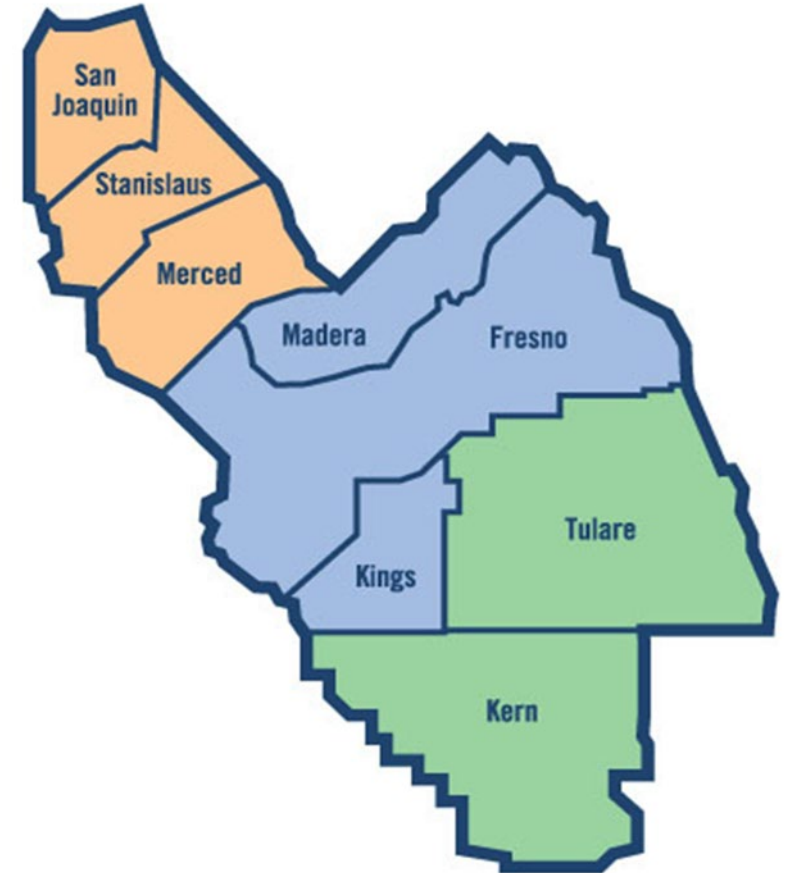


Overview of Air Quality, Sources of Pollution, and Air Monitoring

Arvin/Lamont Community Steering Committee Meeting
August 25, 2021

San Joaquin Valley Air Pollution District

- Responsible for air quality in 8 counties
- 15 member Governing Board
- Regulates stationary sources
- Provides grant funding
- Responsible for meeting EPA & CARB mandates to improve public health



Sources of Pollution

- Emissions come from a variety of sources in the Valley, all contributing to regional air pollution



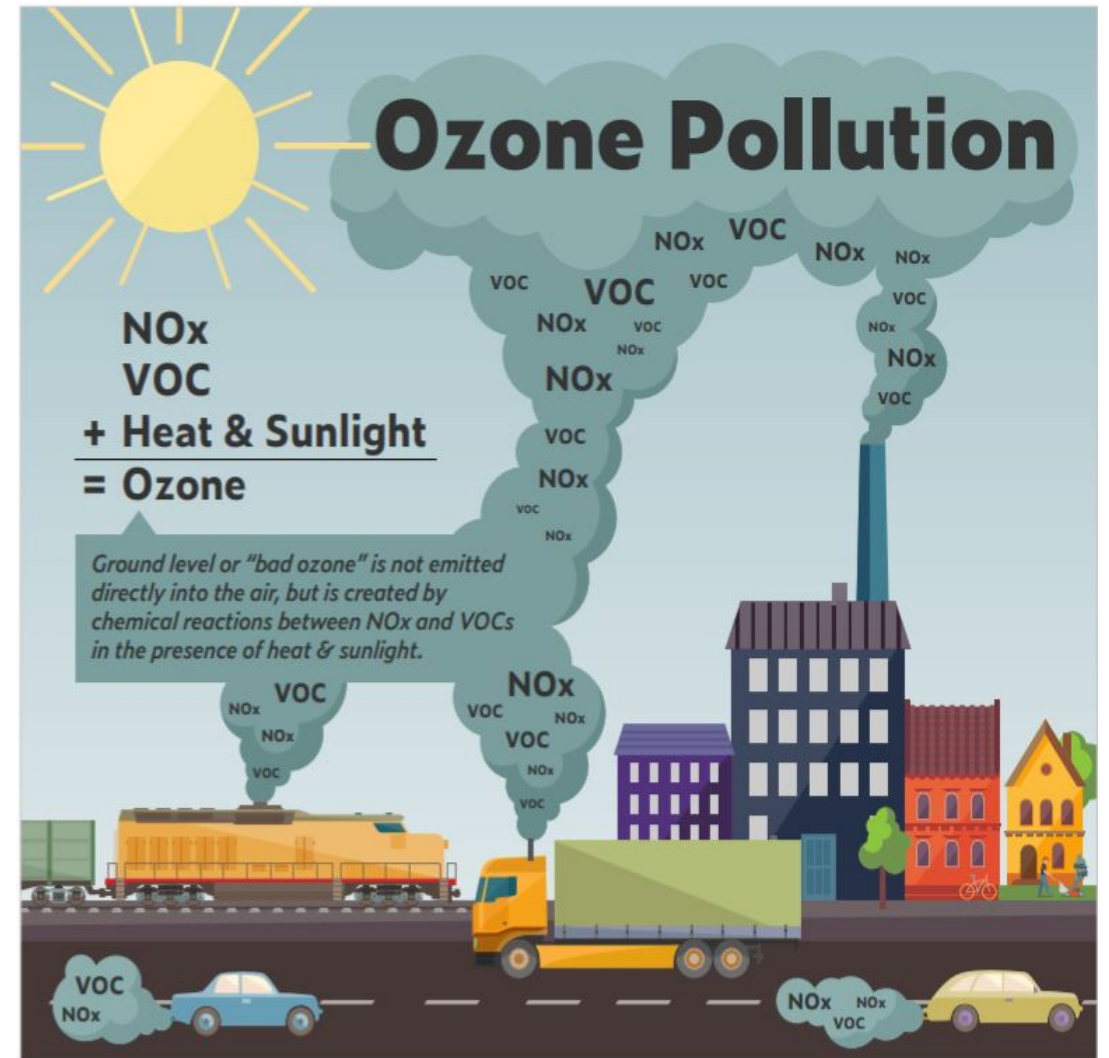
Types of Pollution

Ozone

- Main component of summertime 'smog'
- Ozone formed from chemicals in the presence of sunlight and heat
- Made from nitrogen oxides (NO_x) and volatile organic compounds (VOCs)

NO_x in Arvin/Lamont from:

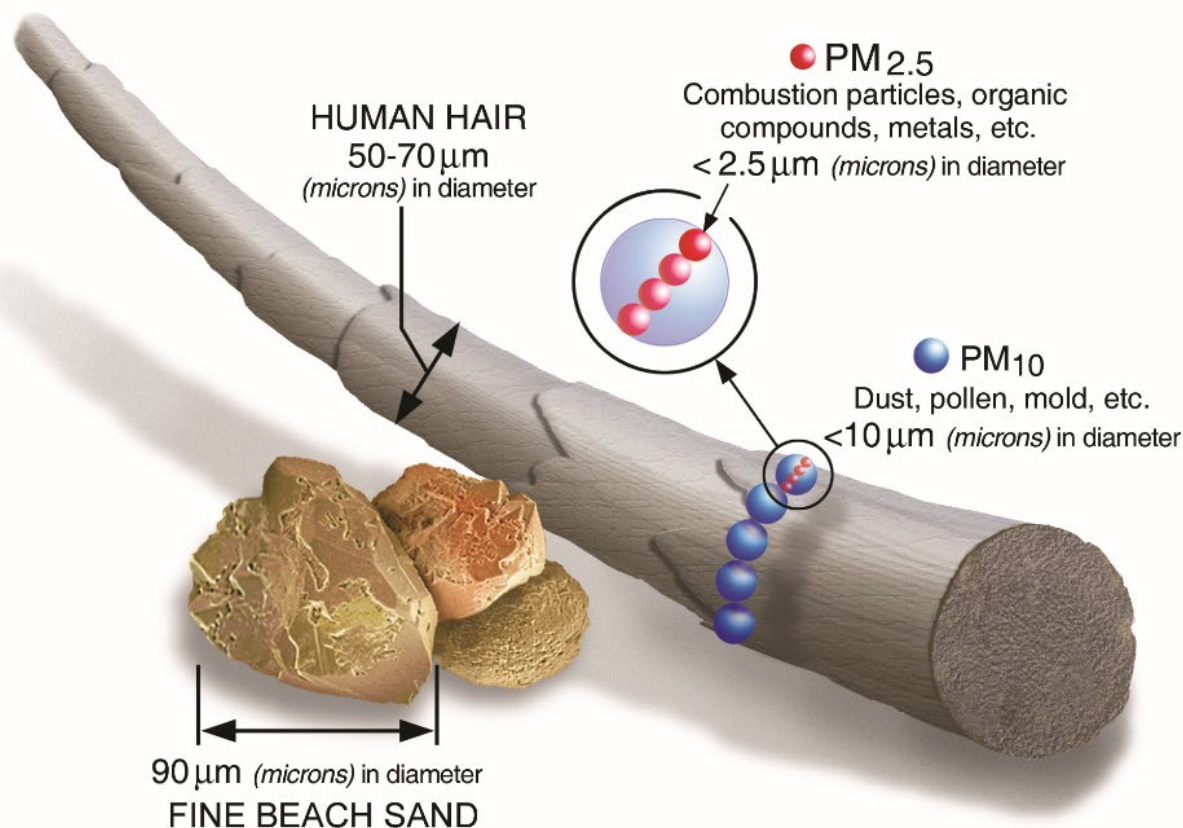
- Vehicles over 80% percent of NO_x
 - Trucks, other on-road vehicles
 - Heavy-duty off-road vehicles
- Industrial processes



Types of Pollution

Particulate Matter

- Can be emitted directly into the atmosphere
- Can form as secondary particulates in the atmosphere when precursors are react in the presence of sunlight
- Two Types of PM:
 - Direct (**example:** smoke)
 - Formed in atmosphere (**example:** NO_x from mobile source emissions)
- Two sizes regulated and controlled
 - PM_{2.5}
 - PM₁₀



Various Source Types Contribute to Emissions in Arvin/Lamont

Mobile On-Road Sources--Regulated by State and Federal Agencies

- Heavy duty truck traffic, main roadways (Highways: 184 and 223)

Mobile Off-Road Sources--Regulated by State and Federal Agencies

- Agricultural and construction equipment

Stationary Sources--Regulated by the District

- Oil and gas operations, waste treatment operations, gas stations, etc.

Area-wide Sources--Regulated by Various Agencies

- Dust on roads, fireplace smoke, cooking emissions

Pesticides--Regulated by California Department of Pesticides

PM2.5 and PM10

PM2.5:

- Particulate Matter 2.5 microns and smaller
- Emissions from burning and combustion
- More dangerous to health because smaller particles can travel deeper into the lungs

PM10:

- Particulate Matter 10 microns and smaller
- Typically from dust
- Less dangerous than PM2.5

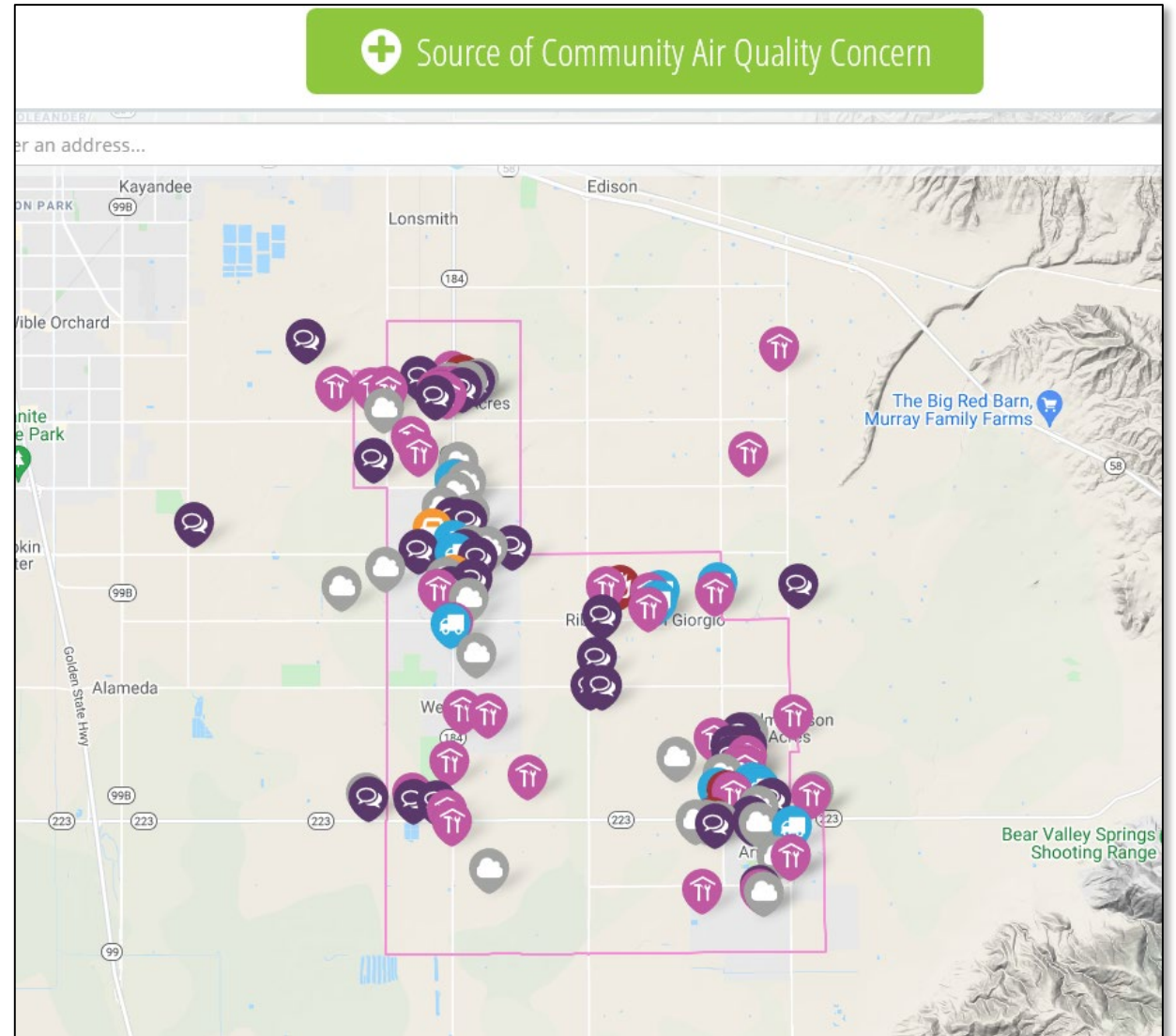
NOx in Arvin/Lamont from:

- Vehicles over 80% percent of NOx
 - Trucks, other on-road vehicles
 - Heavy-duty off-road vehicles
- Industrial processes



Arvin/Lamont Emissions Inventory

- “Emissions Inventory” is an accounting of the emissions from all sources of air pollution in the community
 - Upcoming CSC meetings will focus on reviewing emissions for Arvin/Lamont community
- Understanding emissions sources, in addition to community concerns, will drive CERP development



Controlling Air Pollution

- The District and state have worked to improve public health by reducing the main pollutants responsible for poor air quality: NO_x and PM_{2.5}
 - **NO_x**: primary pollutant that affects PM_{2.5} and ozone formation
 - **Direct PM_{2.5}**: especially toxic diesel PM from vehicles and other diesel combustion, a pollutant of primary health concern
- Rules, regulations, enforcement actions, outreach & education, and grants & incentives are all part of the toolkit to control and limit exposure to air pollution
- Monitoring and understanding air quality helps the District and community track progress and protect health

Rules and Regulations

- Businesses, industrial sources, residents, and municipalities must comply with air quality regulations
 - District has adopted and amended over 650 rules and regulations for stationary sources
 - CARB and EPA responsible for rules and regulations for mobile and area-wide sources
- Enforcement of air quality rules, including response to reported complaints, is a critical element of improving air quality and protecting public health

9,000

**INSPECTIONS AT
PERMITTED
FACILITIES
PER YEAR**

RESPOND TO

3,000

**COMPLAINTS
PER YEAR**

Opportunities for Residents

- Lawn and garden equipment incentives program
- Passenger vehicle incentives (repair, replace, rebate)
- Wood burning fireplace or stove replacement program



Opportunities to Reduce Emissions from Agriculture Operations

- Tractor replacement program
- Low-dust nut harvester replacement program
- Alternatives to open ag burning program
- Agricultural pump replacement program



Opportunities to Reduce Emissions from Businesses and Public Agencies

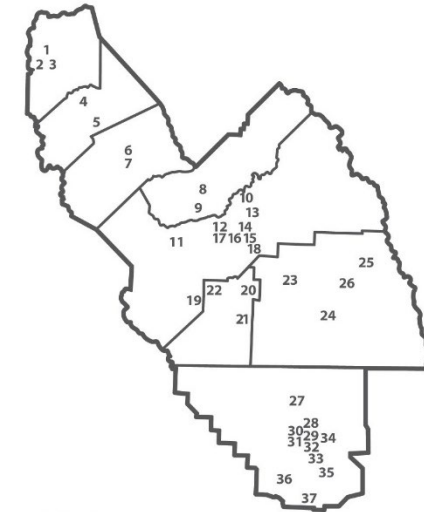
- Truck replacement program
- Commercial garden equipment replacement program
- Electric vehicle charging



valleyair.org/grants

District's Air Monitoring Network

- District invests significant resources and effort operating and maintaining extensive regional air monitoring network
 - Numerous sites throughout Valley measuring various pollutants, providing timely information to the public
 - Follow strict federal guidelines for regularly scheduled maintenance, calibrations, and certifications
 - Regular independent audits by CARB and EPA
 - Extensive training to staff who maintain, operate, and calibrate air monitoring equipment
 - Efforts ensure that collected data is high quality and defensible when compared against federal air quality standards



As of July 2020



MONITO
F Fine F
G Gasec
M Meter



Possibilities for Community Air Monitoring in Arvin/Lamont

MOBILE VAN



COMPACT MULTI-POLLUTANT SYSTEM



FULLY-LOADED TRAILER

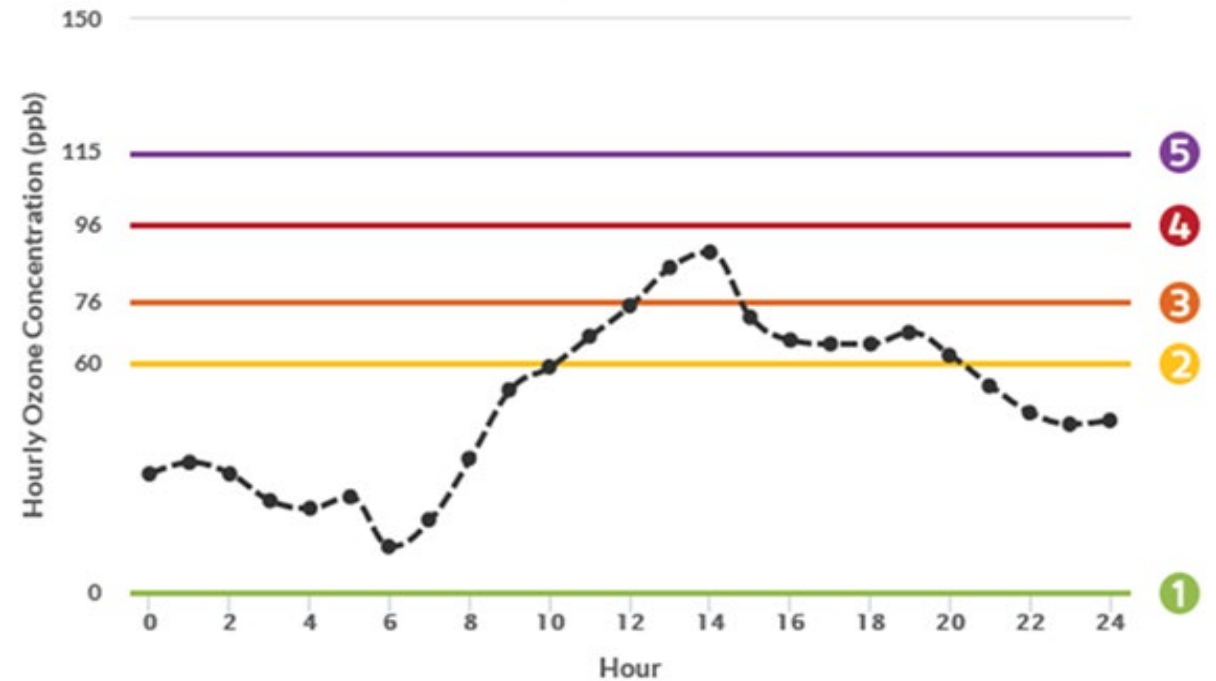


STAND-ALONE PM2.5



Air Quality Information Available to the Public

- Real-Time Air Advisory Network (RAAN) – access to real-time, hourly air-quality information for your area, 24 hours a day online or on a mobile device
 - Access to actual concentrations of ozone and PM2.5
 - Outdoor activity recommendations based on five different levels
- Access RAAN
 - www.myraan.com
 - Free “Valley Air” app for iPhone and Android



Need more information?

Contact Outreach and Communications

public.education@valleyair.org

AB617@valleyair.org

Fresno office (559) 230-6000

Modesto office (209) 557-6400

Bakersfield office (661) 392-5500

For information visit:

www.valleyair.org/community

www.valleyair.org

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social media



Use the Valley Air
App for the latest
air quality info

