PM2.5 Mandates and Deadlines Under Clean Air Act

Central Valley Summit on
Alternatives to Open Burning of Agricultural Waste
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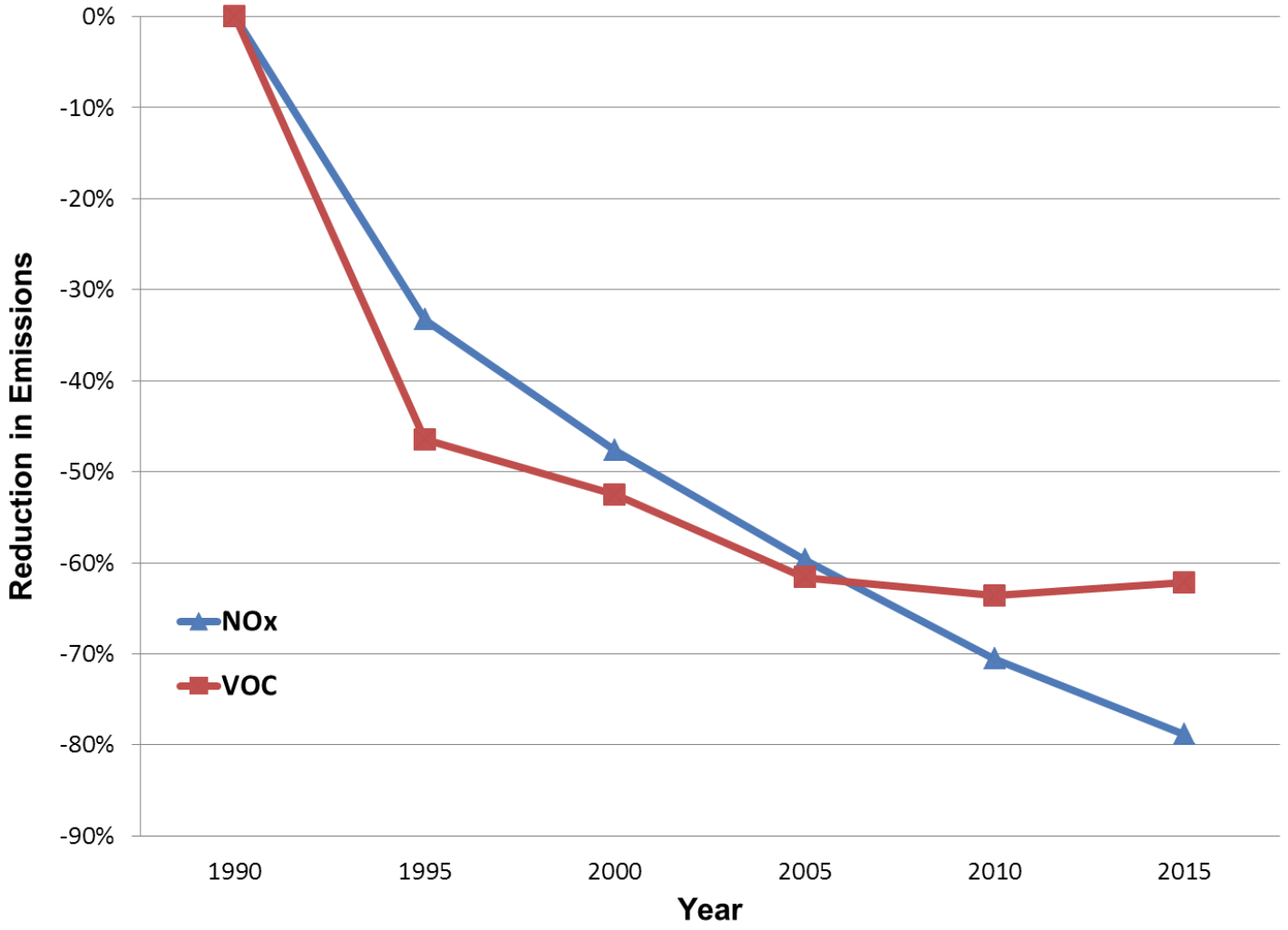
Valley's Challenge

- Valley's challenges in meeting federal ambient air quality standards unmatched by any other region in the nation
- Valley's ozone and PM2.5 precursor emissions at historically low levels through decades of implementing most stringent stationary and mobile regulatory control program in nation
- Meeting latest standards requires enormous additional reductions in emissions in relatively short timeframes
  - 2024 for the 2006 PM2.5 standard (24-hour 35 µg/m^3)
  - 2025 for the 2012 PM2.5 standard (annual 12 µg/m^3)
- Federal Clean Air Act does not provide for a "black box" for PM2.5 like it does for ozone
- Attaining the standards requires significant increase in funding for incentive-based measures

District's Strategy has Significantly Improved Air Quality in the Valley

- District has adopted numerous attainment plans
  - Toughest air regulations in the nation
  - Adopted over 600 stringent rules and regulations
  - Groundbreaking rules serve as model for others
  - Over 80% reduction in stationary source emissions
- $40 billion spent by businesses on clean air
- Strong incentive programs ($1.6 billion in public and private investment reducing 130,000 tons of emissions)
- Public education and participation
  - Build public support for tough measures adopted
  - Urge air friendly behavior by public
- Through these combined efforts, Valley's air quality better than any other time on record

Decrease in Stationary Sources Emissions



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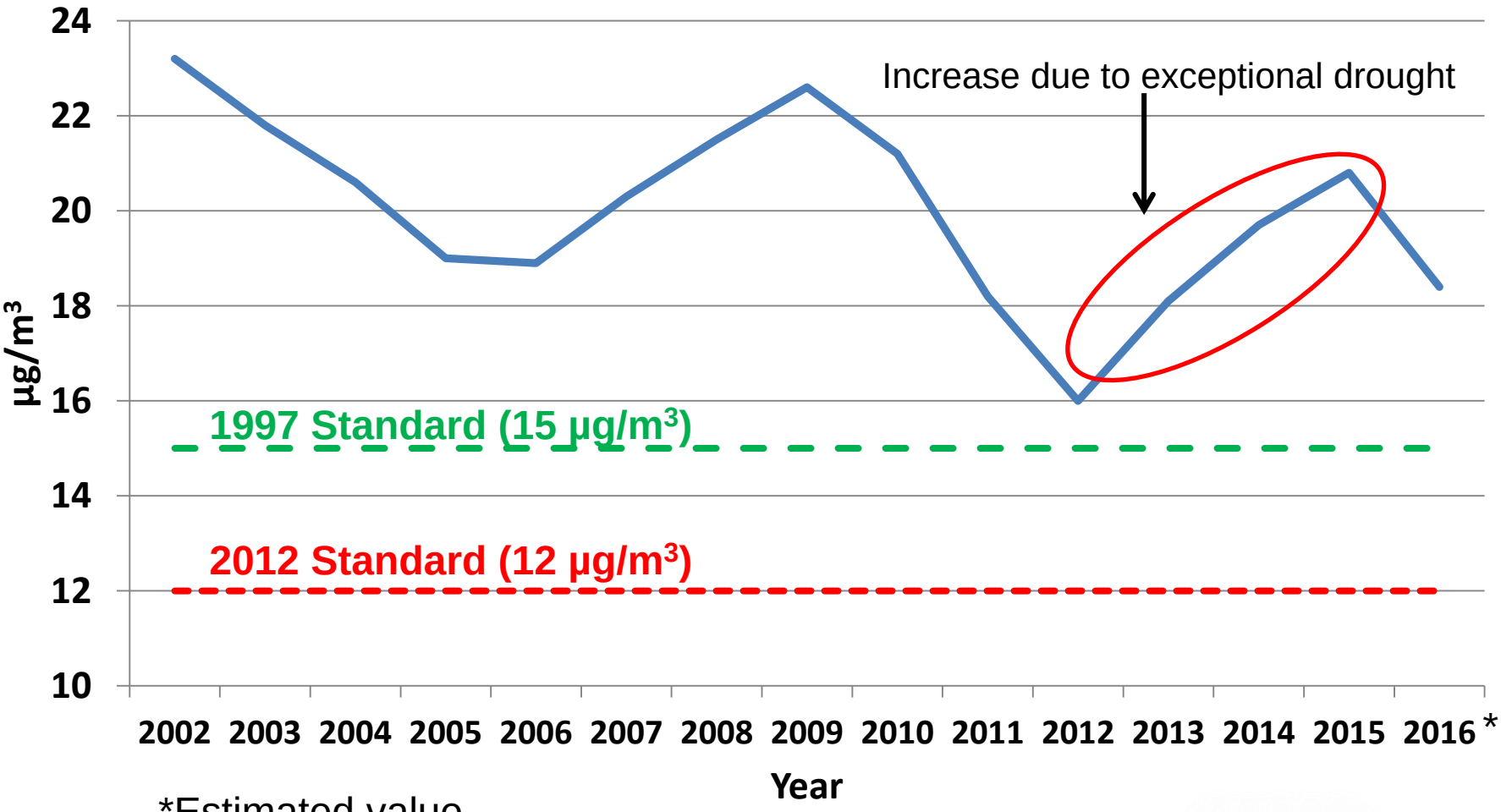
Trend in Valley's Annual PM2.5 Design Value



*Estimated value

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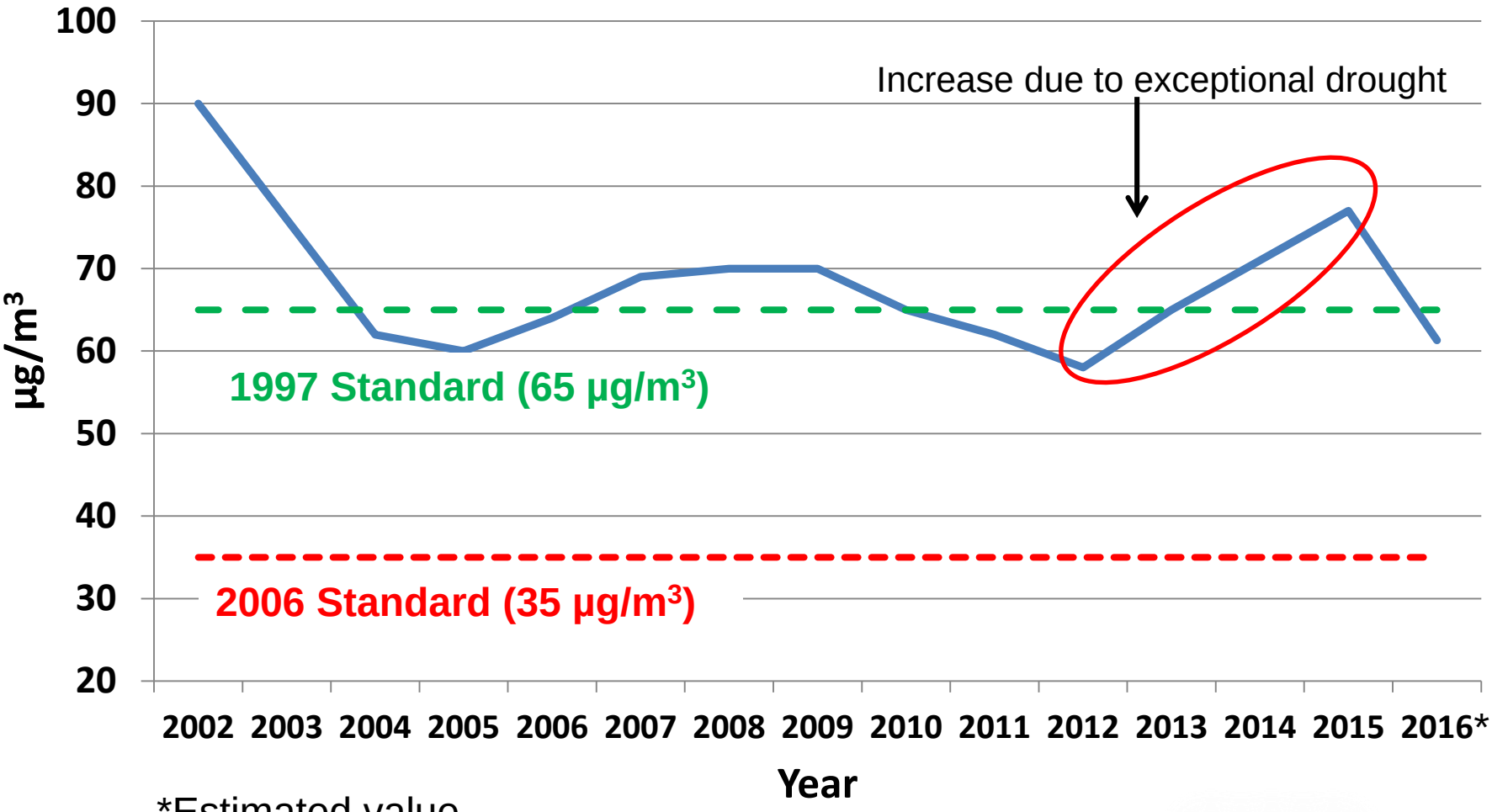
Trend in Valley's 24-hour PM2.5 Design Value



*Estimated value

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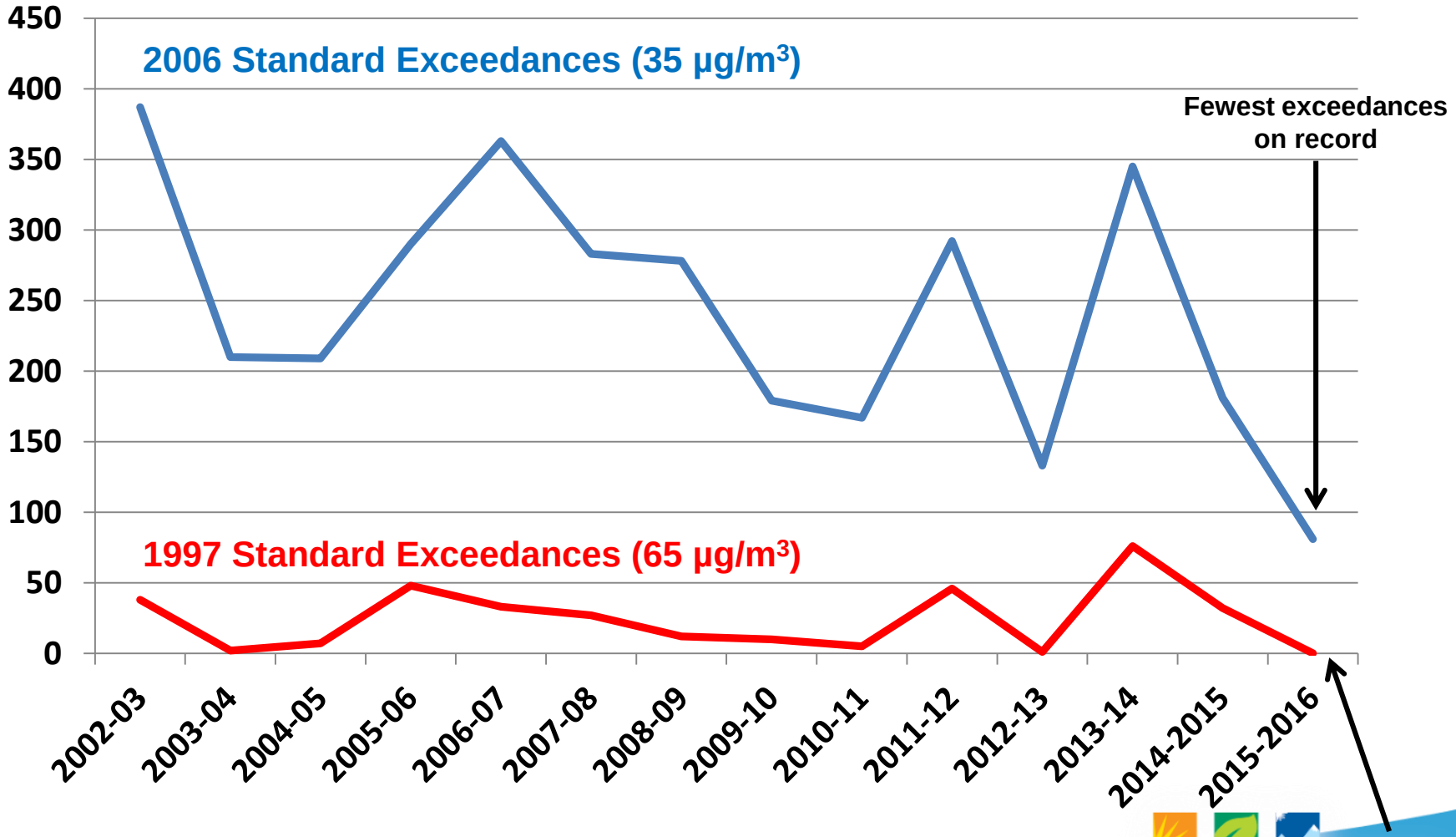
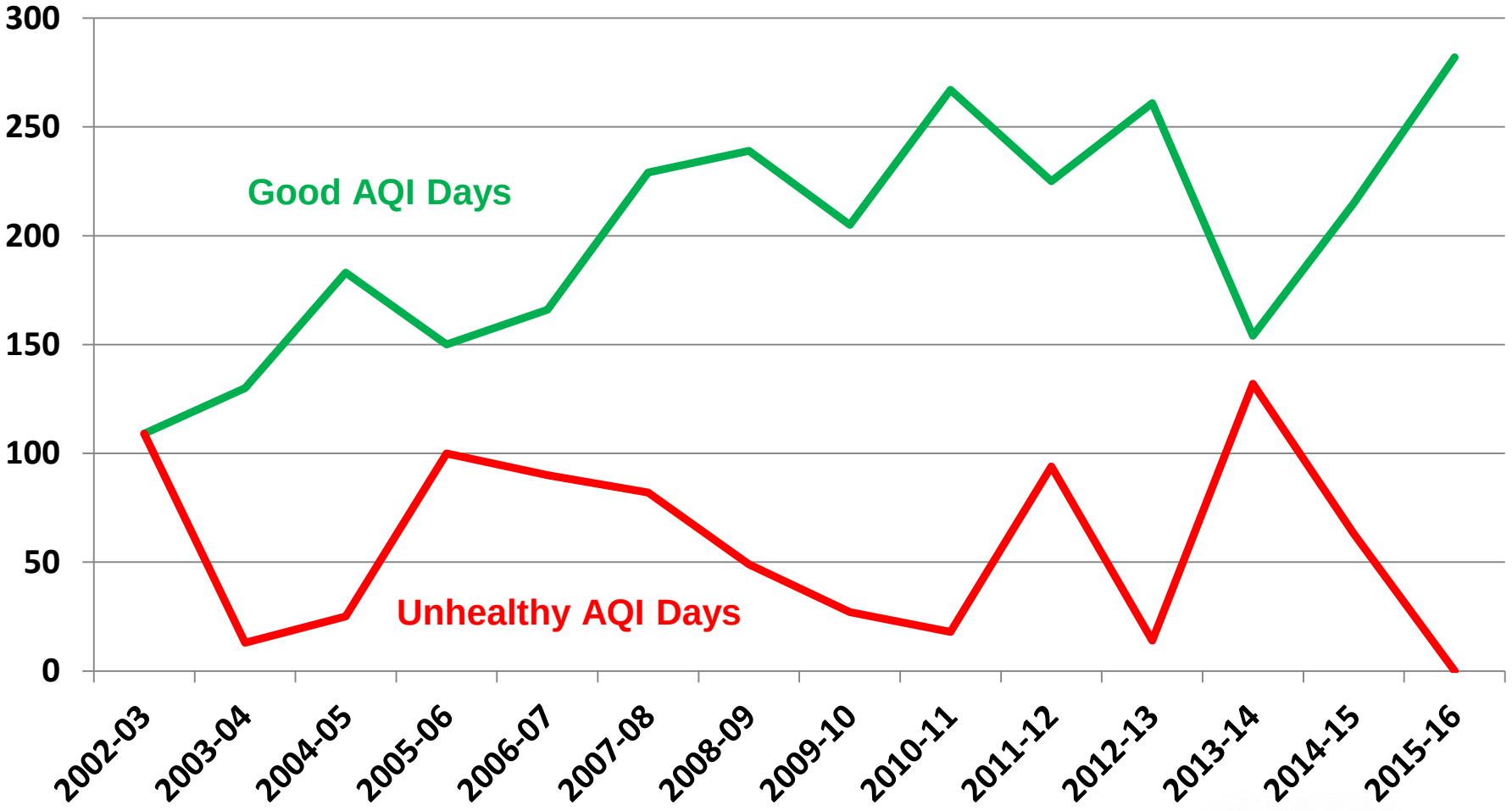
Trend in County-Days Exceeding 24-hour PM2.5 Standards per Winter Season (Nov-Feb)



Trend in PM2.5 Good and Unhealthy AQI County-Days per Winter Season (Nov-Feb)



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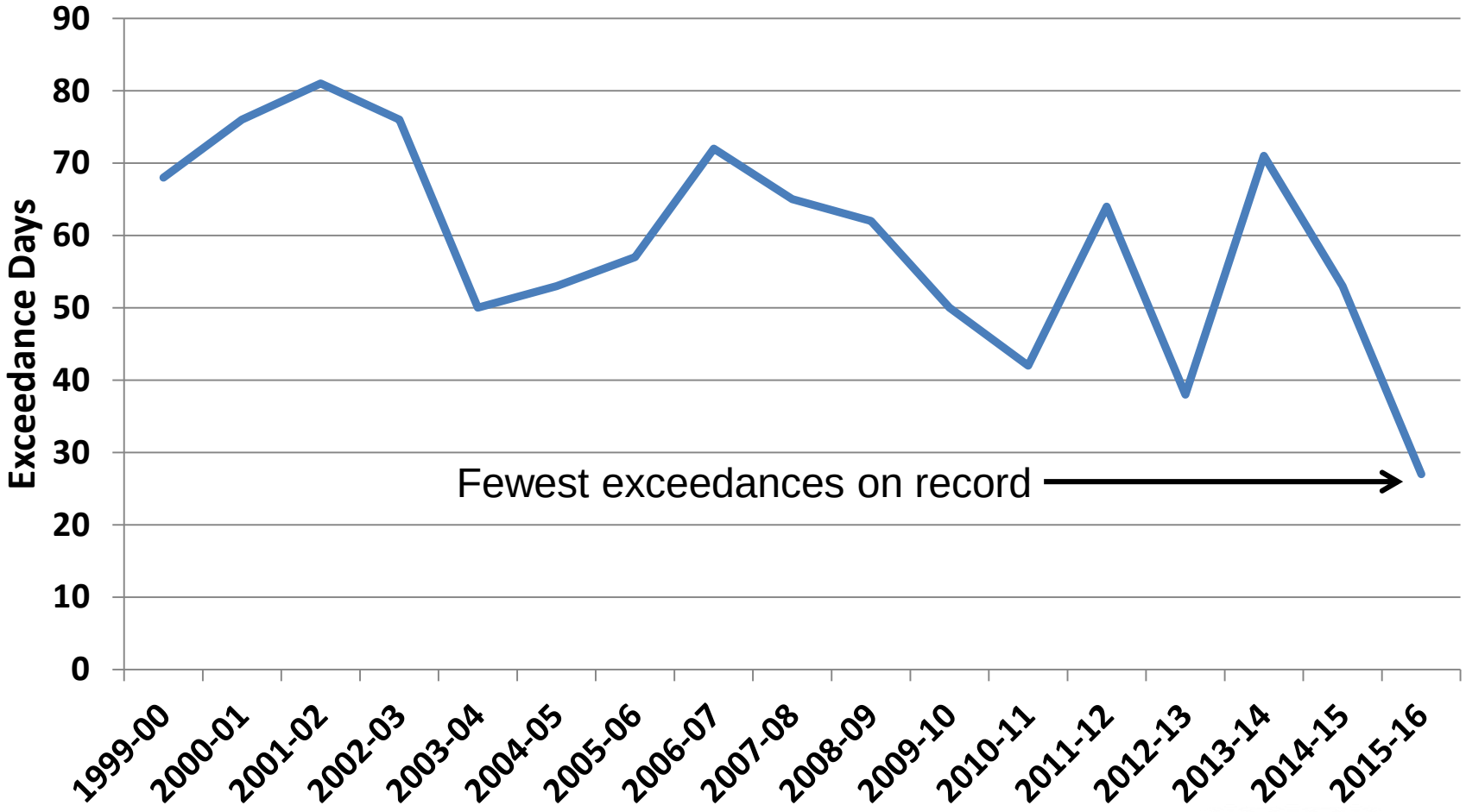
Days Valley Exceeded 35 µg/m^3 Standard during Wood-Burning Season (Nov-Feb)



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Proposed Attainment Strategy

- Will contain new measures that apply valleywide
- Will contain new measures focused on reducing emissions in “hot-spot” regions with most difficult attainment challenge
  - Targeted use of incentive grants
  - Targeted regulations
  - Reduced future regulatory burden for specific regions
  - Reduced overall cost to all regions by achieving attainment of federal standards more expeditiously
  - For regions that may face more stringent future measures, added regulatory cost will be mitigated by added incentives
- Supplemented with proposed Community-Level Targeted Strategy that will focus on reducing public exposure to pollution sources of local concern

ARB Mobile Source Actions

- Reductions from new measures in Mobile Source Strategy
  - More stringent engine standards
  - Requirements for zero emission technologies
  - Low emission diesel fuel standard
- Incentivize turnover to cleanest technologies
  - Heavy duty trucks and buses
  - Ag tractors
  - Off-road equipment
- Further reduce heavy-duty truck emissions through I&M program

New Stationary Source Control Measures

- Building off existing stringent requirements, new potential stationary source measures
  - Lower NOx requirements for boilers, steam generators and process heaters
  - Lower NOx requirements for glass manufacturing facilities
  - Lower NOx requirements for non-agricultural engines
  - Electrify agricultural pump engines in areas impacting peak PM2.5 sites where access to electricity is available (incentive-based)
  - Require ultra low-NOx flares for flaring activities and enhance flare minimization practices
  - Additional reductions of fugitive dust (directly emitted PM) from cropland tilling and fallow lands through new enhanced conservation management practices
- Each measure will undergo technological and economic feasibility analysis

Burn Cleaner Program Offering Enhanced Incentives in Hot-Spot Areas and Current Levels of Incentives in Rest of Valley

- Enhanced levels of incentives provided in hot-spot areas
  - Kern County, Fresno County, City of Visalia, City of Madera, and City of Corcoran
- Program would replace wood burning devices with only natural gas or propane units in hot-spot areas
- Program would continue to offer current level of incentives Valleywide
- $80 million estimated total cost, with $60 million dedicated to hot-spot areas
- Exact funding levels and incentive program details to be finalized pending results of residential wood burning survey currently under way

More Stringent Residential Wood Burning Curtailments (12 µg/m^3 and 35 µg/m^3) in Hot-Spot Areas

- In order to encourage participation in enhanced Burn Cleaner program, could implement more stringent wood burning curtailment program in hot-spot areas
  - Burn prohibitions for non-registered units at 12 µg/m^3
  - Burn prohibitions for all devices at 35 µg/m^3
- Measure suggested for Valley floor locations
  - Counties of Madera, Fresno, Kings, Tulare, and Kern
  - More specifically, cities of Madera, Fresno, Clovis, Corcoran, Visalia, and Bakersfield

Underfired Charbroiler Hot-Spot Strategy

- Provide incentives for installation of controls and related modifications for existing underfired charbroilers within urban boundaries of hot-spots
  - Kern County, Fresno County, cities of Visalia, Madera, and Corcoran
  - Provide funding to deploy controls at 40% of underfired charbroilers
  - Average cost estimated at $150,000 (capital plus 1st yr maintenance)
  - Incentive cost estimated at $30 million (covering 100% of costs)
  - To ensure early and robust use of incentives, measure may need to be supplemented with regulatory backstop to encourage participation
- Adopt rule requiring installation of PM controls on large new charbroilers within urban boundaries of hot-spots
  - Require installation of control technologies at new larger restaurants
  - May only be feasible with incentives to help restaurants offset cost
  - Incentive cost estimated at $5 million (50% of costs)
- Facilitate efficient and cost-effective expenditure of resources
  - To achieve same design value benefits possible through $35 million investment in charbroiler PM reductions, businesses would have to incur $14 billion in cost for NOx reductions

Attainment Requires Additional Reductions by 2025

- Proposed strategy demonstrates attainment of 24-hr standard and close to attainment for annual standard
- Gap in remaining emissions reductions required for attainment of annual standard may be filled with:
  - Use of existing local funds, including DMV funds, for incentive programs aimed at reducing emissions with a focus on remaining hot-spot areas
  - New funding from EPA, NRCS, and other federal agencies aimed at reducing emissions with focus on hot-spot areas
  - New funding from recent state Cap and Trade expenditure plan, Moyer, AB 118, and other state funds
  - Commitments by state and federal government for additional mobile source reductions if necessary