



California Environmental Protection Agency  
Department of Pesticide Regulation

# **Volatile Organic Compound Regulation Update**

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# Overview

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- Background
- Fumigant VOC Regulations
  - Licensing
  - Fumigation methods
  - Records and reporting
  - Fumigant limits and allowances
  - Annual emissions report

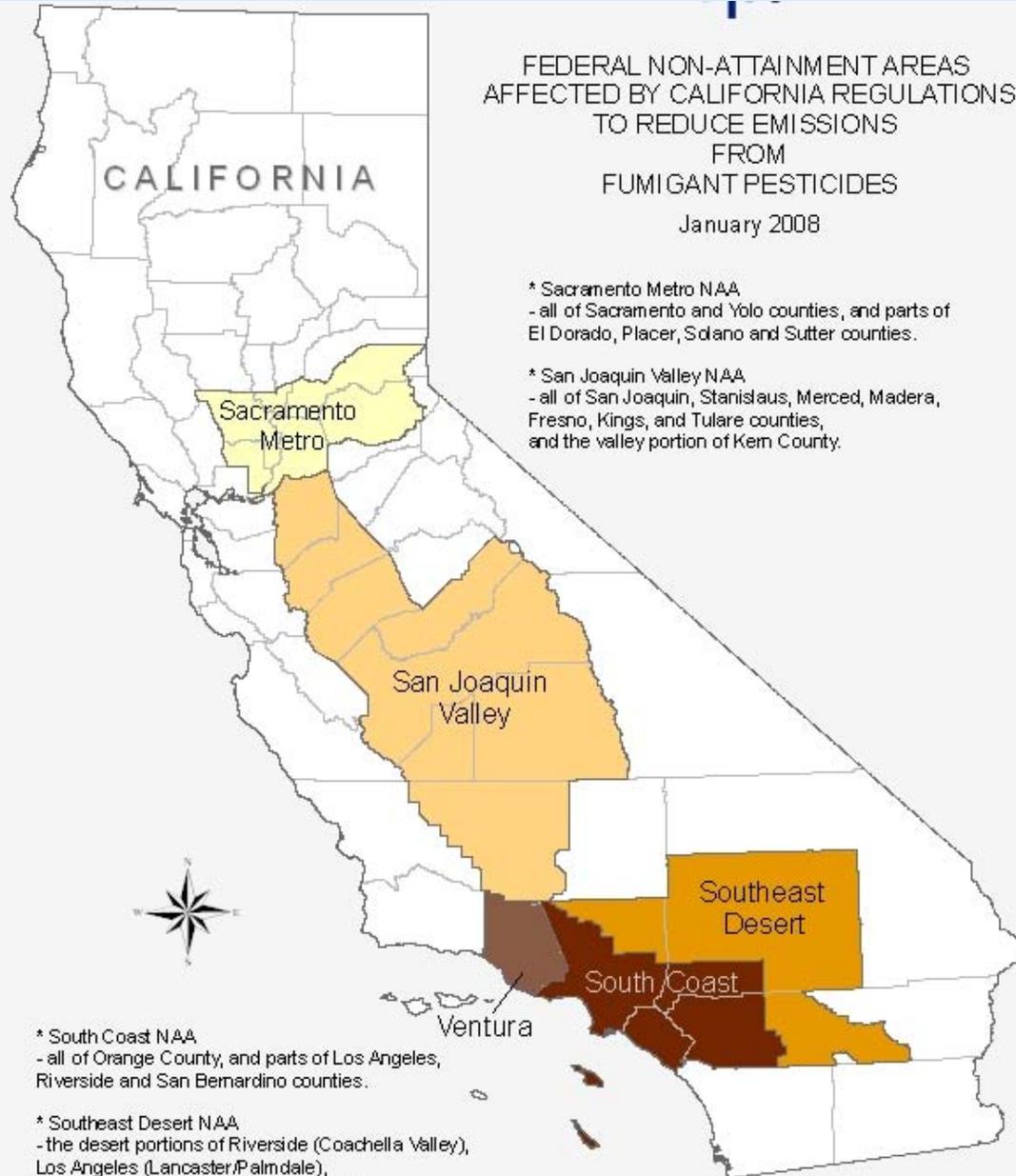
# VOC regulation background

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- Volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>) react with sunlight to form ozone, a major air pollutant
- Many pesticide active and inert ingredients are VOCs
- **State Implementation Plan (SIP)** to achieve ozone standard requires DPR to
  - Develop and maintain an inventory to track pesticide VOC emissions from agricultural and structural applications
  - Implement regulations by 1/26/08 to achieve 20% reduction from 1991 in five **nonattainment areas** (per court order)

FEDERAL NON-ATTAINMENT AREAS  
AFFECTED BY CALIFORNIA REGULATIONS  
TO REDUCE EMISSIONS  
FROM  
FUMIGANT PESTICIDES

January 2008



\* Sacramento Metro NAA  
- all of Sacramento and Yolo counties, and parts of El Dorado, Placer, Solano and Sutter counties.

\* San Joaquin Valley NAA  
- all of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare counties, and the valley portion of Kern County.

\* South Coast NAA  
- all of Orange County, and parts of Los Angeles, Riverside and San Bernardino counties.

\* Southeast Desert NAA  
- the desert portions of Riverside (Coachella Valley), Los Angeles (Lancaster/Palmdale), and San Bernardino (Barstow) counties.

\* Ventura NAA - all of Ventura County.

# Method to estimate pesticide VOC emissions

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- VOC emissions for non-fumigant pesticides based on worst-case lab data

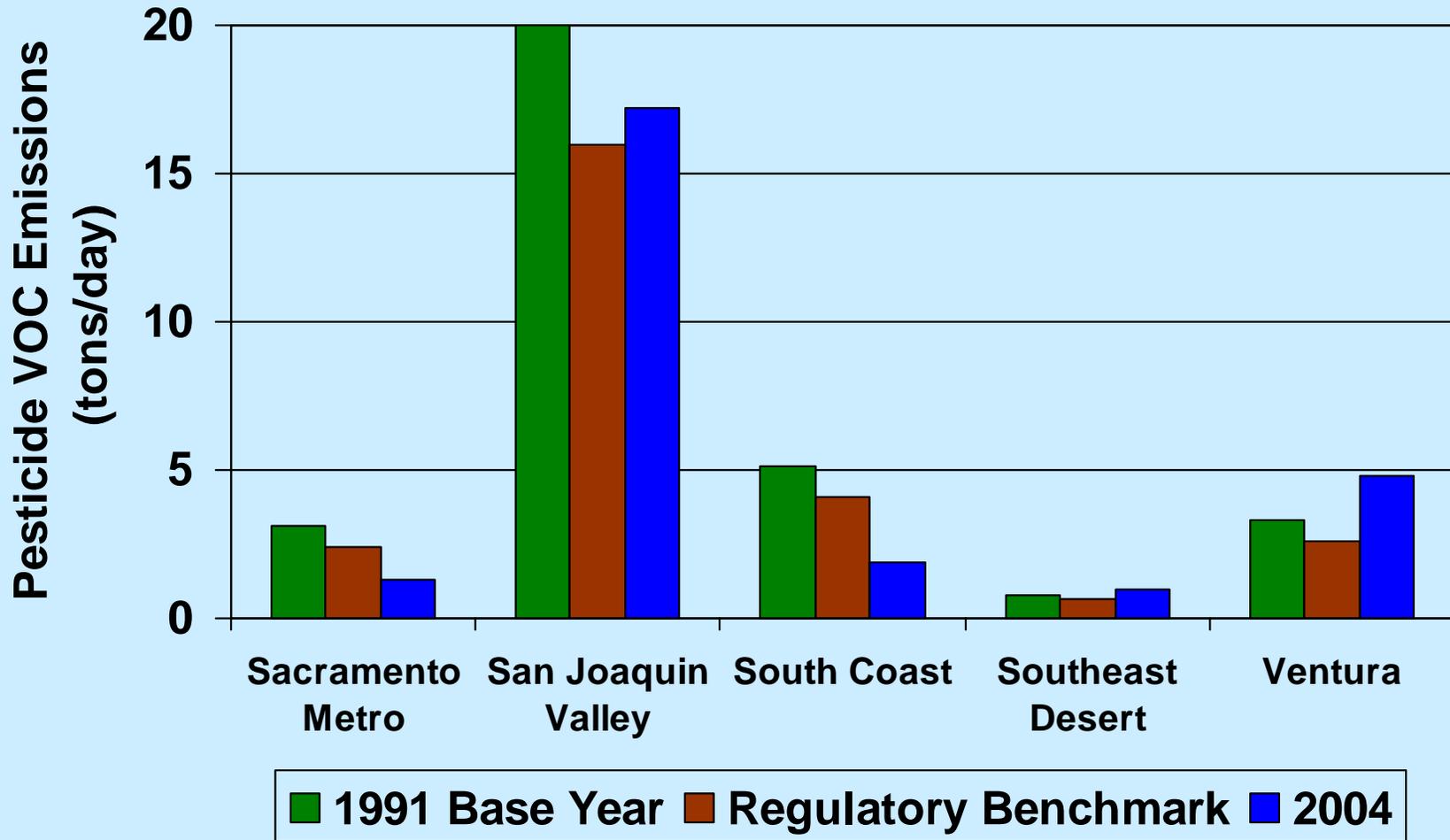
Emission = amount of product x emission potential (VOC content)

- VOC emissions for fumigant pesticides based on field monitoring data

Emission = amount of product x EP x emission rating

Emission rating = percent of emissions under field conditions

# Pesticide VOC inventory (May-Oct)



# Current status

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- DPR not meeting its SIP obligations in San Joaquin Valley, Southeast Desert, Ventura
- Fumigants and emulsifiable concentrates contribute the majority of pesticide VOCs
- DPR under court order to adopt a regulation to achieve the needed reductions by 1/26/08
- DPR proposed a fumigant regulation in May 2007, and a revised proposal in Oct 2007
- Regulation should be approved and effective 1/25/08

# Fumigant regulations scope

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- **Five major elements**
  - Licensing
  - Fumigation methods
  - Records and reporting
  - Fumigant limits and allowances
  - Annual emissions report
- **Regulations apply to field fumigations using**
  - Methyl bromide
  - 1,3-dichloropropene (Telone, Inline)
  - Chloropicrin
  - MITC generator: Metam-sodium (Vapam, Sectagon)
  - MITC generator: Metam-potassium (K-Pam)
  - MITC generator: Dazomet (Basamid)
  - Sodium tetrathiocarbonate (Enzone)

# Licensing requirements

## (3CCR sections 6445.5, 6536)

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- Statewide requirement
- New licensing sub-category for fumigation
- Businesses must have qualified applicator holding a license in fumigation sub-category
- Effective 1/1/09
- No new requirements for private applicators

# Field fumigation methods

(6447.3, 6448.1, 6449.1, 6450.1, 6450.2, 6451.1)

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- VOC emissions vary with fumigation method
  - Emissions can be reduced by changing methods
  - Emission rating assigned to 30+ fumigant-method combinations, based on monitoring data
- Fumigation method requirements apply in NAAs during May-Oct
  - **San Joaquin Valley, Southeast Desert, Ventura NAAs:** Low-emission methods only
  - Low-emission methods generally require drip chemigation, tarping, or post-fumigation water treatments

# Records and reporting requirements (6452.1, 6624, 6626)

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- Revise Pesticide Use Report (PUR) to include 4-digit fumigation method code
  - Begins 2009
  - 5 NAAs only
  - All year
  - Interim reporting system for 2008

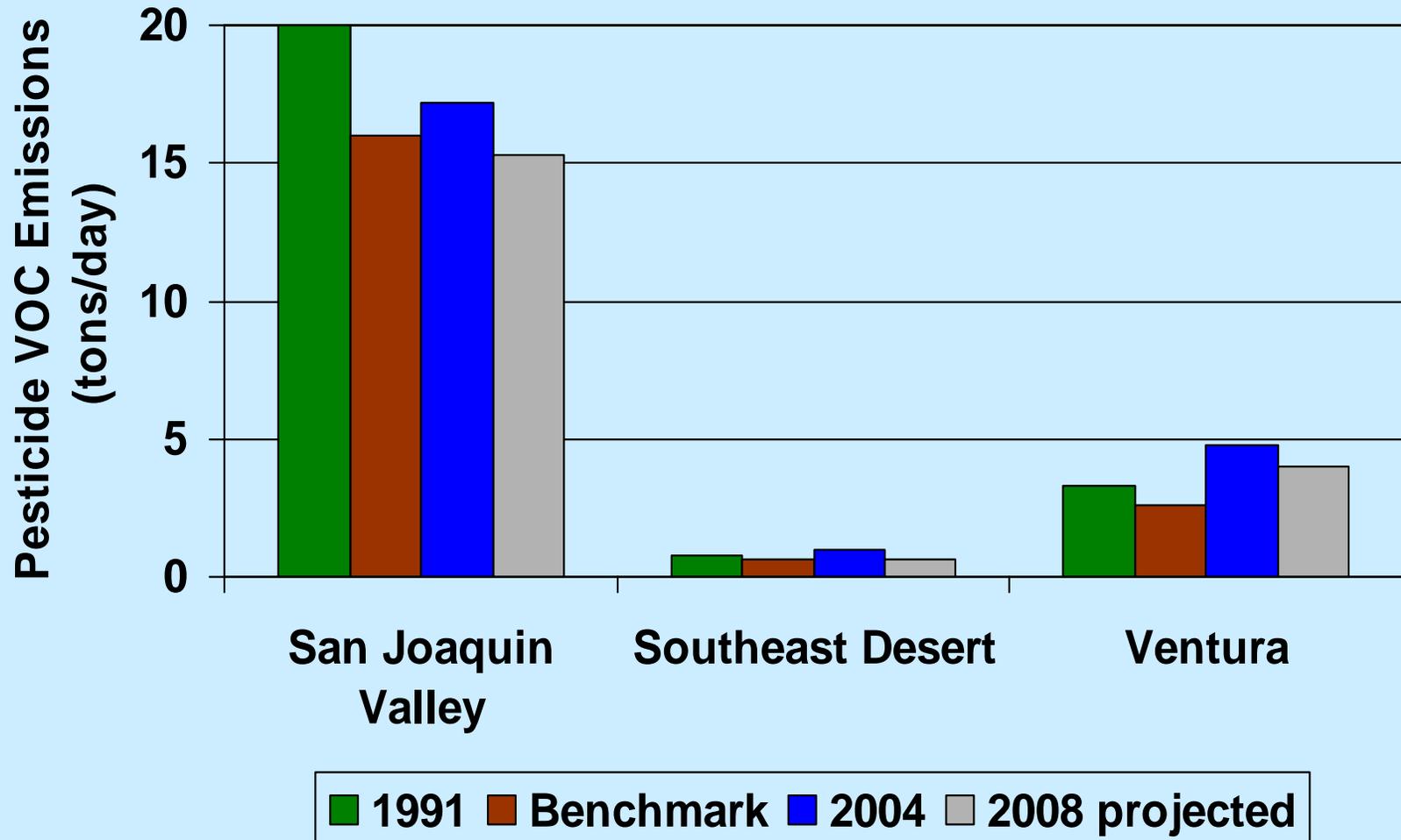
# Fumigant limits

## (6452.2)

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- Regulation establishes total pesticide VOC (fumigant + non-fumigant) benchmarks
- Limit on fumigant emissions if total pesticide emissions exceed 80% of benchmark
  - Fumigant limit needed in Ventura beginning 2008
  - Fumigant limit likely needed in San Joaquin Valley and Southeast Desert beginning 2009
  - Fumigant limits updated each year, based on most recent data for fumigants and non-fumigants

# Projected pesticide VOC inventory without fumigant limits (May-Oct)



# Emission allowances

## (6452.3)

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- Fumigant limits enforced through emission allowances issued to growers for May-Oct
  - Growers request allowance through county agricultural commissioner
  - DPR evaluates and totals all allowance requests
  - DPR proportionally reduces all requests to meet limit
  - Allowances implemented as conditions of restricted materials permit
  - No transfers/sales of allowances

# Annual emissions report

## (6452.4)

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Beginning 2008, DPR report published in Nov-Dec includes

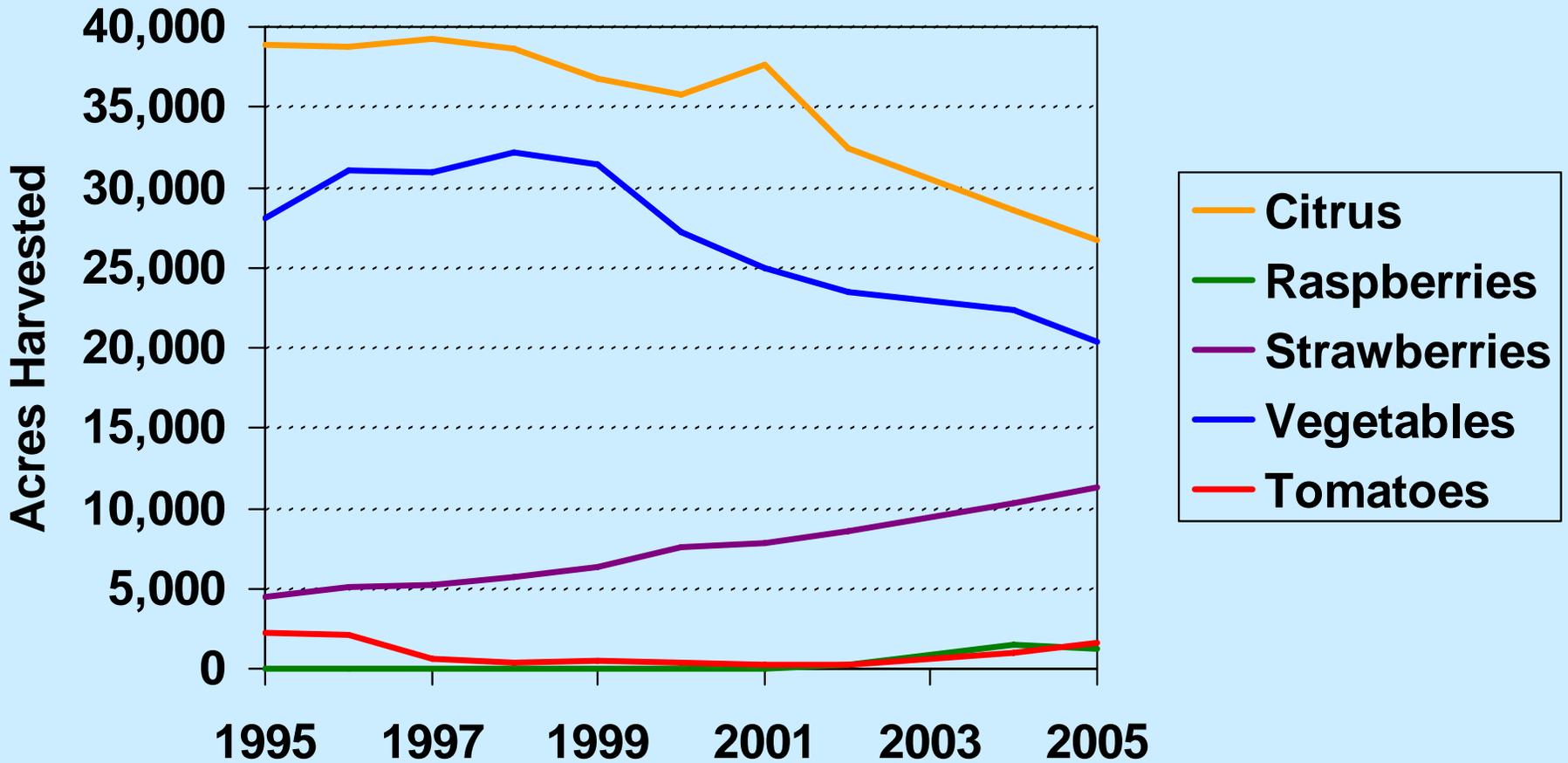
- Total pesticide VOC emission inventory for previous years (fumigant + non-fumigant)
- Fumigant limits needed for upcoming year to meet total VOC benchmarks
- Emission ratings (percentage of emissions) for each fumigation method, based on most recent data
- Public comment period

# Related issues

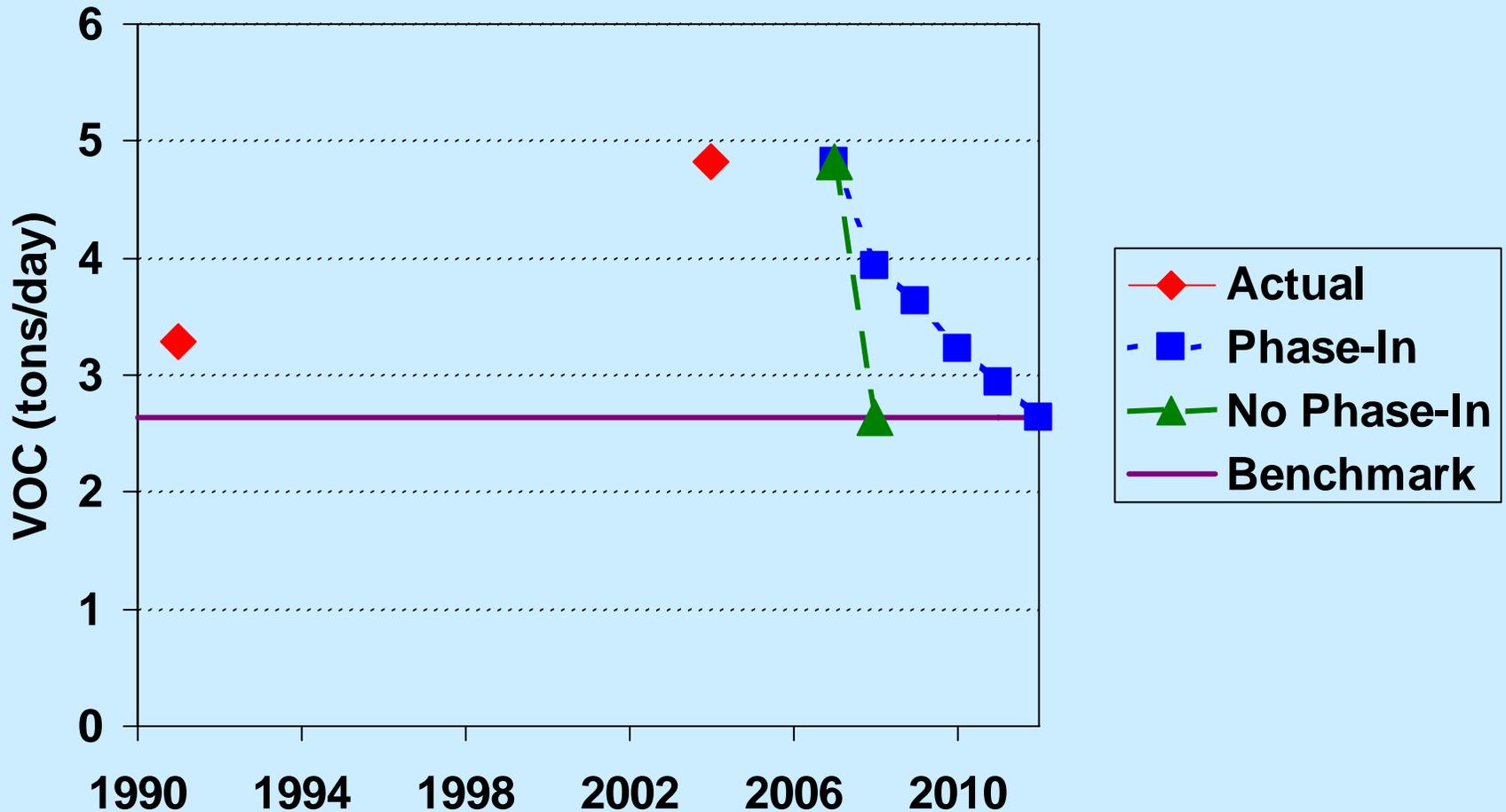
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- Research
  - DPR registrant data call-in for fumigant emission data
  - Funding and/or research in California by ARB, UC, USDA, commodity groups
- Cost to regulated community \$10 million – \$400 million
  - Largest impact likely in Ventura

# Ventura crop acreage



# Ventura VOC reduction timeline



# VOC regulation summary

<b>Requirement</b>	<b>Affected Areas</b>	<b>Dates</b>
Licensing	Statewide	All year; start 2009
Low emission methods	SJV, SE Desert, Ventura NAAs	May-Oct; start 2008
Interim reporting	All 5 NAAs	All year; 2008 only
PUR revisions	All 5 NAAs	All year; start 2009
Limits and allowances	Ventura NAA	May-Oct; start 2008
	SJV, SE Desert NAAs	May-Oct; start 2009

# Questions

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- For more information
  - [www.cdpr.ca.gov](http://www.cdpr.ca.gov)
  - Click on “Air” under Quick Finder
  - Link to Volatile Organic Compound Emissions

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