

What is the Air Quality and Source Apportionment Study (AQSAS)?



Los Angeles
World Airports

Los Angeles World Airports (LAWA) conducted this comprehensive air quality study, and committed to undertake this effort to quantify LAX's contribution to the total emissions and ambient concentrations of air pollutants in the surrounding neighborhoods. The study satisfies requirements of the LAX Master Plan Mitigation and Monitoring Reporting Program commitments and various legal agreements.

History

Efforts to initiate this Air Quality and Source Apportionment Study go back over a decade. In 1999, LAWA began its efforts to study LAX's contribution to area emissions. However, the tragic events of September 11, 2001 brought the implementation of the study to a halt just as the air monitoring field work was beginning. LAWA agreed to reinitiate the study in 2004/2005 in response to requests arising from LAWA's collaboration with the LAX Coalition.

In 2006, the project was formally reinitiated with the reestablishment of a Technical Working Group (TWG) composed of highly qualified professionals to advise and help respond to and manage the challenges facing this study. The TWG is comprised of air quality scientists and researchers from the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), South Coast Air Quality Management District (AQMD), State of California Office of Environmental Health Hazard Assessment (OEHHA), Federal Aviation Administration (FAA), and community organizations. Although LAWA had ultimate responsibility and authority for the study, LAWA and the TWG worked closely toward consensus-based decision-making and sought agreement among the respective participants on the scientific methods and processes used to conduct the study.

In 2008, Phase I & II of the study began followed by Phase III in 2011. Phase III monitoring was carried out during the winter and summer seasons in 2012, providing data representative of year-round conditions and airport operations. In conjunction with the monitoring, Phase III included several sophisticated modeling analyses. A full report was completed and released for public review and for review by the LAWA Board of Airport Commissioners on June 18, 2013. An appendix noting public feedback received will be posted on the project website in late 2013.

Objectives

The primary objective of the Study was to assess the incremental impact of LAX operations on local air quality, by:

- ◆ Quantifying ambient air concentrations of gases and particulate matter in neighborhoods near LAX and determine how these vary in space and time
- ◆ Determining significant sources of air pollutant emissions in the study area and characterize the emissions with respect to rate and chemical composition
- ◆ Determining the contribution of various airport-related activities on selected air pollutant concentrations relative to the contribution from other non-airport sources in the surrounding area

NOTE: The AQSAS is not intended nor designed to be a health effects or epidemiology study; however, the results of the Study and its documented methodology may be used to guide the approach of future studies attempting to analyze health impacts in surrounding communities.

Process

The study is a comprehensive three-phase, multi-year project that was designed and continuously reviewed by a technical working group of air quality scientists and researchers on the federal, state, and local levels, as well as community organizations.

A variety of sophisticated monitoring equipment and modeling techniques were used to complete this complex study. The air quality monitoring approach included two six-week sampling seasons in Winter/Spring and Summer 2012. More than 121,000 data points were collected at 17 core, satellite, and gradient monitoring sites in the communities adjacent to LAX, including El Segundo (south), Lennox (east), Playa del Rey (upwind northwest), and Westchester (north).

Phase I & II: Technology and Methodology Feasibility Demonstration Project

Monitoring conducted at five on-airport locations to evaluate techniques, ranging from experimental to proven, were evaluated as part of this demonstration phase.

The preliminary work included:

- ◆ Data collection and development of preliminary emissions inventory
- ◆ Sampling/characterized mobile source fuels used on and around Airport
- ◆ 42 Days of monitoring at five locations near airport-related sources of air pollutants
- ◆ Tested sampling and monitoring techniques
- ◆ Determined pollutant levels at monitoring sites
- ◆ Determined most effective methods to detect airport-related emissions
- ◆ Provided scientific input for placement of monitoring locations for Phase III

The monitoring test programs conducted during Phases I & II, along with additional Air Quality Management District sponsored

taxiway sampling conducted in 2011, helped guide the monitoring and sampling protocols used in Phase III: Core Study.

Phase III: Core Study

The results of the Demonstration Project and a mobile survey were used to refine the technical approach for the Core Study. The final phase of work evaluated and documented the contribution of LAX-related activities to area emissions.

A total of 17 monitoring sites, consisting of core, satellite, and gradient sampling sites were used. The combination of monitor types provided key data regarding the spatial and temporal distributions and concentration gradients of target pollutants around LAX. The monitoring data was used in several sophisticated modeling methods to identify correlations between air pollutant sources at LAX and air pollutants measured in the surrounding areas.

The monitoring sites were located in the following areas:

◆ Core Monitoring Stations:

- Community North - Westchester
- Community South - El Segundo
- Community East - Lennox
- Upwind Northwest Site, referred to as the "Air Quality" site - Playa del Rey

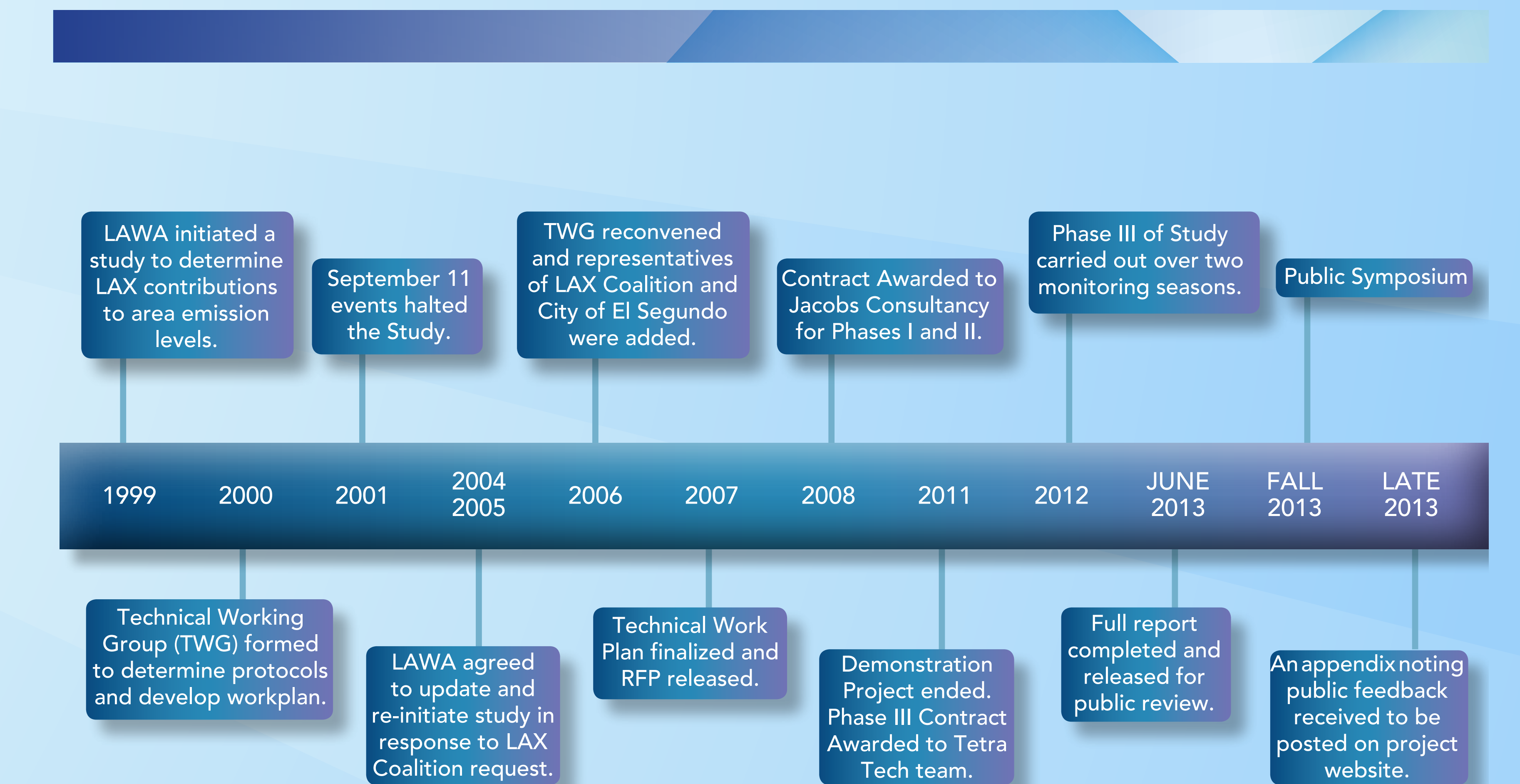
Core monitoring stations included a comprehensive array of monitoring equipment that remained at the same location throughout the monitoring period to provide continuous or time-integrated measurements of a variety of air pollutants. Examples of pollutants that were monitored included particulate matter, carbon monoxide, sulfur dioxide, nitrogen oxides, black carbon, volatile organic compounds, and ultrafine particles.

◆ Satellite Sites:

- Hawthorne
- Westchester
- El Segundo
- West of LAX

◆ **Gradient Sampling Sites** – a total of nine sites provided measurements for a subset of air pollutants throughout the areas surrounding the airport.

Timeline



Next Steps

Public Feedback

Several options are available for submitting written feedback on the study, including:

- ◆ At today's Public Symposium – at the FEEDBACK station
- ◆ Online at: <http://www.lawa.org>
- ◆ E-mail to: airqualitystudy@lawa.org
- ◆ Mail to:
Los Angeles World Airports,
Environmental Services Division,
Attention: LAX AQSAS
7301 World Way West, 3rd Floor,
Los Angeles, CA 90045-5803.

Appendix Noting Public Feedback

An appendix noting public feedback received will be posted on the project website in late 2013.

Written feedback must be received no later than 5:00 pm Pacific Daylight Time on Friday, October 11, 2013