

## Additional Background Information

Air Quality Design Standards for Development near Highway 101  
April 8, 2014 City Council Agenda

### Land Use Information within 250-Foot Corridors along Highway 101

Most parcels along each side of Highway 101 have some existing development, variously within commercial areas and residential areas. There are 991 parcels either wholly or partially within the 250-foot distance of Highway 101.

	<u>No. of Parcels</u>
• Parcels with some existing development	984
• Vacant parcels	7
• Parcels behind Caltrans highway sound walls	246
• Parcels without Caltrans highway sound walls	745
• Residentially zoned parcels (A-2, E-1, E-3, PUD, R-1, R-2, R-3, or R-4)	634
• Other zones (C-1, C-2, C-M, C-O, C-P, HRC-2, M-1, O-C, OM-1, or P-R)	357

The existing residential development includes some multiple-unit complexes for families and the elderly which are partially located within the 250-foot distance. Examples include the Pilgrim Terrace senior housing in the Mission/Modoc area south of the freeway, and several City Housing Authority projects (at 600 block of Eucalyptus; 1200 block of Castillo Street & 400 block of Anapamu Street; 500 block of W. Victoria Street; 300 block of S. Voluntario Street; and 1900 block of San Pascual Street).

Potential additional build out of residential units on these parcels under the General Plan and zoning designations is estimated at 458 units. During the upcoming period to the year 2030, up to approximately 91 additional residential units could likely be proposed on parcels wholly or partly within the 250-foot distance. This estimate uses the 2011 General Plan build-out scenario to the year 2030, which is based on historic growth rates and growth management policies. A portion of these would be on parcels not behind Caltrans sound walls and the ordinance provisions would apply.

A complete land use inventory of other existing sensitive land uses within 250 feet of Highway 101 has not been conducted, but the area includes a few retirement homes and day care facilities. None of the District elementary, junior high, or high schools in the City are located within 250 feet of Highway 101.

## Effectiveness of Project Design Measures

It is recognized that the level of air quality mitigation from various design measures will vary across different site and meteorological circumstances and with changing factors such as wind direction and speed. A publication from the California Air Resources Board summarizes recent research on the effectiveness of air quality mitigation methods along highways (*CARB, Status of Research on Potential Mitigation Concepts to Reduce Exposure to Nearby Traffic Pollution, 2012*).

- As expected, distance from the highway pollution source is the most effective measure.
- Highway sound walls are effective at blocking roadway pollutants and providing higher dispersal of pollutants, resulting in substantial mitigation on the other side of the wall; generally about a 50% reduction in the concentration of pollutants. This is the basis for the proposed ordinance exemption for project sites located behind Caltrans sound walls. Caltrans sound walls are constructed of solid material (e.g., masonry or wood) and vary in dimension but are typically 10-14 feet in height and eight inches thick.
- Interior central ventilation/ air filtration is also identified as a very effective measure, although the effectiveness may be compromised by individual user practices regarding open windows and system maintenance.
- Vegetative and Structural Barriers. Trees and dense vegetation are shown to be effective at trapping particulates. Both vegetative and structural barriers between the highway and project reduce the concentration of air pollution.

Vegetation for air pollution mitigation is most effectively provided by rows of trees with either needles, such as firs and cedars, or dense leafy foliage, and planted in rows. City landscape design guidelines include a number of firs, cedars, and leafy trees.

Other issues also need to be considered in selecting appropriate trees and vegetation for an individual site, including space limitations, fire hazard, soil type/climatic conditions, drought tolerant and native/Mediterranean plants, potential effects of root system on paved areas, blocking solar access on adjacent parcels, and maintenance issues.

The proposed City Urban Forest Master Plan includes the following action item, which would provide additional guidance for vegetation selection:

*Action: Develop guidance for tree selection and planting along Highway 101 that would improve air quality for nearby sensitive land uses.*

## **Tracking State Regulations and Air Quality Changes**

Policy ER7 is identified as an interim policy until such time as highway pollution levels and health hazards are reduced through further planned State regulations or other means. The policy provides that the City will track regulatory efforts of the California Air Resources Board (CARB) and progress on air quality improvements.

Santa Barbara County Air Pollution Control District staff is assisting City staff in monitoring State regulatory activities and data on air quality changes. Scientific studies have estimated that diesel particulate levels statewide were substantially reduced in the years 1990-2010 due to in-place State regulations (UCSD, *Black Carbon and the Regional Climate of California*, 2013). The next phase of diesel particulate regulations (heavy truck retrofits), which had been put on hold following the State's economic downturn, is now underway.

With adoption of ER7, it was anticipated that the City will periodically conduct updated modeling of air quality conditions along Highway 101 within Santa Barbara as part of the City's General Plan Adaptive Management Program (AMP). Following such studies, the City would reassess Policy ER7 and the Ordinance provisions for amendment or repeal. It is also possible that the CARB may in the future be able to provide data about improved air quality that would support policy repeal without the City study.

### **Other Jurisdictions**

The City of Goleta adopted a General Plan policy requiring projects within 500 feet of Highway 101 to prepare project-specific health risk assessments.

The County of Santa Barbara's Los Alamos Community Plan includes development standards providing that a high efficiency ventilation system should be installed for all residential projects within 500 feet of Highway 101; residents provided with filter maintenance information; and potential buyers provided with an air quality disclosure statement.

The County is in process of preparing an updated East Goleta Valley Community Plan for the unincorporated portion of the valley, which is also expected to include a policy addressing this near-highway air quality issue.

The Santa Barbara Association of Governments (SBCAG) recently adopted an updated Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS). The Final Program Environmental Impact Report for this plan identifies a list of potential mitigation measures for siting sensitive land uses within 500 feet of Highway 101, which may include site design and screening, health risk assessments, interior filtration, and disclosure statements, as determined by the lead agency for individual projects.

A number of jurisdictions in northern and southern California also have similar policies in place or pending.