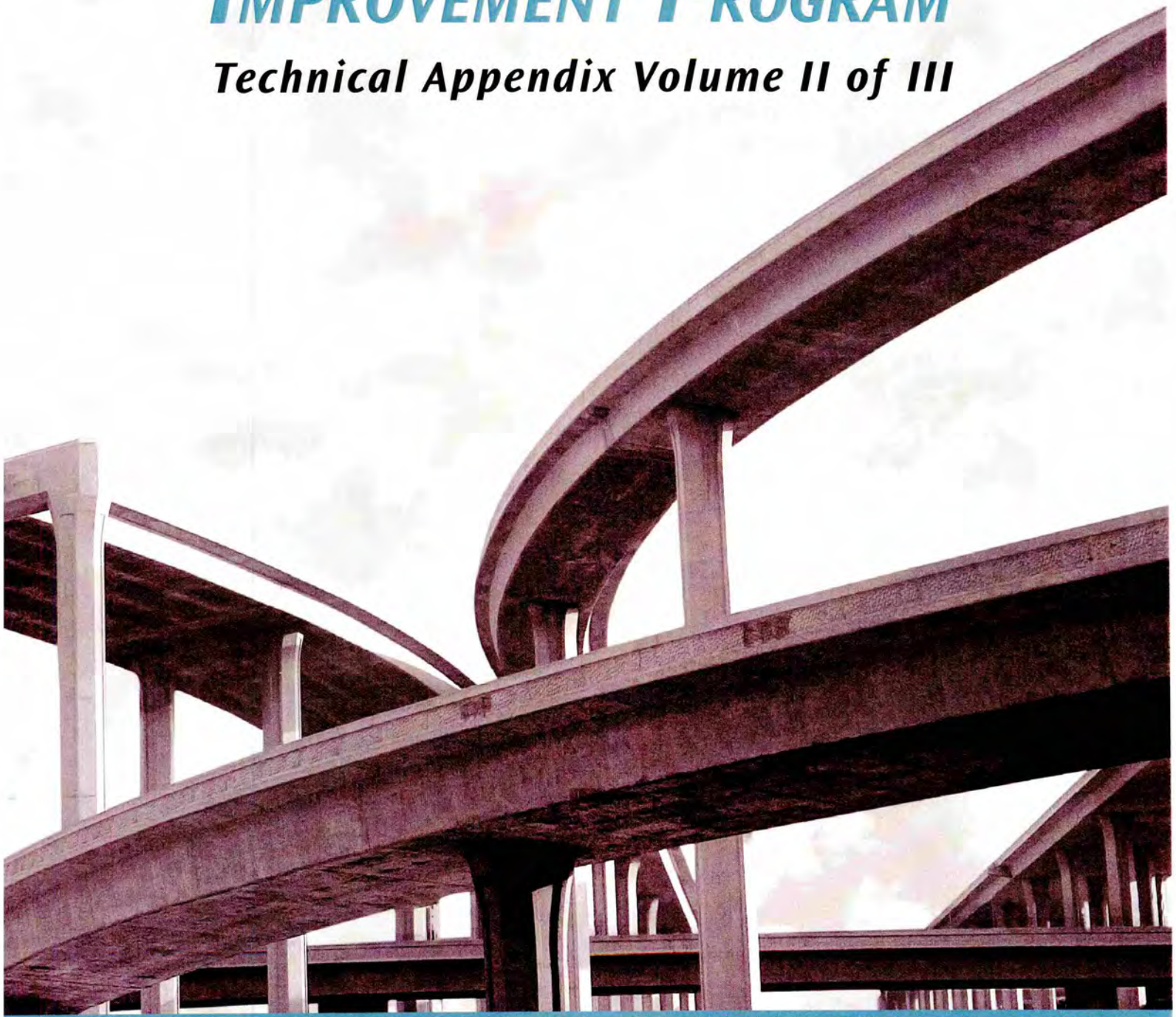
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

2011 FINAL FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM

Technical Appendix Volume II of III



FY 2010/11 – 2015/16

September 2010

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

Our VISION

An international and regional planning forum trusted for its leadership and inclusiveness in developing plans and policies for a sustainable Southern California.

Our MISSION

Under the guidance of the Regional Council and in collaboration with our partners, our mission is to facilitate a forum to develop and foster the realization of regional plans that improve the quality of life for Southern Californians.

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2011

FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM

(FISCAL YEAR 2010/11-2015/16)

TECHNICAL APPENDIX

(Volume II of III)

September 2010

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

SECTION I
Conformity Requirements & Findings

SECTION I

CONFORMITY REQUIREMENTS AND FINDINGS

Table of Contents

Page

Preface I-1

State and Federal Requirements..... I-1

Clean Air Act Designations in the SCAG Region I-2

Conformity Status of Current RTP and FTIP..... I-5

Conformity Tests and Findings I-5

Exhibit A: Maps I-8

CONFORMITY REQUIREMENTS AND FINDINGS

PREFACE

The federally required conformity analyses and findings for the 2011 Federal Transportation Improvement Program (FTIP) are set forth in the following sections. These analyses also update the 2008 Regional Transportation Plan (RTP). All transportation and air quality conformity analyses in this document are in compliance with applicable federal and state laws, including conformity and transportation planning regulations. This Technical Appendix contains three sections that specifically address the conformity analyses required for federal approval:

- Section I summarizes the conformity requirements and findings.
- Section II provides modeling methodologies and assumptions and results of the regional emissions analyses for the 2011 FTIP.
- Section III reports on the timely implementation of Transportation Control Measures (TCMs) and describes the implementation status of all applicable TCMs in the SCAG region.

STATE AND FEDERAL REQUIREMENTS

SCAG, the Metropolitan Planning Organization (MPO) for Southern California, is mandated to comply with federal and state transportation and air quality regulations. Federal transportation regulations authorize federal funding for highway, highway safety, transit, and other surface transportation programs. The Federal Clean Air Act (CAA) establishes air quality standards and planning requirements for various air pollutant criteria.

Regional Transportation Plan and Regional Transportation Improvement Program

Federal transportation law requires that SCAG develop a RTP for a 20-year minimum period. Additionally, SCAG must develop a FTIP that allocates funds over a four-year period to implement the RTP. In the federal non-attainment or maintenance areas, the RTP and FTIP must comply with the transportation conformity requirements of the EPA Transportation Conformity Regulations.

The biennial FTIP update is produced on an even-year cycle, and is consistent with the State Transportation Improvement Program (STIP) cycle.

Federal Non-Attainment and Maintenance Areas

The U.S. Environmental Protection Agency (EPA) may make a federal “non-attainment area” designation to any area that has not met CAA health standards for one or more pollutants. A non-attainment area designation may require additional air-quality controls for transportation plans, programs, and projects. The California Air Resource Board (ARB) recommends the

federal non-attainment area boundaries to EPA for final designations. Subsequently, the EPA finalizes and defines the boundaries of the federally designated non-attainment areas for each criteria pollutant.

State Implementation Plans (SIPs)

To comply with the CAA in achieving the National Ambient Air Quality Standards (NAAQS), the ARB develops SIPs for federal non-attainment and maintenance areas. In California, SIP development is a joint effort of the local air agencies and ARB working with federal, state, and local agencies (including the MPOs). Local air quality management plans (AQMPs) are prepared in response to federal and state requirements.

In California, all SIPs have to go through three steps: air district action, ARB action, and finally EPA action. Each air district submits its respective AQMPs/SIPs to ARB. ARB is the official state agency that submits the SIPs to EPA for all federal non-attainment and maintenance areas in California.

The SIP includes two important components relative to transportation and air quality conformity requirements – emissions budgets and TCMs. Emissions budgets set an upper limit which transportation activities (motor vehicles also known as on-road mobile sources) are permitted to emit. TCMs are strategies to reduce emissions from on–road mobile sources. The 2008 RTP and 2011 FTIP must conform to the applicable SIPs [i.e., emissions budgets and TCMs] in the SCAG region.

Federal Transportation Conformity Rule

Transportation conformity is required under CAA section 176(c) to ensure that federally supported highway and transit project activities “conform to” the purpose of the SIP. Conformity currently applies to areas that are designated non-attainment, and those re-designated to attainment after 1990, maintenance areas, with plans developed for the specific transportation-related criteria pollutants. Conformity for the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS. The transportation conformity regulation is found in 40 CFR part 93 and provisions related to conformity SIPs are found in 40 CFR 51.390.

CLEAN AIR ACT DESIGNATIONS IN THE SCAG REGION

Four criteria air pollutants are subject to transportation conformity for the 2008 RTP and 2011 FTIP:

- Carbon Monoxide (CO) - a product of automobile exhaust. CO reduces the flow of oxygen in the bloodstream and is particularly dangerous to persons with heart disease.
- Nitrogen Dioxide (NO2) - created under the high pressure and temperature conditions in internal combustion engines. It impacts the respiratory system and degrades visibility due to its brownish color.

- Ozone - formed by the reaction between volatile organic compounds (VOC) and oxides of nitrogen (NOx) in the presence of sunlight. Ozone negatively impacts the respiratory system.
- Particulate Matter (PM10 and PM2.5) - extremely small particles and liquid droplets associated with dust, soot and combustion products. Particulate pollution has been linked to significant health problems, including aggravated asthma, increases in adverse affects on respiratory systems, chronic bronchitis, decreased lung function, and premature death.

Air Basins and Air Districts in the SCAG Region

SCAG is a six-county region that contains four air basins administered by five air districts:

- The South Coast Air Basin (SCAB) covers the urbanized portions of the Los Angeles, Riverside, and San Bernardino counties as well as the entire County of Orange and is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD).
- The Ventura County portion of the South Central Coast Air Basin (SCCAB) covers Ventura County and is within the jurisdiction of the Ventura County Air Pollution Control District (VCAPCD).
- The Mojave Desert Air Basin (MDAB) covers the desert portions of Los Angeles, Riverside, and San Bernardino counties. A small portion of this air basin is in Kern County and outside of the SCAG region. The SCAG portion of this air basin is under the jurisdiction of three air districts:
    - The Mojave Desert Air Quality Management District (MDAQMD) administers portions of the MDAB situated in San Bernardino County and eastern Riverside County. The Riverside County portion is known as the Palo Verde Valley Area.
    - The SCAQMD administers the portion of MDAB in Riverside County situated between the Salton Sea Air Basin (SSAB) and the Palo Verde Valley Area.
    - The Antelope Valley Air Quality Management District (AVAQMD) administers the Los Angeles County portion of the MDAB.
- The Salton Sea Air Basin (SSAB) covers all of Imperial County and the eastern portion of Riverside County (excluding the MDAB portion). This air basin is under jurisdiction of two air districts:
    - The Imperial County Air Pollution Control District (ICAPCD) administers the Imperial County portion of the SSAB.
    - The SCAQMD administers the Riverside County portion of the SSAB situated between the SCAB and the MDAB.

Non-Attainment / Maintenance Areas in the SCAG Region

The federal non-attainment/maintenance areas in the SCAG region are:

- Ventura County Portion of SCCAB – non-attainment area for 8-hour Ozone
- SCAB – non-attainment or maintenance area for: CO; NO2; PM2.5; PM10; and 8-hour Ozone

- Western MDAB (Antelope Valley portion of Los Angeles County and San Bernardino County portion of MDAB excluding Searles Valley) – non-attainment area for 8-hour Ozone
- San Bernardino County portion of MDAB:
  - Searles Valley – non-attainment for PM10
  - San Bernardino County (excluding the Searles Valley area) – non-attainment area for PM10
- Riverside County Portion of SSAB (Coachella Valley) – non-attainment area for: PM10 and 8-hour Ozone
- Imperial County Portion of SSAB – non-attainment for 8-hour Ozone, PM2.5, and PM10

The boundaries of the air basins, air districts, and non-attainment and maintenance areas are illustrated in Exhibit A at the end of the report.

Applicable Emissions Budgets in the SCAG Region

For the 2008 RTP conformity determination, the applicable emissions budgets are established in the SIPs as described below:

- Ventura County Portion of SCCAB
- 2008 8-Hour Ozone Early Progress Plan
- SCAB
  - 2007 Ozone SIP (using budgets deemed adequate by U.S. EPA May 2008)
  - 2007 PM2.5 SIP (using budgets deemed adequate by U.S. EPA May 2008)
  - 2007 CO SIP (Maintenance Plan)
  - 2007 NO2 SIP (Maintenance Plan)
  - 2003 PM10 SIP
- Riverside County Portion of SSAB (Coachella Valley)
  - 2008 8-Hour Ozone Early Progress Plan
  - 2003 PM10 SIP
- Western MDAB (Antelope Valley and portion of Los Angeles County and San Bernardino County portion of MDAB excluding Searles Valley)
  - 2008 8-Hour Ozone Early Progress Plan
- Imperial County Portion of SSAB (Ozone)
  - 2008 8-Hour Ozone Early Progress Plan

SIP Status in Other Areas of the SCAG Region

In absence of the applicable emissions budgets for conformity, SCAG has to conduct interim emissions tests for regional emissions analysis of the 2008 RTP. At the present time, there is no federally approved SIP for the following areas.

- San Bernardino County Portion of MDAB (PM10)
- Searles Valley Portion of MDAB (PM10)
- Imperial County Portion of SSAB (PM10 and PM2.5)

Applicable TCMs

The SIP documents for the applicable TCMs in the SCAG region are listed below:

- SCAB – The TCM01 established in the 1994 Ozone SIP functions as the applicable TCM categories for the conformity finding (timely implementation of TCM analysis). The TCM categories in the 2007 AQMP/SIP as well as the 2003 Ozone AQMP/SIP and the 1997 (as amended in 1999) Ozone AQMP / SIP are consistent with the TCM01 categories listed in the 1994 Ozone AQMP/SIP.
- The Ventura County portion of SCCAB – The TCM strategies incorporated in the 1994 (as amended in 1995) Ozone AQMP/SIP function as the applicable TCMs for conformity finding.

It should be noted that while the 1-hour Ozone standard has been revoked and replaced with an 8-hour Ozone standard, the TCMs in the 1-hour Ozone SIPs remain applicable.

There are no applicable TCMs in any other federal non-attainment or maintenance areas in the SCAG region. For more information on TCMs and timely implementation of the TCMs, see Section III of this document.

CONFORMITY STATUS OF CURRENT RTP AND FTIP

On May 6, 2010, the FHWA and FTA issued the conformity determination for the amended 2008 RTP and amended 2008 FTIP for the following non-attainment and maintenance areas:

- SCCAB (Ventura County portion) - Ozone
- SCAB - Ozone, PM10, PM2.5, CO and NO2
- Western MDAB (Antelope Valley and San Bernardino County portion excluding Searles Valley) - Ozone
- MDAB (San Bernardino County and Searles Valley portion) - PM10
- SSAB (Coachella Valley portion) - Ozone, PM10
- SSAB (Imperial County portion) - Ozone

CONFORMITY TESTS AND FINDINGS

Under the U.S. DOT Metropolitan Planning Regulations and EPA's Transportation Conformity Regulations, SCAG's 2011 FTIP needs to pass five tests:

- ✓ Consistency with SCAG's RTP
  (23 CFR, Section 450.324 of the U.S. DOT Metropolitan Planning Regulations)
- ✓ Regional Emission Analysis
  (40 CFR, Sections 93.109, 93.110, 93.118, and 93.119)
- ✓ Timely Implementation of TCMs Analysis
  (40 CFR, Section 93.113)

- ✓ Financial Constraint Analysis
  (40 CFR, Section 93.108 and 23 CFR, Section 450.324)
- ✓ Interagency Consultation and Public Involvement Analysis
  (40 CFR, Sections 93.105 and 93.112 and 23 CFR, Section 450.324)

SCAG has made the following conformity findings for the 2011 FTIP under the required federal tests:

- ✓ **Consistency with 2008 RTP Test**
  Finding: SCAG's 2011 FTIP (project listing) is consistent with the 2008 RTP as previously amended (policies, programs, and projects).

- ✓ **Regional Emissions Tests**
  These findings are based on the regional emissions test analyses shown in Tables 14 -26 in Section II of this Technical Appendix.

  Finding: The regional emissions analyses for the 2011 FTIP update the regional emissions analyses for the 2008 FTIP and the 2008 RTP as previously amended.

  Finding: The 2011 FTIP regional emissions analysis for PM2.5 and its precursors meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in the SCAB.

  Finding: The 2011 FTIP regional emissions analysis for PM2.5 and its precursors meet the interim emission test (build/no-build test) for all milestone, attainment, and planning horizon years in the SSAB (urbanized area of Imperial County portion) [1].

  Finding: The 2011 FTIP regional emissions for the Ozone precursors meet all applicable emission budget tests for all milestone, attainment, and planning horizon years for the SCAB, SCCAB (Ventura County), Western MDAB (Antelope Valley and San Bernardino County portion excluding Searles Valley), SSAB (Coachella Valley and Imperial County portions).

  Finding: The 2011 FTIP regional emissions for NO2 meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in the SCAB.

  Finding: The 2011 FTIP regional emissions for CO meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in SCAB.

  Finding: The 2011 FTIP regional emissions for PM10 and its precursors meet all applicable emission budget tests for all milestone, attainment, and planning horizon years in SCAB and the SSAB (Coachella Valley).

[1] The conformity re-determination for the 2006 PM2.5 NAAQS is required to be federally approved by December 14, 2010. The documentation for the PM2.5 conformity re-determination is scheduled to be brought to the SCAG's Regional Council for adoption in July 2010. The Imperial County PM2.5 emission test finding is included for information purpose until FHWA/FTA has approved the conformity re-determination.

Finding: The 2011 FTIP regional emissions for PM10 meet the interim emission test (build/no-build test) for all milestone and planning horizon years for the MDAB (San Bernardino County portion and Searles Valley portion) and for the SSAB (Imperial County portion).

✓ **Timely Implementation of TCM Test**

Finding: The TCM1 project categories listed in the 1994/1997/2003/2007 Ozone SIPs for the SCAB area were given funding priority and are on schedule for implementation or, if any obstacles to implementation have been identified, actions have been or are being taken to overcome such obstacles.

Finding: The TCM strategies listed in the 1994 (as amended in 1995) Ozone SIP for the SCCAB (Ventura County) were given funding priority and are on schedule for implementation or, if any obstacles to implementation have been identified, actions have been or are being taken to overcome such obstacles.

✓ **Inter-agency Consultation and Public Involvement Test**

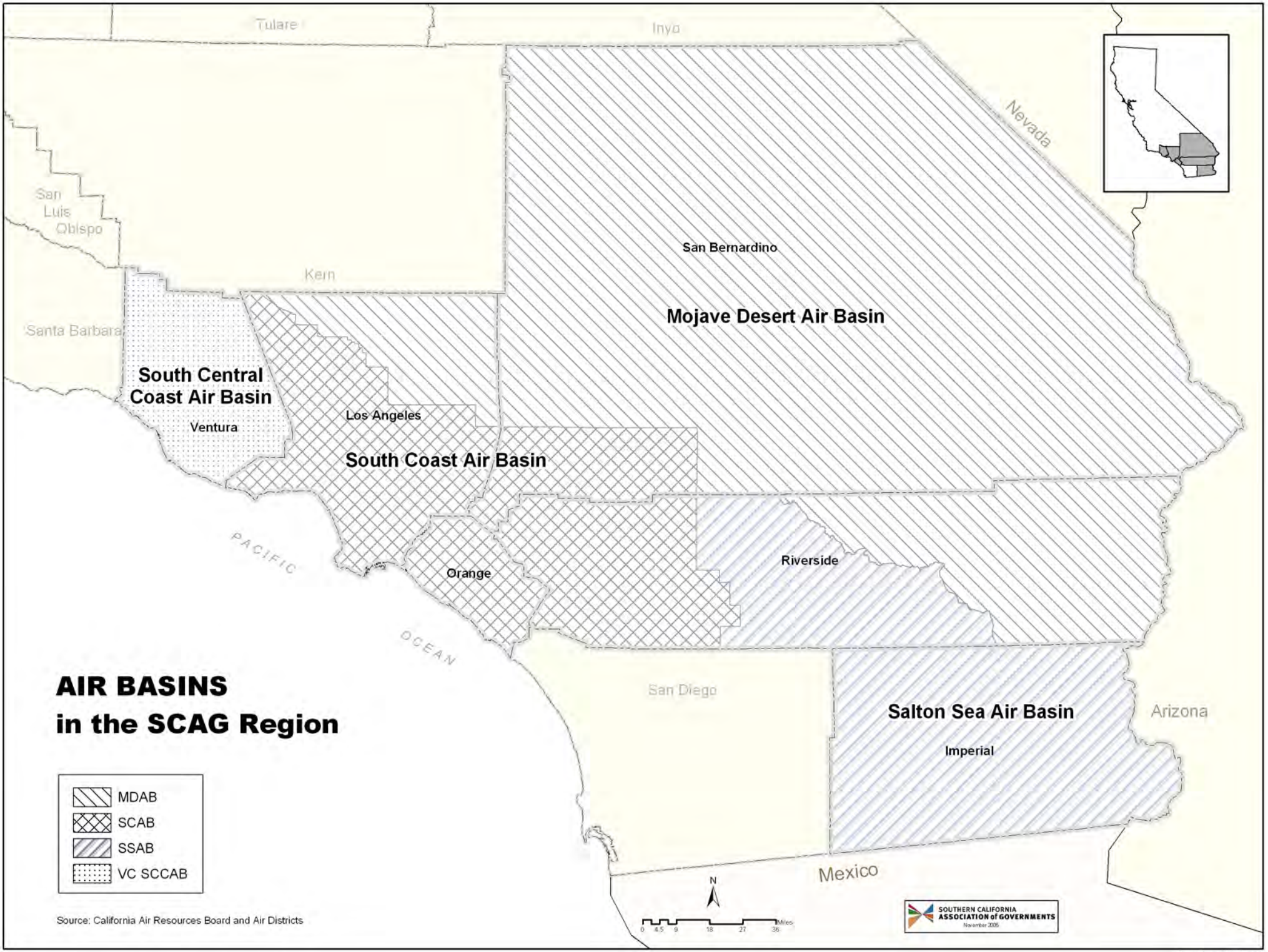
Finding: The 2011 FTIP complies with all federal and state requirements for interagency consultation and public involvement. SCAG's Transportation Conformity Working Group serves as a forum for interagency consultation. The Draft 2011 FTIP was released for a 30-day public review period. In addition, three public hearings were held on the Draft 2011 FTIP on July 14th, 21st, and 22nd 2010. The draft document was published on the web and hard copies of the draft documents were distributed to many libraries across the SCAG region.

✓ **Financial Constraint Test**

Finding: The 2011 FTIP is fiscally constrained since it complies with federal financial constraint requirements under 23 U.S. Code Section 134(h) and 23 CFR Section 450.324(e). SCAG's 2011 FTIP demonstrates financial constraint in the financial plan by identifying all transportation revenues including local, state, and federal sources available to meet the region's programming totals.

EXHIBIT A: MAPS

- **Air Basins**
- **Air Districts**
- **Federal Non-attainment and Maintenance Areas**


Tulare
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San Luis Obispo
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Mojave Desert Air Basin
South Central Coast Air Basin
Ventura
Los Angeles
South Coast Air Basin
PACIFIC
OCEAN
Orange
Riverside
San Diego
Salton Sea Air Basin
Imperial
Arizona
Mexico
AIR BASINS
in the SCAG Region
MDAB
SCAB
SSAB
VC SCCAB
Source: California Air Resources Board and Air Districts
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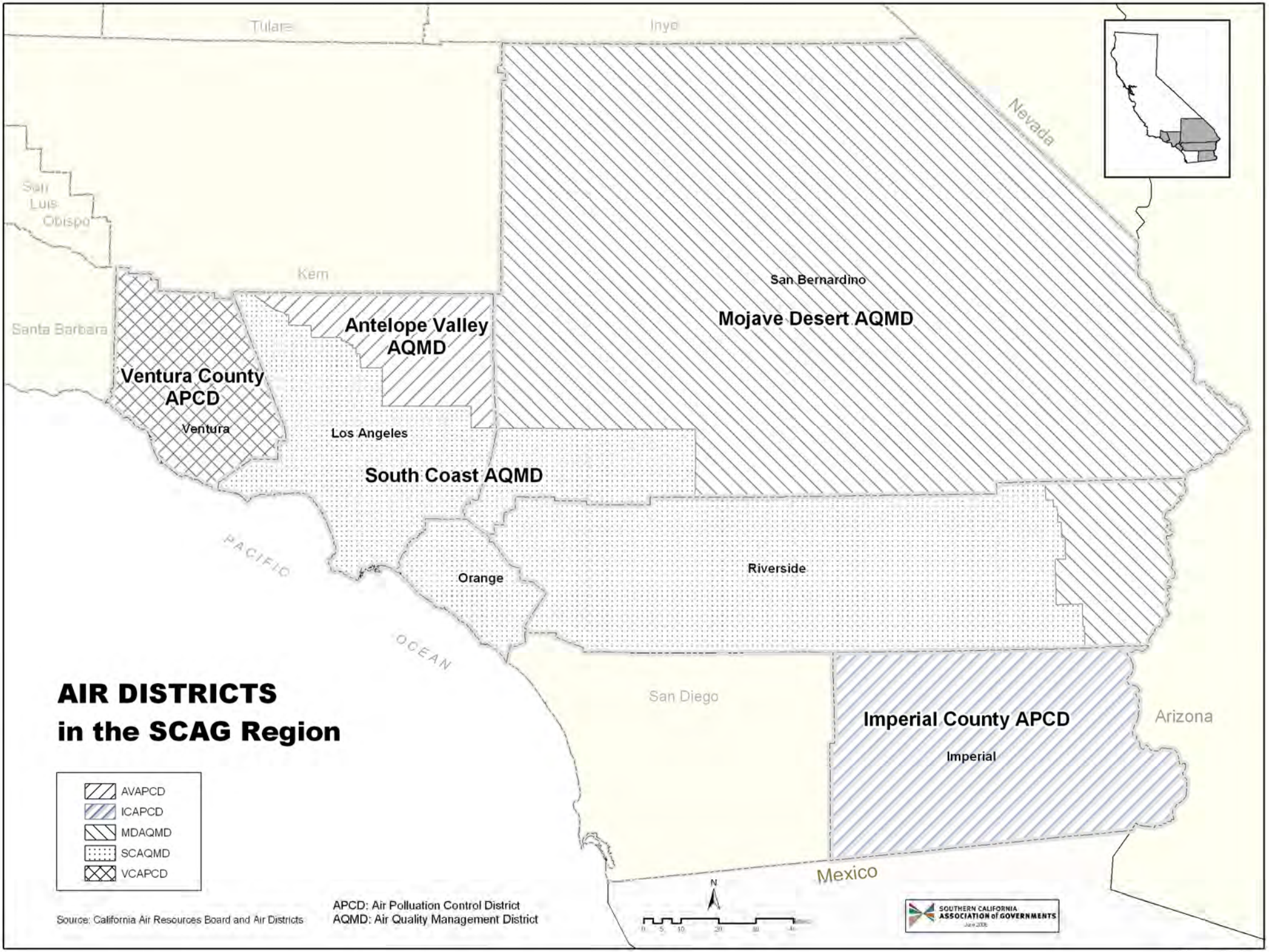
SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS
November 2005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Mojave Desert AQMD
Antelope Valley AQMD
Ventura County APCD
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Los Angeles
South Coast AQMD
PACIFIC
OCEAN
Orange
Riverside
San Diego
Imperial County APCD
Imperial
Arizona
Mexico
AIR DISTRICTS
in the SCAG Region
AVAPCD
ICAPCD
MDAQMD
SCAQMD
VCAPCD
Source: California Air Resources Board and Air Districts
APCD: Air Pollution Control District
AQMD: Air Quality Management District
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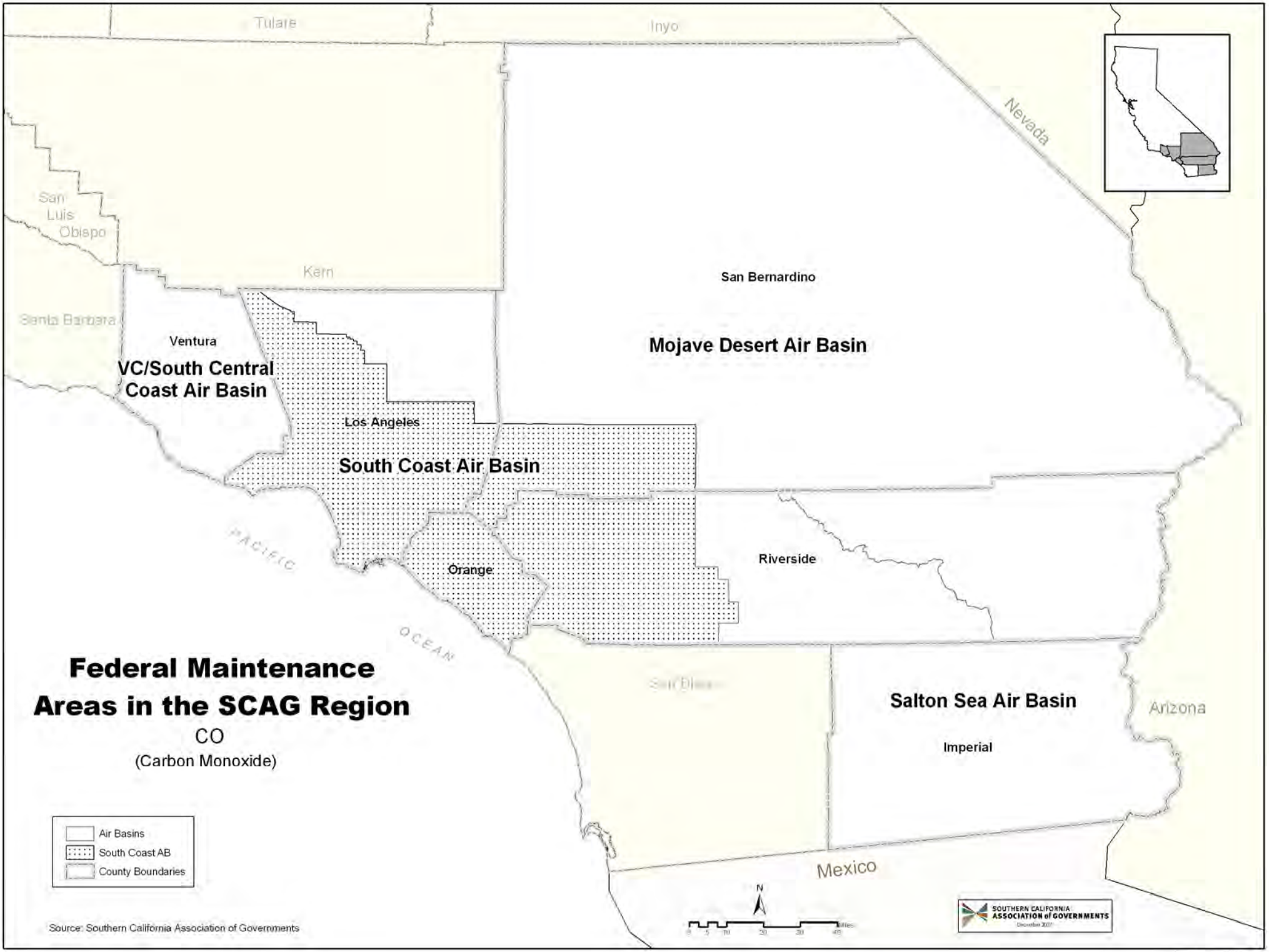
SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

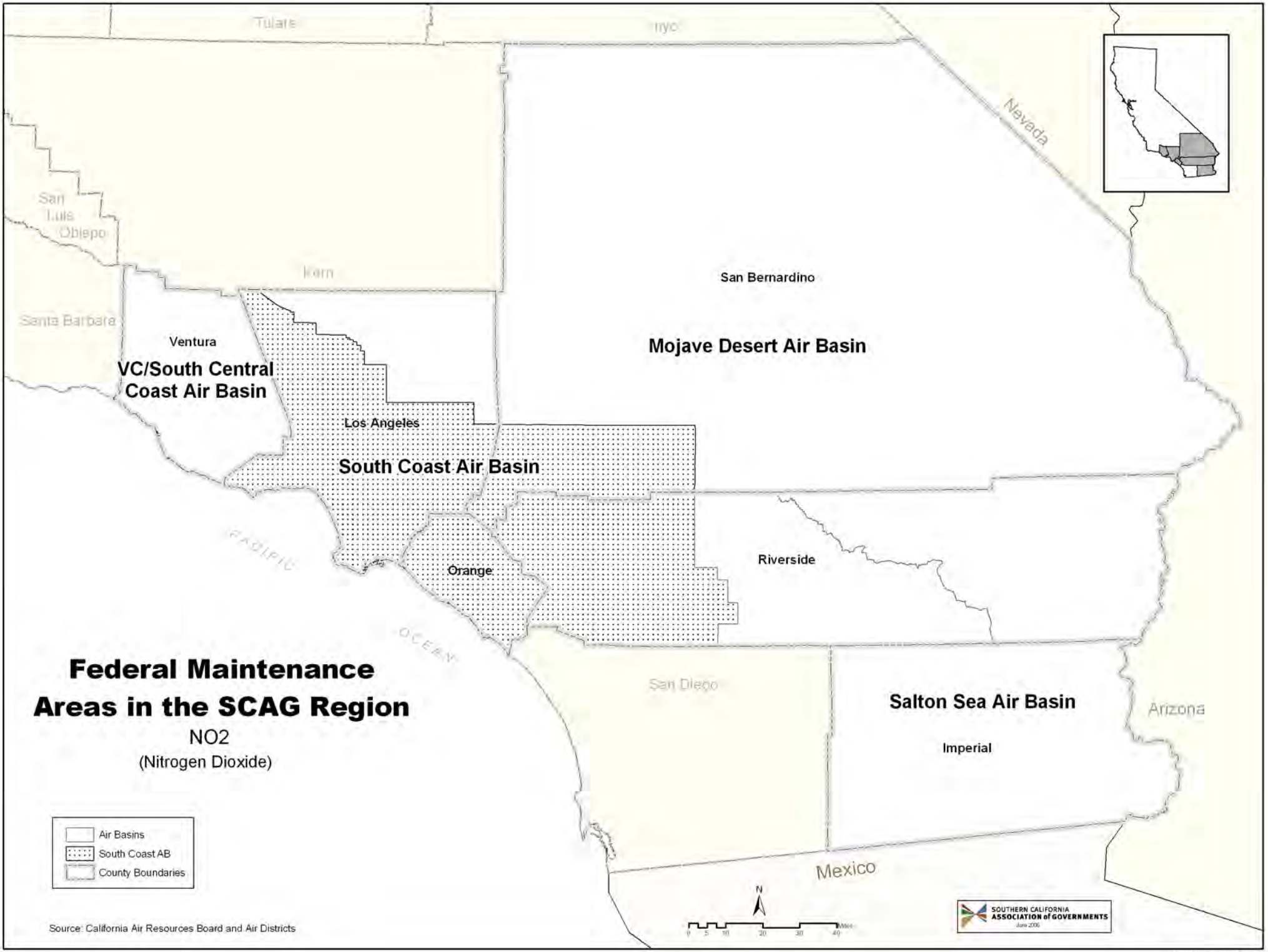


Federal Maintenance Areas in the SCAG Region

CO

(Carbon Monoxide)

Source: Southern California Association of Governments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VC/South Central Coast Air Basin
Mojave Desert Air Basin
Los Angeles
South Coast Air Basin
PACIFIC
Orange
Riverside
OCEAN
San Diego
Salton Sea Air Basin
Imperial
Arizona
Mexico
Federal Maintenance Areas in the SCAG Region
NO2
(Nitrogen Dioxide)
Air Basins
South Coast AB
County Boundaries
Source: California Air Resources Board and Air Districts
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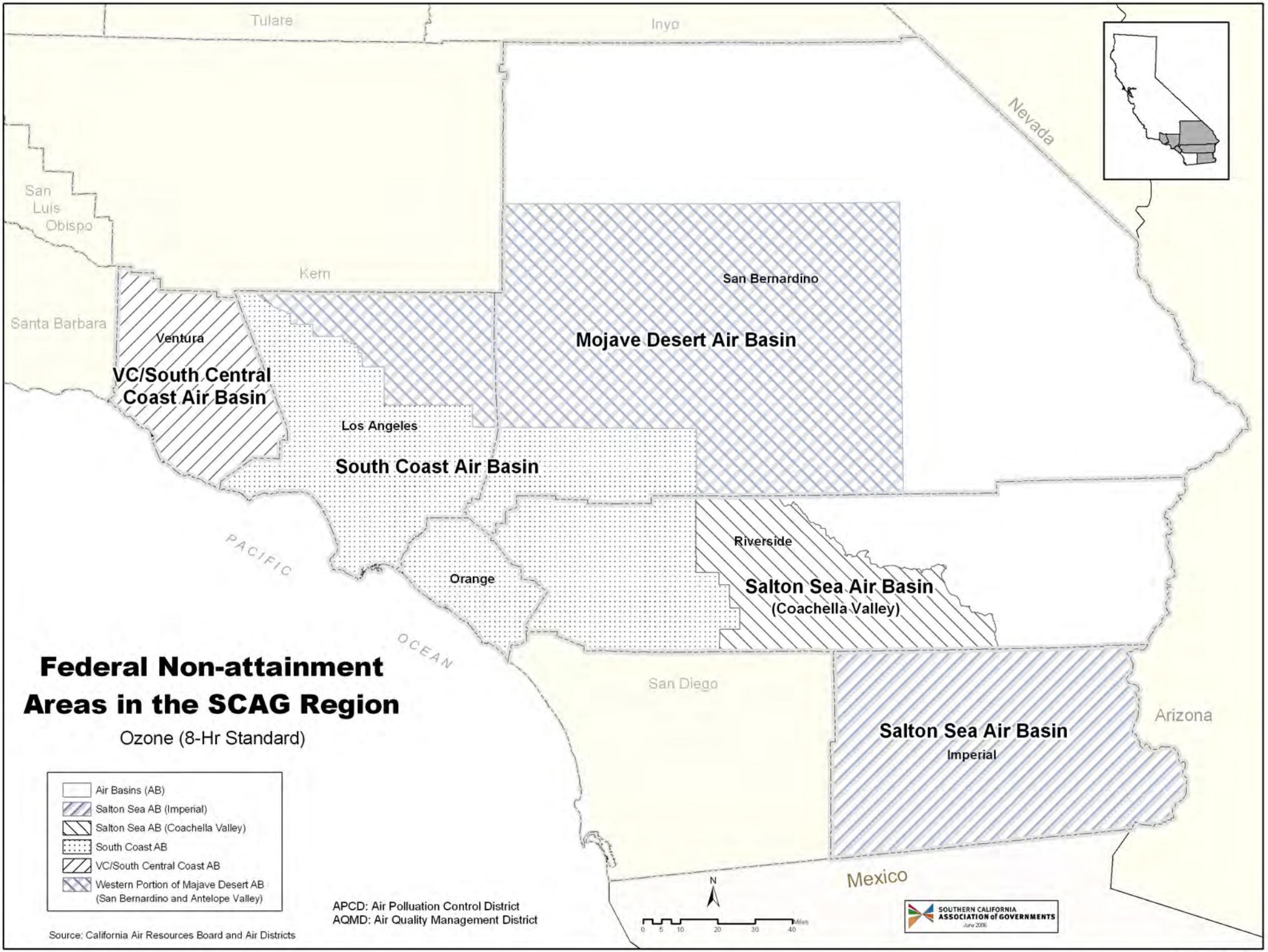
SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS
June 2006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San Luis Obispo
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San Bernardino
Santa Barbara
Ventura
Mojave Desert Air Basin
VC/South Central Coast Air Basin
Los Angeles
South Coast Air Basin
PACIFIC
Riverside
Orange
Salton Sea Air Basin
(Coachella Valley)
OCEAN
San Diego
Arizona
Salton Sea Air Basin
Imperial
Mexico
Federal Non-attainment Areas in the SCAG Region
Ozone (8-Hr Standard)
Air Basins (AB)
Salton Sea AB (Imperial)
Salton Sea AB (Coachella Valley)
South Coast AB
VC/South Central Coast AB
Western Portion of Majave Desert AB (San Bernardino and Antelope Valley)
APCD: Air Polluation Control District
AQMD: Air Quality Management District
Source: California Air Resources Board and Air Districts
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June 2006
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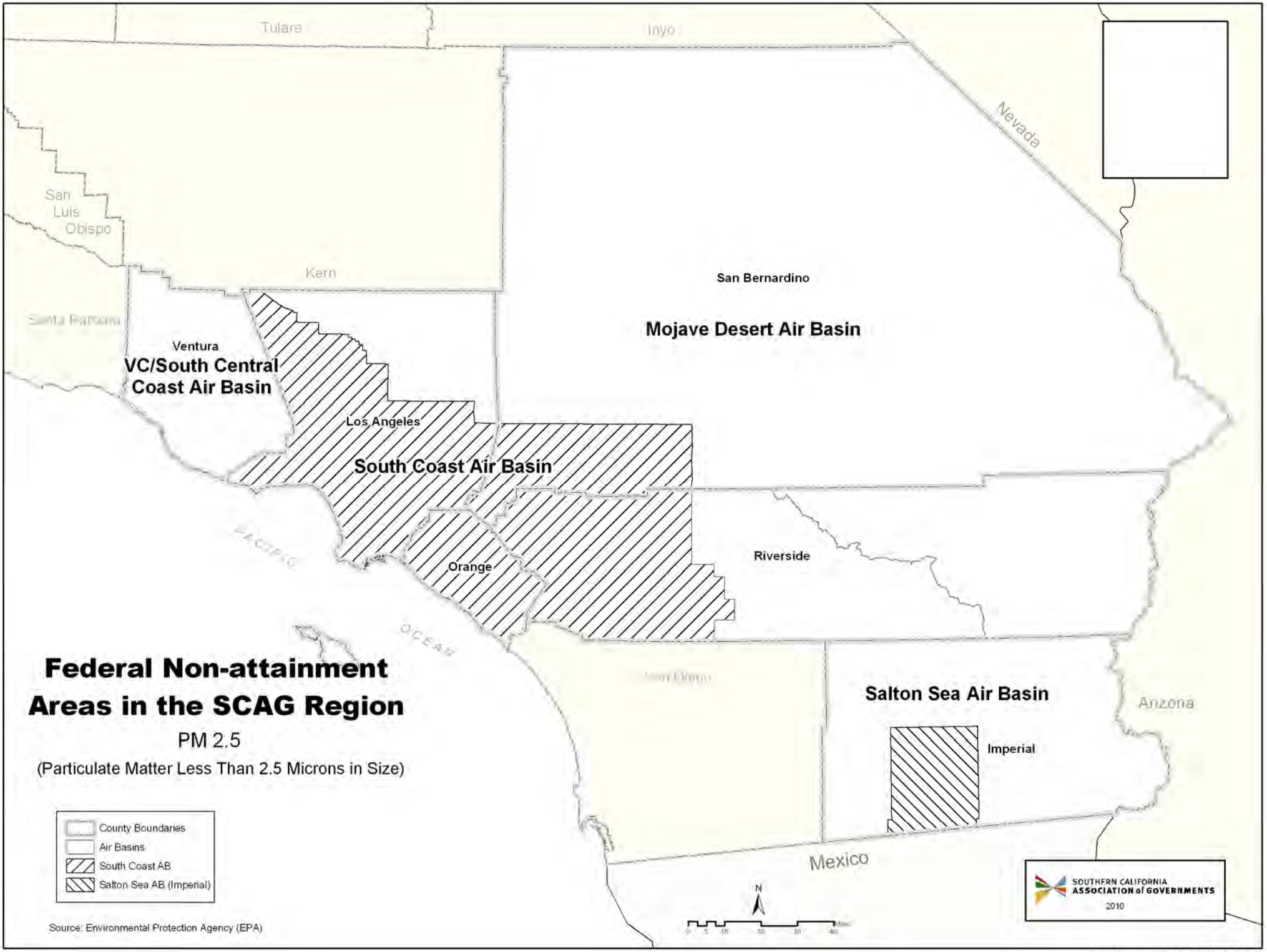

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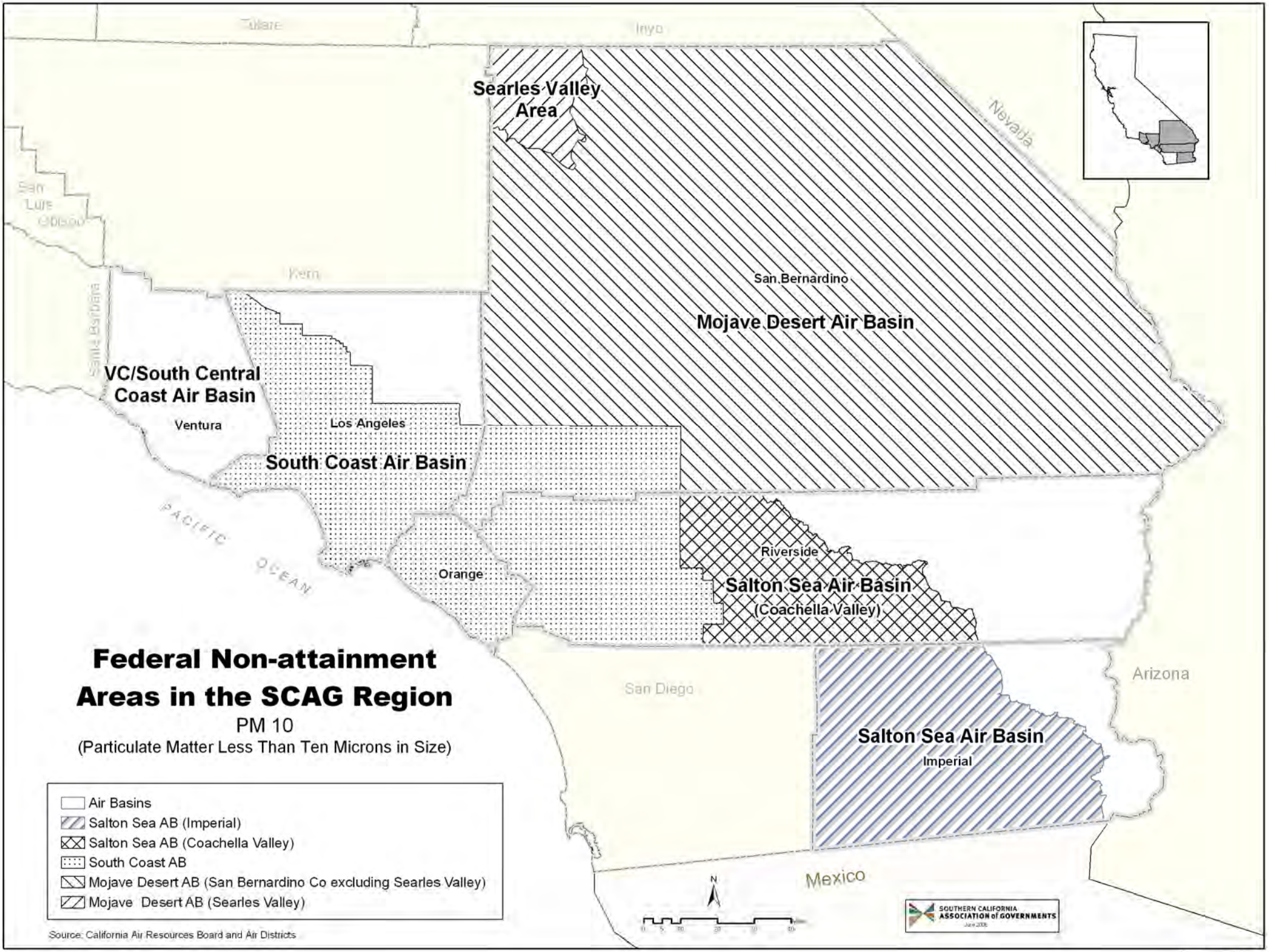
Federal Non-attainment Areas in the SCAG Region
PM 10
(Particulate Matter Less Than Ten Microns in Size)
Air Basins
Salton Sea AB (Imperial)
Salton Sea AB (Coachella Valley)
South Coast AB
Mojave Desert AB (San Bernardino Co excluding Searles Valley)
Mojave Desert AB (Searles Valley)
Source: California Air Resources Board and Air Districts
Tulare
Inyo
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Searles Valley Area
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