4.2 AIR QUALITY

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Introduction

This section assesses the potential air quality effects of the Dixon Downs Horse Racetrack and Commercial Development Center project (Proposed Project) and recommends mitigation measures to reduce or eliminate significant impacts. This section describes the climate in the project area; existing air quality conditions in the project area for both "criteria air pollutants" and "toxic air contaminants"; and applicable federal, State, and regional air quality standards. The section also analyzes the air quality effects caused by stationary and mobile sources related to construction and operation of the Proposed Project.

Public comments received in response to the Notice of Preparation (See Appendix B) covered a range of air quality issues. Commentors requested that potential impacts to regional air quality be analyzed and mitigated. In addition, the local air pollution control district also provided guidance on preparing the air quality section of the EIR. All of these issues and concerns have been addressed in this section.

Environmental Setting

Air quality in the Sacramento Valley is influenced by the climate of the region, topography, and the region's growing population. Air quality is also affected by pollution that is generated in other locations and transported through the upper atmosphere to the Valley.

Regional Climate and Topography

The project site is located in Solano County, which is at the southwestern end of the Sacramento Valley. The Valley is bounded by the coast ranges on the west and the Sierra Nevada Mountains on the east. The District boundary is approximately 20 miles northeast of the Carquinez Strait, a sea-level gap between the Coast Range and the Diablo Range; the intervening terrain is flat.

The prevailing wind is from the south, primarily because of marine breezes through the Carquinez Strait, although during winter, the sea breezes diminish and winds from the north occur more frequently. Winter storms, however, can bring strong southerly winds.

One more important meteorological factor that determines the overall air quality in Solano County is the frequent presence of temperature inversions. Temperature inversions occur when air becomes warmer at higher elevations and makes it difficult for air at different heights to mix. When mixing is minimal, polluted air closer to the ground is trapped and cannot disperse. Inversion layers are significant in determining the severity of concentrations of pollutants such as ozone, particulate matter (PM_{10}), and carbon monoxide (CO). Ozone precursors mix and react to produce higher concentrations of ozone under an inversion, and inversions trap and hold directly emitted pollutants like CO. PM_{10} is mostly a

directly emitted pollutant, but can also be created in the atmosphere as a chemical reaction. Inversion layers can also directly affect concentration levels of PM_{10} by limiting mixing space.[1]

Criteria Air Pollutants and Regional Air Quality

Criteria air pollutants are a group of pollutants for which federal or State regulatory agencies have adopted ambient air quality standards. Criteria air pollutants include ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM_{10}, and lead.

Classifications for the criteria pollutants are given to each air basin, county, or in some cases, within a specific urbanized area. The classification is determined by comparing actual monitoring data with State and federal standards. If a pollutant concentration is lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "non-attainment" for that pollutant. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified." The ambient air quality standards and Solano County's attainment status for the criteria pollutants are summarized in Table 4.2-1. As shown in Table 4.2-1, Solano County does not attain State and federal standards for ozone and PM_{10}. Table 4.2-2 describes the health effects associated with these pollutants.

Monitors that collect air quality data are located throughout the Sacramento Valley. The closest monitoring station to the project site is the Davis – UC Davis Monitoring station, located in Davis on the UC Davis campus.[2] This monitoring station is operated by the Air Resources Board (ARB). Since the Davis – UC Davis Monitoring Station does not monitor for PM_{10}, data from the closest monitoring station, the Woodland – Gibson Road station in Woodland, that monitors PM_{10} was used. Recent air quality data collected at these monitoring sites is summarized in Table 4.2-3.

Existing Attainment Status

The criteria air pollutants most relevant to air quality planning and regulation in Yolo County include ozone (O_3), carbon monoxide (CO), and fine particulate matter (PM_{10}). Each of the relevant criteria pollutants is briefly described below in the context of the County's attainment status. Table 4.2-1 also provides a summary of the attainment designation for each pollutant.

Ozone is a gas that is formed when reactive organic gases (ROGs) and nitrogen oxides (NO_x)—both byproducts of internal combustion engine exhaust—undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable. The federal government divides the State into air basins. Each basin is given a designation to describe the extent to which a basin is in nonattainment for the federal ozone standard. The northern portion of Solano County, in which the Proposed Project is located, is in the Sacramento Nonattainment Area, which is currently classified as being in "severe" nonattainment for the one-hour ozone standard.

1 Yolo-Solano Air Quality Management District Guidelines for Determining Air Quality Thresholds of Significance and Mitigation Measures for Proposed Development Projects that Generate Emissions from Motor Vehicles, page 3. May, 1996.

2 CARB website: arb.ca.gov/aqd/namslams/sv1.pdf.

Table 4.2-1

State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]		Solano County State Status/ Classification	Solano County National Status/ Classification
		Concentrations[c]	Primary[c,d]	Secondary[c,e]		
Ozone	8-hour 1-hour[f]	-- 0.09 ppm	0.08 ppm 0.12 ppm	Same as Primary	Nonattainment/ Severe	Nonattainment/ Severe
Carbon Monoxide	8-hour 1-hour	9.0 ppm 20.0 ppm	9 ppm 35 ppm	Same as Primary	Attainment/ None	Attainment/ None
Nitrogen Dioxide	Annual Mean 1-hour	-- 0.25 ppm	0.053 pm --	Same as Primary	Attainment/ None	Attainment/ None
Sulfur Dioxide	Annual Mean 24-hour 3-hour 1-hour	-- 0.04 ppm -- 0.25 ppm	0.03 ppm 0.14 ppm -- --	-- -- 0.5 ppm --	Attainment/ None	Attainment/ None
Fine Particulate Matter (PM_{10})	Annual Mean Annual Geometric Mean 24-hour	-- 30 µg/m³ 50 µg/m³	50 µg/m³ -- 150 µg/m³	Same as Primary -- Same as Primary	Nonattainment	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Annual Mean 24-hour	-- --	15 µg/m³ 65 µg/m³	Same as Primary	Not Designated/ None	Not Designated/ None

Notes:

ppm = parts per million, µg/m³ = micrograms per cubic meter

a California standards, other than carbon monoxide, sulfur dioxide (1-hour), and fine particulate matter, are values that are not to be equaled or violated. The carbon monoxide, sulfur dioxide (1-hour), and fine particulate matter standards are not to be violated.

b National standards, other than ozone, the 24-hour $PM_{2.5}$, the PM_{10}, and those standards based on annual averages, are not to be exceeded more than once a year. The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or les than one. The 8-hour ozone standard is attained when the 3-year average of the annual fourth highest daily maximum concentration is less than 0.08 ppm. The 24-hour PM_{10} standard is attained when the 99th percentile of 24-hour PM_{10} concentrations in a year, averaged over 3 years, at the population-oriented monitoring site with the highest measured values in the area, is below 150 µg/m³. The 24-hour $PM_{2.5}$ standard is attained when the 98th percentile of 24-hour $PM_{2.5}$ concentrations in a year, averaged over 3 years, at the population-oriented monitoring site with the highest measured values in the area, is below 65 µg/m³. The annual average $PM_{2.5}$ standard is attained when the 3-year average of the annual arithmetic mean $PM_{2.5}$ concentrations, from single or multiple community oriented monitors is les than or equal to 15 µg/m³.

c. All measurements of air quality are to be corrected to a reference temperature of 25° C and a reference pressure of 760 mm of mercury (Hg) (1013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d National Primary Standards: The levels of air quality deemed necessary by the federal government, with an adequate margin of safety, to protect the public health.

e National Primary Standards: The levels of air quality deemed necessary by the federal government, to protect the public welfare from any known or anticipated adverse effects to a pollutant.

f The 1-hour ozone standard will be replaced by the 8-hour standard on an area-by-area basis when the area has achieved 3 consecutive years of air quality data meeting the 1-hour standard.

Source: CARB http:///www.arb.ca.gov, June 2002.

Table 4.2-2

Health Effect Summary of the Major Criteria Air Pollutants

Air Pollutant	Adverse Effects
Ozone	Eye irritation Respiratory function impairment
Carbon Monoxide	Impairment of oxygen transport in the blood stream Aggravation of cardiovascular disease Impairment of central nervous system function Fatigue, headache, confusion, dizziness Can be fatal in the case of very high concentrations in enclosed places
Particulate Matter	May be inhaled and lodge in and irritate the lungs Increased risk of chronic respiratory disease with long exposure Altered lung function in children May produce acute illness with sulfur dioxide
Nitrogen Dioxide	Increased risk of acute and chronic respiratory disease
Sulfur Dioxide	Irritation of lung tissue Increased risk of acute and chronic respiratory disease

Source: Monterey Bay Unified Air Pollution Control District – CEQA Air Quality Guidelines, 1995, revised 2004, pages 3-1 to 3-5.

Carbon Monoxide is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines—unlike ozone—and motor vehicles operating at slow speeds are the primary source of CO in the SVAB, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections. Additional traffic generated by a project may increase congestion at nearby intersections, and consequently increase the likelihood of creating high levels of CO.

Through control measures adopted by State, local and federal agencies, all areas of the Sacramento Valley, including the northern part of Solano County, have attained the current California and federal CO standards.

Fine Particulate Matter (PM_{10}) consists of extremely small, suspended particles or droplets 10 microns or smaller in diameter. Some sources of PM_{10}, like pollen and wind-blown dust, are naturally occurring. However, in populated areas, most PM_{10} is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities. Agricultural operations can also produce PM_{10}. Particulates are of concern because they can be inhaled deep into the lungs and cause respiratory problems.

The northern portion of Solano County is currently designated as non-attainment for the State PM_{10}.

Table 4.2-3

Summary of Air Pollutant Data From Davis-UCD Campus and Woodland-Gibson Road Monitoring Stations (Compared to Federal and State Standards)

Pollutant	2001	2002	2003
OZONE (1-hour)			
Highest 1-hour (ppm)	0.10	0.121	0.098
Days>0.125 ppm (Fed)	0	0	0
Days>0.09 ppm (Cal)	5	3	2
OZONE (8-hour)			
Highest 8-hour (ppm)	0.093	0.088	0.082
Days>0.08 (Fed)[1]	2	2	0
CARBON MONOXIDE			
Highest 8-hour (ppm)	3.35	1.44	0.83
Days>=9.5 ppm (Fed)	0	0	0
Days>=9.1 ppm (Cal)	0	0	0
PARTICULATE MATTER (PM_{10})			
Highest 24-hour (ug/m^3)	67.0	82.0	55.0
Days>50 ug/m^3 (Cal)	3	6	2
Days>150 ug/m^3 (Fed)	0	0	0
PARTICULATE MATTER ($PM_{2.5}$)[2]			
Highest 24-hour (ug/m^3)	57.0	69.0	31.0
Days>65 ug/m^3 (Fed)	0	1	0
NITROGEN DIOXIDE			
Highest 1-hour (ppm)	0.172	0.059	0.060
Days>.25 ppm (Cal)[3]	0	0	0

Notes: All readings are from Davis-UCD Campus monitoring station except PM_{10} and $PM_{2.5}$ readings, which are from the Woodland-Gibson Rd. monitoring station.
There is no State 8-hour ozone standard.
There is no federal standard for nitrogen dioxide.
Source: California Air Resources Board. www.arb.ca.gov Site accessed 7/23/04.

Other Criteria Pollutants

The SVAB is in attainment of State and federal standards for all other criteria pollutants, which include nitrogen dioxide, sulfates, sulfur dioxide, lead, hydrogen sulfide and vinyl chloride. The SVAB has not yet been classified for $PM_{2.5}$, for which there is a federal standard, but no State standard. $PM_{2.5}$ consists of particles 2.5 microns or less in diameter. Although the SVAB is unclassified for $PM_{2.5}$, monitoring data is being collected for this pollutant. EPA will make $PM_{2.5}$ designations for areas once it has developed guidance and policies for making this determination.

Toxic Air Contaminants

In addition to the criteria air pollutants, another group of airborne substances called Toxic Air Contaminants (TACs) are known to be highly hazardous to health, even in small quantities. TACs are

airborne substances capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness).

TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Natural source emissions include windblown dust and wildfires. Farms, construction sites, and residential areas can also contribute to toxic air emissions. Importantly for the SVAB, the California Air Resources Board (CARB) has also recently identified diesel particulate matter as a TAC. Regulation of TACs is achieved through federal and State controls on individual sources. The 1990 federal Clean Air Act Amendments (CAA Amendments) offer a comprehensive plan for achieving significant reduction in both mobile and stationary source emissions of certain designated Hazardous Air Pollutants (HAP). All major stationary sources of designated HAP's are required to obtain and pay the required fees for an operating permit under Title V of the federal CAA Amendments.

TAC impacts are assessed using a standard Maximally Exposed Individual (MEI) health risk of 10 in 1 million. The CARB and local air districts have determined that any source that poses a risk to the general population that is equal to or greater than 10 people out of 1 million contracting cancer as excessive. When estimating this risk, it is assumed that an individual is exposed to the maximum concentration of any given TAC, continuously for 70 years. If the risk of such exposure levels meets or exceeds the threshold of 10 excess cancer cases per 1 million people, then the CARB and local air district require the installation of best available control technology (BACT) or maximum available control technology (MACT) to reduce the risk threshold.

The CARB has conducted studies to determine the total cancer risk to individuals due to outdoor toxic pollutant levels. According to the map prepared by the CARB showing the estimated inhalation cancer risk for TACs in the State of California, the project site has an existing estimated risk that is between 100 and 250 cancer cases per one million people.[3] While TACs are produced by many different sources, the largest contributor to inhalation cancer risk in California is diesel particulates. Diesel particulate matter is emitted into the air via heavy-duty diesel trucks, construction equipment, and passenger cars. According to CARB's *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*[4] (RRP), the existing average statewide potential cancer risk from diesel particulate matter is over 500 potential cancer cases per one million people. Levels of TACs may be exacerbated by the fact that Interstate 80, which experiences semi-truck traffic, is adjacent to the northwest corner of the project site. The RRP contains proposals to implement various diesel-reduction measures that are estimated to reduce diesel emissions by approximately 85 percent by the year 2020. Examples of these diesel-reduction measures include engine retrofits and idling restrictions for diesel school buses and commercial, diesel-fueled vehicles with a gross vehicle weighting of 10,000 pounds or more.

Odors

Part of any air quality analysis includes an evaluation of whether odor impacts would occur due to either construction or operation of the Proposed Project. The apparent presence of an odor in ambient air depends on the properties of the substance emitted, its concentration when it is emitted from a source, and the dilution of emission between the emission point and the receptor. Odors can be generated by a

3 CARB website: www.arb.ca.gov/toxics/cti/hlthrisk/cncrinhl. Accessed 6/11/2004

4 CARB's Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000, p.1.

large variety of land uses, some of which are very common. Everyday sources of odors include land uses such as restaurants and dry cleaning facilities. In the case of the Proposed Project, the odor evaluation would focus on odors that could be created by horses at the facility that could affect existing receptors in the vicinity of the project site.

Sensitive Receptors

Some individuals are considered to be more "sensitive" than others to air pollution. Possible reasons for greater sensitivity include existing health problems, proximity to the emission source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and retirement homes are considered to be sensitive receptors because the very young, the old and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive because people in residential areas are often at home for extended periods of time, so they can be exposed to pollutants for extended periods.

The project site is located in an undeveloped area in the City of Dixon within the Northeast Quadrant. While there are three residences on Vaughn Road near the project site, the Proposed Project would not be contiguous to any existing residential neighborhoods. Likewise, no other sensitive uses such as schools, hospitals, or retirement homes exist near the project site.

Existing Emission Sources

Criteria pollutants are generated by many different sources in Solano County. These sources can be divided into two categories: (1) mobile and, (2) stationary/area sources. Mobile sources consist primarily of vehicles driven on and off roadways, as well as watercraft and other special mobile sources such as locomotives. Stationary/area sources include all other man-made emission sources. The CARB maintains an emission inventory of air pollutants within the State's air basins and counties inside those air basins. Table 4.2-4 presents the latest emission inventory of reactive organic gases, nitrogen oxides, carbon monoxide, and particulate matter for Solano County. This inventory subdivides "stationary/area" and "mobile" sources into smaller, more specific categories. According to the inventory, on-road motor vehicles are the primary source of ROG, NO_x, and CO in Solano County. "Miscellaneous Processes", which includes cooking, farming operations, and construction and demolition activities, is the largest contributor of PM_{10}.[5]

Regulatory Framework

Air quality in Solano County is regulated by federal and State agencies, as well as the local air quality management district. These agencies develop rules or regulations to meet the goals or directives imposed on them through legislation. Although federal regulations may not be superseded, both state and local regulations may be more stringent than the federal standards. Mobile sources of air pollutants are largely controlled through federal and state agencies, while most stationary sources are regulated by the local air pollution control or air quality management districts.

5 CARB website: www.arb.ca.gov/app/emsinv/emssumcat_query. Accessed 5/28/04.

Table 4.2-4

2003 Estimated Annual Emissions Summary for Solano County (tons/day)

Source Category	ROG	CO	NO_x	PM_{10}
Stationary Sources				
Fuel Combustion	0.20	4.07	7.16	0.41
Waste Disposal	0.13	0.03	0.01	0.00
Cleaning and Surface Coatings	2.69	0.00	0.01	0.01
Petroleum Production and Marketing	2.79	0.52	0.26	0.28
Industrial Processes	1.16	0.29	0.51	0.41
Total Stationary Sources	*6.97*	*4.91*	*7.95*	*1.31*
Area-Wide Sources				
Solvent Evaporation	4.91	-	-	-
Miscellaneous Processes	1.59	12.27	1.08	20.07
Total Area-Wide Sources	*6.50*	*12.27*	*1.08*	*20.07*
Mobile Sources				
On-Road Vehicles	10.26	98.31	18.68	0.54
Other Mobile	9.26	36.62	14.87	1.05
Total Mobile Sources	*19.52*	*134.93*	*33.55*	*1.59*
Natural (Non-Anthropogenic) Sources				
Wildfires	0.01	0.15	0.01	0.03
Total Natural Sources	0.01	0.15	0.01	0.03
Total	***33.00***	***152.25***	***42.59***	***23.00***

Source: California Air Resources Board. Website accessed 12/21/04.

Federal Regulations

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives.

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs.

State Regulations

The CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and State air pollution control programs within California. In this capacity, the CARB conducts research, sets State ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer

products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

Local Regulations

City of Dixon General Plan

The City of Dixon General Plan guides the growth and development of the City. The General Plan includes many goals and policies, but none of these pertain specifically to air quality.

Yolo Solano Air Quality Management District

The Yolo-Solano Air Quality Management District (YSAQMD) is the primary agency responsible for planning to meet federal and State ambient standards in the northern portion of Solano County. In addition to covering the northern portion of Solano County, the District's jurisdiction covers Yolo County as well. The YSAQMD is part of the Sacramento Ozone Nonattainment Area. Nonattainment areas are created by the federal government because ozone is a regional pollutant, and local jurisdictions can influence each others' ozone concentrations. The YSAQMD works with the other local air districts in the nonattainment area to maintain the area's portion of the State Implementation Plan (SIP) for ozone. The SIP is a compilation of plans and regulations that govern how the region and the State will comply with the federal Clean Air Act requirements to attain and maintain the federal ozone standard. The Sacramento Nonattainment Area's plan for meeting the ozone standard is called the Sacramento Area Regional Ozone Attainment Plan. The Plan was adopted on November 15, 1994, however an update to the plan is currently ongoing. The YSAQMD is responsible for enforcing the regulations of the SIP within the YSAQMD jurisdiction.

Local Air District Rules

The YSAQMD has several rules that relate to the Proposed Project, summarized below:

RULE 2.5 – Nuisance

Prohibits a person from discharging, from any source whatsoever, such quantities of air contaminants or other materials 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 person or the public or which cause or have a natural tendency to cause injury or damage to business or property.

Rule 2.11 – Particulate Matter

Prohibits the discharge or release 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 2.14 – Architectural Coatings

Limits the quantity of volatile organic compounds (VOC) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the YSAQMD.

Rule 2-33 – Adhesive Operations

Limits emissions of volatile organic compounds from the use of adhesives, sealants, adhesive primers, sealant primers, and from the related use of solvents in the application of adhesives.

Rule 2-39 – Wood Products Coating Operations

Establishes limits on emissions of volatile organic compounds from coatings and strippers used on wood products, and from products used for wood product coating surface preparation and cleanup.

Northeast Quadrant Specific Plan (NQSP)

The NQSP does not contain any goals or policies that address air quality. However, the NQSP EIR contains mitigation measures to reduce the severity of significant impacts identified. Applicable mitigation measures from that EIR are included below.

AQ-A The project construction site shall be watered at least two times per day. Emphasis shall be placed on the watering of unpaved roadways during periods of high vehicle movement.

AQ-B Tarpaulins or other effective covers shall be used on haul trucks when transferring earth materials.

AQ-C Where feasible, all inactive portions of the project construction site shall be seeded and watered until vegetation is grown.

AQ-D All disturbed soil areas not subject to re-vegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the YSAQMD.

AQ-E Soils shall not be exposed nor grading occur during periods where wind speeds are greater than 20- mph averaged over one hour.

AQ-F Vehicle speed shall not exceed a maximum of 15 mph on all unpaved roads.

AQ-G All roadways, driveways, and sidewalks shall be paved as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

AQ-H Proper maintenance of equipment and engines shall be maintained at all times.

AQ-I Vehicle idling shall be kept to an absolute minimum. As a general rule idling shall be kept below 10 minutes.

AQ-J During smog season (April through October), the construction period shall be lengthened so as to minimize the number of vehicles and equipment operating at the same time.

AQ-K Construction activities should utilize new technologies to control ozone precursor emissions as they become available and feasible.

AQ-M Convenient access, such as shuttle services, to public transit systems shall be provided to encourage shoppers, employees and visitors to use mass transit, thereby reducing vehicle emissions.

AQ-N Information shall be provided at various locations within the project site about carpool, vanpool, or transit use facilities. Incentives, such as parking stalls for carpool and vanpool vehicles shall also be exercised.

AQ-O Employee trip reduction and other applicable transportation control measures shall be developed. An annual report shall be prepared to document and demonstrate employee trip reduction.

AQ-R Parking lots, drive-through facilities, and egress/ingress areas shall be designed to reduce vehicle idling. Slow-moving or idling vehicles produce more emissions.

AQ-S Secure, convenient indoor or outdoor bike storage racks shall be provided at commercial centers, office buildings, and other places of employment.

AQ-U PM_{10} emissions shall be reduced by curtailing fugitive dust through effective landscaping, and paving all vehicle roads and parking lots.

For the purposes of this chapter, the City is assuming that Mitigation Measure AQ-O will not result in any air pollution reductions. This is so because the Measure is probably legally unenforceable. In 1995, the California Legislature enacted Senate Bill (SB) 437 (Stats. 1995, Ch. 607, § 1 now Health and Safety Code § 40717.9), which dramatically limits government agencies' ability to require employers to implement "employment pollution control districts, air quality management districts, congestion management agencies, and "any other public agenc[ies]" from requiring an employer to implement an employee trip reduction program "unless the program is expressly required by federal law and the elimination of the program will result in the imposition of federal sanctions, including, but not limited to, the loss of federal funds for transportation purposes." (Former Health and Safety Code, § 40929, subd. (a) (now Health and Safety Code, § 40717.9).)

This legislation has had three major consequences. First, SB 437 prevents air districts and all other agencies from imposing employee trip reduction programs on employers as a means of reducing emissions, unless such programs are required under the federal Clean Air Act (42 U.S.C. § 7401 et seq.). When the bill was enacted, such federal programs, as applied to businesses with 100 or more employees, were expressly required in "sever" and "extreme" nonattainment areas, as defined by federal law (see former 42 U.S.C. § 7511a, subds. (d)(1)(B), (e)). In December 1995, however, Congress amended the federal Clean Air Act to eliminate these requirements in all but extreme instances. Solano County is not classified as an "extreme" nonattainment area for any criteria air pollutants.

Second, and pertinent here, the State legislation eliminates employee trip reduction programs as on of the types of mitigation that cities and counties can impose under CEQA for impacts on air quality and transportation facilities.

And third, SB 437 prevents public agencies from imposing employee trip reduction as part of a voter-mandated growth management program.

For these reasons, the City does not consider NQSP Mitigation Measure AQ-O to be a reliable basis for mitigating the air quality impacts of the NQSP.

Standards of Significance

For the purposes of this EIR, impacts to air quality are considered significant if the Proposed Project would:

- Conflict with or obstruct implementation of the 1994 Sacramento Area Regional Ozone Attainment Plan;
- Violate or contribute substantially to an existing or projected air quality violation;
- Expose sensitive receptors to substantial pollutant concentrations;

- Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in non attainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors); or

- Create objectionable odors affecting a substantial number of people.

As discussed above, thresholds for air quality have also been established by the YSAQMD. As the agency principally responsible for air pollution control in Yolo County, the YSAQMD recommends that projects should be evaluated in terms of these air pollution impact significance thresholds. The following quantifiable thresholds are currently recommended by the YSAQMD and are used to determine the significance of air quality impacts associated with the Proposed Project:

- 82 pounds per day of ROG,

- 82 pounds per day of NO_x,

- 150 pounds per day of PM_{10}.

The thresholds listed above apply to individual projects and not cumulative development. For cumulative impacts, the YSAQMD determines that a project will not be cumulatively significant if it does not require a change in land use designations (i.e., general plan and zoning), where the new use is more intensive than the existing designation. Development projects meeting these criteria are considered to be consistent with the 1994 Sacramento Area Regional Ozone Attainment Plan.

For TAC impacts, the YSAQMD recommends that projects that could emit carcinogenic or toxic air contaminants that exceed the maximum individual cancer risk of 10 in one million be considered significant.

Methods of Analysis

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to construction and operation of the Proposed Project. Air pollutant emissions associated with the project would result from construction activities, increased residential population, and increased traffic volumes. The net increase in emissions generated by these activities and other secondary sources have been estimated and compared to thresholds of significance recommended by the YSAQMD. The YSAQMD establishes standards for three types of impacts – short-term impacts from construction, long-term impacts from project operation, and cumulative impacts.

Construction Emissions

The project site encompasses approximately 260 acres of undeveloped land in the City of Dixon. Clearing, grading, and building fabrication activities would all generate criteria pollutants. To analyze impacts from construction, emissions were calculated by estimating the type of equipment that would be used during the most intensive periods of site clearing and grading, excavating, and construction of buildings. Peak daily construction emissions associated with these activities were estimated using emission factors from the URBEMIS 2002 emissions model developed for CARB.

Operational Emissions

Operational emissions refer to the emissions that would be generated during operation of the project. In this case, the main source of operational emissions would be the motor vehicles that drive to and from the facility, although emissions may also be generated by stationary sources associated with the commercial uses that would develop as part of the project.

During the operational phase, ozone precursor emissions and carbon monoxide were the pollutants of primary concern. The YSAQMD specifies thresholds of significance for operational emissions of these pollutants.

The average daily emission factors for operational emissions of criteria pollutants are estimated using the URBEMIS 2002 emissions model. For mobile source emissions, the daily trip generation rates used in the traffic study were input into the URBEMIS 2002 model.

Localized CO Concentrations

The CALINE4 dispersion model for predicting CO concentrations is the preferred method of estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. For each intersection analyzed, CALINE4 adds roadway-specific CO emissions calculated from peak-hour turning volumes to the existing ambient CO air concentrations. For this analysis, CO concentrations were calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District. The simplified model is intended as a screening analysis in order to identify a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations.

Impacts and Mitigation Measures

Impact 4.2-1	**Construction activities associated with the Proposed Project would generate emissions of criteria pollutants.**
Applicable Policies and Regulations	CAAQS, NAAQS, YSAQMD Rules 2-5, 2-11, 2-14, 2-33, 2-39
Significance before Mitigation	Phase 1: Significant Phases 1 and 2: Significant
Applicable NQSP Mitigation Measures	AQ-A through AQ-K
Mitigation Measures	Phase 1: 4.2-1(a) through (d) Phases 1 and 2: 4.2-1 (b) and (d)
Significance after Mitigation	Phase 1: Significant and Unavoidable Phases 1 and 2: Significant and Unavoidable

Phase 1

The entire project site is approximately 260 acres. It is expected that during construction of Phase 1, this entire area would be cleared and graded. Once the site has been prepared, building of the facilities would take place. This would include trenching for water, sewer, and gas pipes as well as the construction of the buildings and the paving of access roads and surface parking lots. These activities would require the

use of heavy-duty construction equipment, which would generate emissions of criteria pollutants, specifically PM_{10}, ROG, and NO_x. These are all pollutants of concern in Solano County. PM_{10} is of concern because it is a criteria pollutant that can cause severe health impacts. ROG and NO_x are of concern because together they can form ozone, a criteria pollutant for which Solano County still exceeds State and federal standards.

The entire construction period for Phase 1 of the Proposed Project is expected to last approximately one and one half years, from the spring of 2007 to through the fall of 2008. It is expected that most, if not all, of the entire project site would be graded during Phase 1. It is also expected that a maximum of three to four acres would be actively disturbed on any given day. Table 4.2-5 shows the estimated peak daily emissions from construction activity associated with Phase 1. Estimated peak daily emissions of PM_{10} could total up to 2,600 lbs/day. Peak construction emissions of ROG and NO_x are estimated to be 2,506.78 lbs/day and 344.41 lbs/day, respectively. Maximum daily levels of NO_x would be generated by heavy-duty construction equipment during grading. Maximum ROG emissions would be generated during the building phase, and would be related almost exclusively to architectural coatings. There would be no emissions from demolition activity because there are no existing structures on the project site that would have to be removed.

Emissions of PM_{10} and NO_x during construction activities could be reduced by implementing dust suppression measures and measures to reduce NO_x emitted from diesel-fueled construction equipment.

Most ROG emissions during construction are produced by the application of architectural coatings. URBEMIS 2002 assumes a ROG content of 250 grams per liter of coating. The YSAQMD has an architectural coating rule (Rule 2.14) that requires all coating within YSAQMD jurisdiction to be 100 g/l of ROG or less for flat coatings and 150 g/l of ROG for non-flat coatings. These two coating categories make up the vast majority of architectural coatings that would be applied during construction of the Proposed Project. Because ROG limits of these coatings would be lower than those assumed in URBEMIS 2002 by 40 to 60 percent, ROG emissions during construction would decrease as well. This should reduce ROG to a level that would be close to, if not below, the YSAQMD threshold of significance for ROG.

Though peak daily PM_{10} and NO_x emissions could be reduced through mitigation, during certain phases of construction emissions of these pollutants would be above the YSAQMD thresholds of significance. Since the project applicant would be required to comply with YSAQMD Rule 2.14, ROG emissions from architectural coatings would also be significantly reduced. However, it cannot be known with certainty that this would cause ROG emissions to be below the applicable threshold.

According to the results of the URBEMIS modeling, emissions associated with project construction before mitigation would exceed YSAQMD thresholds of significance for PM_{10}, ROG, and NO_x. Consequently, construction activities would create a ***significant impact***.

Phases 1 and 2

Because most of the grading of the Proposed Project site would be completed during construction of Phase 1, Phase 2 impacts would be mostly due to actual fabrication of the commercial space associated with Phase 2. NO_x emissions could reach 225 pounds per day and ROG emissions could reach 2,506 pounds per day (see Table 4.2-5).

Table 4.2-5

Construction and Operational Impacts of Proposed Project (Phases 1 and 2)
(peak pounds-per-day)

	PM_{10}	ROG	NO_x
Construction Phases 1 & 2 (Site Grading)			
Fugitive Dust	2,600	--	--
Off-Road Diesel	13.85	51.50	343.69
On-Road Diesel	0.01	0.02	0.25
Worker Trips	0.03	0.39	0.47
Total Site Grading	2,613.89	51.91	344.41
Total Site Grading (Mitigated)	55.47	51.91	275.62
Exceeds YSAQMD Threshold?	Yes	No	Yes
Construction Phases 1 & 2 (Building Construction)			
Building Construction Off-Road Diesel	8.23	30.92	211.05
Building Construction Worker Trips	0.65	6.69	12.54
Architectural Coatings Off-Gas	--	2,466.67	--
Architectural Coatings Worker Trips	0.43	2.50	1.54
Asphalt Off-Gas	--	--	--
Asphalt Off-Road Diesel	--	--	--
Asphalt On-Road Diesel	--	--	--
Asphalt Worker Trips	--	--	--
Total Building Construction	9.31	2,506.78	225.13
Total Building Construction (Mitigated)	9.31	2,506.78	182.92
Exceeds YSAQMD Threshold	No	Yes	Yes
Phase 2 (Operational Emissions)			
Mobile Emissions	299.21	238.02	305.06
Area Source Emissions	0.03	1.12	12.03
Total Operational Emissions	299.24	239.14	317.09
Total Operational Emissions (Mitigated)	299.12	239.06	316.98
Exceeds YSAQMD Threshold	Yes	Yes	Yes
Phase 2 (Operational plus Large Event Emissions)			
Mobile Emissions	391.64	304.13	396.42
Area Source Emissions	0.03	1.26	12.84
Total Operational Emissions	391.67	305.39	409.26
Total Operational Emissions (Mitigated)	390.98	304.91	408.59
Exceeds YSAQMD Threshold	Yes	Yes	Yes

Source: EIP Associates, 2004.

Requiring construction equipment used during Phase 2 to use a lean-NO_x catalyst would reduce the peak emissions of NO_x during building fabrication to 183 pounds per day. This reduction would not be large enough percentage to ensure that the NO_x impact would be less than significant. As discussed in the Phase 1 discussion, ROG emissions from architectural coatings could be reduced through compliance with YSAQMD's architectural coating rule (Rule 214). This could potentially reduce overall ROG emissions by 50% or more. Even with this reduction, ROG emissions would still exceed YSAQMD

thresholds of significance. There are no other feasible mitigation measures available to reduce the construction ROG impact.

According to the URBEMIS modeling, peak daily emissions of both ROG and NO_x during the building fabrication construction phase of Phase 2 would exceed YSAQMD thresholds. ROG emissions would be almost entirely generated from architectural coatings and NO_x emissions would be mostly produced by construction equipment. This would be a ***significant impact***.

Mitigation Measures

Implementation of the following NQSP mitigation measures as well as Mitigation Measure 4.4-1(c) and (d) would reduce emissions of PM_{10} from construction to a maximum of approximately 55 pounds per day, as shown in Table 4.2-5. This is less than the YSAQMD PM_{10} threshold of 150 pounds per day of PM_{10}, and so would be considered less than significant. Mitigation measures to reduce NO_x, however, would not reduce NO_x emissions below applicable thresholds of significance for either Phase 1 or Phase 2. Mitigation Measures AQ-A through AQ-G apply to grading activities which would take place under Phase 1. Mitigation Measures AQ-H through AQ-K apply to project construction activities which would occur under both Phases 1 and 2. Consequently, construction would have a NO_x impact that would be considered a *significant and unavoidable impact*.

4.2-1(a) *(Phase 1)*

Implement Mitigation Measures AQ-A through AQ-G from the NQSP EIR:

AQ-A The project construction site shall be watered at least two times per day. Emphasis shall be placed on the watering of unpaved roadways during periods of high vehicle movement.

AQ-C Where feasible, all inactive portions of the project construction site shall be seeded and watered until vegetation is grown.

AQ-D All disturbed soil areas not subject to re-vegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the YSAQMD.

AQ-E Soils shall not be exposed nor grading occur during periods where wind speeds are greater than 20- mph averaged over one hour.

AQ-F Vehicle speed shall not exceed a maximum of 15 mph on all unpaved roads.

AQ-G All roadways, driveways, and sidewalks shall be paved as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

The following mitigation measure from the NQSP EIR, including the proposed revision, would ensure trucks traveling off-site would be covered when transferring soil to minimize dust impacts.

AQ-B Tarpaulins or other effective covers shall be used on haul trucks when transferring earth materials off-site.

4.2-1(b) *(Phases 1 and 2)*

Implement Mitigation Measures AQ-H through AQ-K from the NQSP EIR:

AQ-H Proper maintenance of equipment and engines shall be maintained at all times.

AQ-I Vehicle idling shall be kept to an absolute minimum. As a general rule idling shall be kept below 10 minutes.

AQ-K Construction activities should utilize new technologies to control ozone precursor emissions as they become available and feasible.

The following mitigation measure from the NQSP EIR is proposed to be deleted because it is no longer applicable:

~~*AQ-J During smog season (April through October), the construction period shall be lengthened so as to minimize the number of vehicles and equipment operating at the same time.*~~

4.2-1(c) *(Phase 1)*

The following measure shall be implemented to reduce emissions of PM_{10} from construction activities:

- *Cover all stock piles with tarps.*

4.2-1(d) *(Phases 1 and 2)*

The following measure shall be implemented to reduce emissions of NO_x during construction:

- *All diesel powered construction equipment shall use a lean-NO_x catalyst, where feasible.*

Impact 4.2-2	**Operation of the Phase 1 combined with construction of Phase 2, and operation of Phases 1 and 2 combined would generate emissions of ROG and NO_x.**
Applicable Policies and Regulations	CAAQS, NAAQS
Significance before Mitigation	Phase 1: Significant Phases 1 and 2: Significant
Applicable NQSP Mitigation Measures	AQ-M through AQ-U
Mitigation Measures	Phase 1: 4.2-2(a) and (b) Phases 1 and 2: 4.2-2(a) and (b)
Significance after Mitigation	Phase 1: Significant and Unavoidable Phases 1 and 2: Significant and Unavoidable

Phase 1

Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities once the project is built. Stationary area source emissions would be generated by activities such as the operation of landscape maintenance equipment, and the use of consumer products. Mobile emissions would be generated by motor vehicles used by individuals working at the facilities, as well as by guests attending events at the facility.

The URBEMIS 2002 model is normally used to quantitatively evaluate operational emissions from a project. However, because of the unique nature of Phase 1 of the Proposed Project, the URBEMIS 2002 model is not considered an appropriate tool for estimating daily Phase 1 emissions associated with project operation.

Because Phase 1 would create the infrastructure for horseracing and other events to occur, such as concerts or other events, but would not include any substantial amount of retail or other commercial uses for the general public, Phase 1 would include horse race betting via satellite, and customers using this service would produce some vehicle trips to the facility on a daily basis as well as employees. However, these daily trips would not be as great as those that would occur if retail uses were to be included as part of Phase 1. Consequently, while there would be approximately 484 full-time employees working at the facility, Phase 1 would not create any substantial non-mobile sources of criteria pollutants. However, when a large event occurs at the facility, substantial amounts of traffic would be created before and after the event. Because of the location of the project site at the eastern edge of the City of Dixon, because events may last until the later evening hours, and because many event attendees would be traveling from outside of the City of Dixon to attend the event, it is assumed that most attendees would choose to drive to the project site. While there may be some transit service to the project site, it is expected that this service would be fairly limited. There are no feasible mitigation measures available to reduce Phase 1 operational impacts on event days by reducing traffic trips from event attendees, because attendees would mostly be driving personal vehicles, and they would be arriving from many different locations and directions. As shown in Table 4.2-5, emissions from the Proposed Project on a large event day would exceed YSAQMD thresholds of significance for ROG and NO_x (ozone precursors).

Large events at the Phase 1 facilities would occur regularly but infrequently. This means that while daily Phase 1 operational emissions would be relatively low on most days, large event days would create substantial amounts of traffic-generated criteria pollutants. The YSAQMD thresholds of significance are calculated in "pounds-per day". Since large event days would cause criteria pollutants to be emitted in amounts that exceed the YSAQMD thresholds of significance for ROG and NO_x on large event days, Phase 1 would be considered a ***significant impact***.

Phase 1 Operational and Phase 2 Construction

Phase 1 of the Proposed Project would be operational during a portion of the Phase 2 construction period. Consequently, there would be a certain amount of time where total daily emissions of the Proposed Project would be a combination of operational emissions from Phase 1 (vehicles and area sources), and construction emissions from Phase 2. The maximum daily emissions that could be generated under this scenario are shown in Table 4.2-6, below. It should be noted that it is assumed the grading for Phase 2 would occur at the same time grading for Phase 1 would occurs. Therefore, only building construction is included for Phase 2 construction.

As discussed earlier, daily operational Phase 1 activities would not generate large amounts of ozone precursors as shown in Table 4.2-5. However, when larger events occur, motor vehicle emissions could generate substantial ozone precursor emissions which would exceed the YSAQMD thresholds. As shown in Table 4.2-6, mobile emissions associated with a large event would exceed the YSAQMD thresholds for ROG by over 26 pounds per day and NO_x by over 60 pounds per day. Table 4.2-6 shows estimated peak daily operational emissions for Phase 1 both with and without a large event.

Table 4.2-6

Phase 1 Operational and Phase 2 Construction Impacts (peak pounds-per-day)

	ROG	NO_x
Construction Phase - Building Construction		
Building Construction Off-Road Diesel	30.92	211.05
Building Construction Worker Trips	6.69	12.54
Architectural Coatings Off-Gas	2,466.67	-
Architectural Coatings Worker Trips	2.50	1.54
Total Building Construction	2,506.78	225.13
Total Building Construction (Mitigated)	2,506.78	225.13
Exceeds YSAQMD Threshold	yes	yes
Operational Phase (no large event)		
Mobile Emissions	19.38	9.24
Area Source Emissions	0.57	5.65
Total Operational Emissions	19.95	14.89
Total Operational Emissions (Mitigated)	19.95	14.89
Exceeds YSAQMD Threshold	no	no
Operational Phase (large event)		
Mobile Emissions	108.73	143.24
Area Source Emissions	0.09	0.15
Total Operational Emissions	108.82	143.39
Total Operational Emissions (Mitigated)	108.82	143.39
Exceeds YSAQMD Threshold	yes	yes
Combined Phase 2 Construction and Phase 1 Operational without Large Event	2,526.73	240.02
Combined Phase 2 Construction and Phase 1 Operational with Large Event	2,615.6	368.52

Source: EIP Associates, 2005.

As shown in Table 4.2-6 above, when peak emissions from Phase 2 construction emissions are added to peak Phase 1 operational emissions (both with and without a large event), it would be above the YSAQMD thresholds of significance. Consequently, this would be considered a ***significant impact***.

Phases 1 and 2

Phase 2 would add retail, office, and hotel uses to the Proposed Project. Unlike Phase 1, which would generate relatively few traffic trips on a daily basis but substantial trips on event days, Phase 2 uses would

generate daily employee and patron trips. The URBEMIS 2002 model is appropriate for evaluating operational impacts from these Phase 2 uses. According to the results of the URBEMIS model, as shown in Table 4.2-5, daily emissions of ROG as a result of Phase 2 would be approximately 238 pounds per day, NO_x emissions would be approximately 305 pounds per day, and PM_{10} emissions would be approximately 299 pounds per day. These emissions would each be in excess of YSAQMD thresholds of significance. As shown in Table 4.2-5, on event days the traffic from event attendees would be added to the traffic generated by people working and shopping at Phase 2 uses, further exacerbating operational

ROG, NO_x and PM_{10} emissions on these days. The greatest overall amount of daily emissions would occur during annual or bi-annual "Tier 3" Breeder's Cup type events that could attract as many as 50,000 spectators.

The URBEMIS 2002 modeling shows that implementing feasible mitigation measures would only slightly reduce the combined impact of Phase 1 and Phase 2. Daily operational emissions associated with Phases 1 and 2 would exceed YSAQMD thresholds of significance for ROG and NO_x. Operational emissions would be much greater on event days especially during the annual or bi-annual "Tier 3" event. Consequently the emissions of ROG and NO_x associated with Phases 1 and 2 would be considered a ***significant impact***.

Mitigation Measures

Because the traffic generated by the land uses associated with Phase 2 would be in part due to employee trips and shopping trips made by people living in the vicinity of the project site, mitigation measures do exist that can help reduce vehicle trips and, consequently, the emissions associated with these trips. Some mitigation is already built in to the Proposed Project, because Phase 2 would include both office and commercial retail uses. It is assumed that restaurants and other services would develop as part of these uses. This would help to minimize employee trips off-site to utilize these services and increase the opportunities for employees to run errands without driving.

However, even with implementation of feasible mitigation measures, the operational impact of the Proposed Project would exceed YSAQMD thresholds of significance for daily ROG and NO_x emissions, and would be considered a *significant and unavoidable impact*.

4.2-2(a) *(Phases 1 and 2)*

Implement Mitigation Measures AQ-M through AQ-U from the NQSP EIR:

AQ-M Convenient access, such as shuttle services, to public transit systems shall be provided to encourage shoppers, employees and visitors to use mass transit, thereby reducing vehicle emissions.

AQ-N Information shall be provided at various locations within the project site about carpool, vanpool, or transit use facilities. Incentives, such as parking stalls for carpool and vanpool vehicles shall also be exercised.

AQ-R Parking lots, drive-through facilities, and egress/ingress areas shall be designed to reduce vehicle idling. Slow-moving or idling vehicles produce more emissions.

AQ-S Secure, convenient indoor or outdoor bike storage racks shall be provided at commercial centers, office buildings, and other places of employment.

The following mitigation measure from the NQSP EIR, including the proposed revision, would ensure adequate steps are taken to reduce PM_{10} emissions.

> *AQ-U* *PM_{10} emissions shall be reduced by curtailing fugitive dust through effective landscaping, and paving all <u>permanent</u> vehicle roads and parking lots. <u>Temporary or non-paved parking lots shall use alternate parking methods approved by the City.</u>*

4.2-2(b) *(Phases 1 and 2)*

The following mitigation measures shall be implemented by the project applicant in combination with Phase 2 development.

- *Provide secure bicycle parking on site.*
- *The applicant shall construct a transit shelter with one or more benches within ½ mile of the Proposed Project.*
- *The applicant shall provide for a bus turnout at the location of the transit shelter.*

Impact 4.2-3	**The Proposed Project would generate increased traffic volumes that could increase concentrations of CO at local intersections.**	
Applicable Policies and Regulations	CAAQS, NAAQS	
Significance before Mitigation	Phase 1: Phases 1 and 2:	Less than Significant Less than Significant
Applicable NQSP Mitigation Measures	None	
Mitigation Measures	Phase 1: Phases 1 and 2:	None required None required
Significance after Mitigation	Phase 1: Phases 1 and 2:	Less than Significant Less than Significant

Phase 1

While passenger vehicles emit ozone precursors such as ROG and NO_x, these precursors do not have localized impacts. However, motor vehicles also generate carbon monoxide (CO), which is a directly emitted pollutant. CO levels are highest at intersections where there is congestion and traffic is slow. The Proposed Project would add traffic to existing roadways. To the extent that increases in traffic volumes lower existing levels of service (LOS) rates, busy intersections could experience higher concentrations of CO. Normally, CO concentrations would only be an issue if intersections operate at LOS "D" or worse. LOS "D" or below is usually considered to be "unacceptable" for traffic circulation. Consequently, intersections were modeled if the traffic study showed that the intersection would be reduced from an acceptable LOS to an unacceptable LOS as a result of the Proposed Project. This was the case at three intersections for Phase 1. The results of this modeling can be found in Table 4.2-7. As shown, the highest predicted CO concentrations for the 8-hour CO standard would be 5.8 ppm at 25 feet from the edge of the road at the intersection of Pedrick Road and the east-bound ramps of I-80. It

Table 4.2-7

CO Concentrations under Phase 1 / Phases 1 and 2 Conditions

Existing Plus Phase 1					
Intersection	**Condition Analyzed**	**Existing LOS**	**LOS with Project**	**Peak CO Concentration with Project**	**Exceeds 8-hour CO Standard (9 ppm)?**
N. First Street / Dorset Drive	Tier 2 Event (Saturday "Post" Peak Hr)	B	F	4.1	No
I-80 WB Ramps / Pedrick Rd.	Tier 2 Event (Saturday "Pre" Peak Hr)	A	F	4.2	No
I-80 EB Ramps / Pedrick Rd.	Tier 2 Event (Saturday "Post" Peak Hr)	A	F	4.8	No
Existing Plus Phases 1 and 2					
Intersection	**Condition Analyzed**	**Existing LOS**	**LOS with Project**	**CO Concentration with Project**	**Exceeds 8-hour CO Standard?**
N. First Street / Dorset Drive	Tier 2 Event (Saturday "Post" Peak Hr)	B	F	4.4	No
N. First Street / Vaughn Road	Tier 2 Event (Saturday "Post" Peak Hr)	A	F	3.8	No
I-80 WB Ramps / Pedrick Rd.	Tier 2 Event (Saturday "Post" Peak Hr)	A	F	4.2	No
I-80 EB Ramps / Pedrick Rd.	Tier 2 Event (Saturday "Post" Peak Hr)	A	F	5.8	No
I-80 EB Ramps / N. First Street	Tier 2 Event (Saturday "Post" Peak Hr)	A	F	4.1	No

Source: Fehr & Peers Associates / EIP Associates, 2004.

should be emphasized as well that these highest CO concentrations are not representative of daily conditions, but of peak hour conditions after a Tier 2 event held at the project site (i.e., horseracing events, concert events). Tier 2 events could draw as many as 15,000 spectators. As such, these concentrations would be expected to occur irregularly, and most likely on weekends. There is also the possibility that Tier 3 events could be held at the facility, which would generate even more trips than a Tier 2 event. However, since Tier 3 events would occur very infrequently (at most once per year, and more likely only once every several years) Tier 3 events are not analyzed in this section.

Since the modeling showed that peak 8-hour CO concentrations would not exceed the CAAQS standard of 9 ppm, this would be considered a ***less-than-significant impact.***

Phases 1 and 2

Five intersections decreased from an acceptable LOS to an unacceptable LOS under combined Phases 1 and 2. These intersections were modeled to determine peak hour CO concentrations after Tier 2 events. The results are shown in Table 4.2-7. The modeling showed that peak 8-hour CO concentrations would not exceed the CAAQS eight-hour standard of 9 ppm; therefore, this would be considered a ***less-than-significant impact***.

Mitigation Measures

None required.

Impact 4.2-4	**Operation of the Proposed Project could create odors associated with the horseracing venue that may affect nearby receptors.**	
Applicable Policies and Regulations	YSAQMD Rule 2-5	
Significance before Mitigation	Phase 1: Phases 1 and 2:	Less than Significant Less than Significant
Applicable NQSP Mitigation Measures	None	
Mitigation Measures	Phase 1: Phases 1 and 2:	None required None required
Significance after Mitigation	Phase 1: Phases 1 and 2:	Less than Significant Less than Significant

Phase 1

The Proposed Project includes horse racing and training facilities in a rural area that is currently used for agricultural operations. The presence of as many as 1,440 stabled horses would produce odors on a day-to-day basis, from the waste generated by the horses. The nearest receptors are three residences on Vaughn Road, the closest of which would be located approximately 300 feet from the southernmost horse stables.

The biggest source of odors would be the waste produced by the horses. The project would include a Waste Removal (Manure) Management Plan (see Appendix E). As stated in the Plan, waste would be properly and quickly disposed of, including the daily transport of horse bedding materials and manure offsite.

Even if waste from horses is quickly disposed of, there is still the possibility that nearby residences would experience odor impacts if they would be downwind of the stables. However, since winds normally come from the south and west during the warmer months, wind patterns would be unlikely to contribute to odor impacts on a frequent basis.

Because horse waste would be quickly removed from the Proposed Project site and disposed of, and because wind patterns would not transfer odors towards nearby receptors, odor impacts from the Proposed Project would be considered ***less than significant***.

Phases 1 and 2

The major source of odors from the Proposed Project would be horse waste. All of the Proposed Project's horseracing facilities would be developed as part of Phase 1. Phase 2 of the Proposed Project includes development of retail, office, and hotel uses. It is not anticipated that these uses would create additional odor sources. Consequently, Phases 1 and 2 would have a ***less-than-significant impact***.

Mitigation Measures

None required.

Impact 4.2-5	**The Proposed Project could expose sensitive receptors in close proximity to the project site to TACs.**	
Applicable Policies and Regulations	AB 2588	
Significance before Mitigation	Phase 1: Phases 1 and 2:	Less than Significant Less than Significant
Applicable NQSP Mitigation Measures	None	
Mitigation Measures	Phase 1: Phases 1 and 2:	Recommended Mitigation Measure 4.2-5 Recommended Mitigation Measure 4.2-5
Significance after Mitigation	Phase 1: Phases 1 and 2:	Less than Significant Less than Significant

Phase 1

TACs associated with the project would be generated either by TAC sources on site, or by mobile sources such as diesel trucks making trips to and from the facility. While construction equipment that would operate during the construction of Phase 1 would be diesel fueled, these diesel TAC emissions would be temporary. TAC impacts are "chronic" impacts, and are therefore evaluated based on the ability of a source to generate TACs over a long period of time, typically 70 years. Consequently, construction activities are not of concern when evaluating TACs. Instead, the analysis focuses on operational emissions of TAC.

Stationary on-site TAC sources normally consist of diesel generators or gasoline-powered internal combustion engines. None of these sources are expected to be included as part of the Proposed Project. The facility is also not expected to generate large amounts of diesel truck traffic. Unlike a warehouse or distribution hub, Phase 1 of the Proposed Project would not require large amounts of goods to be shipped to the project site under normal operating conditions. Truck trips would be limited to those needed for delivering goods to commercial uses on site as well as truck trips required for the horses. Phase 1 of the Proposed Project is proposed to have approximately 192,372 square feet of space dedicated to commercial use. Currently, the commercial space is expected to be used for watching live and simulcast horse racing as well as performing arts events; limited office/administrative space; as well as a restaurant. A total of 18,457 sf is proposed for employee dining facilities and temporary living quarters. While this space may generate modest diesel truck trips for delivery of goods for food service purposes, it is not anticipated that this space would require service by large numbers of diesel delivery trucks.

Because Phase 1 of the Proposed Project would not create any considerable stationary sources of TACs, and because Phase 1 commercial uses would not require substantial numbers of deliveries to be made by diesel trucks, Phase 1 would not generate TACs in any significant amounts. The impact would be considered ***less than significant***.

Phases 1 and 2

Phase 2 of the Proposed Project would develop retail and office space, along with a hotel and conference facilities. Since these are all considered "light" commercial uses, it is not anticipated that any large stationary sources of TACs would be generated. While some light commercial land uses, such as dry cleaners, can produce TAC emissions, these sources usually only have the potential to be hazardous to sensitive receptors in the immediate vicinity. It is not known whether a dry cleaner's or other similar source would develop as part of Phase 2. However, even if a small TAC source were to develop, Phase 2 would not locate sensitive receptors near commercial uses since no permanent residences, schools or hospitals are scheduled for development as part of the Proposed Project.

While delivery trucks would be expected to transport goods to and from the retail, offices, and hotel uses in Phase 2, this truck traffic would not be any greater than that experienced by typical retail development. Unlike a warehouse facility or truck stop, the amount of truck traffic associated with these types of uses would not be great enough to cause a substantial increase in TACs. This is especially true because the Proposed Project would not locate sensitive receptors near the commercial development, and truck traffic going to and from Phase 2 commercial development is not likely to use Vaughn Road for access to the site.

The primary source of toxic air contaminants is likely to be the boilers used to heat the space and water within the office and commercial retail buildings, and perhaps the occasional testing of standby generators driven by internal combustion engines. Any emissions source that does develop as part of the Proposed Project would be subject to the APCD for review and approval before any permits can be issued for the use or operation of any permitted source of emissions. This process ensures that the combined emissions for a permitted facility do not exceed levels that are considered to cause a substantial risk to the nearby population.

Therefore, because no significant stationary sources (i.e., diesel generators) of TACs are expected to develop under Phase 1 or 2, because the APCD would have permit authority over any sources that do develop, and because truck traffic would not impact new or existing sensitive uses, this would be considered a ***less-than-significant impact***.

Mitigation Measures

Although not required, the following mitigation measure would help to reduce the creation of toxic air contaminants.

4.2-5 *(Phases 1 and 2)*

The project applicant shall require in all construction contracts that diesel trucks shall not be allowed to idle for more than five minutes.

Cumulative Impacts and Mitigation Measures

For evaluation of cumulative impacts, the cumulative setting would depend on the pollutant being evaluated. For regional pollutants, such as ozone, the cumulative setting extends over the entire SVAB in a future year. For pollutants with localized impacts, the cumulative context would include the area in the immediate vicinity of the project site in a future year. To evaluate the cumulative impacts of a temporary activity, such as construction, the cumulative context includes the vicinity of the project site over the duration of the activity.

Impact 4.2-6	**Combined Phase 1 operation and Phase 2 construction and operation, in combination with other existing and future development within the SVAB could generate emission of ROG and NO_x contributing to a cumulative impact.**
Applicable Policies and Regulations	CAAQS, NAAQS
Significance before Mitigation	Phase 1: Significant Phases 1 and 2: Significant
Applicable NQSP Mitigation Measures	AQ-M through AQ-U
Mitigation Measures	Phase 1: 4.2-6 Phases 1 and 2: 4.2-6
Significance after Mitigation	Phase 1: Significant and Unavoidable Phases 1 and 2: Significant and Unavoidable

Phase 1

The Proposed Project is located in the SVAB. Because ozone is a regional pollutant, the cumulative context is the entire SVAB. As discussed in Impact 4.2-2, operational emissions of ROG and NO_x are expected to exceed YSAQMD thresholds during large event days. Consequently, on any given day, the various emissions sources in the SVAB, along with the emissions from the Proposed Project, would far exceed the YSAQMD thresholds. Thus, in light of the region's history of ozone exceedances, there is the potential on any given day for violations of the standards that have been set for these criteria pollutants. The YSAQMD thresholds have been set because the Sacramento region does not attain certain State and federal standards for ozone. The fact that the YSAQMD thresholds would be exceeded on these large event days indicates that emissions generated by large volumes of traffic going to and from the project site could combine with emissions generated by other existing and future development within the SVAB to contribute to an air quality violation in the region. Also, the Proposed Project's exceedance of the thresholds by itself indicates that its contribution to such a violation would be considerable when compared to other projects in the region. Consequently, Phase 1 would be cumulatively considerable, resulting in a ***significant cumulative impact***.

Phases 1 and 2

As discussed above, the Proposed Project's emissions, in combination with other emission sources in the SVAB, would far exceed the YSAQMD thresholds of significance for ozone precursors and would have a significant impact. Operation of Phases 1 and 2 of the Proposed Project have the potential to exceed

YSAQMD thresholds of significance on a daily, project-alone basis. The Proposed Project would exceed the thresholds by an even greater margin on event days.

In addition to this, the YSAQMD guidance document "Air Quality Handbook, Guidelines for Determining Air Quality Thresholds of Significance and Mitigation Measures for the Proposed Development Projects that Generate Emissions from Motor Vehicles" (YSAQMD, 1996) specifies that a project should be considered cumulatively significant if the project requires a change in land use designation, and the new uses are more intense than the existing uses. In the case of the Proposed Project, while some of the land use designations would stay the same, the Proposed Project would also re-designate approximately 251.2 acres of light industrial uses to a designation reflective of the Entertainment, Commercial, and Mixed Office uses that would occur on the site. This new land use would generate more vehicle trips than those that would occur under the current light-industrial zoning. Light industrial uses are not commonly large trip generators. Light industrial uses often generate fewer automobile trips, but more truck trips. Consequently, Phases 1 and 2 of the Proposed Project would contribute emissions of criteria pollutants that would be cumulatively considerable and would constitute a ***significant cumulative impact***.

Mitigation Measure

Mitigation measures described in Impact 4.2-2 are also applicable for reducing cumulative impacts. As discussed in Impact 4.2-2, these mitigation measures would not reduce operational emissions of ROG and NO_x to levels that are below the YSAQMD thresholds of significance. Consequently, since project-alone emissions would be significant, and the project would re-designate land to a more intensive use, the Proposed Project's cumulative impact would also be considered cumulatively considerable and *significant and unavoidable.*

4.2-6 *(Phases 1 and 2)*

Implement Mitigation Measures 4.2-2(a) and (b).

Impact 4.2-7	**Construction activities associated with the Proposed Project, in combination with other existing and future development, could generate emissions of PM_{10} contributing to a significant impact.**
Applicable Policies and Regulations	CAAQS, NAAQS
Significance before Mitigation	Phase 1: Significant Phases 1 and 2: Significant
Applicable NQSP Mitigation Measures	AQ-A through AQ-G
Mitigation Measures	Phase 1: 4.2-7 Phases 1 and 2: 4.2-7
Significance after Mitigation	Phase 1: Significant and Unavoidable Phases 1 and 2: Significant and Unavoidable

Phases 1 and 2

As discussed in Impact 4.2-1, grading of the project site would occur during construction of Phases 1 and 2. This would generate daily PM_{10} emissions in excess of YSAQMD thresholds of significance. Operation of the Proposed Project would also generate PM_{10}, as shown in Table 4.2-5. As shown in Table 4.2-3, Solano County has regular exceedances of the PM_{10} CAAQS. The YSAQMD has set thresholds for PM_{10} to assist in bringing the county into attainment of this standard. During construction, the Proposed Project, in combination with other sources of PM_{10} in the vicinity, would exceed YSAQMD thresholds. When PM_{10} levels exceed these thresholds a cumulative impact could occur, since emissions would be great enough that they could combine with other PM_{10} emission sources in the project vicinity to produce an exceedance of State or federal standards. Also, the PM_{10} produced by operation of the Proposed Project would be greater than that which would be produced under the site's existing land use designation. This would mean that the Proposed Project would be in conflict with the current AQMD plan to reduce PM_{10}. Consequently, this would be considered a ***cumulatively considerable significant impact***.

Mitigation Measures

As discussed in Impact 4.2-1, mitigation measures would be required during construction of Phases 1 and 2 to reduce emissions of PM_{10}. As shown in Impact 4.2-1, these mitigation measures would bring PM_{10} emissions below YSAQMD thresholds of significance. Consequently, it is unlikely that PM_{10} emissions from Phase 1 or Phase 2 construction would be large enough to contribute substantially to any exceedance of federal or State PM_{10} standards. However, operational emissions of PM_{10} would still be greater than YSAQMD thresholds, and would also be greater than PM_{10} emissions under the current land use designation. Since there are no feasible mitigation measures available to substantially reduce operational PM_{10} emissions, the impact would be considered a *significant and unavoidable cumulative impact.*

4.2-7 *(Phases 1 and 2)*

Implement Mitigation Measures 4.2-1(a) and (b).