacific High tends to migrate southward, allowing northern storms to move across the county. About 90% of the total annual rainfall is received during this period. Winter conditions are usually mild, with intermittent periods of precipitation followed by mostly clear days. Rainfall amounts can vary considerably among different regions in the county. In the Coastal Plain, annual rainfall averages 16 to 28 inches, while the Upper Salinas River Valley generally receives about 12 to 20 inches of rain. The Carrizo Plain is the driest area of the county with less than 12 inches of rain in a typical year.

Airflow around the county plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific High pressure system and other global patterns, by topographical factors, and by circulation patterns resulting from temperature differences between the land and sea. In spring and summer months, when the Pacific High

CHAPTER 2 PLANNING AREA AND AIR BASIN DESCRIPTION

attains its greatest strength, onshore winds from the northwest generally prevail during the day. At night, as the sea breeze dies, weak drainage winds flow down the coastal mountains and valleys to form a light, easterly land breeze.

In the Fall, onshore surface winds decline and the marine layer grows shallow, allowing an occasional reversal to a weak offshore flow. This, along with the diurnal alternation of land-sea breeze circulation, can sometimes produce a "sloshing" effect. Under these conditions, pollutants may accumulate over the ocean for a period of one or more days and are subsequently carried back onshore with the return of the sea breeze. Strong inversions can form at this time, "trapping" pollutants near the surface.

This effect is intensified when the Pacific High weakens or moves inland to the east. This may produce a "Santa Ana" condition in which air, often pollutant-laden, is transported into the county from the east and southeast. This can occur over a period of several days until the high pressure system returns to its normal location, breaking the pattern. The breakup of a Santa Ana condition may result in relatively stagnant conditions and a buildup of pollutants offshore. The onset of the typical daytime seabreeze can bring these pollutants back onshore, where they combine with local emissions to cause high pollutant concentrations. Not all occurrences of the "post Santa Ana" condition lead to high ambient pollutant levels, but it does play an important role in the air pollution meteorology of the county.

Atmospheric Stability and Dispersion

Air pollutant concentrations are primarily determined by the amount of pollutant emissions in an area and the degree to which these pollutants are dispersed into the atmosphere. The stability of the atmosphere is one of the key factors affecting pollutant dispersion. Atmospheric stability regulates the amount of vertical and horizontal air exchange, or mixing, that can occur within a given air basin. Restricted mixing and low wind speeds are generally associated with a high degree of stability in the atmosphere. These conditions are characteristic of temperature inversions.

In the atmosphere, air temperatures normally decrease as altitude increases. At varying distances above the earth's surface, however, a reversal of this gradient can occur. This condition, termed an inversion, is simply a warm layer of air above a layer of cooler air, and it has the effect of limiting the vertical dispersion of pollutants. The height of the inversion determines the size of the mixing volume trapped below. Inversion strength or intensity is measured by the thickness of the layer and the difference in temperature between the base and the top of the inversion. The strength of the inversion determines how easily it can be broken by winds or solar heating.

Several types of inversions are common to this area. Weak, surface inversions are caused by radiational cooling of air in contact with the cold surface of the earth at night. In valleys and low lying areas this condition is intensified by the addition of cold air flowing downslope from the hills and pooling on the valley floor. Surface inversions are a common occurrence throughout the county during the winter, particularly on cold mornings when the inversion is strongest. As the morning sun warms the earth and the air near the ground, the inversion lifts, gradually dissipating as the day progresses.

During the late spring and early summer months, cool air over the ocean can intrude under the relatively warmer air over land, causing a marine inversion. These inversions can restrict dispersion along the coast, but they are typically shallow and will dissipate with surface heating.

In contrast, in the summertime the presence of the Pacific high pressure cell can cause the air mass aloft to sink. As the air descends, compressional heating warms it to a temperature higher than the air below. This highly stable atmospheric condition, termed a subsidence inversion, is common to all of coastal California and can act as a nearly impenetrable lid to the vertical mixing of pollutants. The base of the

inversion typically ranges from 1000 to 2500 feet above sea level; however, levels as low as 250 feet, among the lowest anywhere in the state, have been recorded on the coastal plateau in San Luis Obispo county. The strength of these inversions makes them difficult to disrupt. Consequently, they can persist for one or more days, causing air stagnation and the buildup of pollutants. Highest or worst-case ozone levels are often associated with the presence of this type of inversion.

Figure 2-3 provides a visual representation of inversions at the surface and aloft.

Table 2-1

**SAN LUIS OBISPO COUNTY
POPULATION PROJECTIONS - JULY 1999**

PLANNING AREA	1995	2000	2005	2010	2015
ADELAIDA	3060	3226	3441	3634	3801
EL POMAR/ESTRELLA	6832	7555	8341	9119	9872
ESTERO	27764	28996	30796	32535	34105
Morro Bay	9221	9662	10145	10552	10959
Cayucos	2876	3312	3657	3959	4202
Los Osos	14444	14768	15676	16639	17488
Estero (Rural)	1223	1254	1318	1385	1456
HUASNA-LOPEZ	773	850	871	889	902
LAS PILITAS	1355	1398	1491	1575	1647
LOS PADRES	322	330	345	359	372
NACIMIENTO	2700	2955	3426	3895	4385
NORTH COAST	6265	7497	8400	9411	10545
Cambria	5401	6599	7394	8284	9282
North Coast (Rural)	864	898	1006	1127	1263
SALINAS RIVER	55544	60462	68142	75219	79499
Atascadero ¹	23982	25516	28588	31150	31150
Paso Robles	20020	22170	25701	29220	32579
San Miguel	1200	1252	1389	1526	1660
Santa Margarita	1208	1291	1343	1391	1433
Templeton	3173	3992	4364	4724	5064
Salinas River (Rural)	5961	6241	6757	7208	7613
SAN LUIS BAY	45583	49077	53249	57301	59970
Arroyo Grande ¹	14719	16122	17626	18988	18988
Avila Beach	379	385	415	443	470
Grover Beach	11905	12781	13426	14104	14816
Oceano	6300	6741	7262	7785	8304
Pismo Beach	7922	8567	9693	10807	11873
San Luis Bay (Rural)	4358	4481	4827	5174	5519
SAN LUIS OBISPO	43252	45420	47718	50093	52567
San Luis Obispo (City)	39814	41774	43905	46145	48499
San Luis Obispo (Rural)	3438	3646	3813	3948	4068
SHANDON-CARRIZO	2470	2565	2804	3036	3255
SOUTH COUNTY	16786	19243	22097	25020	27907
Nipomo	8416	10074	12023	14006	15924
Nipomo (Rural)	8370	9169	10074	11014	11983
COUNTY TOTAL (Households Only)	213375	229574	251121	272086	288827
Incorporated Cities	128185	136592	149084	160966	168864
Unincorporated Areas	85190	92982	102037	111120	119963
GROUP QUARTERS ²	14519	15109	15723	16362	17027
Incorporated Cities	3174	3303	3437	3577	3722
Unincorporated Cities	11345	11806	12286	12785	13305
COUNTY TOTAL (Hsheds + Grp Qtrs)	227894	244683	266844	288448	305854

Source: San Luis Obispo County Department of Planning and Building - July 1999

¹ No increase indicated beyond 2010 for Atascadero and Arroyo Grande in recognition of city buildout policies.

² Group Quarters includes nursing homes, school dormitories, military barracks, prisons, jails, hospitals, etc.

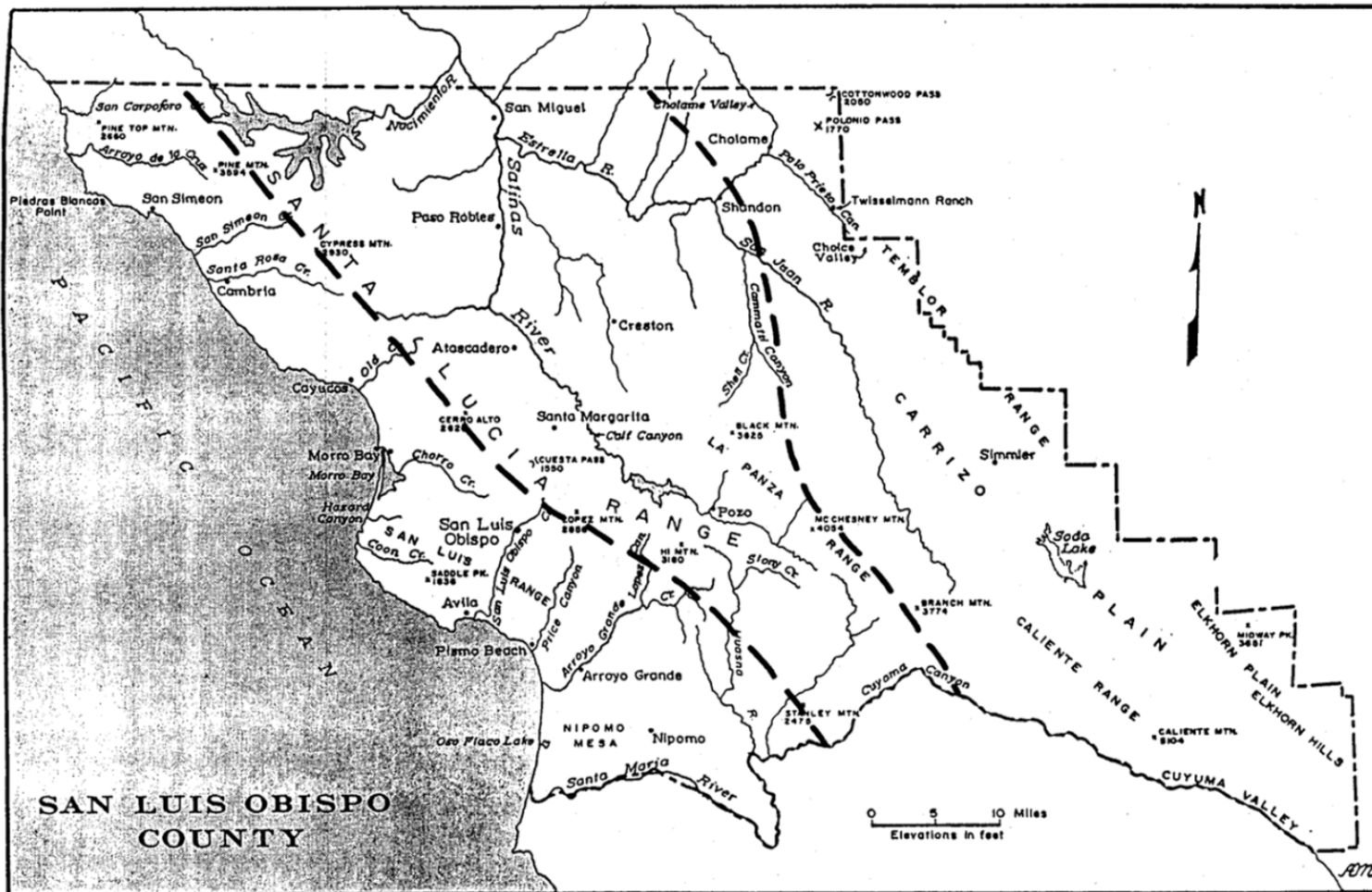
Table 2-2

**SAN LUIS OBISPO COUNTY
PROJECTED POPULATION RATE OF GROWTH**

PLANNING AREA/COMMUNITY	1995	2015	GROWTH
Nipomo	8416	15924	89%
Cambria	5401	9282	72%
Paso Robles	20020	32579	63%
Nacimiento	2700	4385	62%
Templeton	3173	5064	60%
Pismo Beach	7922	11873	50%
North Coast (Rural)	864	1263	46%
Cayucos	2876	4202	46%
El Pomar/Estrella Planning Area	6832	9872	44%
Nipomo (Rural)	8370	11983	43%
San Miguel	1200	1660	38%
Shandon – Carrizo Planning Area	2470	3255	32%
Oceano	6300	8304	32%
Atascadero	23982	31350	31%
Arroyo Grande	14719	18988	29%
Salinas River (Rural)	5961	7613	28%
San Luis Bay (Rural)	4358	5519	27%
Adelaida Planning Area	3060	3801	24%
Grover Beach	11905	14816	24%
Avila Beach	379	470	24%
Las Pilitas Planning Area	1355	1647	22%
San Luis Obispo	39814	48499	22%
Los Osos	14444	17488	21%
Estero (Rural)	1223	1456	19%
Santa Margarita	1208	1433	19%
Morro Bay	9221	10959	19%
San Luis Obispo (Rural)	3438	4068	18%
Huasna – Lopez Planning Area	773	902	17%
Group Quarters	14519	17027	17%
Los Padres Planning Area	322	372	16%

Note: “(Rural)” indicates the rural portion of the planning area, not including incorporated cities or unincorporated communities recognized by the U.S. Census.

Figure 2-1
GEOGRAPHICAL REGIONS OF SAN LUIS OBISPO COUNTY



Source: Hoover, Robert.
Vascular Plants of San Luis Obispo County, California
Copyright (c) 1970. University of California Press. P.27

Figure 2.2
San Luis Obispo County Planning Area Maps

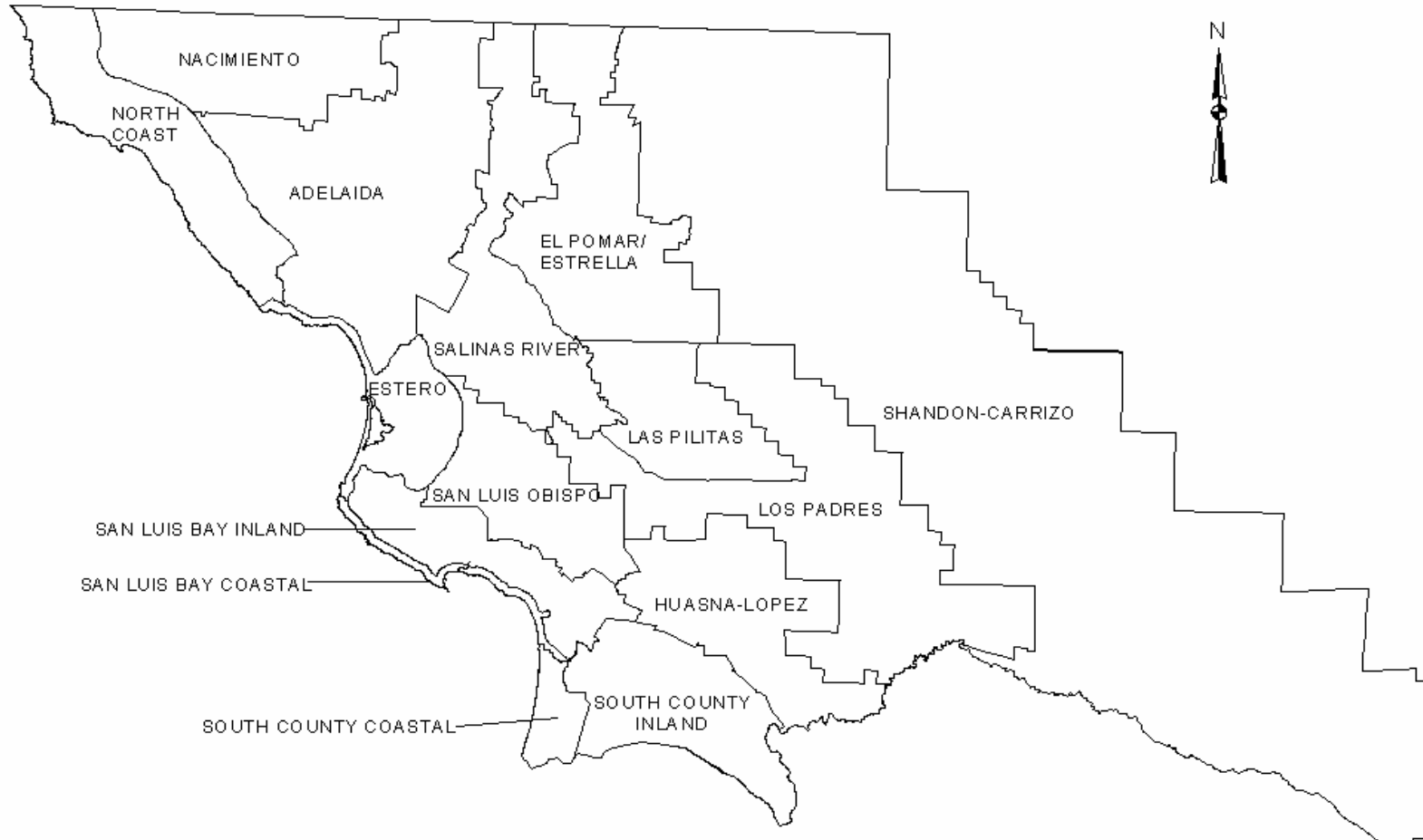


Figure 2-3

INVERSION CHARACTERISTICS

