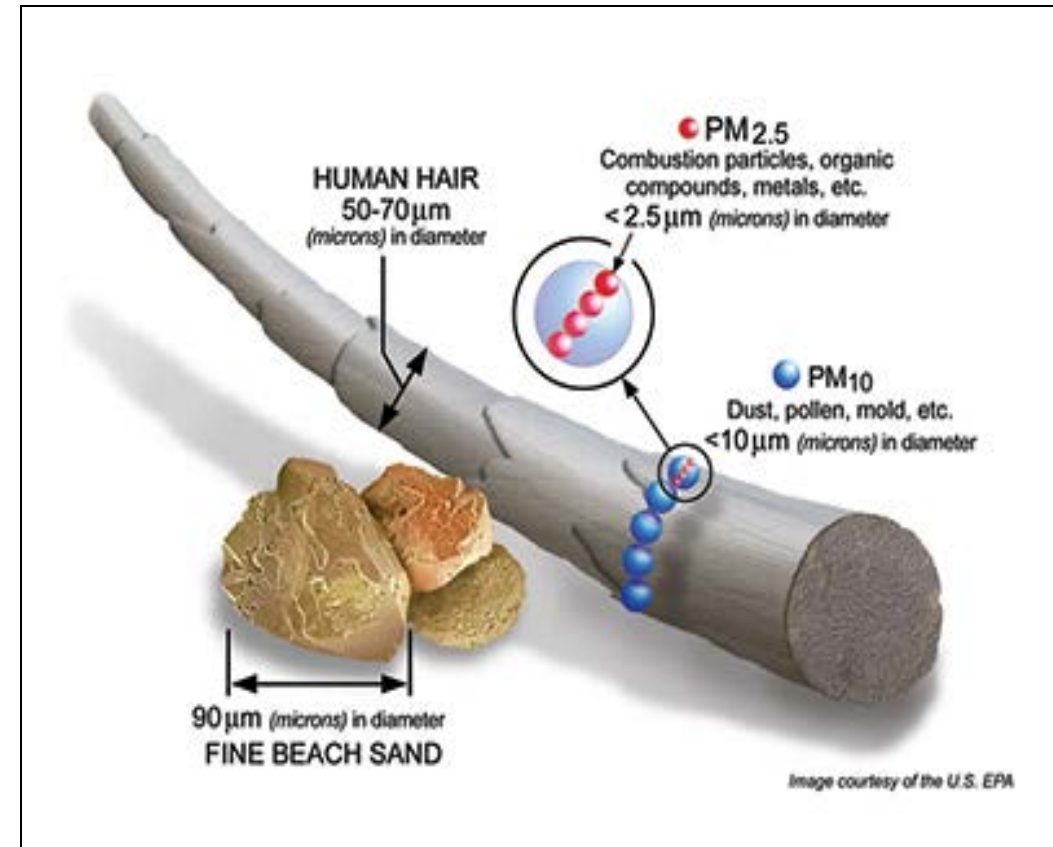


Discuss Next Steps for Attainment Planning Efforts for Federal PM2.5 and Ozone Standards

San Joaquin Valley Air Pollution Control District
Governing Board Meeting
February 18, 2021

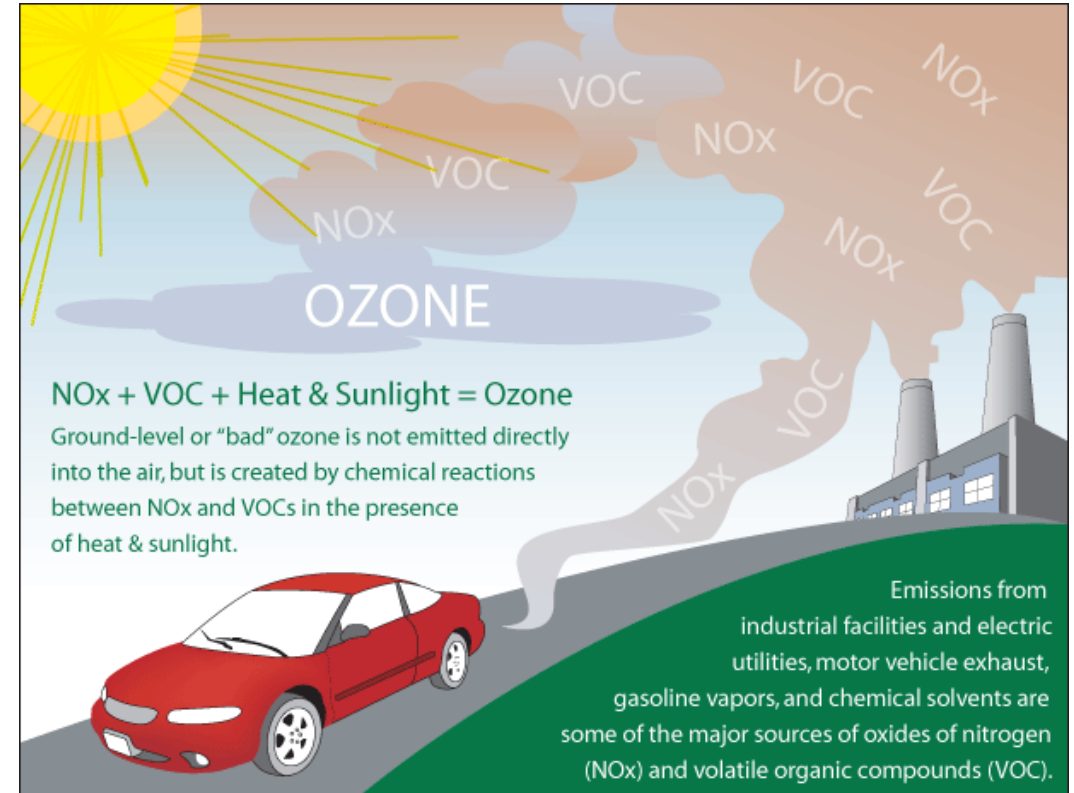
Air Quality and Health Effects: PM2.5

- Particles with a diameter of 2.5 microns and smaller
- A mixture of solid particles and liquid droplets in the air
- Emitted directly or formed indirectly through chemical reactions between gases
- Exposure associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days

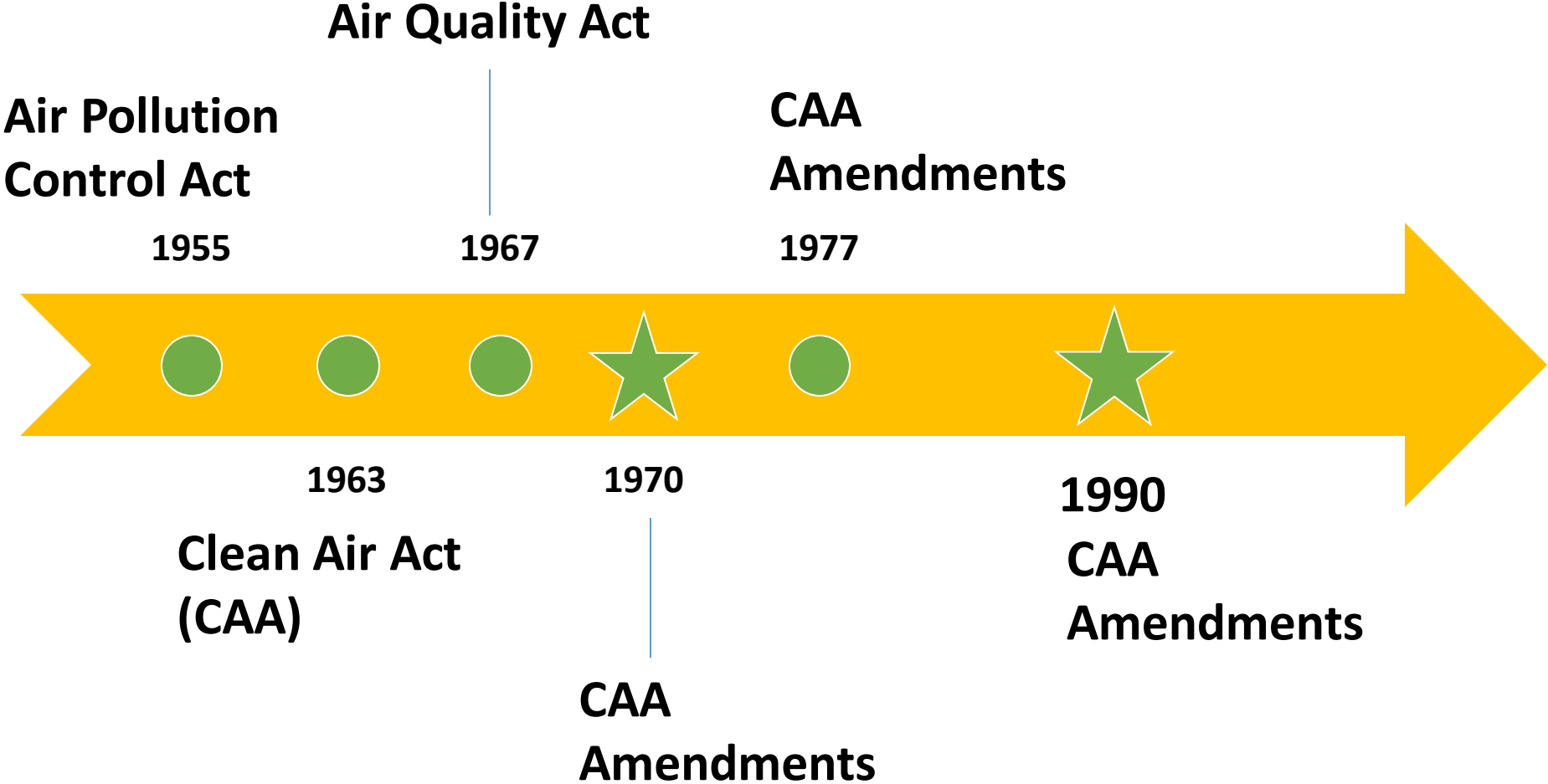


Air Quality and Health Effects: Ozone

- Ozone formed through reaction of NO_x, and VOCs in presence of heat/sunlight
- We experience high ozone in the summer, with peaks in the middle of the day
- Ozone most significantly impacts people with asthma, children, older adults, and outdoor workers
- Exposure to ozone causes coughing, throat irritation, pain, burning, or discomfort in the chest, chest tightness or shortness of breath

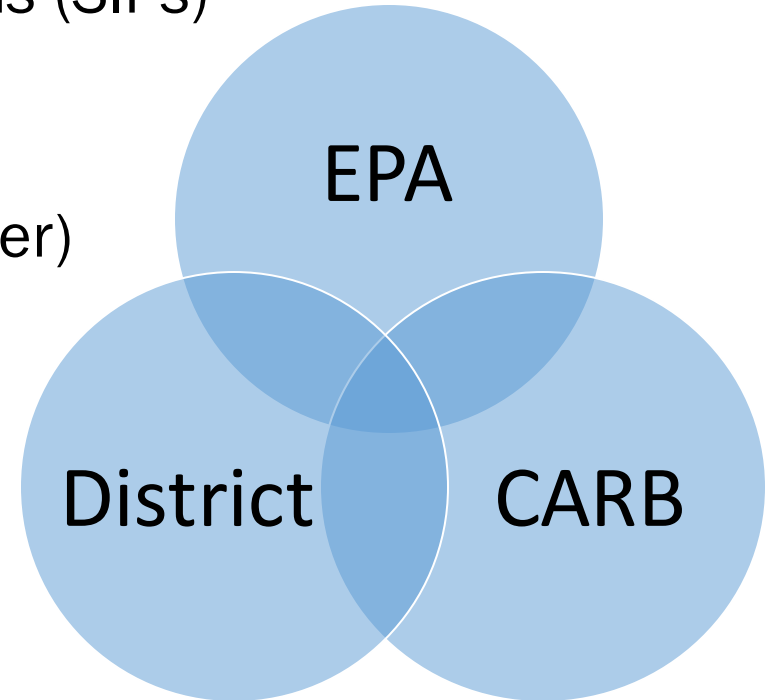


Federal Air Quality Legislation



Agency Roles

- Federal (EPA)
 - Sets standards and establishes implementation deadlines
 - Regulates mobile sources
 - Preempts state/local regulation of mobile sources
 - Reviews and approves State Implementation Plans (SIPs)
- State (CARB)
 - Oversight authority over local districts
 - Regulates mobile sources (must receive EPA waiver)
 - Regulates area/toxics sources
 - Approves local SIPs for submission to EPA
- Local
 - Regulates stationary and area sources
 - Permitting and enforcement
 - Prepares SIPs



National Ambient Air Quality Standards (NAAQS)

- Criteria Pollutants: ozone, particulate matter, carbon monoxide, sulfur dioxide, nitrogen dioxide, and lead
 - Implementation costs are NOT to be considered in setting the NAAQS
 - Health-based standards designed to provide margin of safety and protect sensitive populations
 - In Valley, key issues are ozone (summer), PM2.5 (winter)
- To be reevaluated every 5 years by CASAC (Clean Air Scientific Advisory Committee) based on latest health science
 - PM2.5 standards: 1997, 2006, and 2012
 - 8-hour ozone standards: 1997, 2008, 2015
- Formula-based deadlines in the Clean Air Act (CAA)
 - EPA designates attainment status
 - Classifications determine deadlines and stringency of SIP requirements

Federal Sanctions and FIP

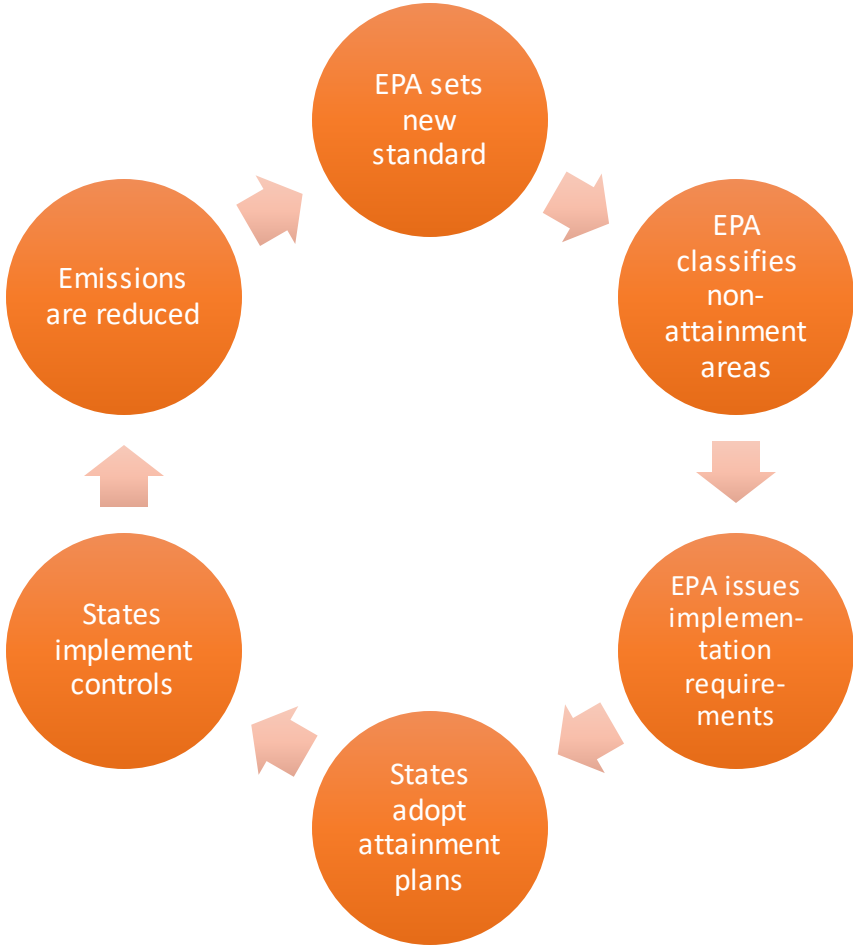
- Regions may face severe penalties if unable to meet CAA requirements
- What will trigger sanctions?
 - Inability to submit an EPA-approvable attainment plan
 - Inability to submit a revised plan in response to EPA disapproval
 - Failure to implement commitments in EPA-approved attainment plans
- Sanctions (18-month clock)
 - Significant barriers to new and expanding businesses (2:1 offsets)
 - Loss of federal highway funds (billions of dollars loss to the Valley)
- Loss of local control
 - Federal Implementation Plan (24-month clock)
 - EPA to adopt/implement measures to address deficiency
 - EPA cannot require District to adopt specific regulations or enforce EPA adopted regulations
 - Draconian measures suggested have included no-drive days, no-farm days, no-construction days

State Implementation Plans (SIPs)

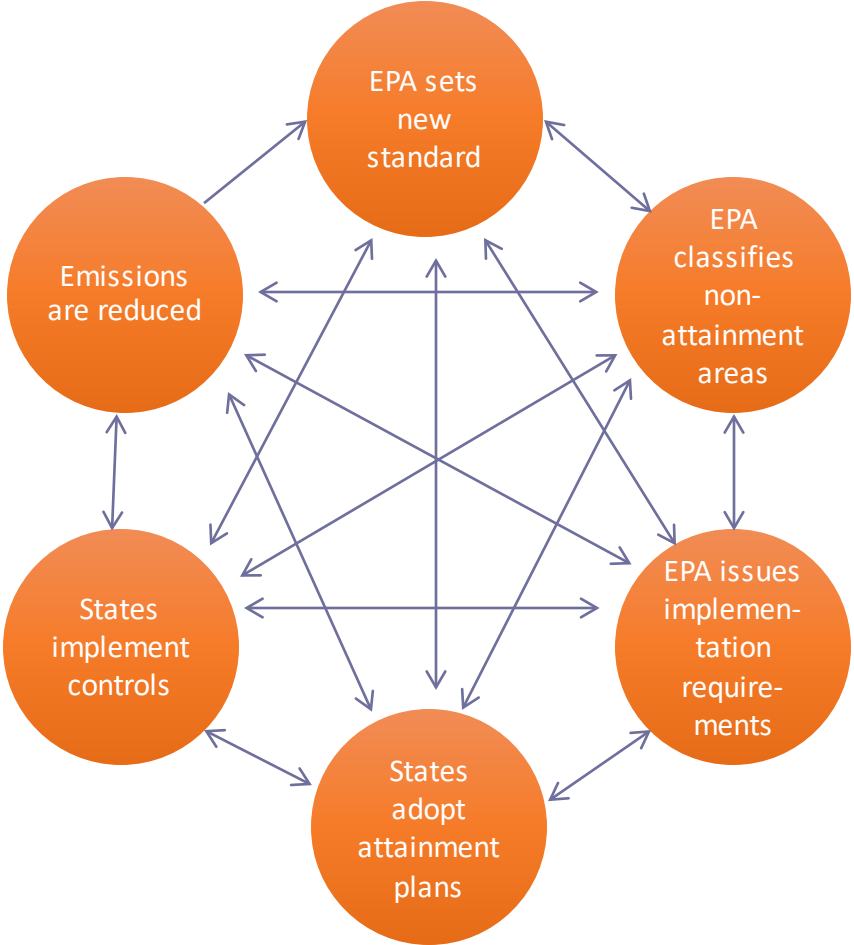
- SIP requirements established by implementation rules and 40 CFR interpreting the CAA
- Components of a SIP
 - Analysis of ambient air quality data
 - Emissions inventory
 - Model future air quality, determine emissions reductions needed for attainment
 - Control measure analysis and commitments
 - “Black box” of yet-to-be-identified measures allowed for ozone, but not PM2.5
 - Emissions reductions milestones
 - Transportation conformity
 - Contingency measures (*Bahr* case)
- EPA to act on SIPs within 18 months
 - Approval: SIP becomes federally enforceable

The Air Quality Standard Cycle

As Intended

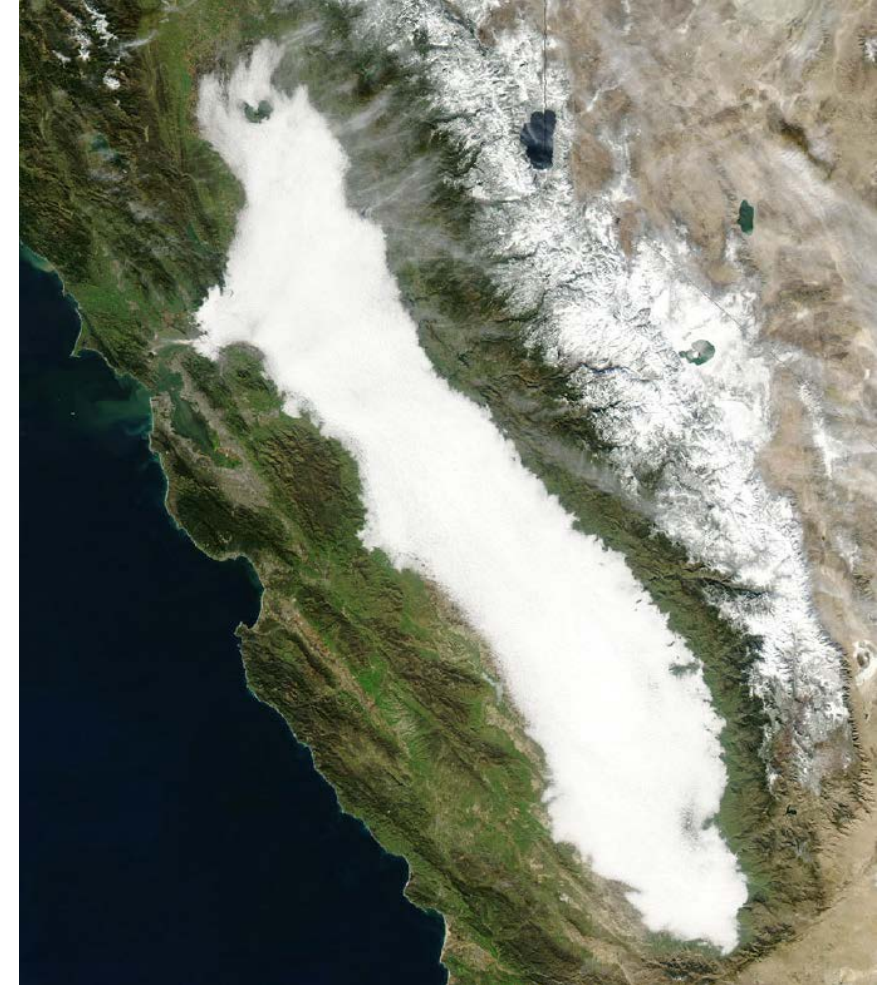


In Reality



Valley's Air Quality Challenges

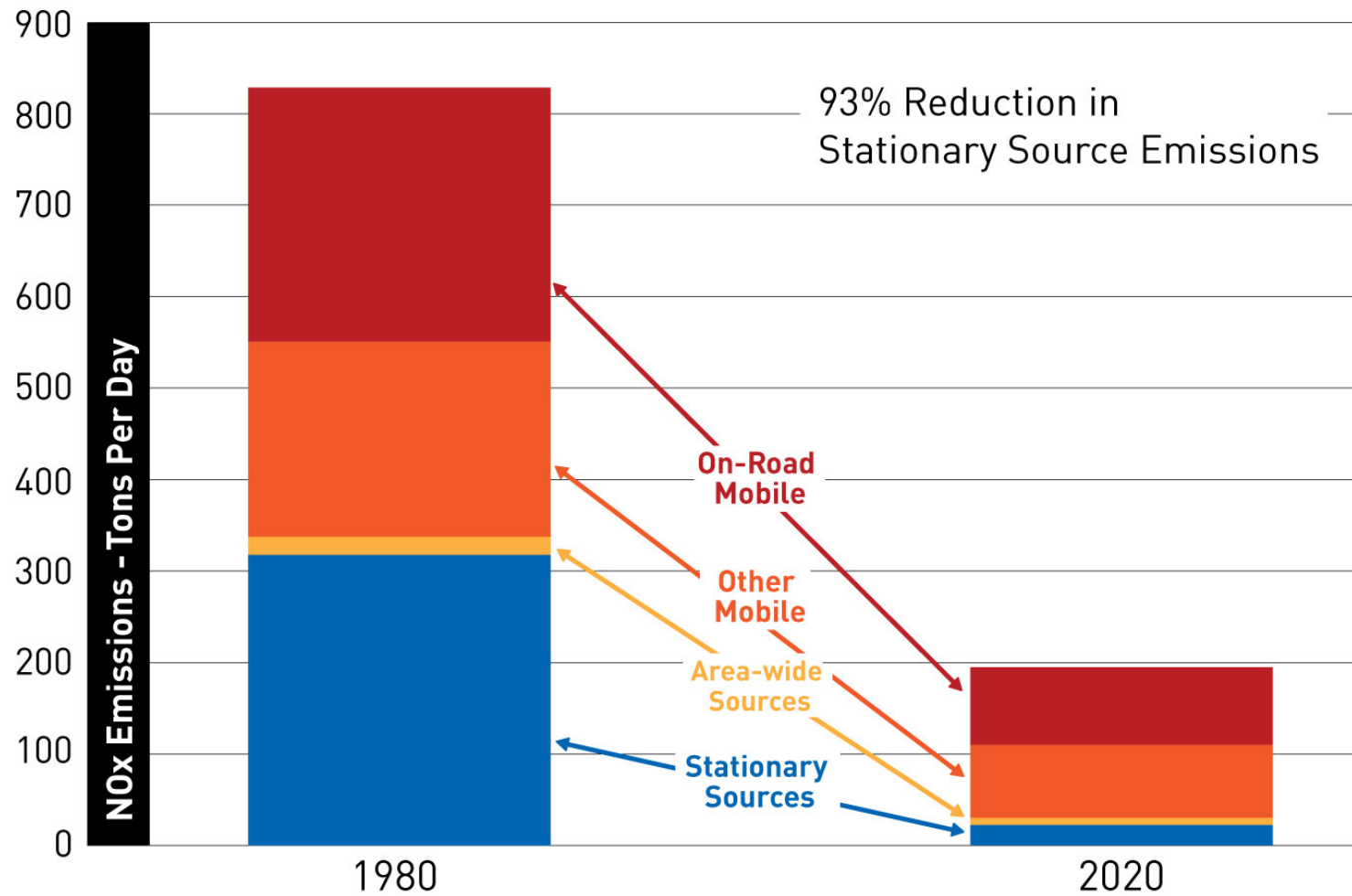
- Valley's challenges in meeting federal air quality standards unmatched due to unique combination of topography and meteorology
- Valley faced with variety of challenges including role as major goods movement corridor, high population growth, pollution transport from other areas, wildfires
- 20 of 30 most disadvantaged California communities located within the San Joaquin Valley



Ongoing Valley Clean Air Efforts

- District Governing Board has adopted numerous attainment plans and air quality control strategies to address federal standards
 - Adopted nearly 650 stringent rules and regulations
 - Stationary source emissions reduced by over 90%
- CARB has adopted numerous mobile source emissions control regulations and strategies
- District/CARB combined efforts represent nation's toughest emissions control program
- Strong incentive programs (over \$3.5 billion in public/private investment)
- Through significant clean air investments, Valley continues to make major improvements with respect to air quality

Major Reductions in Pollution

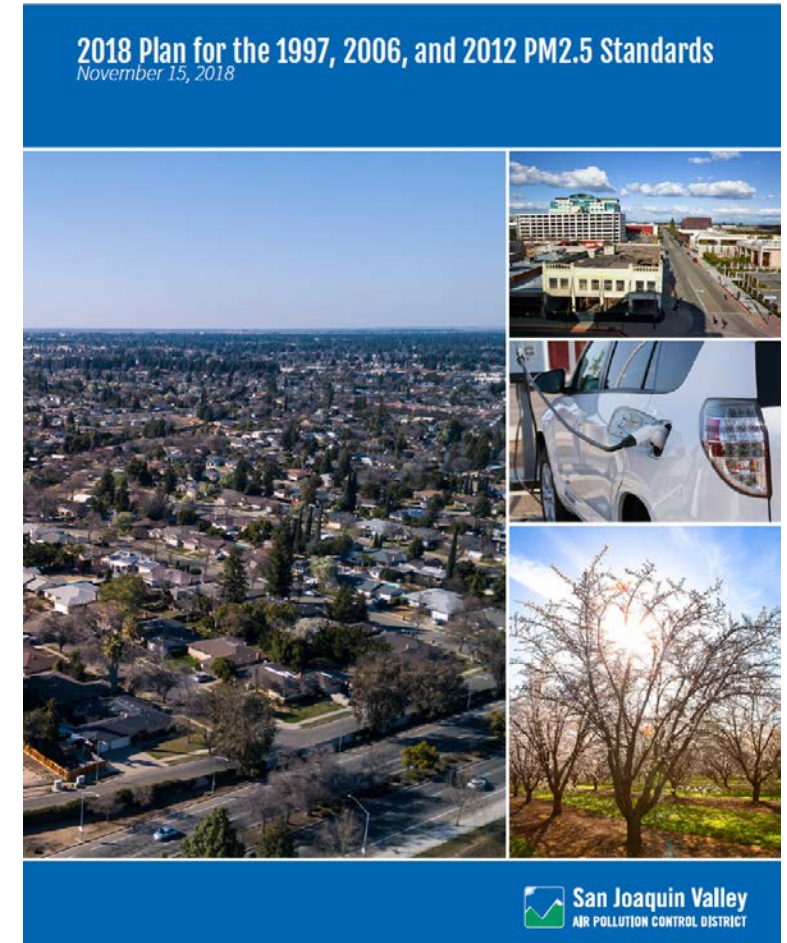


Building Upon Previous Attainment Plans

- Numerous attainment plans have been developed and implemented by the District over the last few decades to significantly improve Valley air quality, including:
 - *2003 PM₁₀ Plan*
 - *2007 Ozone Plan for the 1997 8-hour Ozone Standard*
 - *2008 PM_{2.5} Plan for the 1997 PM_{2.5} Standard*
 - *2012 PM_{2.5} Plan for the 2006 PM_{2.5} Standard*
 - *2013 Plan for the Revoked 1-hour Ozone Standard*
 - *2016 Ozone Plan for the 2008 8-hour Ozone Standard*
 - *2016 Moderate Area Plan for the 2012 PM_{2.5} Standard*
 - *2018 Plan for the 1997, 2006, and 2012 PM_{2.5} Standards*

2018 PM2.5 Plan

- 2018 PM2.5 Plan adopted in November 2018 to address latest PM2.5 standards:
 - Regulatory measures
 - Incentive-based measures
 - State mobile source strategy
 - Targeted “hot-spot” strategy
 - Public outreach and education
 - Technology advancement and demonstration efforts
 - Call for action by state and federal governments to do their part in reducing emissions in Valley
- Developed through extensive public process
 - CARB and District actively implementing Plan commitments for further emissions reductions



2018 PM2.5 Plan: Adopted District Measures

- Your Board has taken recent action on the following measures to address *Plan* commitments and pursue additional measures:
 - Launched new incentive programs, including alternatives to ag open burning, low-dust harvesters, commercial zero-emission lawn/garden
 - Implemented wide-ranging incentive programs, such as replacement of trucks, ag equipment, wood-burning devices
 - Adopted enhanced residential woodsmoke reduction strategy
 - Adopted amendments to Rule 4311 (Flares)
 - Adopted amendments to Rules 4306/4320 (Boilers, Steam Generators, and Process Heaters)
 - Adopted underfired charbroiler emission reduction strategy
 - Adopted additional agricultural burning prohibitions

2018 PM2.5 Plan: Upcoming District Measures

- Additionally, District staff anticipate action on the following *2018 PM2.5 Plan* measures in 2021:
 - Rule 4702 (Internal Combustion Engines)
 - Rule 4354 (Glass Melting Furnaces)
 - Rule 4352 (Solid Fuel-Fired Boilers, Steam Generators, and Process Heaters)
 - Updates on emission reductions achieved through *Burn Cleaner* and *Ag Pump Replacement* incentive programs
 - Continued implementation of key SIP-creditable incentive programs, including heavy-duty vehicle/equipment replacement, wood-burning device changeouts, low-dust harvesters, alternatives to ag open burning

2018 PM2.5 Plan: Update on CARB Regulatory Measures

- Given significant need for additional emissions reductions from mobile sources in 2024/2025 timeframe, District continues to advocate for fair-share emissions reductions from state and federal governments and funding
- CARB continues to make progress in implementing its State SIP Strategy to reduce emissions from mobile sources:
 - June 2020: Advanced Clean Trucks rule requiring phase-in of zero-emission trucks
 - August 2020: Omnibus rule establishing new low-NOx requirements for heavy-duty trucks and additional requirements
- Additional work by CARB to implement significant regulatory and incentive-based measure commitments are ongoing in 2021, including statewide heavy-duty truck inspection and maintenance program
- Critical that State Mobile Source Strategy address Valley's near-term public health and attainment needs as new longer-term state goals are established

Status of EPA Review of *2018 PM2.5 Plan*

- November 2018: Your Board adopts *2018 PM2.5 Plan*
- January 2019: CARB approves *2018 PM2.5 Plan*
- May 2019: CARB submits *2018 PM2.5 Plan* to EPA for review
- June 2020: EPA approves SIP for 2006 PM2.5 standard
- June 2020 to Current: EPA in process of reviewing portions of *2018 PM2.5 Plan* concerning 1997 and 2012 PM2.5 standards
- District/CARB providing support in EPA's ongoing review

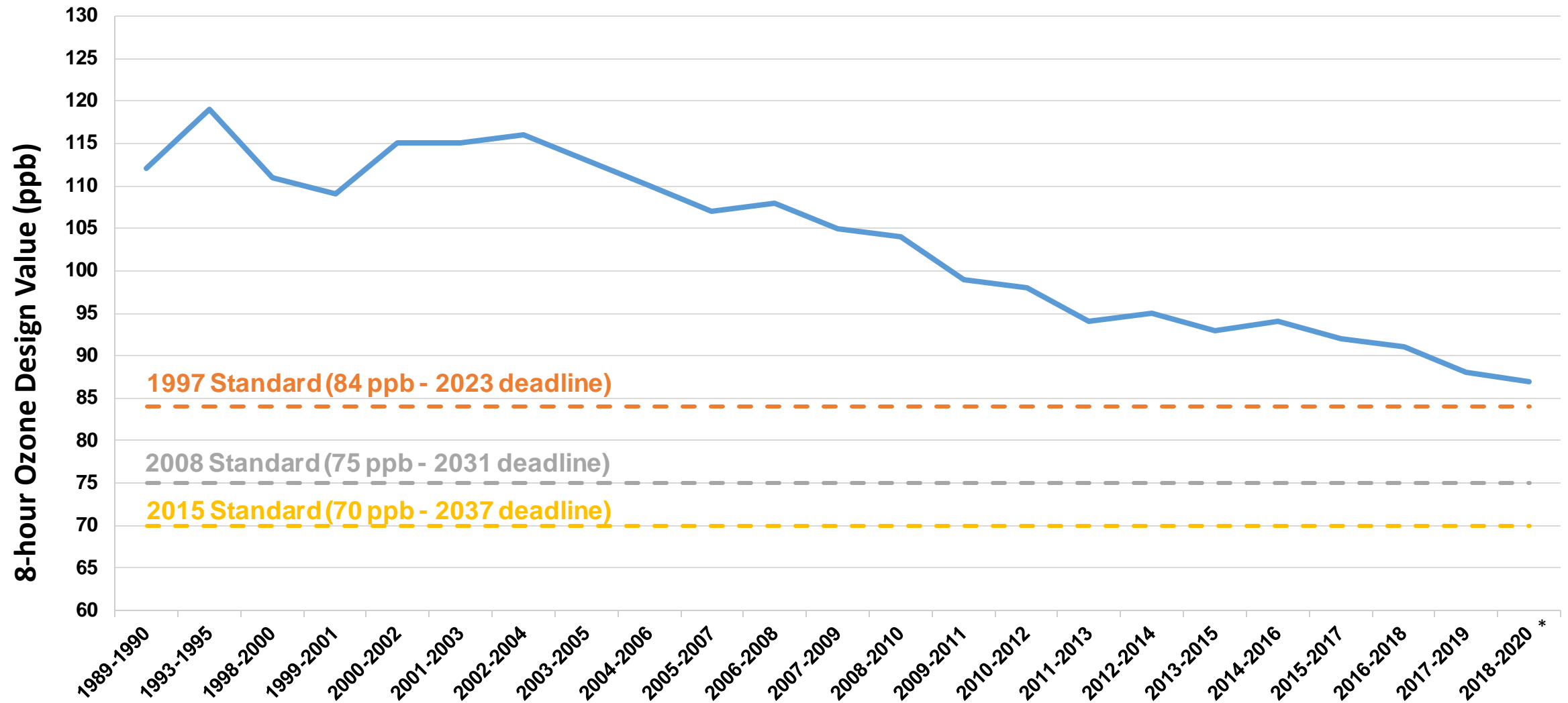
Valley Efforts to Improve Ozone Air Quality

- Ozone air quality challenge primarily during summer season
 - Challenge primarily due to combustion-related NOx emissions trapped on Valley floor due to geography and summer high pressure weather patterns
- Your Board has shown commitment in reducing ozone concentrations through approving multiple ozone plans
 - *2013 Ozone Plan* (Valley now meets the 1-hour ozone standard)
 - *2007 Ozone Plan* (included “black box” of unidentified measures, Valley on track to meeting 2023 deadline)
 - *2016 Ozone Plan* (Valley on track to meeting 2031 deadline)
- San Joaquin Valley first and only region in nation classified as “Extreme” nonattainment to reach attainment (1-hour ozone)

Ongoing Valley Ozone Improvements

- Significant investments to reduce air pollution have led to continued improving ozone levels across the Valley
- Compared to past years, Valley has achieved significant reduction in days exceeding the federal ozone standards (excluding 2020 wildfire impacts):
 - Over 90% reduction in days over 84 ppb
 - Over 70% reduction in days over 75 ppb
 - Over 35% reduction in days over 70 ppb
- Over 90% reduction in population exposure to peak ozone values
- In 2020 Valley experienced lowest federal 8-hour ozone “design value” on record (excluding 2020 wildfire impacts)
 - Demonstrates 91% progress towards meeting 84 ppb standard (2023 deadline)

Valley 8-hour Ozone Design Value Trend



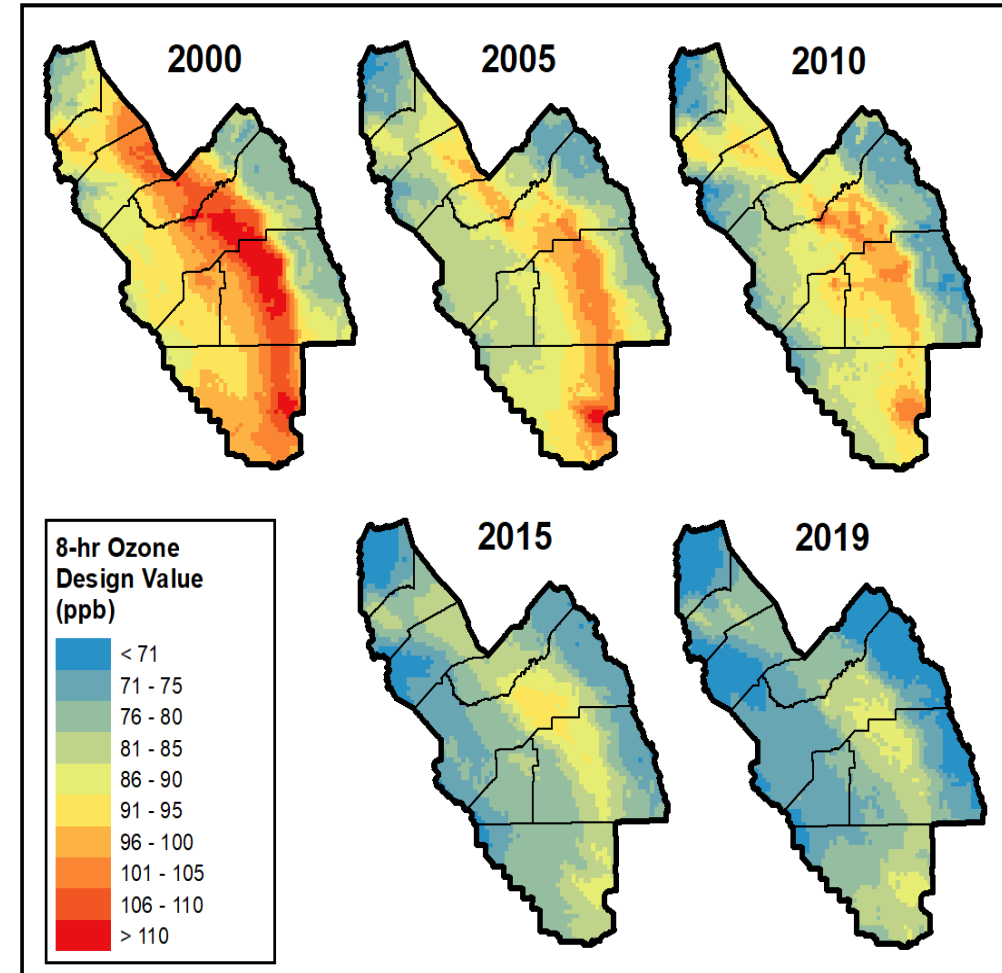
*Year 2020 excludes data impacted by wildfire emissions

Valley on Track to Meet 84 ppb Ozone Standard

- In 2019, CARB took action to approve progress report on Valley's implementation of *2007 Ozone Plan*
- CARB report affirms tremendous progress made in Valley, including findings that:
 - Valley is on track to reach attainment by 2023
 - “Black box” emission reductions are now identified and no further measures necessary to reach attainment
- CARB action submitted to EPA as a revision to the Valley's attainment plan

New Plan Required for 2015 Ozone Standard

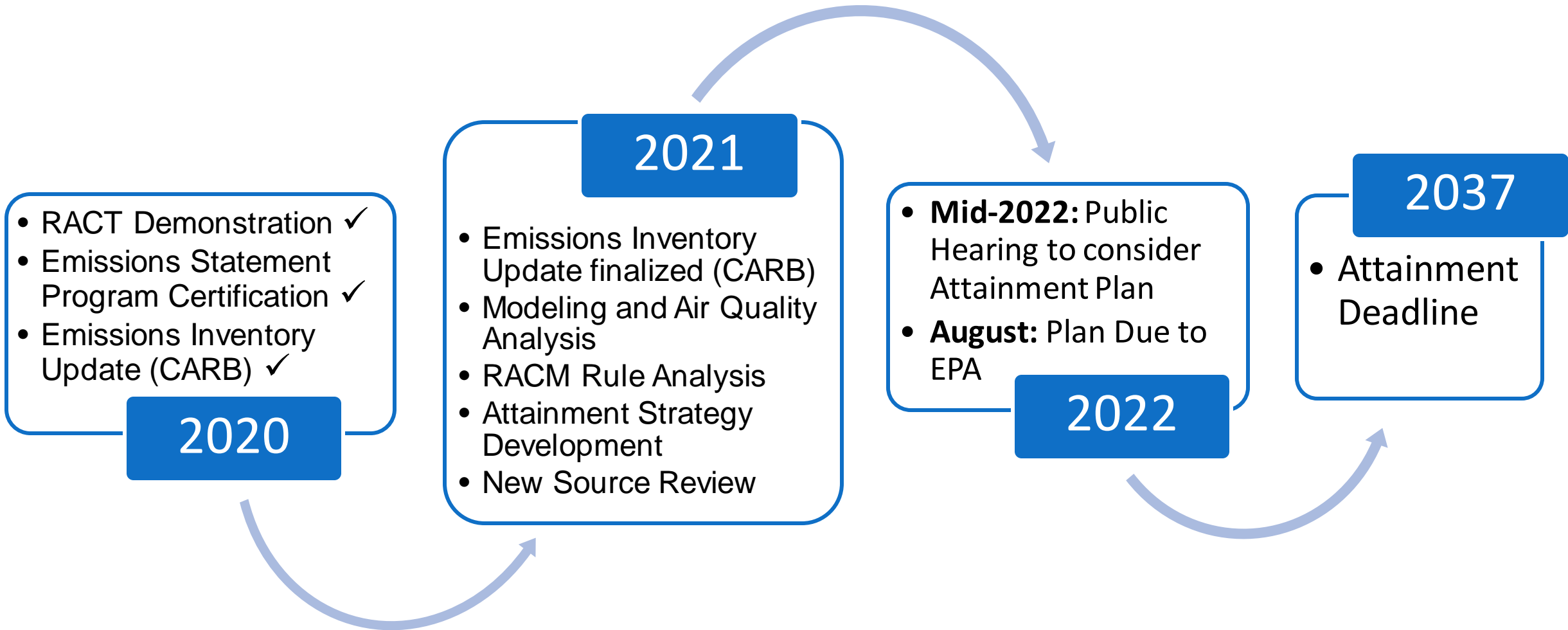
- EPA required to review standards for ozone, PM2.5, and other criteria pollutants every 5 years through extensive process
- October 2015 – EPA lowered 8-hr standard from 75 ppb to 70 ppb
- Valley designated as “Extreme” nonattainment by EPA in 2018, now required to adopt new Ozone Plan by 2022 with attainment deadline of 2037 (*2022 Ozone Plan*)



2022 Ozone Plan

- Despite significant progress, substantial further reductions in NO_x emissions needed to attain new 2015 federal 8-hour ozone standard
- Over 85% of remaining NO_x emissions in Valley come from mobile sources under state and federal jurisdiction
 - Important that continued efforts to reduce emissions from passenger vehicles, heavy duty trucks, locomotives, and other mobile sources be pursued
- *2022 Ozone Plan* will build on existing air quality strategies, and comprehensive NO_x emissions reduction strategies in existing adopted ozone and PM_{2.5} plans will greatly contribute to meeting new ozone standard

Planning Requirements for *2022 Ozone Plan*



Progress in Developing *2022 Ozone Plan*

- District has begun development of *2022 Ozone Plan*, and in June 2020 your Board took action on initial federal requirements:
 - Reasonably Available Control Technology (RACT) Demonstration
 - Emissions Statement Program Certification
- In coming year, District will work with CARB and EPA on remaining plan elements:
 - Updating stationary, mobile, and area source emissions inventory for Valley
 - Conducting air quality modeling and additional technical analysis to establish Valley's carrying capacity and emissions reductions targets needed to attain ozone standard
 - Evaluating District and CARB measures to ensure that Reasonably Available Control Measures (RACM) are being implemented
 - Evaluating additional measures as technologically and economically feasible to reduce NO_x and VOC emissions to expedite attainment of the federal ozone standard
 - Evaluating potential contingency measures
 - Addressing other federal requirements

Guiding Principles for *2022 Ozone Plan*

- Consistent with recent plans, District utilizing the following Guiding Principles for developing *2022 Ozone Plan*:
 1. With public health as our number one priority, provide for expeditious attainment of federal health-based air quality standards across San Joaquin Valley communities
 2. Use sound science as plan's foundation, including in efforts to assess public health impacts, predict future air quality, determine extent of emissions reductions needed, and evaluate availability, effectiveness, and feasibility of emission control measures
 3. Consider Valley's unique challenges and develop cost-effective strategies that provide adequate operational flexibility and minimize costs to Valley businesses

Guiding Principles for *2022 Ozone Plan* (cont'd)

4. Consider all opportunities for timely, innovative, and cost-effective emission reductions – consider traditional regulations, but look beyond traditional regulations to incorporate clean air incentives, policy initiatives, guidance documents, and outreach
5. Given over 85% of Valley's NO_x emissions originate from mobile sources, provide a balanced approach to reducing mobile and stationary source emissions
6. Devise and implement reasonable strategies that involve the public in reducing emissions
7. Prioritize strategies that contribute to attainment of multiple air quality standards
8. Recognize that there is no “silver bullet” for attainment: every sector—from public through all levels of government, businesses, and industry—must continue to reduce emissions

Guiding Principles for *2022 Ozone Plan* (cont'd)

9. Pursue adequate resources and regulatory assistance from state and federal agencies to reduce emissions from sources under their jurisdiction
10. Pursue zero and near-zero emissions technology demonstration efforts to assist the Valley meet health-based air quality standards as expeditiously as possible
11. Evaluate and address as feasible air pollutant transport impacting Valley
12. Provide ample opportunity for public participation and feedback in design and implementation of plans - utilize planning process to also inform participants of Valley's air quality challenges and successes as well as actions that can be taken to improve Valley air quality

Next Steps for District Attainment Planning

- Robust public engagement critical for development of new ozone plan
 - Upon completion of analysis of existing regulatory programs and statewide mobile source measures, District and CARB will recommend additional control measures as necessary to achieve expeditious attainment of new ozone standard
 - District will establish stakeholder engagement opportunities to discuss key areas of interest, and solicit input from affected sources, community-based organizations, residents, and other Valley stakeholders
 - District staff to provide updates at public workshops and meetings, including meetings of the Governing Board, CAC, and EJAG
- Expected mid-2022 Public Hearing for consideration of *2022 Ozone Plan*
- Continual updates to be provided to your Board regarding coordination with CARB and EPA for approval of remaining portions of *2018 PM2.5 Plan*