

EXECUTIVE SUMMARY

Good visibility is essential to the enjoyment of national parks and scenic areas throughout the United States. Pollution in the atmosphere, from both natural and human-caused sources, can degrade visibility resulting in what is known as regional haze. As its name implies, this haze can impact broad regional areas and significantly impair the scenic vistas that are so integral to the wilderness experience. A graphic example of the impacts of impaired visibility is provided in the figure below comparing the view of Half Dome in Yosemite National Park on both good and poor visibility days.



To protect visibility in these national parks and scenic areas, the United States Environmental Protection Agency (U.S. EPA) adopted the Regional Haze Rule in 1999. The Rule lays out specific requirements to ensure improvements in the human-caused components of visibility at 156 of the largest national parks and wilderness areas across the United States. The vast majority of these areas are in the West (118), with 29 in California, including such national treasures as Yosemite and Sequoia National Parks. The Rule sets out a long-term path towards attaining improved visibility, with the goal of achieving visibility which reflects natural conditions by 2064. Unlike State Implementation Plans which require specific targets and attainment dates, the Regional Haze Rule requires States to provide for a series of interim goals to ensure continued progress. This Regional Haze Plan (Plan) addresses the first interim goal period of 2018.

California has a long history of pollution control efforts to address both national and State air quality standards. Due to the unique challenges faced in California, our pollution control programs have gone far beyond what has been achieved on a national level. As a result, California has made tremendous progress in reducing emissions and improving air quality. Most recently, California has also embarked on a landmark program to address climate change. Visibility improvement is an additional aspect of environmental protection in California that is benefiting from California's stringent air pollution control efforts addressing a broad spectrum of program areas.

This Plan sets forth California's visibility goals and represents California's element of a broader western regional effort to assess the visibility improvement that is expected to

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occur through 2018. Due to the regional nature of haze, multi-state planning organizations were established to provide for coordinated technical planning and consultation. The Western Regional Air Partnership (WRAP) serves this function in the west. The WRAP membership includes 15 western states, federal land management agencies, tribes, and U.S. EPA. California has worked extensively with the WRAP over the last five years in preparing this Plan. Technical tool development, emission inventories, and air quality modeling have been conducted on a regional basis by the WRAP to support the efforts of all of the western states. This has ensured that there is a common basis for the building blocks of planning efforts both now and in the future. The WRAP has also provided a forum for consultation amongst member states and with federal land managers that has fostered the cooperative approach for defining future visibility goals.

The technical analysis conducted by the WRAP has shown that by 2018 visibility will improve in all areas of the West. However, the greatest improvements will occur in California. This enhanced rate of progress can be attributed to California's unique and technology-forcing control programs for ozone and particulate matter that are reflected in California's strategy for achieving the 2018 visibility goals. While continuing progress will occur, work conducted by the WRAP has also highlighted that there are impediments to achieving greater rates of progress in the West, including many locations in California. The WRAP analysis has shown that natural sources contribute significantly to visibility impairment. These sources include wildfires that have become more prevalent in the West, as well as natural plant-based biogenic emissions. In addition, analysis has shown that sources outside of the western region, such as from international shipping, and emissions from Mexico and Asia can provide substantial contributions to visibility impairment. These factors, as well as assessing the cost and feasibility of controls from a regional and national perspective, must be considered in setting appropriate reasonable progress goals.

Nevertheless, California's long-standing emissions control program is providing extensive reductions which establish a reasonable level of progress within this context. For example, California has significantly tightened emission standards for on-road and off-road mobile sources and the fuels that power them. As a result, California's emission control program for on-road motor vehicles is the strongest in the world. Compared to uncontrolled vehicles, passenger cars are now 99 percent cleaner. By 2010, new trucks will be 98 percent cleaner than new pre-1988 models. California has also adopted fuel standards that are more stringent than national requirements including California Reformulated Gasoline, and California Clean Diesel fuel. Our requirements for consumer products have led to significant improvements in the formulation of products ranging from paints to automotive cleaners to personal care products. California has also pioneered programs to provide incentive funding to expedite the replacement of older equipment such as the Carl Moyer program, school bus retrofits, and the goods movement bond program. In addition, California's stationary sources are subject to stringent control requirements and their emission levels are generally far lower than equivalent sources elsewhere in the nation.

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Finally, while California's current control measures are the basis for this first set of interim goals and will contribute measurably to visibility improvement by 2018, we are embarking on even more aggressive control programs over the coming years to address further air quality standard requirements. Notably, in 2007 the Air Resources Board adopted a comprehensive Statewide strategy to provide for attainment of the federal 8-hour ozone and PM_{2.5} standards through a combination of far-reaching technologically feasible and cost-effective measures. Meeting the federal standards in the South Coast and the San Joaquin Valley, the two regions with the most severe air quality problems, will require a 75 percent reduction in NO_x emissions from today's levels. The Statewide strategy targets clean-up of in-use heavy duty trucks, off-road sources, and goods movement sources. In addition, California has established air quality standards which are more stringent than the federal standards. The State standards also have long-term planning requirements to ensure they are attained as expeditiously as possible. The scope of these ongoing challenges will ensure that California will continue to be at the forefront of pursuing clean technologies and stringent control approaches far into the future and thus provide ongoing improvements in visibility.

It is also important to note that this Plan is the first of many as we proceed towards 2064. Each state is required to submit a five year progress report, as well as a revised Plan every ten years. These mid-course reviews allow states to evaluate interim progress towards their goals. During development of this Plan, the western states have identified a number of areas that require further evaluation to better inform the goal setting process. As noted previously, natural emissions from wildfires and biogenic sources have been found to play a significant role in visibility impairment in the west. Current estimates of natural conditions appear to underestimate the contributions from these sources. An improved understanding of the role of these sources is therefore needed to more appropriately define the level of future natural visibility that can realistically be achieved. In addition, the western states must continue to work with the federal government and international organizations to reduce the contributions to visibility impairment that come from sources under federal and international control. Updated information on these issues, as well as assessing the additional benefits of new control programs will all be incorporated into future Plan updates.

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