

Table of Contents

EXECUTIVE SUMMARY

Introduction.....	ES-1
Why Is This Plan Being Prepared?	ES-2
What Is New in This Plan Revision?	ES-2
How Was This Plan Revision Prepared?	ES-3
Is Air Quality Improving?.....	ES-4
What Are the Applicable Key Federal and State Requirements That This Plan Revision Addresses?	ES-6
How Has the Emissions Inventory Changed?.....	ES-6
Has the Overall Control Strategy Changed Significantly?	ES-7
What Other Requirements Are Addressed in This Plan?	ES-7
What Considerations Have Been Made for the New Federal Standards for Particulate Matter and Ozone?	ES-8
What are the Challenges of Attainment?	ES-8
Has the Attainment Projection Changed for Federal or State Standards?	ES-8

1. INTRODUCTION

Purpose.....	1-1
Constraints in Achieving Standards.....	1-2
Setting	1-2
Emission Sources	1-4
Population	1-4
Control Efforts	1-5
History.....	1-5
Impact of Control.....	1-6
Progress in Implementing the 1997/1999 SIPs.....	1-7
2003 AQMP Revision.....	1-13
Federal Clean Air Act Planning Requirements	1-13
General Requirements.....	1-13
CAA Planning Requirements Addressed by the 2003 AQMP.....	1-16
State Law Requirements	1-19
Plan Effectiveness.....	1-21
Emission Reductions	1-22
Population Exposure.....	1-23
Control Measure Ranking.....	1-23
Format of This Document.....	1-24

2. AIR QUALITY AND HEALTH EFFECTS

Introduction.....	2-1
Ambient Air Quality Standards	2-1
Comparison to Other U.S. Areas	2-1
Current Air Quality Summary	2-5
Ozone (O ₃) Specific Information.....	2-8
Health Effects	2-8
Air Quality.....	2-8
Carbon Monoxide (CO) Specific Information.....	2-12
Health Effects	2-12
Air Quality.....	2-12
Particulate Matter (PM ₁₀ and PM _{2.5}) Specific Information	2-14
Health Effects	2-14
Air Quality, PM ₁₀	2-14
Air Quality, PM _{2.5}	2-15
Nitrogen Dioxide (NO ₂) Specific Information	2-18
Health Effects	2-18
Air Quality.....	2-18
Sulfur Dioxide (SO ₂) Specific Information	2-19
Health Effects	2-19
Air Quality.....	2-19
Sulfates (SO ₄) Specific Information	2-20
Health Effects	2-20
Air Quality.....	2-21
Lead (Pb) Specific Information	2-21
Health Effects	2-21
Air Quality.....	2-22
Summary	2-22

3. BASE YEAR AND FUTURE EMISSIONS

Introduction.....	3-1
Emissions Inventories	3-2
Stationary Sources	3-2
Mobile Sources	3-2
Gridded Emissions.....	3-3
Base Year Emissions.....	3-5
Reconstructed 1990 Emission Inventories.....	3-5
1997 Emission Inventory.....	3-5
Future Emissions.....	3-9
Data Development	3-9
Summary of Baseline Emissions	3-10

Contributions by Responsible Agencies	3-15
The Impact of Growth.....	3-19

4. AQMP CONTROL STRATEGY

Introduction.....	4-1
Overall Attainment Strategy	4-1
Designing the Overall Strategy.....	4-2
2003 AQMP Control Measures	4-3
District's Stationary and Mobile Source Control Measures.....	4-4
Stationary Source Control Methods and Associated Emission Reductions	4-8
Coatings and Solvents	4-9
Petroleum Operations and Fugitive VOC Emissions.....	4-10
Combustion Sources.....	4-10
Fugitive Dust Sources	4-11
Miscellaneous Sources	4-12
Compliance Flexibility Programs.....	4-16
District's Mobile Source Control Measures.....	4-17
Southern California Association of Governments' (SCAG'S) Regional Transportation Strategy and Control Measures	4-18
Transportation Control Measure Development.....	4-20
Transportation Control Methods Objectives	4-21
State and Federal Stationary and Mobile Source Control Measures	4-24
State Strategy	4-25
Set Technology-Forcing New Engine Standards	4-26
Reduce Emissions from the In-Use Fleet.....	4-26
Require Clean Fuels, Support Alternative Fuels and Reduce Petroleum Dependency	4-27
Work with U.S. EPA to Reduce Emissions from Federal and State Sources.....	4-27
Pursue Long-Term Advanced Technologies Measures	4-28
Summary.....	4-29
District, State, and Federal Long-Term Control Strategy.....	4-32
District's Portion of Long-Term Strategy	4-35
CARB's Portion of Long-Term Strategy	4-37
Federal Responsibility Under Long-Term Strategy	4-40
Emissions Contribution	4-41
Federal Actions to Meet Emission Reduction Targets.....	4-42
Suggested Strategies from AQMP Advisory Technical Subcommittee.....	4-44
Accelerate Penetration and Use of Existing Technologies	4-44
Demand-Side Strategies	4-45
Accelerated Retirement of Older High-Emitting Vehicles	4-45

Clean Communities Concept.....	4-45
Smog Check Improvements	4-46
Remove Disincentives on Voluntary Measures	4-46
Expand Fleet Rules to private Fleets	4-46
Modify Stationary Source Monitoring Requirements	4-46
Add Flexibility to Current Programs	4-46
Educational Programs.....	4-47
Control of Emissions from Port Operations	4-47
Emissions Bubbles at Ports and Airports	4-48
Consumer Products.....	4-48
Advanced Technologies.....	4-48
Fuel Cells/Advanced Battery Technologies	4-48
Electric & Hybrid-Electric Heavy-Duty Vehicles.....	4-50
Marine Vessels and Portside Equipment.....	4-51
Advanced Engine and Aftertreatment Technologies	4-52
Renewable Power Generation Technologies.....	4-53
Advanced Low-VOC Technologies	4-54
Innovative Control Approaches	4-56
Market Incentive Programs	4-56
Reactivity-Based Controls.....	4-57
Localized Controls.....	4-57
Public Awareness and Education Programs.....	4-57
District's SIP Emission Commitment	4-58
SIP Emission Reduction Tracking	4-58
Reductions from Adopted Rules	4-59
Reductions from District's Stationary Control Measures.....	4-59
Overall Emission Reductions.....	4-63

5. FUTURE AIR QUALITY

Introduction.....	5-1
Modeling Approach	5-2
PM ₁₀	5-2
AQMP Modeling Approach	5-3
Ozone	5-4
Carbon Monoxide	5-7
Visibility	5-8
Future Air Quality.....	5-8
PM ₁₀	5-8
Ozone	5-9
Control Strategy Impacts.....	5-12
Carbon Monoxide	5-18
Visibility	5-20

Summary and Conclusions 5-20
 Basin Emissions Carrying Capacity (Emissions Budget)..... 5-23
 Projected Emission Trends Through 2010 5-24

6. CLEAN AIR ACT REQUIREMENTS

Introduction 6-1
 Federal Clean Air Act Requirements 6-1
 PM10 Planning Requirements 6-1
 Current PM10 Requirements 6-2
 Ozone Planning Requirements..... 6-5
 Post-1996 VOC rate-of-progress requirements 6-6
 Ozone Attainment Demonstration 6-9
 Contingency Measures 6-10
 Average Vehicle Occupancy Requirements (AVO) 6-10
 Carbon Monoxide Attainment Demonstration 6-10
 Nitrogen Dioxide Maintenance Plan 6-11
 Transportation Conformity Budgets 6-12
 California Clean Air Act Requirements..... 6-17
 Plan Effectiveness 6-17
 Emission Reductions..... 6-19
 Population Exposure 6-20
 Ozone..... 6-21
 Carbon Monoxide..... 6-23
 Cost Effectiveness Ranking 6-23

7. IMPLEMENTATION

Introduction 7-1
 Responsible Agencies 7-1
 Control Measures 7-3
 Control Measure Ranking 7-3
 Federal Agencies..... 7-3
 CARB..... 7-3
 District..... 7-11
 Transportation Control Measures 7-11
 Local Governments and SCAG 7-12
 Congestion Management Program (CMP) Linkage to the AQMP 7-12
 Southern California Economic Partnership (The Partnership)..... 7-13
 Technology Advancement 7-14
 SCAQMD Clean Fuels Program - Technology Advancement Plan 7-15
 Alternative Fuels - Incentives Program..... 7-18
 Alternative Fuels - On-Road 7-19

Alternative Fuels - Infrastructure	7-19
Fuel Cell Technologies.....	7-20
Electric and Hybrid Electric Technologies	7-20
Alternative Fuels - Off-Road Applications	7-20
Stationary Sources.....	7-21
Implementation Support Activities	7-21
District Assistance and Outreach Programs.....	7-22
Business Assistance	7-22
SCAG Assistance.....	7-23
Monitoring	7-23

8. FUTURE AIR QUALITY - DESERT NONATTAINMENT AREAS

Introduction.....	8-1
Statement of Problem.....	8-1
Regulatory Requirements	8-2
Population Growth.....	8-2
Pollutant Transport	8-4
Trends in Ozone Air Quality	8-6
Attainment Demonstration.....	8-7
Post-1996 VOC Rate-of-Progress Requirements	8-8
Summary of Coachella Valley PM ₁₀ Plan	8-10
Introduction.....	8-10
Background.....	8-10
2002 CVSIP	8-11
2003 CVSIP	8-12
Conclusions.....	8-12

9. CONTINGENCY MEASURES

Introduction.....	9-1
Contingency Measures.....	9-1

10. LOOKING BEYOND CURRENT REQUIREMENTS

Introduction.....	10-1
Uncertainties Associated with the Technical Analysis.....	10-1
A First Look at the Year 2020 Ozone Air Quality	10-4
New Federal Air Quality Standards for Ozone and Fine Particulates.....	10-4
What are the Health Concerns?	10-5
Ozone.....	10-5
Particulate Matter	10-6
What is the New Federal Ozone Standard?	10-6

What are the New Federal PM Standard?.....	10-7
Implementation of the New Federal Standards	10-7
Assessment of the New Federal Standards	10-8
Ozone.....	10-8
Particulate Matter	10-9
New State PM Air Quality Standards	10-10
GLOSSARY	G-1

APPENDIX I	HEALTH EFFECTS
APPENDIX II	CURRENT AIR QUALITY
APPENDIX III	BASE AND FUTURE YEAR EMISSION INVENTORIES
APPENDIX IV-A	DISTRICT'S STATIONARY AND MOBILE SOURCE CONTROL MEASURES
APPENDIX IV-B	PROPOSED 2003 STATE AND FEDERAL STRATEGY FOR THE CALIFORNIA STATE IMPLEMENTATION PLAN
APPENDIX IV-C	REGIONAL TRANSPORTATION STRATEGY AND CONTROL MEASURES
APPENDIX V	MODELING AND ATTAINMENT DEMONSTRATIONS