15 AIR QUALITY

15.1 INTRODUCTION

This chapter provides information relevant to air quality impacts under NEPA and CEQA in connection with the Proposed Action and alternatives. This chapter includes: introduction, environmental and regulatory setting, impact analysis methods and assumptions, significance criteria, environmental effects of the action and alternatives, and mitigation measures to address effects that are identified as significant.

15.1.1 Data Sources

Key sources of information used for this chapter include the following:

- *Yolo County 2030 Countywide General Plan* (Yolo County 2009a),
- *City of Davis General Plan* (City of Davis 2007),
- *City of West Sacramento General Plan 2035 Policy Document* (City of West Sacramento 2016),
- *City of Winters General Plan* (City of Winters 1994),
- *City of Woodland General Plan* (City of Woodland 2017), and
- *Yolo-Solano Air Quality Management District (YSAQMD) Handbook for Assessing and Mitigating Air Quality Effects* (YSAQMD 2007).

15.1.2 Definitions

Criteria air pollutants consist of ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead. The federal and State governments have established ambient air quality standards for criteria air pollutants. A brief description of each criteria air pollutants is provided below, including emission source types and health effects. For descriptions of health effects, *acute* refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations whereas *chronic* refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.

Ozone is a photochemical oxidant (a molecule whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X) in the presence of sunlight. ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels. Emissions of the ozone precursors ROG and NO_X have decreased over the past several years because of more stringent motor vehicle standards and cleaner burning fuels. Acute health effects include increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation. Chronic health effects include permeability of respiratory epithelia, possibility of permanent lung impairment.

Carbon monoxide (CO) is a colorless, odorless gas produced by incomplete combustion of fuels (i.e., motor vehicle exhaust). Acute health effects include headache, dizziness, fatigue, nausea, vomiting, and eventually

death. Chronic health effects include permanent heart and brain damage. However, CO dissipates quickly and unhealthy CO concentrations resulting from vehicle exhaust only occur at intersections experiencing extreme delays and congestion.

Nitrogen dioxide (NO_2) is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary internal combustion engines. Combustion devices emit primarily nitrogen oxide (NO), which reacts through oxidation in the atmosphere to form NO_2. The combined emissions of NO and NO_2 are referred to as NO_X and are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local sources of NO_X emissions (EPA 2017a). Acute health effects include coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis (inflammation of the lung tissue) or pulmonary edema (fluid accumulation in the lungs), breathing abnormalities, cough, chest pain, rapid heartbeat, and ultimately death. Chronic health effects include chronic bronchitis and decreased lung function.

Sulfur dioxide (SO_2) is a gaseous compound of sulfur and oxygen. Sources of SO_2 include coal and oil combustion, refineries, and pulp and paper mills. Acute health effects include irritation of upper respiratory tract and increased asthma symptoms. There is insufficient evidence linking SO_2 exposure to chronic health effects.

Particulate matter (PM) with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. This size particle is of concern because it is small enough to reach deep into the lungs. PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (ARB 2013). $PM_{2.5}$ includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. Acute health risks include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, and premature death. Chronic effects include alterations to the immune system and cancer formation.

Lead is a relatively soft and chemically resistant metal. Lead is present in the air as small particles as a result of a variety of industrial activities. Acute effects include developmental disruptions in fetuses and children. Chronic effects include neurological, endocrine, and cardiovascular damage.

Toxic air contaminants (TACs) are defined as air pollutants that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. Toxic air contaminants are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. According to the California Almanac of Emissions and Air Quality (ARB 2013), the majority of the estimated health risks from TACs in California can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists; however, the California Air Resource Board (ARB} has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs that pose the greatest existing ambient risk in California for which data are available are benzene, 1- and 3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene. However, diesel PM poses the greatest health risk among these TACs mentioned. Based on receptor modeling techniques, ARB estimated the health risk of diesel PM to be 360 excess cancer cases per million people in the Sacramento Valley Air Basin (SVAB) in the year 2000. Since 1990, the health risk associated with diesel PM in California has been reduced by 52 percent. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (ARB 2013).

15.2 AFFECTED ENVIRONMENT

15.2.1 Environmental Setting

The area potentially affected by the Plan is located within the SVAB. This section describes the existing air quality conditions in the SVAB, as well as existing pollutant concentrations in Yolo County.

EXISTING AIR QUALITY CONDITIONS

Regional Climate and Topography

The Plan Area is located within Yolo County, California, which is within the southwestern portion of the SVAB. The SVAB also includes all of Sacramento, Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba Counties; the western portion of Placer County; and the northeastern portion of Solano County (thereby encompassing the extended Plan Area). The ambient concentrations of air pollutants are determined by the amount of emissions released by the sources of air pollutants and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include climate and topography.

The SVAB is a relatively flat area bordered by the north Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento River–San Joaquin River Delta (Delta) from the San Francisco Bay area.

The Mediterranean climate type in the SVAB is characterized by hot, dry summers and cool, rainy winters. During the summer, daily temperatures range from 50° Fahrenheit (F) to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature. Most precipitation in the area results from air masses that move in from the Pacific Ocean, usually from the west or northwest, during the winter months. More than half the total annual precipitation falls during the winter rainy season (November through February); the average winter temperature is a moderate 49°F. Also characteristic of SVAB winters are periods of dense and persistent low-level fog, which is most prevalent between storms. The prevailing winds are moderate in speed and vary from moisture-laden breezes from the south to dry land flows from the north.

The mountains bordering the east and west sides of the SVAB create a barrier to airflow, which leads to the entrapment of air pollutants when meteorological conditions are unfavorable for transport and dilution. The highest frequency of poor air movement occurs in the fall and winter when high-pressure cells are present over the SVAB. The lack of surface wind during these periods, combined with the reduced vertical flow caused by a decline in surface heating, reduces the influx of air and leads to the concentration of air pollutants under stable metrological conditions. Surface concentrations of air pollutants are highest when these conditions occur in combination with agricultural burning activities or with temperature inversions, which hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground.

May through October is ozone season in the SVAB. This period is characterized by poor air movement in the mornings with the arrival of the Delta sea breeze from the southwest in the afternoons. In addition, longer daylight hours provide a plentiful amount of sunlight to fuel photochemical reactions between ROG and NO_X, which result in ozone formation. Typically, the Delta breeze transports air pollutants northward out of the SVAB; however, a phenomenon known as the Schultz Eddy prevents this from occurring during approximately half of the time from July to September. The Schultz Eddy phenomenon causes the wind to shift southward and blow air pollutants back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the area and contributes to the area violating ambient-air quality standards.

Local Air Quality

The local meteorology of the Plan Area is represented by measurements recorded at the Western Regional Climate Center (WRCC) Davis 1 WSW station. The normal annual precipitation is approximately 17.5 inches. January temperatures range from a normal minimum of 46°F to a normal maximum of 74.5°F. July temperatures range from a normal minimum of 55.3°F to a normal maximum of 94.1°F (WRCC 2016). The predominant wind direction is from the south (WRCC 2002).

Existing air quality conditions in the Plan Area can be characterized in terms of the federal and State air quality standards, and by monitoring data collected in the region. The Environmental Protection Agency (EPA), ARB, and local air districts maintain an extensive network of monitoring stations throughout California. Table 15-1 presents pollutant concentrations for Yolo County measured at the Woodland-Gibson Road Monitoring Station for the past 3 years (2013-2015).

Table 15-1 Monitored Pollutant Concentrations in Yolo County, 2013-2015

Pollutant Standards	2013	2014	2015
1-Hour Ozone			
Maximum 1-hour concentration (ppm)	0.080	0.082	0.086
1-hour California designation value	0.09	0.09	0.09
1-hour expected peak day concentration	0.088	0.085	0.082
Number of days standard exceeded[a]			
CAAQS 1-hour (>0.09 ppm)	0	0	0
eight-hour Ozone			
National maximum eight-hour concentration (ppm)	0.067	0.071	0.071
National second-highest eight-hour concentration (ppm)	0.066	0.067	0.071
State maximum eight-hour concentration (ppm)	0.067	0.072	0.072
State second-highest eight-hour concentration (ppm)	0.067	0.068	0.072
eight-hour national designation value	0.069	0.068	0.067
eight-hour California designation value	0.080	0.076	0.072
eight-hour expected peak day concentration	0.080	0.079	0.076
Number of days standard exceeded[a]			
NAAQS eight-hour (>0.075 ppm)	0	0	0
CAAQS eight-hour (>0.070 ppm)	0	1	4
Particulate Matter (PM_{10})[d]			
National[b] maximum 24-hour concentration ($\mu g/m^3$)	60.3	45.0	70.8
National[b] second-highest 24-hour concentration ($\mu g/m^3$)	59.2	37.5	56.7
State[c] maximum 24-hour concentration ($\mu g/m^3$)	61.5	47.5	69.4
State[c] second-highest 24-hour concentration ($\mu g/m^3$)	61.1	37.9	58.0
State annual average concentration ($\mu g/m^3$)[e]	22.9	17.4	21.5
Number of days standard exceeded[a]			
NAAQS 24-hour (>150 $\mu g/m^3$)[f]	0	0	0
CAAQS 24-hour (>50 $\mu g/m^3$)[f]	4	0	2

Table 15-1 Monitored Pollutant Concentrations in Yolo County, 2013-2015

Pollutant Standards	2013	2014	2015
Particulate Matter ($PM_{2.5}$)[d]			
National[b] maximum 24-hour concentration (μg/m³)	22.0	14.6	29.4
National[b] second-highest 24-hour concentration (μg/m³)	22.0	13.2	20.8
State[c] maximum 24-hour concentration (μg/m³)	22.0	14.6	29.4
State[c] second-highest 24-hour concentration (μg/m³)	22.0	14.6	20.8
National annual designation value (μg/m³)	–	6.6	7.0
National annual average concentration (μg/m³)	7.4	5.9	7.5
State annual designation value (μg/m³)	6	6	8
State annual average concentration (μg/m³)[e]	–	–	7.6
Number of days standard exceeded[a]			
NAAQS 24-hour (>35 μg/m³)[f]	0	0	0

Notes:
CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
– = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[c] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.

[d] Measurements usually are collected every six days.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: ARB 2016

ATTAINMENT STATUS

Local monitoring data (see Table 15-1) is used to designate areas as nonattainment, maintenance, attainment, or unclassified for the national ambient air quality standards (NAAQS) and the California ambient air quality standards (CAAQS). The four designations are further defined as follows:

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question;
- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past, but are no longer in violation of that standard;
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time; and
- Unclassified—assigned to areas were data are insufficient to determine whether a pollutant is violating the standard in question.

Table 15-2 summarizes the attainment status of Yolo County and the broader southwestern portion of the SVAB (thereby encompassing the extended Plan Area) with regard to the federal and State standards.

Table 15-2 Federal and State Attainment Status for Yolo County

Pollutant	Yolo County		Southwestern SVAB[a]	
	Federal Standard	State Standard	Federal Standard	State Standard
O_3, one hour	No Standard	Attainment	No Standard	Attainment
O_3, eight-hour	Nonattainment[b]	Nonattainment	Nonattainment[b]	Nonattainment
PM_{10}	Attainment	Nonattainment	Attainment	Nonattainment
$PM_{2.5}$	Attainment	Unclassified	Nonattainment	Unclassified
CO	Moderate Maintenance[c]	Attainment	Attainment	Attainment
NO_2	Attainment	Attainment	Attainment	Attainment
SO_2	Attainment	Attainment	Attainment	Attainment

[a] Based on overview of nonattainment maps. Area evaluated includes the County of Yolo.
[b] Level of nonattainment is considered "severe."

Source: EPA 2017a; ARB 2017

SENSITIVE RECEPTORS

Sensitive receptors relative to air quality conditions are locations where human populations, especially children, seniors, and sick persons are found, and there is reasonable expectation of continuous human exposure according to the averaging period for ambient air quality standards. Sensitive receptors defined by the County General Plan (Yolo County 2009a) include residentially designated land uses, hospitals, schools, hotels and lodgings, and neighborhood parks. In general, these sensitive receptors are concentrated in the incorporated cities and unincorporated communities in the County; however, scattered rural residences are also located throughout the undeveloped or rural lands.

15.2.2 Regulatory Setting

The regulatory structure for air quality planning in California includes federal, State, and local agencies. These agencies either have regulatory authority or are responsible for the development and implementation of programs and plans designed to reduce air pollution levels.

FEDERAL LAWS AND REGULATIONS

EPA has been charged with implementing national air quality programs. EPA air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

Criteria Air Pollutants

The CAA required EPA to establish NAAQS. As shown in Table 15-3, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also required each state to prepare an air quality control plan, referred to as a SIP, for areas that do not attain the NAAQS. The Clean Air Act Amendments (CAAA) of 1990 added requirements for states with areas that are not in attainment of all NAAQSs to revise their state implementation plans (SIPs) to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures

may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and permitting of stationary air pollution sources in the nonattainment air basin.

Table 15-3 Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Ozone*	O_3	one hour	0.09	NA	180	NA	If exceeded	NA
		eight hours	0.070	0.075	137	147	If exceeded	If fourth highest eight-hour concentration in a year, averaged over three years, is exceeded at each monitor within an area
Carbon monoxide	CO	eight hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than one day per year
		one hour	20	35	23,000	40,000	If exceeded	If exceeded on more than one day per year
(Lake Tahoe only)		eight hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded on more than one day per year
		one hour	0.18	0.100	339	188	If exceeded	NA
Sulfur dioxide	SO_2	Annual arithmetic mean	NA	0.030	NA	80	NA	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than one day per year
		one hour	0.25	0.075	655	196	If exceeded	NA
Hydrogen sulfide	H_2S	one hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C_2H_3Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Respirable particulate matter	PM_{10}	Annual arithmetic mean	NA	NA	20	NA	NA	NA
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than one day per year
Fine particulate matter	$PM_{2.5}$	Annual arithmetic mean	NA	NA	12	12	NA	If three-year average from single or multiple community-oriented monitors is exceeded
		24 hours	NA	NA	NA	35	NA	If three-year average of 98th percentile at each population-oriented monitor within an area is exceeded
Sulfate particles	SO_4	24 hours	NA	NA	25	NA	If equaled or exceeded	NA

Table 15-3 Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded no more than one day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA
		Rolling 3-month average	NA	NA	NA	0.15	If equaled or exceeded	Averaged over a rolling 3-month period

NA = not available

Source: ARB 2013

Hazardous Air Pollutants

EPA and ARB regulate hazardous air pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology or best available control technology for TACs to limit emissions. These, in conjunction with additional rules set forth by the YSAQMD, described below, establish the regulatory framework for TACs.

EPA has programs for identifying and regulating HAPs. Title III of the CAA directed EPA to promulgate National Emissions Standards for HAPs (NESHAPs). The NESHAPs may differ for major sources and for area sources of HAPs. Major sources are defined as stationary sources with potential to emit more than 10 TPY of any HAP or more than 25 tons per year (TPY) of any combination of HAPs; all other sources are considered area sources. The emissions standards are to be promulgated in two ways. First, EPA has technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring maximum available control technology for toxics. For area sources, the standards may be different, based on generally available control technology. Second, EPA also has health risk–based emissions standards, where deemed necessary, to address risks remaining after implementation of the technology-based NESHAP standards.

The CAA also required EPA to issue vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, the CAA required the use of reformulated gasoline in selected areas with the most severe ozone nonattainment conditions to further reduce mobile-source emissions.

General Conformity

The CAA requires that federal actions conform to the appropriate SIP so that they do not interfere with strategies employed to attain the NAAQS. The rule applies to federal actions in areas designated as nonattainment areas for any of the six criteria pollutants and in some areas designated as maintenance areas. Project level conformance with the SIP is demonstrated through a general conformity applicability analysis as a first step. A general conformity determination would be required if a proposed action's total direct and indirect emissions for each affected pollutant for which the region is classified as a maintenance or nonattainment area for the national standards are above the *de minimis* levels established by the conformity rule. If the condition above is not met, a general conformity determination must be performed to demonstrate that total direct and indirect emissions for each affected pollutant for which the region is classified as maintenance or nonattainment for the national standards would conform to the applicable SIP.

STATE LAWS AND REGULATIONS

ARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). California law authorizes ARB to set ambient (outdoor) air pollution standards (California Health and Safety Code section 39606) in consideration of public health, safety, and welfare (Table 15-3).

Criteria Air Pollutants

ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest date practical. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

Among ARB's other responsibilities are overseeing local air district compliance with federal and State laws, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review are required before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs, including diesel PM, and adopted EPA's list of HAPs as TACs.

Once a TAC is identified, ARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold standard exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold standard. If no safe threshold standard exists, the measure must incorporate best available control technology for toxics to minimize emissions.

ARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Recent milestones included the low-sulfur diesel fuel requirement and tighter emissions standards for heavy-duty diesel trucks (effective in 2007 and subsequent model years) and off-road diesel equipment (2011). Over time, replacing older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) in California have been reduced substantially over the last decade; such emissions will be reduced further through a progression of regulatory measures (e.g., low emission vehicle/clean fuels and Phase II reformulated-gasoline regulations) and control technologies.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

LOCAL LAWS AND REGULATIONS

Yolo Solano Air Quality Management District

The Plan Area encompasses all of Yolo County and the extended Plan Area includes a small portion of northern Solano County. Both areas are located within the jurisdiction of the YSAQMD. As discussed above, under the CCAA, YSAQMD is required to develop an air quality attainment plan for nonattainment criteria pollutants within the air district. A discussion of the applicable regional air quality management plans is provided on pages 277-288 of the Yolo County General Plan EIR and is hereby incorporated by reference (Yolo County 2009b:277-228). The following is a summary of the air quality plans and actions that have been, or are currently being undertaken by the YSAQMD:

- **1991 Air Quality Attainment Plan:** Submitted to the ARB by the YSAQMD, in coordination with other air districts in the Sacramento region to address ozone.
- **1994 Ozone Attainment Plan:** Revised and updated the 1991 Air Quality Attainment Plan.
- **2006 and 2008 Rate-of-Progress Plans:** Submitted by the Sacramento regional air districts to present strategies to reduce ROG, NO_X, and PM_{10} emissions.
- **Updated Clean Air Plan and Progress Plan:** Air districts in the Sacramento Region developed an updated Clean Air Plan to address ozone nonattainment. The "Sacramento Regional eight-hour Ozone Attainment and Reasonable Further Progress Plan" was approved in 2009 and updated in 2011 and 2013. This plan demonstrates how the region will reach attainment with the eight-hour ozone standard by 2018.

Projects and activities in the Plan Area may be subject to various YSAQMD rules and regulations. These rules have been adopted by the YSAQMD to reduce emissions throughout the district. Failure to comply with any applicable district rule would be a violation subject to district enforcement action. The following are examples of rules that could apply to activities implemented as part of the Plan:

- **Rule 2.5, Nuisance:** Restricts discharge from any source quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause to have a natural tendency to cause injury or damage to business or property.
- **Rule 2.8, Open Burning:** Limits emissions to the atmosphere from open burning.
- **Rule 2.11, Particulate Matter Concentration:** Limits release or discharge into the atmosphere, from any source, particulate matter in excess of 0.3 grains per cubic foot of exhaust volume as calculated standard conditions.
- **Rule 3.1, General Permit Requirements:** Provides an orderly procedure for the review of new sources of air pollution and of the modification and operation of existing sources through the issuance of permits.

Yolo County General Plan

The *County of Yolo 2030 Countywide General Plan* (2009a) contains the following policies related to air quality that may be relevant to the Plan:

- **Policy CO-6.1** Improve air quality through land use planning decisions.
- **Policy CO-6.2** Support local and regional air quality improvement efforts.
- **Policy CO-6.6** Encourage implementation of YSAQMD Best Management Practices, such as those listed below, to reduce emissions and control dust during construction activities:

- Water all active construction areas at least twice daily.
- Haul trucks shall maintain at least two feet of freeboard.
- Cover all trucks hauling soil, sand, and other loose materials.
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut-and-fill operations and hydroseed area.
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Sweep streets if visible soil material is carried out from the construction site.
- Treat accesses to a distance of 100 feet from the paved road with a 6 to 12 inch layer of wood chips or mulch.
- Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel. (DEIR MM AIR-1)

- **Policy CO-6.7** Pursue legislation to assist farming operations with permitting bioenergy operations

City of Davis General Plan

The City of *Davis General Plan* (2007) contains the following policies related to air quality that may be relevant to the Plan:

- **Policy AIR 1.1** Take appropriate measures to meet the AQMD's goal for improved air quality.
- **Policy AIR 2.1** Develop a program to monitor and publicize air quality parameters.

City of West Sacramento General Plan

The City of West Sacramento General Plan contains the following goal and policies that relate to air quality that may be applicable to the analysis of the HCP/NCCP:

Goal S-3. To prevent loss of life, injury, and property damage due to geologic and seismic hazards.

- **Policy S-5.1 Local and Regional Programs.** The City shall support and participate in local and regional air quality planning programs to ensure the earliest practicable attainment and subsequent maintenance of federal and state ambient air quality standards.
- **Policy S-5.3. New Development.** The City shall utilize the CEQA process to ensure development projects incorporate feasible mitigation measures to reduce construction and operational air quality emissions, and consult with the Yolo-Solano Air Quality Maintenance District (AQMD) early in the development process.
- **Policy S-5.4. Sensitive Land Uses**. The City shall ensure maintenance of adequate separation between sensitive land uses and facilities or operations that may produce toxic or hazardous air pollutants or substantial odors, consistent with California Air Resources Board recommendations.

- **Policy S-5.6. Early Coordination with YSAQMD.** The City shall notify and coordinate with the Yolo-Solano Air Quality Maintenance District when industrial developments are proposed within the city to ensure applicants comply with applicable air quality regulations and incorporate design features and technologies to reduce air pollution.

City of Winters General Plan

The *City of Winters General Plan* (1994) Transportation and Circulation, and Environmental Resources elements contain the following policies related to air quality that may be relevant to the Plan:

- **Policy III.D.1:** To the extent feasible, the City shall provide for separation of residential and other noise-sensitive land uses from major roadways to reduce noise and air pollution effects.

- **Policy VI.E.1.** The City shall cooperate with the Yolo-Solano Air Pollution Control District in an effort to ensure the earliest practicable attainment and subsequent maintenance of federal and state ambient air quality standards.

- **Policy VI.E.2.** The City shall utilize the CEQA process to identify and avoid or mitigate potentially significant air quality impacts of new development. The CEQA process shall also be utilized to ensure early consultation with the Yolo-Solano Air Pollution Control District concerning air quality issues associated with specific development proposals.

- **Policy VI.E.3.** The City shall notify and coordinate with the Yolo-Solano Air Pollution Control District when industrial developments are proposed. Such coordination will assist applicants in complying with applicable air quality regulations and will assist the City in promptly identifying and resolving potential air quality problems.

- **Policy VI.E.4.** Major intersections shall be designed to minimize long vehicle delays which result in carbon dioxide (CO) "hot spots."

- **Policy VI.E.5.** The City shall, to the extent practicable, separate sensitive land uses from significant sources of air pollutants or odor emissions.

- **Policy VI.E.6.** The City shall require for both public and private projects that construction-related dust be minimized. Larger projects that create a potential for generating a significant amount of construction-related dust shall be required to include dust control measures as part of their construction mitigation plans.

- **Policy VI.E.8.** The City shall attempt through careful land use and site planning to reduce automobile use.

- **Policy VI.E.II.** In granting development entitlement, the City shall require all new industrial and commercial developments within the city projected to generate more than 500 trips per day (based on typical generation rates) to develop an air quality mitigation plan. This plan shall include an analysis of how the project would utilize site planning, mixed land uses, transportation systems management measures (e.g., carpooling, van pooling, shuttle bus service, transit incentives, etc.) to reduce by 25 percent the number of trips that would typically be projected for such development. Where this goal cannot be met by these methods, the plan shall provide for off-site mitigation through funding of air quality improvements such as new park-and-ride lots, sidewalks, bike paths, and support of transit, as deemed acceptable to the City.

City of Woodland General Plan

The *City of Woodland General Plan* includes the following policies related to the protection of air quality that may be relevant to the Plan:

- **Policy 7.F.1:** YSAQMD Thresholds. Utilize air quality thresholds of significance set by the YSAQMD.

- **Policy 7.F.2:** Best Management Practices. Require all projects to implement Best Management Practices (BMPs) for reducing air pollutant emissions associated with the construction and operation of development projects as a standard City condition of approval.

- **Policy 7.F.3:** Protect Sensitive Receptors. For the purposes of environmental review of potential toxic air contaminant impacts, consider residentially designated land uses, hospitals and other medical facilities, residential care facilities, schools, day care centers, and playgrounds to be "sensitive receptors." Discourage the location of new sensitive receptor uses within 500 feet of a limited access state highway (SR 113 and 1-5). Implement applicable buffer distances recommended by the California Air Resources Board between sensitive uses and sources of substantial pollutant concentrations.

- **Policy 7.F.4:** Landscaping to Improve Air Quality. Promote the increase of community-wide tree canopy and the use of plants and trees that are efficient pollutant absorbers.

- **Policy 7.F.5:** Electric Equipment. Promote inclusion of features such as exterior electrical outlets in new residential development to encourage the use of electric and other alternative fuel equipment.

- **Policy 7.F.6:** Odor Mitigation. Require odors associated with the wastewater treatment plant to be mitigated to acceptable levels in conjunction with planning and development for any land within the odor impact area identified in Figure 7-6. Require an odor mitigation study to be prepared to identify specific measures to be undertaken, including identification of required implementation timing and any necessary financing, as secured through a Development Agreement, or other mechanism acceptable to the city, prior to commencement of development.

- **Policy 7.F.8:** Reduce Vehicle Miles Travelled. Continue to work in conjunction with the YSAQMD and other agencies to establish and implement additional transportation control measures that will reduce vehicle travel and improve air quality.

15.3 ENVIRONMENTAL EFFECTS

15.3.1 Methodology and Significance Criteria

METHODS AND ASSUMPTIONS

The evaluation of the potential effects to air quality that may result from each alternative is based on a review of the activities included in each alternative described in Chapter 2, *Proposed Action and Alternatives*; review of the Yolo County General Plan, and the planning documents from the cities of Davis, West Sacramento, Winters, and Woodland; and the assumption that activities under each alternative would comply with the applicable federal, State, and local regulations and general plan policies.

As described in Section 3.3, the issuance of ITPs by the Wildlife Agencies for take of 12 covered species associated with five categories of covered activities—together with subsequent adoption and implementation of the Plan by the Applicants consistent with the Permits—is the Proposed Action considered in this EIS/EIR. Issuance of permits by the Wildlife Agencies only provides compliance with the FESA and NCCPA.

All covered activities are subject to the approval authority of one or more of the Applicants with jurisdiction over such projects, and HCP/NCCP approval and permit issuance for take of covered species does not confer or imply approval from any entity other than the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW) to implement the covered activities. Rather, as part of the standard approval process, individual projects will be considered for further environmental analysis and generally will receive separate, project-level environmental analysis review under CEQA and, in some cases, NEPA for those projects involving federal Agencies.

For the purposes of this analysis, a qualitative discussion of air quality impacts associated with the covered activities is provided. The physical effects of the covered activities would be expected to continue consistent with the projections of the County and city general plans without the implementation of the Yolo HCP/NCCP, as would subsequent mitigation in the case of the take of an endangered or covered species under the federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). Conservation easements or reserves would be constructed to mitigate for these impacts. With respect to these reserves, the activity with the greatest potential for emissions would be where grading or earth moving is completed as party of habitat restoration or creation; therefore, a quantitative discussion of emissions associated with the establishment and maintenance is provided.

Each alternative evaluated herein would involve the establishment of habitat reserves following the take of a listed species pursuant to the FESA and the CESA. Reserves that place easements on lands to continue the existing use would not alter air emissions. However, reserves that included habitat enhancement, restoration, or creation could generate air emissions from these activities. To evaluate the emissions associated with these reserve establishment activities, construction- and operational-related activities were quantified using the California Emissions Estimate Model (CalEEMod). Modeling was for an estimated high activity day implementing habitat restoration/creation and used conservative assumptions (i.e., assumptions that would lead to higher emissions), so as not to underestimate emissions from this activity. The modelling included the use of heavy-duty equipment for earth movement and grading, as well as operational-related vehicle use. Model assumptions and parameters are included in Appendix F. This level of activity would exceed any future reserve operations and maintenance activity; therefore, the impact analysis for reserve establishment would provide a maximum level of daily emissions for the life of the reserve.

The assessment of potential effects on air quality in the Plan Area is based on the anticipated changes in land cover and land uses over a 50-year study period, corresponding to the permit term under the Proposed Action Alternative.

Anticipated changes in land cover/land use for each alternative are described in Chapter 2, Proposed Action and Alternatives. See Chapter 3, *Approach to the Analysis*, for a description of the methodology used across all resource chapters for the analysis of cumulative effects.

As described in Chapter 2, *Proposed Action and Alternatives*, the Conservancy has proposed a number of changes to the HCP/NCCP since the release of the Draft on June 1, 2017. These changes are described and Characterized in Section 2.3.2, *Alternative B – Proposed Action Alternative (Permit Issuance/Plan Implementation)*, of Chapter 2.

These proposed changes fall into several categories;

- Copy edits such as correction of spelling errors,
- Minor text clarifications and corrections such as providing or correcting cross references to other parts of the document,
- Minor numeric corrections, such as small adjustments to acreages of particular land cover types,
- Providing updated information since publication of the Draft HCP/NCCP such as including information from the City of Woodland General Plan Update 2035, which was adopted after the Draft HCP/NCCP was published,
- Clarifications or enhancements to particular plan elements such as new or updated Avoidance and Minimization Measures (AMMs),
- Increased details on plan implementation such as providing additional information on the content of the Implementation Handbook, and

- Changes in assumptions regarding costs and funding to reflect updated information.

These proposed changes have been analyzed to determine whether they would result in any changes to the impact analysis or conclusions reached in the Draft EIS/EIR. This analysis is provided in Section 24.2, *Evaluation of Proposed Modifications to the Draft HCP/NCCP*. The analysis substantiates that the proposed changes to the HCP/NCCP do not alter the analysis or impact conclusions provided in the Draft EIS/EIR for air quality. Therefore, no changes to the analysis provided below are merited.

Federal Conformity Analysis

A non-transportation project located in a nonattainment or maintenance area must undergo a general conformity analysis in accordance with 40 Code of Federal Regulations (CFR) 93 to ensure that the project does not:

- cause or contribute to new violations or any standard in any area;
- increase the frequency or severity of an existing violation of any standard; or
- delay timely attainment of any standard requiring interim emission reduction, or other milestones.

As a part of the general conformity process, a conformity analysis is required if a federal action satisfies one of the following two conditions:

- The action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at or above emission rates shown in Table 15-4.

- The action's direct and indirect emissions of any criteria pollutant represent 10 percent of a nonattainment or maintenance area's total emissions inventory for that pollutant.

Table 15-4 Federal *De Minimis* Levels for Yolo County

Pollutant	Federal Attainment Classification	De Minimis Levels (tons/year)
O_3, (VOC)	Severe Nonattainment	25
O_3, (NO_x)	Severe Nonattainment	25
PM_{10}	Attainment	N/A
$PM_{2.5}$	Attainment	N/A
CO	Attainment	N/A
Lead (Pb)	Attainment	N/A

Source: EPA 2017b

If the total direct emissions associated with the action are below the *de minimis* levels indicated in Table 15-4, general conformity requirements do not apply; the action is considered in conformity and would not result in an adverse effect. Since the air basin encompassing the Plan Area is in attainment (based on federal standards) for the criteria pollutants indicated in Table 15-4 except for ozone (severe nonattainment status), a conformity analysis for ozone must be completed for the alternatives.

SIGNIFICANCE CRITERIA

Impacts would be significant if an alternative would result in the following:

- conflict with or obstruct implementation of the applicable air quality plan;

- violate any air quality standard or contribute substantially to an existing or projected air quality violation;

- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard;
- expose sensitive receptors to pollutant concentrations in excess of standards; or
- create objectionable odors affecting a substantial number of people.

In 2007, the YSAQMD published more detailed CEQA thresholds of significance based on numeric criteria utilized by YSAQMD. Exceedance of these numeric criteria would be considered to obstruct implementation of an applicable air quality plan and/or contribute substantially to an existing or projected air quality violation. Based on numeric criteria utilized by YSAQMD, a significant effect would occur if an alternative would:

- cause construction-generated criteria air pollutants or precursor emissions to exceed YSAQMD-recommended thresholds of 10 tons/year for NO_X and ROG, and 80 pounds per day (lb/day) for PM_{10};
- result in a net increase in long-term operational criteria air pollutants or precursor emissions that exceed YSAQMD-recommended thresholds of 10 lb/year for ROG and NO_X, and 80 lb/day for PM_{10};
- result in long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 ppm or the eight-hour CAAQS of 9 ppm; or
- expose sensitive receptors to a substantial incremental increase in TAC emissions that exceed 10 in one million for carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1.0 or greater.

Issues Not Evaluated Further

There are no activities proposed in the Plan Area as part of the proposed action and alternatives that would be considered emitters of lead. Therefore, this criteria area pollutant is not considered further.

Controlled burns may be used in some habitat reserves under any of the alternatives as a vegetation management tool. Open burns are regulated through YSAQMD by Rule 2.8. Controlled burns would be infrequent, typically up to once annually at a particular preserve and not implemented every year, and before initiating a controlled burn an open burn permit must be obtained from YSAQMD and burn implementation must comply with all permit requirements to limit air emissions. Further, controlled burns would not be a primary vegetation management method, with other options such as managed grazing available. This issue is not discussed further.

15.3.2 Effects of Proposed Action and Alternatives

ALTERNATIVE A—NO ACTION ALTERNATIVE (NO PERMIT/NO PLAN IMPLEMENTATION)

Environmental Consequences/Environmental Effects

As described previously in Chapter 2, *Proposed Action and Alternatives*, under the No Action Alternative (Alternative A), take associated with development would occur over the 50-year study period consistent with the local general plans and other applicable planning documents (e.g., community plans, specific plans, recreation plans). As also described in Chapter 2, for purposes of this analysis, development and related activities (e.g., operations and maintenance) under the No Action Alternative are considered using the same organizational categories identified in the Yolo HCP/NCCP; urban projects and activities; rural projects and activities, which includes rural public services, infrastructure, and utilities, agricultural economic development and open space; and public and private operations and maintenance. Under the No Action Alternative, the Plan would not be approved and implemented and no Endangered Species Act

authorizations would be issued by the USFWS or CDFW related to the Plan. Endangered species permitting and mitigation would continue on an individual project-by-project basis. All categories of development and related activities would result in construction related activities using heavy construction equipment and causing ground disturbance that would generate pollutant emissions. Larger development related activities, such as those associated with the urban projects and activities and rural projects and activities categories would generate the greatest construction emissions, while categories with a smaller footprint or lesser overall activity, such as public and private operations and maintenance, would generate fewer construction emissions. Emissions of criteria air pollutants, TACs, and odors could all result from construction activities. Specifically, use of heavy-duty diesel construction equipment would generate ozone precursors (NO_X and ROG), TACs associated with diesel exhaust (i.e., PM_{10}), and odors. Fugitive dust emissions of PM_{10} and $PM_{2.5}$ would occur as a result of demolition, land clearing, grading activities, earth movement, and vehicle movement on unpaved surfaces. Construction-related emissions would vary greatly depending on the level of activity, the specific operations taking place, the equipment operated, local soils, and weather conditions. Construction projects with higher levels of emissions have the potential to exceed YSAQMD-recommended thresholds of 10 tons/year for NO_X and ROG, and 80 lb/day for PM_{10}.

However, construction activities in the Plan Area would be subject to various air quality-related laws and regulations, including the provisions of the CAA, CCAA, the Tanner Air Toxics Act, Air Toxics Hot Spots, and other regulations and statutes discussed above in section 15.2.2. Further, projects would be subject to the numeric thresholds established by YSAQMD. Under the No Action Alternative, projects large enough to exceed construction emissions thresholds would typically undergo CEQA review, whereby emissions of air pollutants would be assessed on a project-by-project basis. Projects found to exceed the thresholds for construction emissions would be required to implement feasible mitigation. The YSAQMD *Handbook for Assessing and Mitigating Air Quality Impacts* recommends mitigation measures to be applied during construction activities, including methods to control fugitive dust and limit emissions of pollutants from equipment.

Operations associated with future development would also result in emissions of criteria air pollutants, TACs, and odors. Emissions of criteria air pollutants would be associated with mobile (on-road and off-road vehicles), area-wide, and stationary sources. TAC and odor emissions would be associated with operational-related mobile and stationary sources (e.g., diesel exhaust on roadways; emissions from various land use development such as dry cleaners, gas stations, and other industrial or commercial development). As described for construction emissions, all categories of development and related activities would result in some level of operational related emissions. Larger development related activities, such as those associated with the urban projects and activities and rural projects and activities categories would generate the greatest operational emissions, by including land uses that would generate mobile, stationary, and area-wide emissions and including these land uses in higher volumes than other development categories. The remaining categories of development and related activities; rural public services, infrastructure, and utilities; agricultural economic development and open space; and public and private operations and maintenance; would generate fewer vehicle trips, have fewer facilities, and/or generally have less overall activity and therefore would likely have less operational emissions.

Agricultural activities would continue to occur and vary depending on future conditions. Replanting or appropriating agricultural land based on demand, environmental conditions, and land-use changes would result in emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ from the use of agricultural equipment (e.g., plows). Further, emissions of TACs associated with the use of fertilizers, pesticides, herbicides, and fungicides, as well as air pollutants from manure, would likely continue to occur as consistent with the County and city general plans.

As mentioned previously in Chapter 2, *Proposed Action and Alternative*s, the Yolo HCP/NCCP includes a corridor along the south bank of Putah Creek, in Solano County, where lands can be added to the protected mitigation lands system. Under the No Action Alternative, it is assumed that there would primarily be continuation of existing conditions in the expanded Plan Area along the south side of Putah Creek. The land is primarily used for agriculture and this land would continue. The area also contains valley foothill riparian, which would be expected

to continue to be protected via various laws and regulations (see Chapter 4, *Biological Resources)* and enhanced through activities such as those implemented by the Lower Putah Creek Coordinating Committee.

Operation of new facilities and agricultural lands in the Plan Area would be subject to various air quality-related laws, regulations, and standards, including those enforced by EPA, ARB, and YSAQMD, and general plan policies as described above in section 15.2.2. Further, project operations would be subject to the numeric thresholds established by YSAQMD. As described for construction emissions, under the No Action Alternative, projects large enough to exceed operational emissions thresholds would typically undergo CEQA review, whereby emissions of air pollutants would be assessed on a project-by-project basis. Projects found to exceed the thresholds for operational emissions would be required to implement feasible mitigation. The YSAQMD *Handbook for Assessing and Mitigating Air Quality Impacts* recommends mitigation measures to be applied to operational emissions.

With regards to emissions of local mobile-CO, effects only occur at intersections experiencing extreme delays and congestion, typically those supporting over 30,000 vehicles per hour. In addition, mobile-CO emissions per vehicle will continue the trend of decreasing over time due to cleaner burning fuels and improved vehicle engine technology. It is only in very limited instances, in highly urbanized areas with severe traffic congestion that conditions arise where mobile source CO concentrations exceed standards. It is highly unlikely that these conditions would occur anywhere in the Plan Area over the 50-year study period.

As the development and other activities described above are implemented as part of the No Action Alternative, impacts to threatened and endangered species and other biological resources would occur, requiring mitigation. Mitigation measures are likely to include on-site areas of preservation within a specific project site, and smaller, non-contiguous areas of preservation lands throughout Yolo County, or nearby sites outside the county with authorization from the permitting agencies. Generally, these required mitigation actions under the No Action Alternative would either retain lands in their existing condition (i.e., preserve habitat), or convert lands to a more natural state (i.e., habitat restoration or creation).

Activities associated with the establishment of protected mitigation lands would vary depending on the type of protected mitigation lands. Protected mitigation lands intended solely to protect existing habitat might require very little work to shift the existing use to reserve; however, protected mitigation land that includes habitat enhancement, restoration, or creation could include construction activities such as earth movement and grading. Both examples of protected mitigation lands could require fence installation, installation of interpretive features, and other physical changes. The use of heavy equipment for grading and earth moving could result in exhaust (e.g., ROG, NO_X, PM, CO) and fugitive dust (i.e., PM_{10} and $PM_{2.5}$).

Although specific details regarding the size of protected mitigation lands and types of construction activities under the No Action Alternative are unknown at this time, an estimate of emissions was conducted based on conservative assumptions of protected mitigation land size and likely construction equipment that would be used (e.g., trucks, loaders, backhoes) for protected mitigation lands involving habitat restoration/creation. Refer to Appendix F for detailed assumptions. Based on the modeling conducted, protected mitigation land establishment could result in approximately 59 lbs/day of PM_{10} daily from the use of heavy equipment, worker commute trips, and vendor haul trips (e.g., movement of goods). Modeled annual emissions of ROG and NO_X from construction-related activities were 0.5 tons/year and 5.5 tons/year, respectively. This level of emissions would not exceed applicable YSAQMD thresholds of significance of 80 lbs/day for PM_{10} and 10 tons/year for ROG and NO_X. Emissions of $PM_{2.5}$ would be 17 lbs/day; however, YSAQMD does not have an established threshold for $PM_{2.5}$. Table 15-5 summarizes the projected emissions for each pollutant and their respective YSAQMD thresholds.

Table 15-5 Estimated Emissions of Air Pollutants from Protected Mitigation Lands Establishment

Pollutant	YSAQMD Threshold	Emissions	Exceeds Thresholds?
ROG	10 tons/year	0.5 tons/year	No
NO_X	10 tons/year	5.5 tons/year	No

Table 15-5 Estimated Emissions of Air Pollutants from Protected Mitigation Lands Establishment

Pollutant	YSAQMD Threshold	Emissions	Exceeds Thresholds?
PM_{10}	80 lbs/day	59 lbs/day	No
$PM_{2.5}$	N/A	17 lbs/day	N/A

Notes: YSAQMD = Yolo-Solano Air Quality Management District; tons/year = tons per year; lbs/day = pounds per day; N/A = not applicable

With regard to PM_{10}, YSAQMD requires incorporation of all available emissions and dust control measures a mitigation measure for all projects subject to CEQA review (YSAQMD 2007). Although development triggering the need for establishment of protected mitigation lands is likely to undergo CEQA review, establishment of protected mitigation lands itself is unlikely to trigger CEQA review. Therefore, protected mitigation land establishment may not be required to include all available dust control measures. However, based on the conservative emissions modeling, dust emissions would be relatively minor and therefore would not contribute significantly to the existing nonattainment status of the SVAB. Further, if any relatively large scale grading or earth work were proposed, grading permits would be required from local regulatory agencies that would require dust control measures, if applicable. Thus, based on the relatively low emissions of PM_{10} and $PM_{2.5}$ and that any relatively large scale potential grading or earth moving would be regulated through local permits, construction related emissions associated with protected mitigation lands establishment would not result in exceedances of any air quality standards.

With regard to exposure of sensitive receptors to TACs, odors, and local CO, construction activities associated with protected mitigation lands establishment would be relatively minor and temporary. As such, exposure would be minimal and would not result in excessive exposure at any one receptor for an extended period of time. With respect to TACs and CO, abbreviated exposure at low levels would not result in adverse health effects to sensitive receptors. As protected mitigation lands related construction and maintenance would be short term in nature, sensitive receptors within the vicinity of protected mitigation lands would not be exposed to TACs, odors, or CO in levels or over a period of time that would result in health impacts.

Operational emissions associated with protected mitigation lands management include mobile-source exhaust emissions (i.e., vehicle trips) associated with visits by protected mitigation lands managers/crews for maintenance and monitoring. Additionally, depending on the specifics of the activities associated with protected mitigation lands monitoring, protected mitigation lands workers may use local roadways, resulting in on- and off-site exhaust emissions (e.g., ROG, NO_X, PM_{10}, $PM_{2.5}$) as well as fugitive dust. These activities could result in localized, temporary emissions.

Although specific details regarding the specific activities or operational/maintenance trip number are unknown at this time, an estimate of emissions was conducted based on conservative assumptions of protected mitigation lands size, equipment that would be used, and activities that would take place (e.g., cars, trucks, maintenance equipment). Refer to Appendix F for detailed assumptions. Based on the modeling conducted, protected mitigation lands maintenance and operations would result in approximately 49.5 lbs/day and 5.5 lbs/day of PM_{10} and $PM_{2.5}$, respectively. Emissions of ROG and NO_X would be less than 1 ton/year and 1.6 tons/year, respectively. This level of ROG and NO_X emissions would not exceed the applicable YSAQMD threshold of significance of 10 tons/year of ROG and NO_X. With regard to PM_{10}, most protected mitigation lands operations and maintenance activities would not trigger YSAQMD review. However, emission-generating activities (e.g., fence repair, mowing, grazing) would be minor. As shown by the modeling conducted, fugitive dust emissions would be minimal and would likely not exceed 5 lbs/day. Operational-related activities would not result in substantial dust emissions that would contribute to the existing nonattainment status of the SVAB. No additional effects would occur from operation activities associated with protected mitigation lands. Table 15-6 shows the estimated emissions of air pollutants from protected mitigation lands maintenance and monitoring.

Table 15-6 Estimated Emissions of Air Pollutants from Protected Mitigation Lands Maintenance and Monitoring

Pollutant	YSAQMD Threshold	Emissions	Exceeds Thresholds?
ROG	10 tons/year	<1 ton/year	No
NO_X	10 tons/year	1.6 tons/year	No
PM_{10}	80 lbs/day	49.5 lbs/day	No
$PM_{2.5}$	N/A	5.5 lbs/day	N/A

Notes: YSAQMD = Yolo-Solano Air Quality Management District; tons/year = tons per year; lbs/day = pounds per day; N/A = not applicable

With regard to exposure of sensitive receptors to TACs, odors, and local CO, operational activities associated with protected mitigation lands management would be relatively minor and temporary. As such, exposure would be minimal and would not result in excessive exposure at any one receptor for an extended period of time. With respect to TACs and CO, abbreviated exposure at low levels would not result in adverse health effects to sensitive receptors. As protected mitigation lands related construction and maintenance would be short term in nature, sensitive receptors within the vicinity of protected mitigation lands would not be exposed to TACs, odors, or CO in levels or over a period of time that would result in health impacts.

Cumulative Effects

Expansion of development in urban and rural areas (i.e., Davis, West Sacramento, Winters, Woodland) over the past century has resulted in an increase in the amount of agricultural and natural landscapes converted to residential, commercial, and other uses. This past development has produced emissions of air pollutants in the Plan Area such that human-related sources of pollution have depleted air quality as compared to pre-development conditions. Development in the Plan Area has resulted in the addition of mobile (e.g., automobiles, heavy-duty trucks) and stationary sources (e.g., wastewater treatment plants, factories) of air pollutants, with the Yolo County portion of the SVAB is in non-attainment for ozone and PM*10*. This indicates that there is currently an adverse cumulative effect on air quality within the Plan Area.

Given the stringent regulatory environment in the SVAB, as well as various federal, State, and local policies and programs that result in emission reductions (e.g., clean fuel standards, improved vehicle emission standards, greenhouse gas reduction measures that also result in criteria pollutant reductions), further development in Yolo County included within the No Action Alternative would not necessarily contribute to a continuing reduction in air quality.

Elements of the additional foreseeable future development in the Plan Area, such as solar and wind energy development, could result in a net improvement in air quality in the SVAB by supplying electricity with less pollutant emissions per kilowatt hour produced. Past and present projects in the Plan Area have typically relied on electricity derived from fossil fuels, which emit air pollutants during combustion. Solar and wind energy sources would not require combustion and would, therefore, not produce air pollutants to a similar degree. Other foreseeable future projects, such as Caltrans infrastructure projects and additional flood control activities, would contribute construction emissions, but direct operational emissions would be minimal. All of the foreseeable future development projects would be subject to the same regulations, policies, and programs as the projects included as part of the No Action Alternative.

In addition, over the 50-year project study period, it is likely that advances in technology and cleaner fuels will continue through this timeframe that would result in reduced emissions of criteria air pollutants. This could have a net-positive cumulative effect on air quality in the Plan Area.

ALTERNATIVE B - PROPOSED ACTION (PERMIT ISSUANCE/PLAN IMPLEMENTATION)

The Proposed Action Alternative (Alternative B) incorporates the same development-related activities identified for the No Action Alternative (urban projects and activities, rural projects and activities, and public

and private operations and maintenance), with the HCP/NCCP providing a mechanism for the Wildlife Agencies to provide incidental take authorization for these lawfully undertaken covered activities. Air quality impacts as a result of these activities would be the same as those described under the No Action Alternative.

Where the Proposed Action Alternative differs from the No Action Alternative is the implementation of the Yolo HCP/HCCP, including its conservation strategy and neighboring landowner protection program, as well as the required use of Avoidance and Minimization Measures (AMMs) during implementation of covered activities. The following impact discussion focuses on these elements of the HCP/NCCP that differ from the No Action Alternative. Components of the conservation strategy include but are not limited to habitat assessment surveys and population surveys; habitat management; restoration, enhancement, and creation of habitats; conversion of agricultural lands to create habitat; construction of facilities necessary for management and maintenance; monitoring; and control of invasive, nonnative species. However, the primary result of the neighboring landowner protection program, from an air quality perspective, would be the general preservation of existing conditions on lands adjacent to the Plan reserve system, and therefore, little to no change in air emissions associated with those lands. The voluntary neighboring landowner protection program is described in more detail in Chapter 2, *Proposed Action and Alternatives*. Because the program does not change land uses or air emissions, it would not have an effect on air quality, and is not evaluated further in the impact discussion below.

All covered actions implemented under the Proposed Action Alternative, including both development and conservation actions, would be subject to AMMs required by the HCP/NCCP, some of which would reduce air quality effects. The AMMs that would reduce the likelihood of air quality effects are shown in Table 15-7 and are discussed in detail in Appendix C. AMM3, *Confine and Delineate Work Area* would reduce the ground disturbance footprint associated with covered activities and thereby reduce PM_{10} and $PM_{2.5}$ emissions. AMM 5, *Control Fugitive Dust*, would reduce dust mobilization, and therefore also reduce PM_{10} and $PM_{2.5}$ emissions.

Table 15-7 Yolo HCP/NCCP Avoidance and Minimization Measures Applicable to Air Quality

General Construction and Operations and Maintenance
AMM3, Confine and Delineate Work Area.
AMM5, Control Fugitive Dust

Effect AQ-1: Conflict with or obstruct implementation of an applicable air quality plan.

Under the Proposed Action Alternative, implementation of the conservation strategy would include management activities that entail the construction, maintenance, repair, replacement, and use of facilities required to manage the reserve system, including maintenance sheds, shade structures, roads, culverts, fences, gates, wells, stock tanks, and stock ponds. All reserve system management structures will be constructed to minimize adverse effects on covered species and natural communities. Facilities existing at the time of land acquisition would be used whenever feasible. Habitat enhancement, restoration, creation, management, and monitoring would also be conducted. Implementation of these activities would result in emissions of air pollutants, similar to those described under the No Action Alternative.

The conservation strategy under the Proposed Action Alternative would also include the acquisition of agricultural land. Although agricultural use would be restricted (i.e., not converting the lands to orchards or vineyards), agriculture-related activity would continue to occur. Use of agriculture-related equipment (e.g., heavy-duty plows) would result in emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$; however, such emissions would occur similar to agricultural activity included in the covered activities. Therefore, emissions of air pollutants associated with agricultural preservation under Proposed Action Alternative would be similar to that discussed under the No Action Alternative.

As mentioned previously in Chapter 2, *Proposed Action and Alternatives*, the Yolo HCP/NCCP includes a corridor along the south bank of Putah Creek, in Solano County, where lands can be added to the reserve

system. No other activities related to the HCP/NCCP would occur in this corridor, which is referred to as the expanded Plan Area. The expanded Plan Area would supplement the reserve system, and may undergo establishment and monitoring that could result in emissions of air pollutants.

As discussed under the No Action Alternative, construction- and operational-related emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ related to reserve system establishment and management activities would not exceed YSAQMD numeric standards and therefore would not conflict with or obstruct implementation of air quality plans applicable to Yolo County. It should be noted that reserves established under the No Action Alternative would likely be isolated in smaller in area than the reserve system, which would cover approximately 24,000 acres; however, establishment of the reserve system would occur over the 50-year study period. Therefore, emissions would be similar in amount to those produced from establishment of a reserve of smaller size (e.g., 500 acres) under the No Action Alternative.

Emissions would differ under the Proposed Action Alternative as compared to the No Action Alternative in that the conservation strategy in the Proposed Action Alternative would result in a reserve system that is consolidated and more contiguous and managed by a single entity. As a single entity would be overseeing the management of the reserve system, reserve system management would be more coordinated. This would support more efficient reserve system operations, such as allowing a single vehicle trip to be used to conduct reserve system management and monitoring on multiple reserves, as opposed to multiple reserve management entities each making separate trips to conduct management and monitoring on individual preserves. Reduced vehicle trips, and associated reductions in VMT, would also result in slightly reduced mobile source emissions from reserve operations and maintenance as compared to the No Action Alternative.

Further, construction of the covered activities under the Proposed Action Alternative would be subject to AMMs as required by the Yolo HCP/NCCP. These AMMs would provide an additional mechanism for impact reduction and oversite beyond existing regulations to reduce air quality effects associated with PM_{10} and $PM_{2.5}$. Although neither the Proposed Action Alternative nor the No Action Alternative would result in conflicts with, or obstruction of, implementation of an applicable air quality plan from reserve system establishment and operation, overall emissions from these activities are anticipated to be slightly less or similar under the Proposed Action Alternative.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is **less than significant**.

Potential effects from establishment and management of a reserve system under the Proposed Action Alternative would not conflict or obstruct an air quality management plan.

CEQA Level of Significance: As compared to Existing Conditions, this impact is **less than significant**.

No mitigation is required

Effect AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
For the same reasons described above for Effect AQ-1, establishment and management of reserves under both the Proposed Action Alternative and the No Action Alternative would not violate an air quality standard or contribute substantially to an existing projected air quality violation. Overall emissions from these activities are anticipated to be slightly less or similar under the Proposed Action Alternative compared to the No Action Alternative.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is **less than significant**.

Potential effects from establishment and management of a reserve system under the Proposed Action Alternative would not result in a violation of an air quality standard.

CEQA Level of Significance: As compared to Existing Conditions, this impact is **less than significant**.

No mitigation is required

Effect AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard

For the same reasons described above for Effect AQ-1, establishment and management of a reserve system under both the Proposed Action Alternative and the No Action Alternative would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is **less than significant**.

Potential effects from establishment and management of a reserve system under the Proposed Action Alternative would not contribute a cumulatively considerable net increase of air pollutants to the Plan Area.
CEQA Level of Significance: As compared to Existing Conditions, this impact is **less than significant**.

No mitigation is required

Effect AQ-4: Expose sensitive receptors to substantial pollutant concentrations.

Activities associated with reserve system establishment and management that would generate pollutants would be short-term, temporary, and relatively minor. The activity with the greatest potential for emissions would be where grading or earth moving is completed as part of habitat restoration or creation. This would typically be a one-time activity at each reserve where it is conducted. As such, any exposure of nearby sensitive receptors to construction emissions would be minimal. More common reserve system establishment and management activities, such as installing and maintaining fences and habitat monitoring, would result in little to no pollutant emissions. Because reserves would most frequently be established in existing rural or open space areas most suitable for providing habitat value to covered species, there would typically be few, to no sensitive receptors in close proximity to reserve system establishment and management activities.

Under the Proposed Action Alternative, agricultural land would also be preserved as a component of the conservation strategy. Agricultural practices such as tilling and plowing would continue to occur similar to existing conditions and would have similar impacts to those discussed under the No Action Alternative.

Given these conditions, like for the No Action Alternative, the establishment and management of the reserve system under the Proposed Action Alternative would not expose sensitive receptors to substantial pollutant concentrations. The level of emissions that could affect sensitive receptors is not appreciably different under the two alternatives, and an assessment of the overall proximity of preserves to sensitive receptors cannot be determined. Therefore, for this analysis, there is no difference in this effect between the Proposed Action Alternative and the No Action Alternative.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is **less than significant**.

Potential effects from establishment and management of a reserve system under the Proposed Action Alternative would not expose sensitive receptors to substantial concentrations of pollutants.

CEQA Level of Significance: As compared to Existing Conditions, this impact is **less than significant**.

No mitigation is required

Effect AQ-5: Create objectionable odors affecting a substantial number of people.

The small scale of reserve system establishment and management activities, the short-term and temporary nature of these activities, and the anticipated low density of potential sensitive receptors in the vicinity of reserves would prevent any odors generated by these activities from affecting a substantial number of people. Although exhaust from heavy-duty diesel construction equipment can be considered to provide an objectionable odor, the smell of the exhaust dissipates rapidly with distance and would not be discernable to

a substantial number of people even if higher than anticipated numbers of diesel equipment were operating simultaneously in the reserve system. There are no other proposed reserve system activities that would generate objectionable odors that would cross the reserve boundary. The potential for generating odors that could affect people outside the reserve system would not be appreciably different between the Proposed Action Alternative and the No Action Alternative, and an assessment of the overall proximity of the reserve system to sensitive receptors cannot be determined.

As discussed previously, the conservation strategy under the Proposed Action Alternative would include emphasis on preserving agricultural land use. Agricultural activities that may produce odors such as deployment of manure and chemical compounds (e.g., pesticides, fungicides) would continue to occur. Odor impacts associated with agricultural activity would be similar to those discussed under the No Action Alternative.

Therefore, for this analysis, there is no difference in this effect between the Proposed Action Alternative and the No Action Alternative. Therefore, compared to No Action Alternative, this impact would be less than significant.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is **less than significant**.

Potential effects from establishment and management of a reserve system under the Proposed Action Alternative would not expose sensitive receptors to objectionable odors.

CEQA Level of Significance: As compared to Existing Conditions, this impact is **less than significant**.

General Conformity

With regards to General Conformity *de minimis* levels, the net change in peak annual emissions between the Proposed Action Alternative and the No Action Alternative would be subject to the General Conformity Rule. These emissions include construction-related mobile sources (construction equipment, earth movement, construction vehicle trips) and operational-related mobile, stationary, and area-wide sources, as described above for the Proposed Action Alternative.

As discussed above, construction and operational emissions associated with the Proposed Action Alternative (for both urban development and reserve system activities) would be similar as compared to the No Action Alternative. As such, implementation of the Proposed Action Alternative would not result in a net increase in emissions that would be subject to General Conformity. Therefore, the Proposed Action Alternative Conformity would be exempt from general conformity (i.e., assumed to conform).

Cumulative Effects of the Proposed Action Alternative

The existing cumulative condition in the Plan Area resulting from past and present projects is described above for the No Action Alternative and remains the same for the Proposed Action Alternative. Cumulative air quality effects under the Proposed Action Alternative would generally be the same as those described previously for the No Action Alternative. Therefore, implementation of the conservation strategy under the Proposed Action Alternative would result in slightly reduced or similar cumulatively considerable contribution to the combined effects of past, present, and future projects on air quality in the Plan Area.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is **less than significant**.

CEQA Level of Significance: As compared to Existing Conditions, this impact is **less than significant**.

ALTERNATIVE C-REDUCED TAKE ALTERNATIVE

The Reduced Take Alternative (Alternative C) would include the same categories of covered activities as the Proposed Action (Alternative B); however, under the Reduced Tale Alternative, there are eight areas designated for development under the Proposed Action Alternative in which activities that would result in take of covered species would not be permitted. See Chapter 2, Section 2.3.3, *Alternative C-Reduced Take Alternative* for more information on this alternative.

If the prohibition on take of covered species in the eight designated areas resulted in less overall vehicle trip generating development in the Plan Area, effects from mobile and area source emissions from development related activities could be slightly less under the Reduced Take Alternative. However, the prohibition on take in the eight areas could result in the development planned for these locations being diverted to another part of the Plan Area. If any of the new locations were farther from development centers, this could result in more frequent and longer vehicle trips and an increase in mobile source emissions from development related activities.

The Reduced Take Alternative includes implementation of the Yolo HCP/NCCP and associated conservation strategy and AMMs; however, with reduced take, there would also be reduced mitigation requirements compared to the Proposed Action Alternative. Therefore, there would be incrementally less overall preservation and habitat enhancement, restoration, and creation activities in the Plan Area. This would reduce the emissions associated with reserve system establishment and management activities. However, air quality effects from implementation of the conservation strategy are minimal; therefore, a further reduction would not make a change to the level of effect.

Overall, under the Reduced Take Alternative, Effects AQ-1 through AQ-5 would not be appreciably different from what is described for the Proposed Action Alternative.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is similar and is **less than significant**.

CEQA Level of Significance: As compared to the Proposed Action Alternative, this impact is similar and is **less than significant**.

No mitigation is required

Cumulative Effects

The existing cumulative condition in the Plan Area resulting from past and present projects is described above for the No Action Alternative and remains the same for the Reduced Take Alternative. Cumulative air quality effects under the Reduced Take Alternative would generally be the same as those described previously for the No Action Alternative. However, similar to the Proposed Action Alternative, because of the various elements of the Reduced Take Alternative that would reduce emissions (e.g., implementation of AMMs, coordinated management of a reserve system with larger and connected preserves), the Reduced Take Alternative would make a slightly smaller or similar contribution to any cumulative air quality effects.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is similar and is **less than significant**.

CEQA Level of Significance: As compared to the Proposed Action Alternative, this impact is similar and is **less than significant**.

ALTERNATIVE D-REDUCED DEVELOPMENT ALTERNATIVE

The Reduced Development Alternative (Alternative D) would include the same categories of covered activities as the Proposed Action (Alternative B), but under the Reduced Development Alternative, development within a portion of the west side of the Dunnigan area, and the Elkhorn Specific Plan Area, would not be covered activities under the HCP/NCCP. Any development resulting in take of listed species in these locations would be required to obtained ESA and CESA authorization on a project by project basis (See Chapter 2, Section 2.3.4, *Alternative D-Reduced Development Alternative* for more information on this alternative).

Impacts related to air quality as a result of implementation of the Reduced Development Alternative would be similar to those discussed above for the No Action and the Proposed Action alternatives. Since the two

areas that would not be covered by the HCP/NCCP could still be developed, the overall development scenario may ultimately not differ from the No Action Alternative and Proposed Action Alternative. Although any development in the two identified areas would not be covered activities under the HCP/NCCP, mitigation for effects on covered species would still be required, which would likely result in some level of habitat reserve establishment.

Overall, under the Reduced Development Alternative, Effects AQ-1 through AQ-5 would not be appreciably different from what is described for the Proposed Action Alternative.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is similar and is **less than significant**.

CEQA Level of Significance: As compared to the Proposed Action Alternative, this impact is similar and is **less than significant**.

No mitigation is required

Cumulative Effects of the Reduced Development Alternative

The existing cumulative condition in the Plan Area resulting from past and present projects is described above for the No Action Alternative and remains the same for the Reduced Development Alternative. Cumulative air quality effects under the Reduced Development Alternative would generally be the same as those described previously for the No Action Alternative. However, similar to the Proposed Action Alternative, because of the various elements of the Reduced Development Alternative that would reduce emissions (e.g., implementation of AMMs, coordinated management of a reserve system with larger and connected preserves), the Reduced Development Alternative would make a slightly smaller or similar contribution to any cumulative air quality effects.

NEPA Level of Significance: As compared to the No Action Alternative, this impact is similar and is **less than significant**.

CEQA Level of Significance: As compared to the Proposed Action Alternative, this impact is similar and is **less than significant**.