Executive Summary

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In 1997, the U.S. Environmental Protection Agency (EPA) set two PM2.5 standards: a 24-hour standard to protect against short-term health impacts, and a 12-month (annual) standard to protect against longer-term impacts. The San Joaquin Valley complied with the 24-hour standard, based on data from 2004 through 2006. In 2006, EPA revised the 24-hour standard to a lower level. Additional formal rulemaking by EPA is required before the states can submit plans for the new 2006 PM2.5 standard. Based on informal discussions with EPA, it is estimated that attainment plans for this new standard may be required by 2012 or 2013. Consequently, this *2008 PM2.5 Plan* focuses primarily on the strategy to attain the 1997 annual standard. Nonetheless, the measures proposed in this plan will also provide for progress towards the more stringent 2006 PM2.5 standards and the California standard for PM2.5.

The *2008 PM2.5 Plan* builds upon the comprehensive strategy adopted in the *2007 Ozone Plan* to bring the Valley into attainment of the 1997 National Ambient Air Quality Standards (NAAQS) for PM2.5 (particulate matter than is 2.5 microns or less in diameter). PM2.5 can be directly emitted into the atmosphere or can form in the atmosphere through chemical reactions among precursors. EPA has identified nitrogen oxides (NOx) and sulfur dioxide (SO_2) as precursors that must be addressed in air quality plans for the 1997 PM2.5 standards. The *2008 PM2.5 Plan* is a continuation of the San Joaquin Valley Unified Air Pollution Control District's (District) strategy to improve the air quality in the San Joaquin Valley.

Progress from ozone and PM10 Attainment Plans

The District's adopted ozone and PM10 plans are already providing benefits for PM2.5 levels. Under the control strategy put forth in the *2003 PM10 Plan* and amendments, and again verified by the *2006 PM10 Plan*, the Valley has reached attainment of the federal PM10 standards ahead of schedule. The *SB656 Report*, prepared and adopted by the District to meet state requirements in 2006 (Health and Safety Code (H&SC) Section 39614), confirmed that the District's PM10 and precursor strategy is a benchmark for other air districts in California. In September 2007, the District adopted the *2007 PM10 Maintenance Plan and Request for Redesignation* as required for EPA to officially redesignate the San Joaquin Valley to attainment of the PM10 standards.

As a public health agency, the District's mission is to improve the health and quality of life for all Valley residents through efficient, effective, and entrepreneurial air quality-management strategies. In recent years, the District has played a leadership role in devising and implementing effective measures for controlling emissions from stationary and indirect sources of air pollution. Today, the District's air quality management program is one of the strongest in the state.

PM2.5 levels have been decreasing since PM2.5 monitoring began in 1999 through the District's emissions controls. The Valley's success with PM10 gives us confidence that

our control strategies will continue to be successful in the future for PM2.5. Analysis of PM2.5 monitoring data for 2004 to 2006 shows that the Valley complied with the 1997 24-hour PM2.5 NAAQS of 65 µg/m^3.

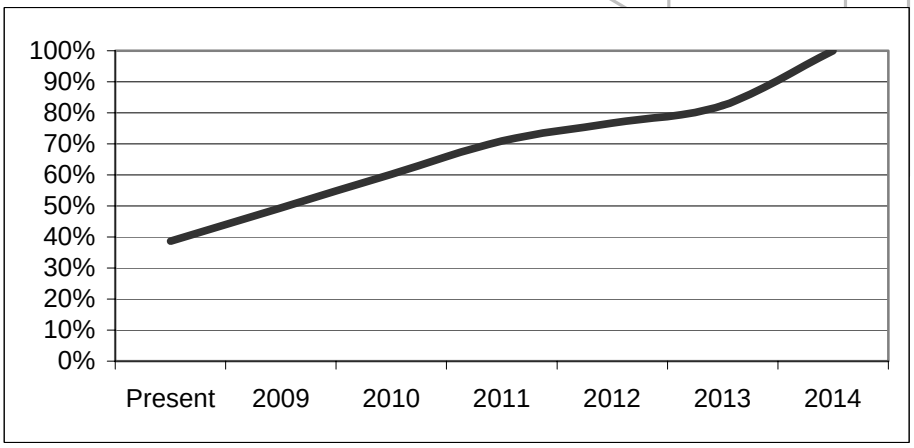
The recently-adopted *2007 Ozone Plan* contains a comprehensive and exhaustive list of regulatory and incentive-based measures to reduce emissions of ozone precursors throughout the Valley in the coming years. This PM2.5 Plan analyzes these measures to project PM2.5 improvement. District staff also recommends new controls for further reductions in PM2.5 and its precursors.

Expeditious Attainment

The Clean Air Act requires all states to attain the 1997 PM2.5 standards as expeditiously as practicable beginning in 2010, but by no later than April 5, 2015. States must identify their attainment dates based on the rate of reductions from their control strategies and the severity of the PM2.5 problem. Modeling must be used to verify that the control strategy is as expeditious as practicable.

The District is committed to expeditious attainment of the PM2.5 standards. Thorough analysis of modeling results available to date and control measures show that the San Joaquin Valley PM2.5 nonattainment area can attain the annual PM2.5 NAAQS in 2014. Many Valley residents will find that their areas attain the PM2.5 NAAQS earlier than 2014. About 39% of the Valley's population resides in areas that already attain the 1997 PM2.5 standards. By 2011, 71% of the Valley's population will reside in areas that attain the PM2.5 standard. By 2013, 82% of the Valley's population will reside in areas that attain the PM2.5 standard. This is shown graphically in Figure ES-1.

Figure ES-1 Percent of Valley's Population Living in Areas that Attain the 1997 PM2.5 Standard *



* Based on 2006 population data (Population Trends Reports, California Department of Finance (2005)) and attainment projections available in Table 3-2 of this plan.

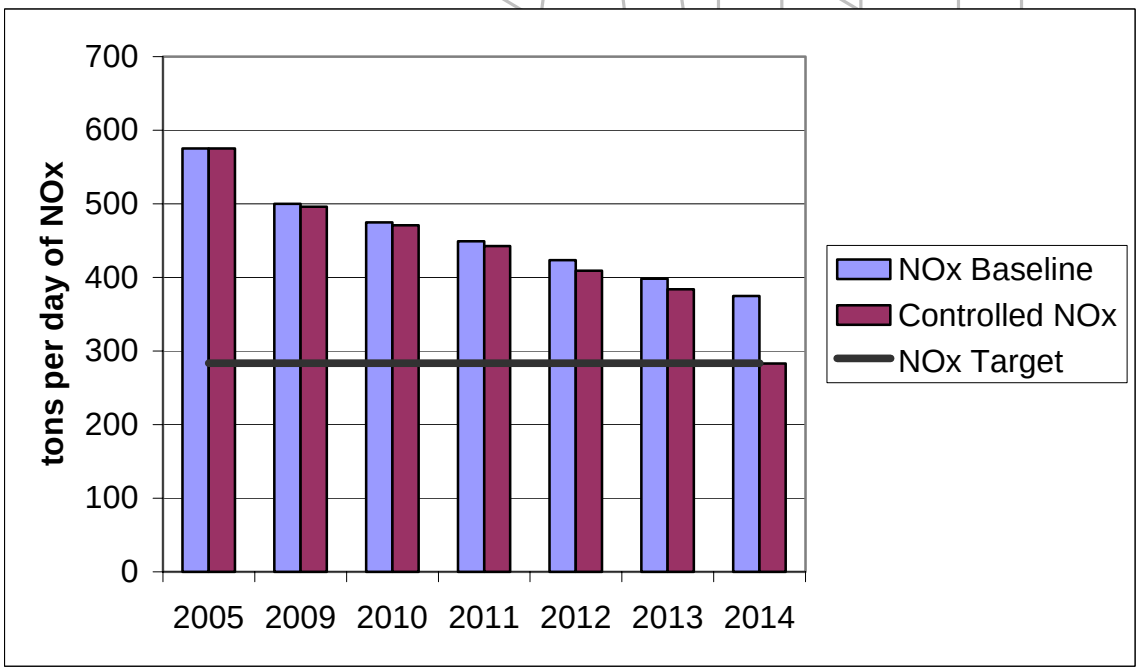
What does this plan do?

This plan contains a comprehensive and exhaustive list of strict regulatory and incentive-based measures to reduce directly emitted PM2.5 and precursor emissions throughout the Valley. As the District continues to tighten regulations for sources under its jurisdiction, state and federal agencies need to also reduce emissions from mobile sources, which are beyond the District's direct jurisdiction.

Based on the District's and ARB's analysis (shown in Figure ES-2), it appears that the Valley can attain the 1997 PM2.5 standard. The "Baseline NOx" columns provide a baseline inventory (Table B-2) that includes the benefits of rules adopted by the District and ARB through December 2006 as well as adjustments for routine emissions inventory methodology reviews. The "Controlled NOx" columns then account for the proposed PM2.5 Plan control strategy (including District control measures and ARB reductions). The "NOx Target" line represents the basin-wide average NOx goal, the NOx emissions level at which the entire Valley will be in attainment of the annual PM2.5 standard.

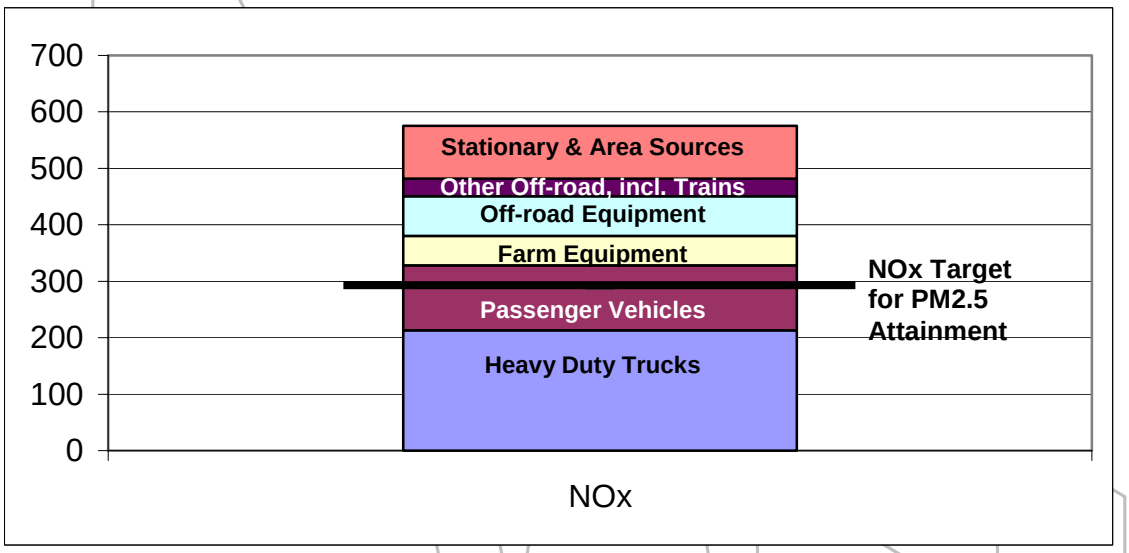
Figure ES-2 shows that, under the District's current analysis, the Valley can attain the annual PM2.5 standard in 2014. Though modeling shows that NOx is the dominant pollutant for reducing the San Joaquin Valley's PM2.5 concentrations, direct PM2.5 reductions and SO_2 reductions also provide necessary and measurable benefits to ambient PM2.5 levels. ARB modeling (see Chapter 3) confirms the attainment outlook.

Figure ES-2 Annual Average NOx Emissions and NOx Attainment Target



Although reductions of direct PM2.5 and SO_2 are needed for attainment, reductions of NOx appear to be critical because of the Valley's wintertime ambient conditions and atmospheric chemistry. As shown in Figure ES-3, 80% of the Valley's NOx emissions are generated by mobile sources. Therefore, reducing NOx emissions to the target level that will provide for PM2.5 attainment requires vast reductions from mobile sources, particularly heavy-duty diesel trucks.

Figure ES-3 Mobile Source Contribution to NOx Emissions



The *2008 PM2.5 Plan* is designed to meet federal requirements for PM2.5 plans (see Chapter 2). By bringing the Valley into attainment of the PM2.5 standard as expeditiously as practicable, this plan will reduce the Valley's PM2.5-related health impacts and health-related costs. Aligning PM2.5 and ozone efforts will ensure that resources are used efficiently and effectively. The progress made in this plan to bring the Valley into attainment of the federal 1997 PM2.5 standards will also contribute to progress towards the 2006 PM2.5 standards as well as 8-hour ozone standards.