SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

The CEQA Guide

CEQA Guide to Air Quality Assessment

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5. TAC EMISSIONS

5.1 INTRODUCTION

Under the Clean Air Act, toxic air contaminants (TACs) are airborne pollutants that may be expected to result in an increase in mortality or serious illness or which may pose a present or potential hazard to human health. TACs are also referred to as toxic air pollutants or hazardous air pollutants.

A wide range of sources, from industrial plants to households emits TACs. Because it is not practical to eliminate all TACs these compounds are regulated through risk management programs. These programs are designed to eliminate, avoid, or minimize the risk of adverse health effects from exposures to TACs.

A chemical becomes a regulated TAC after it is identified by ARB's California Air Toxics Program or the U.S. Environmental Protection Agency's (EPA) National Air Toxics Assessments, assessed for its potential for human exposure, and evaluated for its health effects on humans. ARB has listed approximately 200 toxic substances, including those identified by EPA, which are identified on the California Air Toxics Program's TAC List.

5.1.1 HEALTH EFFECTS

TACs can cause long-term health effects such as cancer, birth defects, neurological damage, or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches. Regulating TACs is important not only because of the severity of their health effects, but also because the health effects can occur with exposure to even small amounts of TACs. TACs are not classified as criteria air pollutants (CAPs) and no ambient air quality standards have been established for them. The effects of various TACs are very diverse and their health impacts tend to be local rather than regional; consequently uniform standards for these pollutants have not been established.

TACs can be separated into carcinogens and non-carcinogens based on the nature of the physiological degradation associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur and cancer risk is expressed as excess cancer cases per one million exposed individuals. Non-carcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Acute and chronic exposure to non-carcinogens is expressed in using a Hazard Index (HI), which is the ratio of expected exposure levels to acceptable health-acceptable exposure levels.

EPA's web page, About Air Toxics, provides more detailed information about the health effects of TACs. The specific health effects of each particular TAC as

identified by the Office of Environmental Health Hazard Assessment (OEHHA) and ARB are listed in the Consolidated Table of OEHHA / ARB Approved Risk Assessment Health Values.

5.1.2 Concepts in Health Risk

The dose to which receptors are exposed to a TAC is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance(s). Dose is positively correlated with the concentration of a toxic substance, which generally disperses with distance from the emission source under normal meteorological conditions. Dose is also positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for an exposed individual. Thus, the risks estimated for a receptor are higher if a fixed exposure occurs over a longer period. The breathing rate of an exposed individual is also an important factor. For instance, children have higher intake rates on a per kilogram body weight basis and thus receive a higher dose of airborne pollutants.

5.1.3 Trends in Background TAC Levels

The California Almanac of Emissions and Air Quality (Almanac), which is published annually by ARB, presents the trends of various TAC emissions in California. Currently, the estimated risk from particulate matter emissions from diesel exhaust (diesel PM) is higher than the risk from all other TACs combined, and this TAC poses the most significant risk to California's population. In fact, ARB estimates that 79% of the known statewide cancer risk from the top 10 outdoor air toxics is attributable to diesel PM.

In September 2000, ARB adopted the Diesel Risk Reduction Plan (DRR Plan), which recommends many control measures to reduce the risks associated with diesel PM and achieve a goal of 75% PM reduction by 2010 and 85% by 2020. The key elements of the Plan are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, to lower the sulfur content of diesel fuel, and implement advanced technology emission control devices on diesel engines. In fact, many of the Air Toxic Control Measures that have been promulgated by ARB specifically address diesel PM emissions from a range of sources, including portable engines, cargo handling equipment used at ports, transport refrigeration units, and idling by commercial vehicles and school buses. Without implementing the DRR Plan, according to ARB's 2009 Almanac, diesel PM concentrations in 2010 and 2020 are estimated to drop by only about 17% and 33%, respectively, from the estimated year 2000 level.

It is important to note these TAC reductions in the context of well-planned mixed-use urban areas. In response to nonattainment conditions with respect to criteria air pollutants (CAP), specifically ozone, land uses within California are being developed with an increased emphasis on planning principles that reduce vehicle miles traveled (VMT) along with energy and water consumption (e.g., smart

growth, transit-oriented design). With the passage of Assembly Bill 32 and the associated greenhouse gas (GHG) emissions reduction goal of achieving 1990 levels by 2020, the implementation of such principles will play an increasingly important role with regards to land use planning as California will need to more efficiently (e.g., less VMT per household) accommodate population and job growth. Though this type of planning proves to effectively reduce regional CAP emissions and GHGs, inherent to the design, receptors are placed in closer proximity to localized sources of pollution (e.g., freeways, rail). Thus, the future TAC reductions discussed above will play an important role in addressing this matter; however, lead agencies need to assess the potential for higher density development patterns to result in increased TAC exposure levels.

5.2 ANALYSIS EXPECTATIONS

The District recommends that CEQA documents analyze potential impacts resulting from exposure of sensitive receptors to high doses of TACs and associated health risk. These analyses shall include the following:

- A discussion of type of construction activities that would occur and the TAC emission sources associated with those activities. This may include the number and types of equipment anticipated to be used during construction. Detailed guidance about construction-generated TACs is provided in section 5.3.1, Construction Activity.
- A significance determination about construction-generated TAC emissions, without mitigation;
- A discussion of feasible mitigation necessary to reduce construction-generated TACs and whether the reduction is sufficient to reduce impacts to a less-than-significant level.
- A discussion of whether the project would locate any permitted sources of TACs or non-permitted sources of TACs (e.g., a high traffic volume roadway) in close proximity to existing or future planned receptors;
- A discussion of whether the project would locate new receptors in close proximity to an existing or future planned source of TAC emissions;
- A significance determination about exposure to TACs from project operations without mitigation; and
- A discussion of feasible mitigation necessary to reduce TAC exposure resulting from project construction and operations and whether the reduction would be sufficient to reduce the impact to a less-than-significant level.
- A quantitative health risk assessment (HRA) that discloses health risk levels at affected receptors if qualitative methodologies for analyzing TAC impacts are not sufficient. The HRA shall be conducted in consultation with the District and

in accordance with acceptable guidance such as the California Air Pollution Control Officers Association's *Health Risk Assessments for Proposed Land Use Projects* or OEHHA's *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments*.

Lead Agencies shall make a concerted effort to obtain detailed project-specific information in order to accurately disclose all potential TAC-related impacts. However, the District recognizes that the level of detail in which this information is available may vary at the time the impact analysis is performed. More detailed guidance for analyzing TAC impacts is provided below.

5.3 METHODOLOGIES

Methodologies for assessing impacts resulting from diesel PM and airborne asbestos emissions generated by short-term construction activity are discussed below, followed by methodologies for assessing operational TAC emissions for projects that would site TAC emission sources in close proximity to receptors and for projects that would locate receptors near existing permitted and non-permitted TAC emission sources.

5.3.1 CONSTRUCTION ACTIVITY

Construction activity can result in emissions of particulate matter from diesel exhaust (diesel PM), airborne asbestos resulting from the demolition of asbestos-containing materials, and, in some areas of Sacramento County, earth disturbance activity can result in the release of naturally occurring asbestos (NOA) to the air. These TACs are addressed separately below.

DIESEL PM EXHAUST

The use of off-road heavy-duty diesel equipment for site grading and excavation, paving, and other construction activities results in the generation of diesel PM emissions, which was identified as a TAC by ARB in 1998. According to the Consolidated Table of OEHHA / ARB Approved Risk Assessment Health Values, the potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential noncancer health impacts.

The District has not established a quantitative threshold of significance for construction-related TAC emissions. Therefore, the District recommends that lead agencies address this issue on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and its proximity to off-site receptors. The impact discussion shall disclose the following about the construction activity associated with each project:

- Types of off-site receptors and their proximity to construction activity,
- Duration of construction period,

- Quantity and types of diesel-powered equipment,
- Number of hours equipment would be operated each day,
- Location of equipment staging area,
- Predominant wind direction, and
- Amount of on-site diesel-generated PM exhaust if mass emission levels from construction activity are estimated.

The District recognizes that detailed information about a project's construction activities may not be known at the time of writing the impact analysis. In this case, the District recommends the use of conservative estimates for the parameters including the number and type of construction equipment used, the hours of operation, and the distance from equipment to the nearest off-site receptors.

Demolition of Asbestos-Containing Materials

Demolition of existing buildings and structures would be subject to District Rule 902 (Asbestos). District Rule 902 is intended to limit asbestos emissions from demolition or renovation of structures and the associated disturbance of asbestos-containing waste material generated or handled during these activities. The rule addresses the national emissions standards for asbestos along with some additional requirements. The rule requires lead agencies and their contractors to notify the District of any regulated renovation or demolition activity. This notification includes a description of structures and methods utilized to determine whether asbestos-containing materials are potentially present. All asbestos-containing material found on the site must be removed prior to demolition or renovation activity in accordance with District Rule 902, including specific requirements for surveying, notification, removal, and disposal of material containing asbestos. Therefore, projects that comply with Rule 902 would ensure that asbestos-containing materials would be disposed of appropriately and safely. By complying with District Rule 902, thereby minimizing the release of airborne asbestos emissions, demolition activity would not result in a significant impact to air quality.

Because District Rule 902 is in place, no further analysis about the demolition of asbestos-containing materials is needed in a CEQA document. However, the District does recommend that CEQA documents acknowledge and discuss District Rule 902 to support the public's understanding of this issue.

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) was identified as a TAC in 1986 by ARB. NOA is located in many parts of California and is commonly associated with ultramafic rocks, according the California Department of Geology's special publication titled Guidelines for Geologic Investigations of Naturally Occurring Asbestos in California.

Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Ultramafic rocks form in high-temperature environments well below the surface of the earth. By the time they are exposed at the surface by geologic uplift and erosion, ultramafic rocks may be partially to completely altered into a type of metamorphic rock called serpentinite. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in the bodies of these rocks or along their boundaries, according to a report published in 2000 by the California Geological Survey (formerly the California Division of Mines and Geology) titled *A General Location Guide for Ultramafic Rocks in California—Areas More Likely to Contain Naturally Occurring Asbestos*.

For individuals living in areas of NOA, there are many potential pathways for airborne exposure. Exposures to soil dust containing asbestos can occur under a variety of scenarios, including children playing in the dirt; dust raised from unpaved roads and driveways covered with crushed serpentine; grading and earth disturbance associated with construction activity; quarrying; gardening; and other human activities. For homes built on asbestos outcroppings, asbestos can be tracked into the home and can also enter as fibers suspended in the air. Once such fibers are indoors, they can be entrained into the air by normal household activities, such as vacuuming (as many respirable fibers will simply pass through vacuum cleaner bags).

People exposed to low levels of asbestos may be at elevated risk (e.g., above background rates) of lung cancer and mesothelioma. The risk is proportional to the cumulative inhaled dose (quantity of fibers), and also increases with the time since first exposure. Although there are a number of factors that influence the disease-causing potency of any given asbestos (such as fiber length and width, fiber type, and fiber chemistry), all forms are carcinogens.

At the request of SMAQMD, the California Geological Survey (formerly the California Division of Mines and Geology) prepared a report called the Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California. The map in this report displays "areas moderately likely to contain NOA." Although geologic conditions are more likely for asbestos formation in particular areas identified by the map, the presence thereof is not certain.

Using the detailed map at the end of this report, a lead agency shall discuss whether a proposed project would be located in "areas moderately likely to contain NOA." If a project would not involve earth-disturbing construction activity in one of these areas or would not locate receptors in one of these areas then it can be assumed that the project would not have the potential to expose people to airborne asbestos particles. If a project would be located in an area moderately likely to contain NOA, then the impact shall be considered potentially significant.

5.3.2 SITING NEW TAC SOURCES

SITING PERMITTED TAC SOURCES

The siting of new stationary sources of TACs is subject to the rules under District Regulation 2, Permits. Each new stationary source is evaluated to determine whether it has the potential to emit TACs. The District assesses the impact from TACs based on its guidance document, *Supplemental Risk Assessment Guidelines for New and Modified Sources*, as well guidance documents from OEHHA, ARB and the California Air Pollution Control Officers Association. The District requires emission controls, similar to Best Available Control Technology (BACT), called Toxic Best Available Control Technology (T-BACT) for certain sources.

In addition to T-BACT requirements, permits for equipment that may emit TACs may also contain conditions required by the National Emission Standards for Hazardous Air Pollutants (NESHAPs) and Air Toxic Control Measures (ATCMs) promulgated by the EPA and ARB, respectively. In short, a new stationary source of TACs would not receive the authority to construct or permit to operate if it would result in:

- An incremental increase in cancer risk greater than 10 in one million at any off-site receptor; and/or
- An off-site ground-level concentration of non-carcinogenic TACs generated from the project that would result in a Hazard Index greater than 1 (unless approved by OEHHA).

These permitting requirements are identical to the District's thresholds of significance for TACs generated by stationary sources or land uses that included non-permitted sources (e.g., truck distribution yards). Therefore, lead agencies can determine that a new stationary source of TACs that attains the authority to construct and permit to operate from the District would not exceed the District's applicable TAC thresholds of significance.

SITING LAND USES THAT INCLUDE NON-PERMITTED TAC SOURCES

Some land use development projects, such as a truck distribution center or a commercial venue, could result in a high volume of TAC-generating activity in a relatively small or defined area. For instance, a discount superstore may receive approximately 5 deliveries each day from semi-tractor trailers at its loading dock. The potential impact of TAC emissions from a project of this type and size could be assessed qualitatively based on the level of truck activity, the proximity to nearby off-site receptors, and the predominant wind direction. However, a truck distribution center that has multiple loading docks, generates a high number of trips by diesel trucks, and/or includes diesel-powered "yard trucks" that only operate on the site would likely require a full HRA to determine whether associated emissions would exceed the District's thresholds of significance for TACs at an off-site receptor. These types of HRAs should be performed according

to the guidance provided in the California Air Pollution Control Officers Association's *Health Risk Assessments for Proposed Land Use Projects*.

The District recognizes that permitted stationary sources of TACs and non-permitted sources of TACs may operate on the same project site. Lead agencies shall evaluate the combined impact of all TAC emissions generated on the project site.

5.3.3 Siting New Sensitive Receptors

When a project would include the development of new sensitive receptors, including residential dwellings and schools, lead agencies should analyze all sources of TACs that could potentially affect the proposed development location. This analysis shall address all permitted and non-permitted sources within a half mile (2,640 feet) of the proposed project site. The siting of sensitive receptors near permitted TAC sources, land uses that include non-permitted TAC sources, and major roadways is discussed separately below.

Siting Receptors Near Existing Permitted Sources

The District recommends that lead agencies survey all permitted TAC sources located within at least a half mile (2,640 feet) of the proposed project site. Permitted TAC sources can be identified using ARB's Community Health Air Pollution Information System (CHAPIS) and supplemented using the EPA's Toxics Release Inventory Explorer search tools.

When using CHAPIS searches can be conducted by county and/or ZIP code. In order to conduct a thorough search, lead agencies shall search all ZIP codes that are within a half mile (2,640 feet) of the project site. CHAPIS will then display a map of the area with some additional data fields. Select "all toxic compounds" in the Select pollutant data field, enter the ZIP code of the project site in the ZIP Code field, and choose a distance in the Circle radius field. The District suggests choosing "2 miles" in the Circle radius field, then clicking on the Go to ZIP button to execute the search and produce a map of the project area. After identifying the project site on the map, the circle radius tool can then be used to show a half mile radius around the project site. Individual facilities on the CHAPIS map can be identified be selecting the information icon from the tool bar above the map and clicking on each facility. A new window will display the name of the company that operates the facility, which can be clicked to show a Facility Details window that displays detailed information about that facility's air pollutant emissions and associated risk levels.

Important information is contained in the Facility Prioritization table in the Facility Details window. The Facility Prioritization table indicates whether the facility's TAC emissions are above or below the District's prioritization threshold and, therefore, whether a quantitative HRA was required for the facility. If the District's prioritization threshold was not exceeded by the facility and, therefore, an HRA was not required, then the lead agency shall determine that the facility

does not result in a substantial health risk to nearby areas. For some TAC sources such as dry cleaners using perchloroethylene and gasoline dispensing facilities, which typically do not have an HRA conducted when they were developed, a lead agency may want refer to the recommended setback distanced discussed in the Air Quality and Land Use Handbook: A Community Health Perspective (Land Use Handbook), published by ARB.

If the District's prioritization threshold is exceeded by the facility (and an HRA was required) then the lead agency should request the results of the HRA from the District (Public Information Request). The results of the HRA should be examined to determine whether the facility's TAC emissions result in risk levels at the proposed project site that exceed the District's thresholds of significance for TACs. This step is important because some HRA's only estimate the levels of risk at existing discrete off-site receptors and/or a fence line receptors, while others evaluate the levels of health risk at all off-site locations surrounding the facility. The District requires an HRA to reflect the maximum potential health risk from a facility, which could be an existing or future discrete site, or the fence line depending on the specific project and its surroundings.

The EPA's Toxics Release Inventory Explorer search tool can also be used to supplement the survey using ARB's Community Health Air Pollution Information System (CHAPIS). Note that EPA's search tool provides information about releases of toxic chemicals discharged to the environment in a variety of forms, including emissions to the air (i.e., TACs), discharges to bodies of water, disposal to the land at the facility, and/or disposal in underground injection wells. In the air quality analysis of a CEQA document, lead agencies only need to address air pollutant emissions.

Siting Receptors Near Land Uses That Include Non-Permitted Sources

Lead agencies shall also examine which non-permitted TAC sources are located near a proposed project site. Non-permitted sources of TACs include land uses such as truck distribution centers and rail yards. Land uses that contain permitted sources, such as a land fill or chemical plant, may also contain non-permitted TAC sources, particularly if they host a high volume of diesel truck activity. The lead agency shall determine whether the new receptors would be exposed to levels of health risk from the non-permitted TAC sources operating on the nearby land use would exceed the District's thresholds of significance for TACs. This determination can be supported by a site-specific HRA that models all TAC emissions generated on the neighboring land use.

A qualitative analysis can be performed if the level of TAC emissions generated on the neighboring land use is relatively low (e.g., a few truck visits to a retail loading dock each week) and would not occur in immediate proximity to the proposed receptor location. When performing a qualitative analysis lead agencies shall consider the following parameters associated with the development of sensitive receptors near land uses that include non-permitted sources of TACs.

- Risk factors of the TACs generated by the land use;
- Intensity of TAC-generating activity (e.g., number of diesel trucks);
- Predominant wind direction relative to the TAC source and affected receptors; and
- Rate at which the TACs generated by the source drop off over distance, if available.

These parameters are discussed in detail for many types of TAC-generating land uses in the Land Use Handbook. The Land Use Handbook provides guidance on land use compatibility with sources of TACs and recommended set back distances for a variety of land use types that include activity by non-permitted TAC sources (e.g., diesel truck activity). The District recognizes that the Land Use Handbook is not a law or adopted policy but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs.

Siting Receptors Near Major Roadways

The prominent TAC associated with high volumes of traffic on major roadways is diesel PM. For projects that would site receptors in close proximity to major roadways, lead agencies shall use the District's Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways (Protocol). The Protocol was developed to provide further guidance on ARB's Land Use Handbook to assist local land use jurisdictions in assessing the potential cancer risk of siting sensitive land uses adjacent to major roadways.

The Protocol focuses on assessing cancer risk from diesel PM and provides a disclosure mechanism for those risks, while showing the relationship between potential cancer risk from diesel PM exposure and distance from the major roadway. The Protocol is applicable to any projects that would locate sensitive receptors within 500 feet of a high traffic volume roadway which is defined as a freeway, urban roadway with greater than 100,000 vehicles per day, or rural roadway with 50,000 vehicles per day. In order to determine whether a highway segment is considered a major roadway, lead agencies can refer to the District's Roadway Protocol webpage for a list. Detailed traffic volume information for highways can be obtained from the California Department of Transportation's Average Annual Daily Trips (AADT) Data for State Highways, Interstates, and U.S. Highways. Information about the traffic volume on non-highway road segments may be available from the local city or county. Local communities often collect traffic volumes when developing their General Plans or Environmental Impact Reports for land use development projects.

The District emphasizes, however, that the Protocol is not intended to provide an acceptable cancer risk level or a regulatory threshold to be used to determine whether a proposed land use development project would be considered

acceptable. Local land use jurisdictions retain all authority to decide whether the land use project is appropriate after considering all relevant factors.

5.4 MITIGATION

Mitigation strategies for reducing diesel PM exhaust emitted by off-road construction equipment, on-road engines, and measures for controlling NOA during construction are discussed separately below. Measures that reduce health risk exposure from TACs generated by major roadways are discussed in detail in the District's Protocol.

5.4.1 DIESEL PM EXHAUST FROM CONSTRUCTION EQUIPMENT

Implementation of the District's Basic Construction Emission Control Practices would result in the reduction of diesel PM exhaust emissions in addition to CAP emissions, particularly the measures to minimize engine idling time and maintain construction equipment in proper working condition and according to manufacturer's specifications. This is also true for the Enhanced Exhaust Control Practices for off-road construction equipment, which reduce particulate exhaust emissions by 45% and regulate the opacity of exhaust from all off-road diesel powered equipment. The District's basic and enhanced mitigation measures are discussed in further detail in Section 3.4 of Chapter 3, Construction-Generated Criteria Air Pollutant and Precursor Emissions.

In addition, the District provides the following non-comprehensive list of measures to reduce exposure of sensitive receptors to diesel PM exhaust emissions associated with construction activity.

- Install diesel particulate filters or implement other ARB-verified diesel emission control strategies on all construction equipment to further reduce diesel PM emissions beyond the 45% reduction required by the District's Enhanced Exhaust Control Practices;
- Use equipment during times when receptors are not present (e.g., when school is not in session or during non-school hours; or when office buildings are unoccupied);
- Establish staging areas for the construction equipment that are as distant as possible from off-site receptors;
- Establish an electricity supply to the construction site and use electric powered equipment instead of diesel-powered equipment or generators, where feasible;
- Use haul trucks with on-road engines instead of off-road engines even for on-site hauling;

- Equip nearby buildings with High Efficiency Particle Arresting (HEPA) filter systems at all mechanical air intake points to the building to reduce the levels of diesel PM that enter the buildings; and/or

- Temporarily relocate receptors during construction activity.

Lead agencies shall consider the applicability and feasibility of each measure on a project-by-project basis. The District also encourages lead agencies to develop additional measures.

5.4.2 Diesel PM Exhaust from On-Road Equipment

In some instances diesel PM can be controlled at the source by implementing emission control technologies. ARB's Diesel Certification Program maintains a list of ARB-verified diesel emission control strategies for reducing diesel PM from on-road and off-road engines (e.g., diesel particulate filters). Lead agencies may implement mitigation that requires the use of these strategies. For example, it may be feasible to require developers of a housing development proposed near a truck distribution center to fund the purchase and installation of diesel particulate filters on the trucks or other diesel engines that operate a the distribution center. A lead agency may also require that ARB-verified diesel emission control strategies be implemented by the operator of a proposed truck yard that would be located near existing or future planned receptors.

5.4.3 Control Measures for Naturally Occurring Asbestos

The District recommends the following mitigation measure for projects that would be located in "areas moderately likely to contain NOA" identified by the California Geological Survey's report, titled *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California*.

- A site investigation shall be performed to determine whether and where NOA is present in the soil and rock on the project site and/or areas that would be disturbed by the project. The site investigation shall include the collection of soil and rock samples by a California Registered geologist. If the site investigation determines that NOA is not present on the project site then the project applicant shall submit a Geologic Exemption as allowed under Title 17, Section 93105, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining (Asbestos ATCM). If the site investigation determines that NOA is present on the project site, then the project applicant shall submit an Asbestos Dust Control Plan including but not limited to control measures required by the Asbestos ATCM for approval by the District. The project applicant shall submit the plan to the District for review and approval before beginning any ground disturbance activity. District approval of the plan must be received before ground disturbance occurs in any "areas moderately likely to contain NOA," as determined by the map in California Geological Survey's report titled *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County,*

California. Upon approval of the Asbestos Dust Control Plan by the District, the applicant shall ensure that construction contractors implement the terms of the plan throughout the construction period. This measure shall be fully funded by the project applicant.

Implementation of the above mitigation measure would reduce impacts associated with generation of fugitive dust that potentially contains NOA. If the site investigation determines that NOA is present on the project site, then implementation of a District-approved dust control plan would reduce impacts related to construction in serpentinite soils. Implementation of these measures would reduce the potentially significant impact associated with exposure to NOA during construction to a less-than-significant level.

If NOA is located on the surface of the project site then mitigation may be necessary to reduce the risk of generating airborne asbestos from some operational activities such as recreational activities on baseball diamonds and dirt running tracks or residents overturning soil for gardening purposes. In order to reduce exposure to airborne asbestos emissions in these types of situations, lead agencies shall consider mitigation that requires all surface soil containing NOA to be replaced with clean soil or capping these surfaces with another material (e.g., cinder or rubber).