Eastern Kern APCD

RACT SIP Workshop

March 16, 2017

RACT SIP Overview

- Background
- Challenges
- RACT SIP
- RACT SIP Analysis
- Rule Revisions

Background

Ozone (O_3)

- Ozone is a gas composed of 3 oxygen atoms (O_3).
- O_3 is created by chemical reactions between NOx, VOCs, and Sunlight.
- O_3 occurs in Earth's troposphere and at ground level.
- O_3 can be good or bad depending on where its found.

Ground-Level O_3

- Ground-level O_3 is one of the six criteria air pollutants identified in the CAA.
- Ground-level O_3 is a harmful air pollutant because of its effects on people and environment.
- O_3 is the main ingredient in smog.
- O_3 formation reaches unhealthy levels on hot sunny days.
- O_3 can be transported long distances by wind.

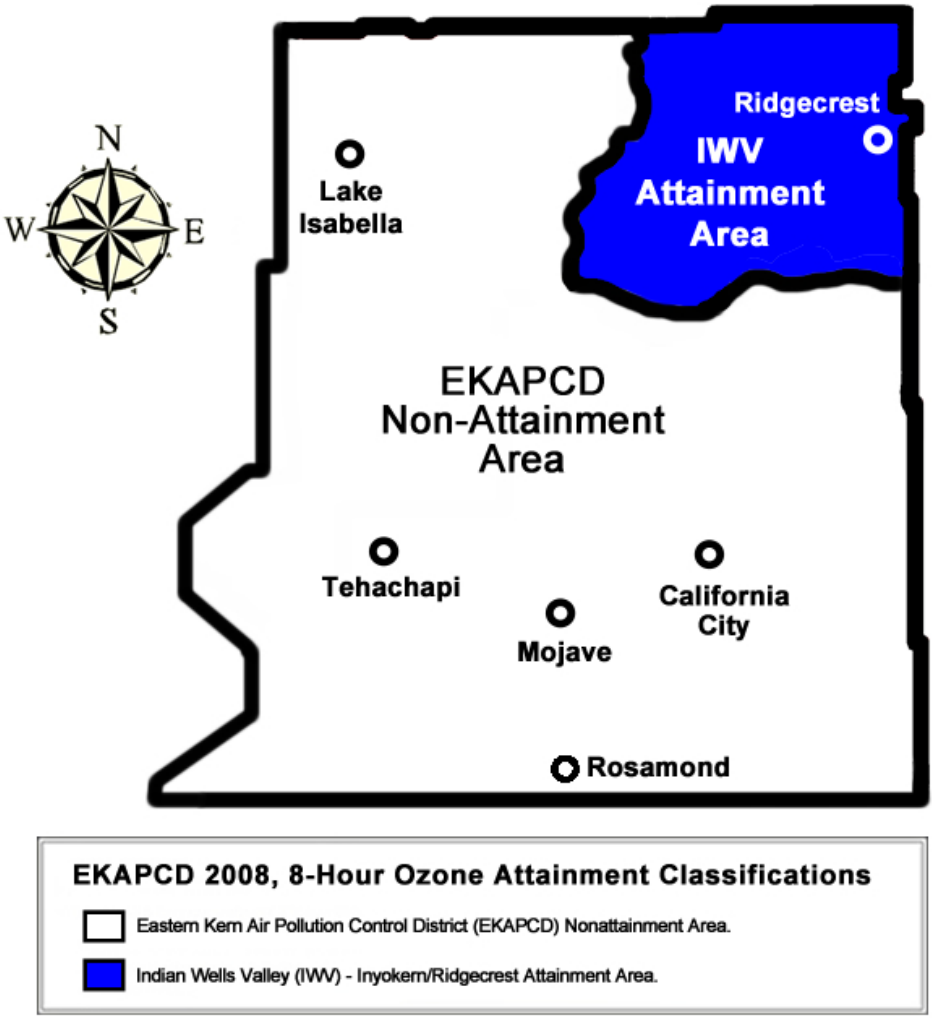
NAAQS

- Clean Air Act (CAA) requires EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants harmful to public health and environment.
- CAA identifies two types of NAAQS.
- Primary: Provides public health protection (asthmatics, children, elderly).
- Secondary: Provides public welfare protection (decreased visibility, damage to animals, crops, buildings).
- O_3 is considered a primary and secondary air pollutant.

2008 8-Hour Ozone NAAQS

- March 12, 2008, EPA lowered the 8-Hour Ozone NAAQS from 0.08 ppm to 0.075 ppm.
- Although District met 1997 NAAQS of 0.08 ppm, attaining new standard was expected to take time.
- May 21, 2012, EPA reclassified the District as “Marginal” non-attainment.
- Indian Wells Valley (including Ridgecrest) remains in attainment (0.067 ppm).

Attainment/Non-attainment Areas



District Bump-Up

- EPA required areas classified as Marginal to attain 2008 O_3 NAAQS by December 31, 2015.
- CAA section 181(b)(2)(A) requires areas that fail to attain NAAQS by applicable date be designated to a higher non-attainment classification.
- August 27, 2015, EPA proposed District to “bump-up” from Marginal to Moderate.

Moderate Non-Attainment

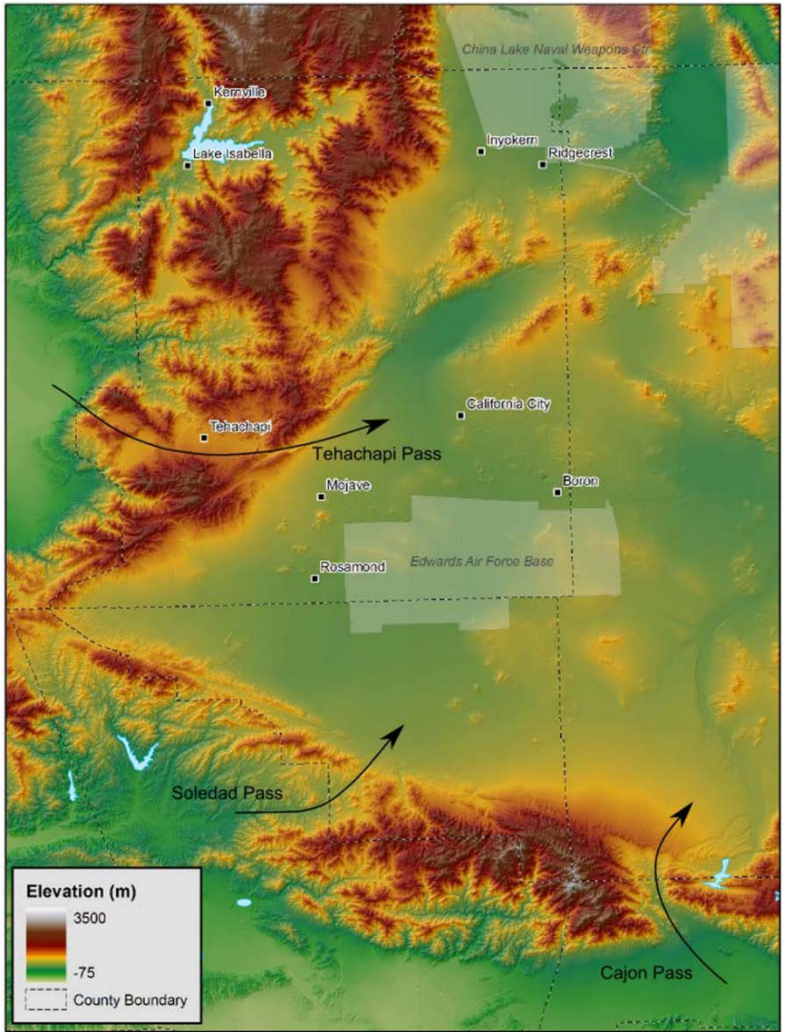
- District's 2014 O_3 design value is 0.084 ppm.
  (Based on air monitoring data collected 2012-2014)
- Design Value is calculated by averaging 4th highest O_3 concentration of each year, over 3-year period.
- CARB determined District would not meet 2008 NAAQS by 2017. (Based on 2016 data and air modeling)

Challenges

Geography

- District is located on western edge of Mojave Desert.
- Several mountain ranges separate District from populated valleys and coastal areas south & west.
- These mountain ranges contain passes that serve as O_3 “transport corridors” from the populated areas.
- Transport of O_3 precursor emissions from populated areas is a major factor of District’s O_3 exceedances.

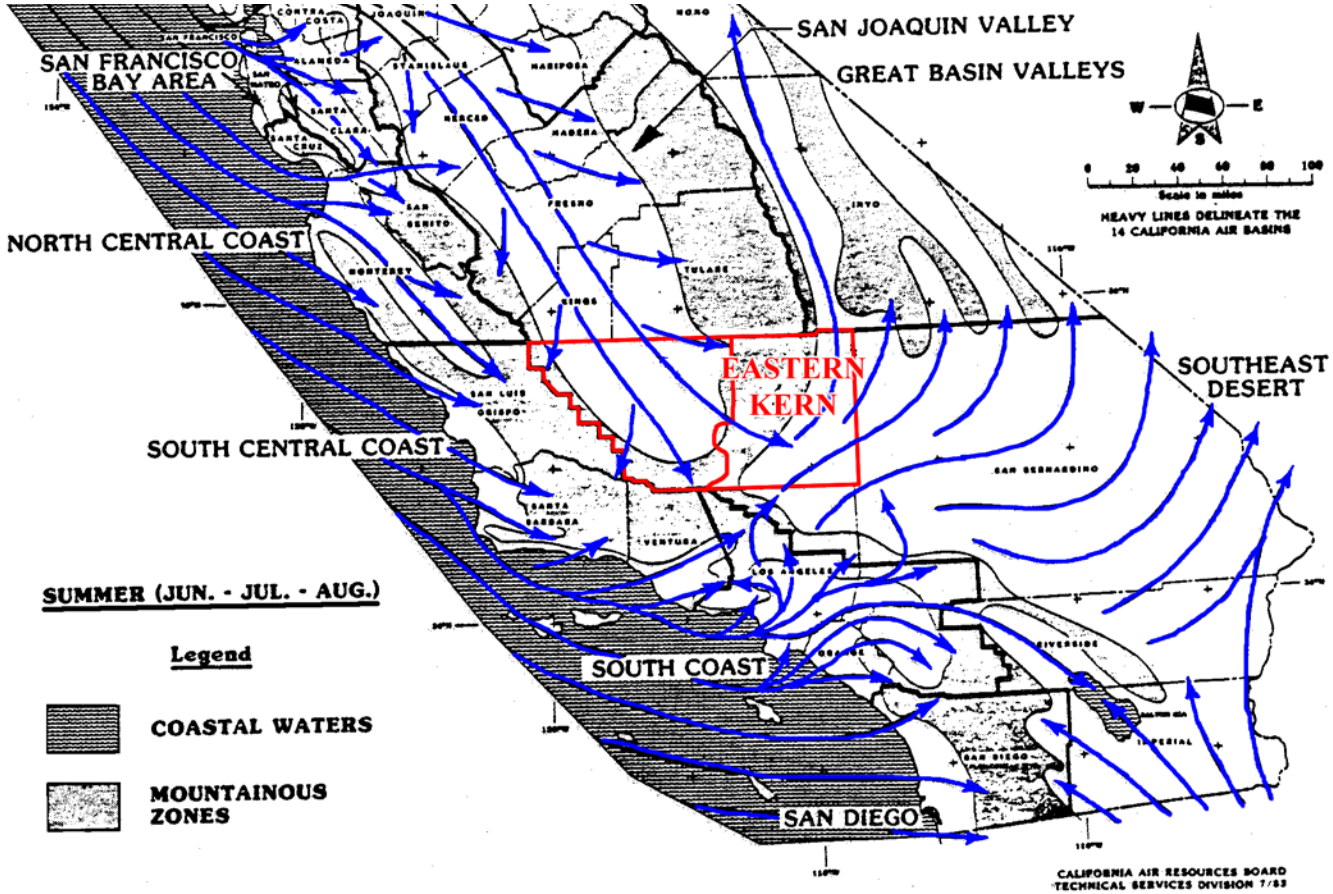
Transport Corridors



Transport Can Increase Baseline O_3

- O_3 transport can increase downwind surface concentrations (O_3 background) to such an extent that the margin for local O_3 production before exceeding NAAQS is greatly reduced.
- MDAQMD conducted a study of O_3 Transport Patterns occurring in the Mojave Desert Air Basin.
- Transport patterns were consistent during District's 2008 design value years (2008-2014).

California Wind Flow Patterns



Meteorology

- Temperatures can exceed 100° F 60-70 days/year (between May - September) with little rainfall.
- Average summer humidity is below 10% during the hottest part of the day.
- This combination of hot dry, clear days results in intense solar radiation that is instrumental in formation of photochemical ozone.

RACT SIP

RACT Definition

- Reasonably Available Control Technology (RACT): The lowest emissions limitation that a particular source is capable of meeting by the application of air pollution control technology that is reasonably available considering technological and economic feasibility.

RACT

- RACT is required for sources of air pollution subject to Control Techniques Guidelines (CTGs).
- RACT is also required for “major sources” of VOCs and NOx emission.
- RACT will assure significant sources of O_3 precursors are controlled to a “reasonable” extent, but not necessarily to the more stringent Best Available Control Technology (BACT) or Maximum Achievable Control Technology (MACT).

State Implementation Plan (SIP)

- Federal Clean Air Act Amendments (FCAAA) of 1977 required EPA to divide the U.S. into "Planning Areas“ within 3 years of adopting NAAQS.
- FCAAA of 1990 gave states primary responsibility for achieving NAAQS.
- Primary mechanism for complying with FCAAA is developing and adopting a SIP.

SIP Requirement

- Areas classified as moderate nonattainment or higher must submit a demonstration that their current rules fulfill RACT for all CTG categories, and all non-CTG major sources, as a revision to their ozone SIP.

EPA RACT SIP Guidance

- RACT SIP should identify all source categories within the District requiring RACT, including CTG sources and non-CTG major sources.
- Negative declarations are required for CTGs not applicable in the District (no identified source).
- District rule(s) must be listed for all source categories needing RACT, along with EPA SIP approval date(s).

CTG Sources

- EPA issued CTGs defining RACT for existing source categories.
- CTGs describes applicability and threshold/emission limits for sources categories.
- RACT SIP lists affected sources, applicable CTG(s) and their thresholds/emission limits, and associated District Rule(s) and our threshold/emission limits.

Non-CTG Major Sources

- Source with no applicable CTG but still subject to RACT, is referred to as non-CTG Major Source.
- RACT SIP must list all major sources (including non-CTG) located within District's nonattainment area with VOC or NOx emissions greater than 50 tpy.
- RACT SIP includes each facility's name, subject equipment permit numbers, process names, potential to emit, and applicable District rules that limit VOC or NOx emissions.

Negative Declaration

- Negative declaration for each CTG category with no applicable source operating within the District's non-attainment area is included in the RACT SIP.
- This includes listing District sources with emissions below CTG applicability threshold.

RACT SIP ANALYSIS

RACT SIP Analysis

- Analyzes CTG-equivalent District rules applicable to affected sources located within non-attainment area;
- Demonstrates District rule applicability for non-CTG major source is appropriate for satisfying RACT;
- Demonstrates RACT compliance for major source with PTE greater than 50 tpy of VOCs or NOx;
- Identifies any deficiency in applicable District rule(s) and provides corrective action.

Potential Rule Revisions

- 210.1, New Source Review (Amend)
- 410, Organic Solvents (Amend)
- 410.2, Disposal & Evaporation of Solvents (Rescind)
- 410.3, Organic Solvent Degreasing Operations (Amend)
- 425, Cogeneration Gas Turbine Engines (Amend)
- 425.2 Boilers Steam Generators & Process Heaters (Amend)
- 425. 3, Portland Cement Kilns (Amend)

Draft RACT SIP Public Review

- Draft RACT SIP is available for public review and comment and can be downloaded from EKAPCD website: www.kernair.org
- Please address all comments to Jeremiah Cravens or Wunna Aung.

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Questions
Comments