

AIR QUALITY

This chapter describes existing air quality for the Bay Area and the Specific Plan environs, presents standards of significance, and evaluates potential air quality impacts of proposed development under the Specific Plan. The analysis focuses on whether the proposed Specific Plan is consistent with the most recent regional air quality plan, and discusses expected emissions of criteria air pollutants and toxic air contaminants from both stationary and mobile sources in the Specific Plan area.

11.1 SETTING

This section discusses air pollutants in two categories: criteria air pollutants¹ and toxic air contaminants. Criteria air pollutants include ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and small-diameter particulate matter (PM₁₀, referring to particulate matter less than 10 microns in diameter). Regulatory agencies have adopted regional, State, and Federal ambient air quality standards and pollution reduction plans for these pollutants.

In contrast, toxic air contaminants (TACs) are not regulated in the same way, as there are no ambient air quality standards for these pollutants. TACs pose a present or potential hazard to human health, but typically have more localized impacts than criteria pollutants. There are more than 700 toxic air contaminants recognized by different regulatory agencies. Some toxic air contaminant sources are regulated at the Federal, State, and local levels.

Regional Climate

The San Francisco Bay Area has a Mediterranean climate, characterized by mild winters due to proximity to the ocean. During the summer, the dominant meteorological condition is a semi-permanent high-pressure cell over the northeastern Pacific Ocean, which keeps storms away. This pressure system also causes predominant westerly winds.

Regional temperature inversions are common in the late summer and fall. When there are inversions, low winds, and strong sunlight, conditions are suitable for photochemical ozone and smog formation. Ozone is formed when reactive organic gases (ROG) and oxides of nitrogen (NO_x) react in the presence of sunlight.

Burning of fossil-fuels and other industrial activities enhance the atmosphere's greenhouse effect. The global climate shows evidence of warming, and may affect regional climate.

Local Climate and Wind Patterns

The Specific Plan area is within the Carquinez Strait Region as defined by the Bay Area Air Quality Management District (BAAQMD) for the purposes of describing subregional climate differences in the Bay Area. The Carquinez Strait Region extends from Rodeo to Martinez.² The Carquinez Strait Region is the only sea-level gap between the San Francisco Bay and the Central Valley.

During summer and fall, prevailing winds are from the west, and wind speed is commonly 15 to 20 miles per hour (mph) in the afternoon.³ Sometimes during summer and fall, winds flow from the east, and there are low wind speeds, shallow mixing depths, high temperatures, and little or no rainfall. Average annual wind speed in this area is 10 mph.

In winter, inversions are typically weak or non-existent, winds are moderate, and air pollution potential is low. Exceptions do occur. Mean minimum temperatures in the Carquinez Strait Region are in the high 30's.

Regulatory Framework

Criteria Air Pollutants

The Federal Clean Air Act of 1970, as amended (1970 CAA), gave the U.S. Environmental Protection Agency (EPA) the authority to set Federal ambient air quality standards. The 1970 CAA indicated the need for primary standards to protect public health and secondary standards to protect public welfare from effects such as visibility reduction and dust nuisance. It also required that the Federal standards be designed to protect those people most susceptible to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by illness, and persons engaged in strenuous work or exercise, all referred to as “sensitive receptors.” Under the Federal Clean Air Act, there are National Ambient Air Quality Standards for six pollutants, commonly referred to as the criteria pollutants. The health effects of these air pollutants are listed in Table 11-1. Federal air quality standards for these pollutants (and several others) are presented in Table 11-2.

Table 11-2 also shows California standards for the criteria pollutants; these are often more stringent than Federal standards due to California’s serious air pollution problems. The California Clean Air Act of 1988 requires air quality management districts in California to plan and achieve the California ozone standards. The act requires air

TABLE 11-1

Health Effects of Criteria Air Pollutants

Air Pollutant	Adverse Effects
Ozone	Eye irritation Respiratory function impairment
Carbon Monoxide	Impairment of oxygen transport in the bloodstream, increase of carboxyhemoglobin 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
Sulfur Dioxide	Aggravation of chronic obstructive lung disease Increased risk of acute and chronic respiratory disease
Nitrogen Dioxide	Risk of acute and chronic respiratory disease
Suspended Particulates (PM ₁₀)	Increase risk of chronic respiratory disease with long exposure Altered lung function in children With sulfur dioxide, may produce acute illness Particulate matter 10 microns or less in size (PM ₁₀), may lodge in and/or irritate the lungs

Source: Bay Area Air Quality Management District, 1985.

districts that exceed the State ozone standard to reduce emissions of ozone precursors (i.e., reactive organic compounds and oxides of nitrogen) by five percent per year, or take all feasible measures to achieve emission reductions.

The BAAQMD is the primary agency responsible for planning, implementing, and enforcing State and Federal ambient air quality standards in the Bay Area. The California Air Resources Board (CARB) is the primary agency for setting mobile source emission standards and certain toxic air contaminant standards for California. The EPA plays an oversight role.

A major focus of regulatory effort in the Bay Area is reduction of tropospheric ozone,⁴ i.e., ozone close to the ground. The temperature inversions typical of hot, sunny, summer days in the Bay Area are particularly conducive to ozone formation.

TABLE 11-2Federal and State Ambient Air Quality Standards ^a

Pollutant	Averaging Time	California Standard ^b	Federal Standards ^c	
			Primary ^d	Secondary ^e
Criteria Air Pollutants				
Ozone	1-hour	0.09 ppm	0.12 ppm	0.12 ppm
Carbon Monoxide	1-hour	20.00 ppm	35.00 ppm	35.00 ppm
	8-hour	9.00 ppm	9.00 ppm	9.00 ppm
Nitrogen Dioxide	1-hour	0.25 ppm	--	--
	Annual Average	--	0.053 ppm	0.053 ppm
Sulfur Dioxide	1-hour	0.25 ppm	--	--
	3-hour	--	--	1300 µg/m ³
	24-hour	0.04 ppm	365 µg/m ³	--
	Annual Average	--	80 µg/m ³	--
Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual Geometric Mean	30 µg/m ³	--	--
	Annual Arithmetic Mean	--	50 µg/m ³	50 µg/m ³
Lead	30 Day Average			
	Calendar Quarter	1.5 µg/m ³	--	--
		--	1.5 µg/m ³	1.5 µg/m ³
Non-Criteria Air Pollutants				
Sulfates	24-hour	25 µg/m ³	--	--
Hydrogen Sulfide	1-hour	0.03 ppm	--	--
Vinyl chloride	24-hour	0.010 ppm	--	--
Visibility Reducing Particles ^f	1 observation	-- ^g		

NOTES:

- ^a Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius and a reference pressure of 760 millimeters (mm) of mercury (1,013.2 millibar); parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas. The symbol µg/m³ is micrograms per cubic meter.
- ^b California standards for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide; suspended particulate matter or PM₁₀; and visibility-reducing particles; are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded.
- ^c National standards, other than ozone and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 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 less than one.
- ^d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the EPA.
- ^e National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the implementation plan is approved by the EPA.
- ^f This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range when relative humidity is less than 70 percent.

- ⁹ In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

There are several regional plans for attaining particular criteria pollutant standards. The *Ozone and Carbon Monoxide Attainment/Maintenance Plans*⁵ address Federal requirements. The BAAQMD's *Bay Area '97 Clean Air Plan and Triennial Assessment ('97 Clean Air Plan)* addresses how the Bay Area plans to meet the California ozone standard.

The BAAQMD's *'97 Clean Air Plan* and the *BAAQMD CEQA Guidelines* are particularly relevant to the Specific Plan because they recommend certain requirements for local land use plans and certain methodologies for evaluating the consistency of local land use plans with the regional air quality plan for State ozone standard attainment (i.e., the *'97 Clean Air Plan*).

Over the past twenty years in the Bay Area, vehicle miles traveled have increased nearly three times faster than population.⁶ Therefore, the BAAQMD, in conjunction with other regional planning agencies, the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), and local governments (elected officials of which make up the Air District Board of Directors), have developed a number of Transportation Control Measures (TCMs) designed to reduce the number of vehicle trips and vehicle miles traveled, in order to reduce emissions of ozone precursors. TCMs fall into the following functional categories: pricing reform, demand management, user incentives, intermittent controls, voluntary employer-based trip reduction, mobility improvements, and support measures.⁷ Several TCMs in the *'97 Clean Air Plan* cannot be implemented without action by cities and counties.⁸ These include:

- TCM #1: Voluntary Employer-Based Trip Reduction Programs
- TCM #9: Improve Bicycle Access and Facilities
- TCM #12: Improve Arterial Traffic Management
- TCM #13: Transit Use Incentives
- TCM #15: Local Clean Air Plans, Policies, and Programs
- TCM #19: Advocate Planning and Design of Development Projects to Facilitate Pedestrian Travel
- TCM #20: Promote Traffic Calming Measures

Table 11-3 summarizes the key provisions of these TCMs. TCMs 1, 9, 12, 13, and 15 were developed in the *'91 Clean Air Plan* and *'94 Clean Air Plan*. The *'97 Clean Air Plan* added TCMs 19 and 20 and made revisions to other TCMs.

Toxic Air Contaminants

As discussed above, there are over 700 toxic air contaminants recognized by various Federal, State, and regional agencies. Some toxic air contaminant sources are regulated with emission-based and/or risk-based regulations.

TABLE 11-3

Transportation Control Measures to be Implemented by Cities and Counties

TCM #	Topic	Description
TCM #1	Voluntary Employer-Based Trip Reduction Programs	Provide assistance to regional and local ridesharing programs; advocate legislation to maintain and expand incentives (e.g., tax deductions/credits)
TCM #9	Bicycles	<p>Improve and expand bicycle lane system by providing bicycle access in plans for all new road construction or modifications</p> <p>Establish and maintain bicycle advisory committees in all nine Bay Area counties</p> <p>Designate a staff person as a Bicycle Program Manager</p> <p>Encourage employers and developers to provide bicycle access and facilities (see also TCM #15)</p> <p>Provide bicycle safety education</p>
TCM #12	Arterial Traffic	<p>Study signal preemption for buses on arterials with high volume of bus traffic</p> <p>Improve arterials for bus operations and to encourage bicycling and walking</p> <p>Continue and expand local signal timing programs, only where air quality benefits can be demonstrated</p>
TCM #13	Transit Use Incentives	Expand Regional Transit Connection (RTC) ticket distribution and "Commuter Check" (subsidies for transit passes) through employers, including public employers
TCM #15	Local Plans	Encourage cities and counties to incorporate air quality beneficial policies and programs into local planning and development activities, with a particular focus on subdivision, zoning, and site design measures that reduce the number and length of single-occupant automobile trips
TCM #19	Pedestrian Travel	<p>Review/revise general/specific plan policies to promote development patterns that encourage walking and circulation policies that emphasize pedestrian travel, and modify zoning ordinances to include pedestrian-friendly design standards</p> <p>Include pedestrian movements in capital improvement projects</p> <p>Designate a staff person as a Pedestrian Program Manager</p>
TCM #20	Traffic Calming	<p>Include traffic calming strategies in the transportation and land use elements of general and specific plans</p> <p>Include traffic calming strategies in capital improvement projects</p>

Source: Balloffet & Associates, Inc., August 1998, from '97 Clean Air Plan.

In order to evaluate the danger of toxic air contaminants, regulatory agencies often use risk assessments. Risk assessment includes four steps: hazard identification, exposure assessment, toxicological assessment, and risk characterization. Toxicological effects may be acute (resulting from short-term exposure) or chronic (resulting from long-term exposure).

Chronic health effects may include cancer and non-cancer effects. Cancer risk is usually expressed in terms of an increased risk for an individual (i.e., a ten-in-one-million increased risk of developing cancer over a lifetime, not necessarily fatal) or an increase in the number of cancer cases per one million persons in a population. Non-cancer risks are typically described in terms of a “hazard index.” A hazard index compares the maximum exposure of an individual to an exposure level protective of human health. A hazard index is a ratio, and if it is greater than one, adverse health effects could occur.

At the Federal level, the Clean Air Act requires the analysis of hazardous air pollutants. The 1990 Amendments to the Clean Air Act set up a program for more extensive regulation of such pollutants.

At the State level, the 1983 Toxic Air Contaminant Act established a process to identify TACs from stationary sources and to prepare control measures (called airborne toxic control measures). The CARB implements this process.

California’s 1987 Air Toxics “Hot Spots” Information and Assessment Act required existing stationary sources of toxic air contaminants to submit reports regarding their emissions starting in the years 1988, 1989, and 1990. Facilities were grouped based on total emissions of criteria pollutants, with the largest criteria pollutant emitters to report in 1988. The act requires facilities to update their reports every four years, unless they demonstrate that their risks have been reduced. A facility that shows its “prioritization scores” for cancer and non-cancer health effects to be equal to or less than one, becomes exempt and is no longer required to report. A prioritization score of one is regarded as the significance threshold. Even if an existing or new facility shows that its health risks fall below significance criteria, a change in operations or surrounding conditions may make the facility subject to further reporting under the “Hot Spots” Act.

At the regional level, the BAAQMD adopted a Toxic Air Contaminant Reduction Plan in 1991. Its goal was to reduce emissions from stationary sources to less than 50 percent of 1989 levels by 1995, on a toxicity-weighted basis. This goal was achieved in 1994.⁹

In addition, the BAAQMD requires new or modified sources that would emit one or more air toxic contaminant in quantities above the trigger levels, to obtain permits, unless the owner or operator of the source can demonstrate that the source would pass a risk screening analysis within 90 days of receipt of a request by the BAAQMD.¹⁰ A facility passes the risk screening if it would not cause an increased cancer risk of greater than one-in-one million to the maximally-

exposed individual (MEI) and would not cause a non-cancer risk of a hazard index greater than one. If above these levels, the BAAQMD may require Toxic Best Available Control Technology (TBACT). If, even with TBACT, the facility would cause a cancer risk greater than ten-in-one-million or an unacceptable hazard index, it is the BAAQMD's policy to deny a facility permits to construct and operate, although exceptions may be made.

Efforts to control toxic air contaminants from mobile sources include emission standards for vehicles and specifications for gasoline and diesel fuel sold in California. Reformulated gasoline has reduced TAC emissions from vehicles considerably.

Regional and Local Air Quality

Criteria Air Pollutants

Regional Air Quality

The San Francisco Bay Area Air Basin has a history of violations of Federal and State ambient air quality standards for ozone, carbon monoxide, and PM₁₀. Since the 1970s, substantial progress has been made toward reducing ambient levels of these pollutants. The Bay Area briefly attained the Federal ozone standard, but it is again in nonattainment status.

The Bay Area has not attained the State ozone standard. Nevertheless, the Bay Area population exposure to ozone was reduced by 43 percent from the 1986–88 base period to 1997.¹¹ Reactive organic compounds were reduced by about 4.8 percent per year and oxides of nitrogen were reduced by about 2.1 percent per year over the period 1990–97. But, since the Bay Area did not achieve the five percent per year target of the 1988 California Clean Air Act, it must take “all feasible measures” to attain the State ozone standard.

CARB has designated the Bay Area as an attainment area for the State CO standard. However, occasional violations of State ozone and PM₁₀ standards still occur, and although further improvement is anticipated, attainment of State standards for these pollutants is not expected by 2015.

The BAAQMD operates monitoring stations throughout the Bay Area. Table 11-4 summarizes recent data for the City of Pittsburg. As shown, the Federal ozone standard is frequently violated, and the State PM₁₀ standard is violated less frequently. Standards for nitrogen dioxide and carbon monoxide have not been violated recently, and neither have standards for sulfur dioxide and lead (not shown).

TABLE 11-4

Monitoring Data for Air Pollutant Levels in Pittsburg

Year	Ozone			Nitrogen Dioxide			Carbon Monoxide			PM ₁₀		
	1-hr High (ppm)	Number of Exceedances	1-hr High (ppm)	Number of Exceedances	1-hr High (ppm)	Number of Exceedances	8-hr High (ppm)	Number of Exceedances	24-hr High (µg/m ³)	Number of Exceedances		
1996	0.12	12	0.07	0	7.0	0	2.9	0	NA	NA		
1995	0.12	21	0.08	0	6.0	0	2.8	0	56	1		
1994	0.11	10	0.08	0	6.0	0	3.5	0	87	4		
1993	0.13	7	0.08	0	6.0	0	2.8	0	81	2		

Notes:

The "high" is the highest concentration for the year. Exceedances for ozone, nitrogen dioxide, and carbon monoxide refer to federal and State standards, while those for PM₁₀ refer only to State standards. PM₁₀ data are not gathered every day (violations shown are among the samples taken—typically about 60 in the year).

ppm = parts per million

µg/m³ = micrograms per cubic meter

NA = not available

Sources: California Air Resources Board, *California Air Quality Data Summaries 1993, 1994, 1995, 1996*; Bay Area Air Quality Management District, unpublished data, 1997.

Local Air Quality

The Carquinez Strait Region has many industrial facilities that emit criteria pollutants, toxic air contaminants, and odors. Refineries, chemical plants, and the Pittsburg Power Plant are large pollution sources near the Specific Plan area. Major roadways, including State Route 4, are sources of carbon monoxide and particulates.

Accidents or upsets at refineries or chemical plants can cause short-term pollution episodes. Odors may frequently emanate from these facilities. From January 1996 to August 1998, the BAAQMD received 290 complaints regarding odors, smoke, and similar nuisances from residents and workers in the City of Pittsburg.¹² Complaints described the problems variously as odors, gases, chlorine, sulfur, “pungent,” “refinery,” and similar characterizations. Problems were attributed to industries, such as the Chemical and Pigment Company, Johns-Manville Corp., USS-Posco Industries, PG&E, and local gas stations, although the basis for, and source of, most complaints were unconfirmed (due to lack of BAAQMD staff and resources). Appendix D contains a compilation of odor complaints in the Pittsburg area from 1996 to present.

Toxic Air Contaminants

Regional Air Quality

Stationary (industries) and mobile sources contribute a wide variety of TACs to the region’s atmosphere each day. As discussed above, the BAAQMD made substantial progress in reducing TAC emissions from stationary sources in the early 1990s, reducing them to less than 50 percent of 1989 levels by 1994. Existing ambient concentrations of TACs are estimated to pose an increased cancer risk of 303-in-one-million.¹³

Local Air Quality

As discussed above, refineries, chemical plants, and the Pittsburg Power Plant are pollutant sources near the Specific Plan area. They emit a wide variety of toxic air contaminants, and receptors downwind of these facilities could suffer long-term exposure to TACs. Major roadways, including State Route 4, are sources of TACs, such as benzene.

In 1995, the BAAQMD listed two facilities in the Bay Area as having health risks requiring public notification under the Air Toxics “Hot Spots” Act. One of these was the Dow Chemical Company located in Pittsburg. Another was the Shell Oil Refinery in Martinez. At the time, each had an estimated increased cancer risk of 14-in-one-million.

As of 1996, the BAAQMD’s inventory of stationary sources of TACs included 15 sources in the City of Pittsburg, including seven dry cleaners; and Antioch Building Materials Company; Chemical and Pigment Company; Chevron, Inc.; Dow Chemical Co.; GWF Power System, L.P.; Keller Canyon Landfill Co.; PG&E; and USS-POSCO Industries.

11.2 STANDARDS OF SIGNIFICANCE

The Specific Plan is considered to have a significant impact on local air quality if it would violate any ambient air quality standard or contribute to an existing or projected air quality violation, contain proposed land uses that would produce objectionable odors, or expose sensitive receptors to substantial concentrations of pollutants. Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants.

The BAAQMD sets forth different methodologies for evaluating individual development projects versus local land use plans. In general, projects are evaluated by estimating emissions and determining whether air quality standard violations would occur.¹⁴ Local land use plans are evaluated by determining whether they are consistent with the BAAQMD's regional air quality plan (the '97 *Clean Air Plan*) and policies regarding land use compatibility and buffer zones.

The Specific Plan is a local land use plan, and is therefore evaluated in this Master EIR primarily in terms of a plan-level analysis.

Regional Air Quality—Plan-Level Analysis

According to the *BAAQMD CEQA Guidelines*, to evaluate criteria pollutants related to a local land use plan, including a specific plan, consistency with the most recently adopted BAAQMD Clean Air Plan (CAP) should be evaluated.¹⁵ The BAAQMD sets forth a three-part test. A local land use plan is consistent with the CAP and would have a less-than-significant impact, if the following can be demonstrated over the planning period:¹⁶

- population growth for the jurisdiction will not exceed the values included in the current Clean Air Plan;
- the rate of increase in vehicle miles traveled for the jurisdiction is equal to, or lower than, the rate of increase in population; and
- the local government agency(ies) responsible for implementing TCMs from the Clean Air Plan are indeed implementing them.

Regarding the third test, local plans that do not demonstrate reasonable efforts to implement CAP TCMs are considered to be inconsistent with the regional air quality plan, and therefore, would have a significant air quality impact.¹⁷

Construction-related emissions are considered less than significant by the BAAQMD if appropriate mitigation measures are employed to minimize particulate emissions.

Toxic Air Contaminants

A significance standard for evaluating potential toxic air contaminants and odors of local plants is also addressed in *BAAQMD CEQA Guidelines*. BAAQMD's standard is qualitative, and does not recommend specific risk thresholds as standards of significance. The BAAQMD recommends that buffer zones should be established around existing and proposed land uses that would emit these air pollutants.¹⁸

11.3 IMPACTS AND MITIGATION MEASURES

This section first presents the methodologies for assessing the potential air quality impacts of development under the Specific Plan, then presents the results of the analyses.

Methodology

As mentioned under “Standards of Significance,” the BAAQMD recommends different methodologies for evaluating individual development projects versus local land use plans. In general, projects are evaluated by estimating emissions and determining whether air quality standard violations would occur.¹⁹ Local land use plans are evaluated by determining whether they are consistent with the BAAQMD's regional air quality plan and policies regarding land use compatibility and buffer zones. The Specific Plan is a local land use plan, but it also has specific development assumptions in terms of square feet and number of dwelling units, which means that where necessary it can also be evaluated using project methodologies.

Criteria Air Pollutants

Regional Air Quality—Plan-Level Analysis

Following the *BAAQMD CEQA Guidelines*,²⁰ a three-part test is used to determine if the Specific Plan is consistent with the BAAQMD's '97 *Clean Air Plan*, as follows:

- Population growth projections in the plan are compared to the ABAG projections underlying the '97 *Clean Air Plan*.
- The rate of increase in vehicle miles traveled for the Specific Plan area is qualitatively evaluated in terms of jobs-housing balance to determine whether it is equal to or lower than the rate of increase in population.
- The Specific Plan and the general plans of the City of Pittsburg and Contra Costa County are evaluated to determine if they demonstrate reasonable efforts to implement Clean Air Plan Transportation Control Measures to be implemented by these jurisdictions.

Local Air Quality — Mobile Sources

To estimate potential carbon monoxide impacts at intersections, the Caltrans' CALINE4 model was used, according to the guidelines contained in *Transportation Project-Level Carbon Monoxide Protocol* (“CO Protocol”).²¹ In addition, guidance in the *BAAQMD CEQA Guidelines* was followed.

Toxic Air Contaminants

To evaluate whether the development under the Specific Plan and other relevant plans would include adequate buffers between sources of TACs and sensitive receptors, the relevant land use plans and existing land uses were reviewed.

Criteria Air Pollutant Analysis

Comparison of Population Growth Projections

IMPACT 11-1. The Specific Plan would be consistent with two out of three of the test criteria of the BAAQMD’s Bay Area ’97 Clean Air Plan. This impact is considered less than significant.

As described above, the BAAQMD recommends a three-part test to determine whether a local land use plan is consistent with the BAAQMD’s *Bay Area ’97 Clean Air Plan* (CAP). The first comparison is whether the population growth projections under the Pittsburg/Bay Point BART Station Area Specific Plan do not exceed the values in the current CAP.

The Specific Plan indicates that it will accommodate 4,000 to 5,000 new residents.²² This Master EIR projects about 4,500 new residents under the Specific Plan. Placement of the 2,195 dwelling units is conceptually illustrated in the Specific Plan. Approximately 1,790 units would be built within the City of Pittsburg and approximately 405 units within the County.²³ Based on population estimates in Chapter 9: Population, Employment, and Housing, Table 9-5, these dwelling units translate to approximately an additional 3,600 residents in the City and 900 residents in the County. Because the City of Pittsburg's Sphere of Influence (SOI) includes Bay Point, all of the dwelling units and residents would be located within either the City of Pittsburg or its SOI.

The population projections underlying the emissions inventory in the *'97 Clean Air Plan* are from the Association of Bay Area Governments’ *Projections '96*.²⁴ *Projections '96* shows a population for the City of Pittsburg and its SOI, which includes Bay Point (and hence the entire Specific Plan area), of 72,100 in 1995.²⁵ *Projections '96* forecasts a population of 97,100 for the year 2010.²⁶ Thus the projected growth is 25,000 persons (35 percent) over the period. The Specific Plan's growth of up to 5,000 residents falls within this forecast; therefore, the Specific Plan passes the first BAAQMD evaluation.^{27,28}

Comparison of Growth in Vehicle Miles Traveled to Population Growth

Under the BAAQMD's test, the rate of increase of vehicle miles traveled (VMT) would have to be equal to, or lower than, the rate of increase in population for the Specific Plan to be consistent with the Clean Air Plan. Unfortunately, the *Regional Transportation Plan* being prepared by the Metropolitan Transportation Commission (MTC) in August 1998 does not have VMT information for Pittsburg or the State Route 4 corridor.²⁹ Therefore, the jobs-housing balance and countywide data are used in the analysis below.

The *City of Pittsburg General Plan* acknowledges that jobs and housing are not in balance in the City and are not expected to be in the near future.³⁰ The Pittsburg General Plan indicates that the ratio of jobs to housing demand was 0.76 in 1980, 0.72 in 1985, and is projected to be 0.84 in 2005.³¹ These ratios reflect the City's role as a residential community for workers elsewhere, such as the urban centers of San Francisco and Oakland.

As discussed in Chapter 9, Section 9.3, the Specific Plan is expected to produce about 800 jobs and 2,195 dwelling units. By providing jobs along with housing, the Specific Plan would improve the jobs-housing balance for the City and the Bay Point unincorporated community of the County (see Impacts 9-2 and 9-3).

On the other hand, development under the Specific Plan would not have an internal balance of jobs supplied and jobs demanded. Using *Projections '98*, the countywide estimates for the year 2010 include a population of 1,049,600 and employed residents of 525,900; therefore half of the population is employed. Using this ratio, under the Specific Plan there would be 4,932 people and 2,251 employed residents. The demand for jobs would be 2,251, but there would only be 800 jobs created under the Specific Plan, resulting in a deficit of about 1,450 jobs. Thus, 1,450 persons (net) would be employed outside of the City of Pittsburg SOI.

The relationship between the job deficit and the growth rate of vehicles miles traveled cannot be quantified due to lack of data. However, MTC does have estimates for Contra Costa County of 12,575,000 VMT per day in 1990 and 21,250,000 VMT per day in 2020, for a growth rate of 69 percent over 30 years.³² *Projections '98* forecasts population growth from 65,230 in 1990 to 97,000 in 2020,³³ for a rate of 49 percent over the period for the City of Pittsburg SOI. Assuming that the 69 percent growth rate for the County would also be true for the City of Pittsburg SOI, then the growth rate would exceed the rate of population growth. Under the BAAQMD's test, the VMT growth rate would be a significant impact.

On the other hand, transit use is encouraged under the Specific Plan (see subsection below), and many people would use BART to commute to jobs. The Specific Plan fulfills planning recommendations of the BAAQMD in terms of locating high-density residential development close to transit stations, and fulfills other TCMs discussed below. Therefore, although the impact of increasing vehicle miles traveled faster than population could conservatively be assumed to be significant, the Specific Plan contains measures that reduce this impact to a less-than-significant level.

Implementation of Transportation Control Measures

Under the third part of the BAAQMD's significance framework, the question is whether the Specific Plan (and related plans by local governments involved) demonstrate reasonable efforts to implement CAP TCMs that are required to be implemented by these jurisdictions. As described under "Regulatory Framework, Criteria Air Pollutants," certain Transportation Control Measures (1, 9, 12, 13, 15, 19, and 20) require City and County action for implementation.

Table 11-3, shown previously, summarizes the key provisions of these TCMs. Table 11-5 shows policies of the Specific Plan and the general plans of the City of Pittsburg and Contra Costa County that are relevant to these TCMs.

The Specific Plan contains a number of policies that implement or complement the TCMs to be implemented by local governments. The most important TCM for comparison is TCM #15, "Local Clean Air Plans, Policies, and Programs." Specific Plan Policy LU-1, and the land use plan itself, encourage mixed residential, office, retail, and entertainment projects; therefore, they encourage compact community land use patterns, promote infill development, and establish zoning for higher densities and mixed uses near transit centers (i.e., BART).³⁴ Similarly, Specific Plan Policy LU-3 and LU-4 would discourage large destination retail stores south of State Route 4 and discourage fast food restaurants and similar uses with drive-through service windows within one-quarter mile of the BART station. Policy LU-8 would encourage commercial uses serving local residents to those that would rely primarily on automobile access. Policy LU-11 would increase the minimum residential unit density in an area near the BART station to 65 units per acre. The Specific Plan also contains a number of goals and policies aimed to improving transit, bicycle, and pedestrian access. Table 11-5 also identifies these goals and policies.

TABLE 11-5

Policies Implementing Transportation Control Measures by City of Pittsburg and Contra Costa County

TCM # and Topic	Item	Proposed Specific Plan	Pittsburg General Plan	County General Plan
TCM #1	Voluntary Employer-Based Trip Reduction Programs	Policy C-14	TSM policies	--
TCM #9 Bicycles	Bike access in road plans Bicycle advisory committee Bicycle Program Manager Encourage employees Safety education	Policies C-2, C-10	--	Measure 5-x; Countywide Bikeway Plan
TCM #12 Arterial Traffic	Signal preemption for buses Improve arterials for buses Local signal timing Other notes	-- Policies C-8, C-13	-- --	-- Measure 5-t Yes, in general (assembly of small parcels along Willow Pass Road)
TCM #13 Transit Use Incentives	RTC ticket distribution and "Commuter Check"	No	No	Measure 5-ae is related (commuter transit services)
TCM #15 Local Plans	Air quality beneficial policies that reduce auto trips	Policies LU-1, LU-3, LU-8, LU-11 and others	TSM policies	Encourage high density at transit hubs, use of transit; numerous measures
TCM #19 Pedestrian Travel	Promote walking in developments Capital improvement projects Pedestrian Program Manager	Policies C-11, C-13, UD-4	Yes	Measure 5-w
TCM #20 Traffic Calming	Traffic calming strategies in transportation and land use elements of general and specific plans Capital improvement projects	No*	No*	No*

^a TCMs 19 and 20 were first introduced in the '97 *Clean Air Plan*; because the City of Pittsburg and Contra Costa County have not been updated since that time, there has been insufficient time for consideration of measures to implement these TCMs.

Sources: Balloffet & Associates, Inc., August 1998; *Pittsburg/Bay Point BART Station Area Specific Plan*, November 1997; *City of Pittsburg General Plan*, 1988; Contra Costa County, *Contra Costa County General Plan: 1995-2010*, July 1996.

The *City of Pittsburg General Plan* (1988) contains a Transportation Systems Management (TSM) section that includes “guiding policies” and “implementing policies” to reduce reliance on automobiles and increase reliance on transit, bicycles, and walking.³⁵ Similarly, the *Contra Costa County General Plan 1995–2010* contains a number of Transportation Demand Management goals, policies, and implementation measures intended to implement BAAQMD’s TCMs.³⁶ Table 11-5 identifies selected measures.

In conclusion, the Specific Plan contains policies that directly implement the land-use philosophy of encouraging dense development near transit stations and encouraging alternatives to vehicles. The City of Pittsburg and Contra Costa County general plans also contain policies that implement TCMs. These three plans demonstrate reasonable progress toward implementing TCMs 1, 9, 12, 13, 15, 19, and 20.

MITIGATION MEASURE 11-1. None required.

Estimate of Mobile Source Emissions

IMPACT 11-2. Development of the Specific Plan could result in an increase of mobile source emissions. This impact is considered less than significant.

Although not necessary to evaluate the significance of a local land use plan, Table 11-6 presents estimates of mobile source emissions of criteria pollutants for the year 2010. As shown in Table 11-6, the development assumed in the Specific Plan would be projected to produce approximately 177 pounds per day of ROG, 241 pounds per day of NO_x, 341 pounds per day of PM₁₀, and about 2,738 pounds per day of CO. This impact is considered less than significant.

The analysis above relates to the potential long-term impacts of mobile source emissions, and is based on a total parking supply of approximately 2,400 spaces. For the short term, the Specific Plan allows for development of 380 spaces in a 3.45-acre vacant parcel adjacent to the existing BART surface parking lot. The potential mobile source emissions associated with this amount of parking supply is included in the modeling of potential long-term air quality impacts in which no significant impacts were identified. As a result, no impacts to air quality are projected from the development of additional parking in the short term.

MITIGATION MEASURE 11-2. None required.

TABLE 11-6

Estimated Vehicular Emissions from Traffic Related to Specific Plan Development (2010)

Pollutant	Estimated Vehicular Emissions in 2010 (pounds per day)
Reactive Organic Compounds	157
Nitrogen Oxides	209
Particulate Matter	294
Carbon Monoxide	2,370

Note: These values are not compared to BAAQMD project-level thresholds of significance for a regional impact, because the Specific Plan is evaluated at the plan-level.

Source: Balloffet & Associates, 1999. The California Air Resources Board's URBEMIS version 5 model was used, following guidance in the *BAAQMD CEQA Guidelines*, 1996.

Stationary Sources

IMPACT 11-3. Development of the Specific Plan could result in an increase in air emissions from stationary sources. This impact is considered less than significant.

In addition to mobile source emissions, Specific Plan development would include a variety of stationary sources, such as boilers, chillers, and other fuel-burning equipment in commercial, office, and residential buildings. If large enough, such sources would have to obtain emissions offsets. The impact of these additional emissions would be less than significant.

MITIGATION MEASURE 11-3. None required.

Local Air Quality

Construction-Related Emissions

IMPACT 11-4. Construction activities of development assumed in the Specific Plan could result in short-term emissions of criteria pollutants and fugitive dust. This impact is considered less than significant.

Construction and demolition activities would generate emissions of criteria pollutants and TACs, but the pollutant of greatest concern from such activities is PM₁₀. The BAAQMD recommends

that rather than attempting to quantify construction-related emissions to determine significance, the mitigation program to reduce particulate emissions be evaluated instead.³⁷

For construction sites larger than four acres, as would typically occur under the Specific Plan, the BAAQMD recommends adoption of both basic and “enhanced” measures, including watering exposed soils, covering truck loads, sweeping, soil stabilization, limiting traffic speeds, and others. Table 11-7 lists these measures. With proper mitigation, particulate emissions can be reduced substantially. (The *Pittsburg General Plan: Existing Conditions and Planning Issues Report* also recommends adoption of these standard construction dust abatement measures included in the *BAAQMD CEQA Guidelines*.³⁸)

During individual project review, the potential for emissions of particulate matter and fugitive dust would be addressed. Standard Best Management Practices (BMPs) and other dust control measures would be required as part of the project approval and permitting.

TABLE 11-7

Mitigation Measures for Construction-Related Particulate Emissions

Basic Measures

- Water all active construction areas at least twice a day.
- Cover all trucks hauling soil, sand, and other loose materials require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved parking areas and staging areas at construction sites.
- Sweep daily (preferably with water sweepers) all access routes, parking areas, and staging areas.
- Sweep streets daily (preferably with water sweepers) if visible amounts of soil material are carried onto adjacent public streets.

Enhanced Measures

These measures should be implemented at construction sites larger than four acres in size.

- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- Limit traffic speeds on unpaved roads to 15 mph
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

Source: Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines*, 1996, page 14.

MITIGATION MEASURE 11-4. Depending on the location of a Specific Plan project (i.e., within the city limit or in the unincorporated County area), the City or County would require basic or enhanced BMPs and other dust-control measures as set forth in Table 11-7, as part of agency’s project review and approval. With implementation, this impact would be less than significant.

Local Air Quality — Mobile Sources

Localized “hot spots” of carbon monoxide may be generated by vehicles in congested areas, particularly intersections. The transportation study for this Master EIR indicates that the following intersections would become substantially more congested in 2010 in either the AM and PM peak hours, even without the project: Bailey Road and Willow Pass Road; Bailey Road and West Leland Road; and Bailey Road and Concord Boulevard (in the City of Concord). Tables 10-9 and 10-10 in Chapter 10: Transportation, show the changes in estimated Levels of Service at these intersections due to the project, and each of them requires mitigation. For these reasons, these intersections were selected for micro-scale analysis of carbon monoxide concentrations.

The CALINE4 model was used to estimate carbon monoxide concentrations during AM and PM peak hours at these intersections under four scenarios: 1) existing 1998 conditions; 2) existing 1998 conditions with the project (although this scenario is not possible because the project would not be built out until about 2010); 3) future conditions in 2010 without the project; and 4) future conditions in 2010 with the project. Appendix D contains detailed results of the modeling effort.

As shown in Table 11-8, under no conditions would the one-hour State standard of 20 ppm be exceeded. Similarly, under no conditions would the eight-hour State standard of 9.0 ppm be exceeded. Table 11-8 also shows that estimated carbon monoxide concentrations would generally decrease in the future. This is because less-polluting vehicles are replacing, and will continue to replace, older, more-polluting vehicles.

Although congestion in urban areas of the Bay Area sometimes causes exceedances of the carbon monoxide standards, particularly the eight-hour standards, the City of Pittsburg has a relatively low background concentration of carbon monoxide. This low background concentration is a key factor underlying the results in Table 11-8.

IMPACT 11-5. Vehicular traffic associated with Specific Plan development could increase carbon monoxide concentrations at nearby intersections. No violations of the carbon monoxide standards are expected, and this would be a less-than-significant impact.

MITIGATION MEASURE 11-5. None required.

Toxic Air Contaminant — Plan-Level Analysis

IMPACT 11-6. Proposed land uses development under the Specific Plan could emit toxic air contaminants. This impact is considered potentially significant.

The proposed land uses under the Specific Plan are commercial, office, and residential. Although these uses may emit some toxic air contaminants, e.g., from boilers, chillers, and painting, they are generally not large sources of TACs. There is no industrial use specifically proposed; however, industrial uses may develop north of Willow Pass Road in Zone IV. In addition, gas stations and dry cleaners would be allowed land uses under the Commercial and Residential Mixed Use (as a conditional use) land use designations. Gas stations and dry cleaners emit TACs and are subject to BAAQMD regulation.

Any industrial uses proposed would have to comply with State and BAAQMD regulations, possibly including obtaining permits from the BAAQMD (after screening) and Air Toxics “Hot Spots” reporting requirements. Similarly, if sensitive receptors such as residences, day care centers, or schools locate near existing sources of TACs, the source may be required to report its emissions inventory to the BAAQMD, upon request by the BAAQMD.

MITIGATION MEASURE 11-6

- (a) Amend the Specific Plan to require any proposed land use with the potential for air or water contamination to be subject to a land use permit.

- (b) Any proposed land uses that could emit TACs should be subject to land use compatibility review, and to a screening review by the BAAQMD. With implementation of this mitigation measure, this impact would be reduced to a less-than-significant level.

TABLE 11-8

Estimated Carbon Monoxide Concentrations at Selected Intersections in the Specific Plan Area

Intersection (Streets)	One-Hour Total CO Concentration (ppm) ^a				Eight-Hour Total CO Concentration (ppm) ^b			
	Existing 1998	Existing with Project ^c	2010 Cumulative without Project ^c	2010 Cumulative with Project	Existing 1998	Existing with Project ^c	2010 Cumulative without Project ^c	2010 Cumulative with Project
Bailey and West Leland - AM	11.4	12.3	7.0	7.5	6.1	7.1	3.8	4.2
Bailey and West Leland - PM	11.7	14.2	7.4	8.0	6.1	7.9	3.9	4.2
Bailey and Willow Pass - AM	10.7	10.9	6.1	6.2	5.2	5.3	3.0	3.0
Bailey and Willow Pass - PM	11.7	12.7	6.7	7.4	5.9	6.4	3.4	3.8
Bailey and Concord Blvd. - AM	12.3	12.7	6.1	6.2	6.1	6.4	3.0	3.1
Bailey and Concord Blvd. - PM	12.1	12.4	6.7	6.7	5.9	6.1	3.4	3.4

Notes:

^a The state one-hour standard is 20 ppm; the federal one-hour standard is 35 ppm.

^b The state and federal eight-hour standard is 9 ppm.

^c Estimated CO concentrations in 2010 are generally lower due to emission controls (i.e., cleaner cars) in the future.

Source: Ballcoffet & Associates, Inc., January 1999.

Buffer Zones Near TAC Sources

IMPACT 11-7. Potential sources of TACs located in areas with Commercial or Residential Mixed Use land use designations and near sensitive receptors could pose a health risk. This impact is considered potentially significant.

The question is whether sufficient buffer zones would exist between potential sources of TACs and sensitive receptors. The BAAQMD does not provide guidance on the minimum acceptable width of buffer zones. Instead, it recommends a qualitative assessment.

The existing land use pattern in Bay Point already has residential uses adjacent to, across the street from, or otherwise in close proximity to industrial uses. North of Willow Pass Road, there are residential uses on the west side of Alves Lane, and industrial uses (land owned by LP Catalyst Holdings, Inc.) northeast of Alves Lane. Although no light industrial development is assumed under the Specific Plan, it identifies the north side of Willow Pass Road as appropriate for light industrial development.

The Ambrose Community Center is located on the south side of Willow Pass Road, across from the potential light industrial area. The community center is typically used by children, senior citizens, and persons engaging in physical exercise. Specific Plan Guideline IBP-1 recommends that parking lots not be placed between buildings and Willow Pass Road. Such parking lots would increase the distance between the potential industrial buildings and the community center.

The following existing or potential sensitive uses would not be near existing or proposed industrial areas: residential development in Zones I, II, and III; day care centers in Zones I, II, and III; and the Bel Air Elementary School. On the other hand, State Route 4 bisects the plan area and is close to most of these existing or potential sensitive uses. Furthermore, gas stations and dry cleaners would be permitted within the Commercial and Residential Mixed Use areas.

In sum, most of the sensitive receptors that could result under the Specific Plan would not be located close to industrial TAC emitters, but they could be located close to gas stations, dry cleaners, or State Route 4. The existing residential development east of Alves Lane and the Ambrose Community Center would be directly across the street from potential light industrial uses.

In the absence of any specific emission-generating facilities and their possible emission of toxic air contaminants, it cannot be precisely determined whether industrial facilities in Zone IV, or gas stations and dry cleaners allowed in commercial or residential mixed use land use designations would be sufficiently buffered from sensitive receptors. It is recommended that all uses (permitted or conditional) under the Specific Plan be reviewed for their potential emissions of TACs. Appropriate site planning should also be used to create buffer zones. Emissions controls should be installed per any BAAQMD permit requirements.

MITIGATION MEASURE 11-7

- (a) Preclude gas stations and conditionally allow dry cleaning operations from the Residential Mixed Use land use classification; allow dry cleaners in the Commercial land use designation only if not adjacent to sensitive receptors. Dry cleaning retail outlets where no actual dry cleaning is performed would be allowed.
- (b) To widen buffers between light industrial uses and potential sensitive receptors to the west and south, provide parking lots between Alves Lane and industrial uses; consider allowing parking lots located between industrial uses and Willow Pass Road.
- (c) Consider creation of a buffer zone to create separation between residential uses and day care centers and State Route 4.
- (d) Amend the Specific Plan to require any proposed land use with the potential for air or water contamination to be subject to a land use permit.

With implementation of the above mitigation measures, this impact would be reduced to a less-than-significant level.

Cumulative Impacts

Cumulative impacts are already addressed above. The plan-level analysis for regional air quality takes into account cumulative growth. The discussion of mobile sources and stationary sources includes sources within and around the Specific Plan area. The evaluation of localized carbon monoxide concentrations is based on traffic data and projections that are cumulative; i.e., expected cumulative growth is included. Finally, the toxic air contaminant analysis is at a plan-level; it is not possible to evaluate specific future industrial uses, but the analysis takes into account State Route 4 and possible emitters of TACs in and around the Specific Plan area.

NOTES: Air Quality

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- ¹ Pollutants subject to Federal ambient standards are referred to as “criteria pollutants,” because the EPA publishes criteria documents to justify the choice of standards.
 - ² Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines*, 1996, page D-7.
 - ³ Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines*, 1996, page D-7.
 - ⁴ The U.S. EPA has promulgated new standards for both ozone and particulate matter. The new ozone standard is 0.08 ppm averaged over eight hours, rather than the existing 0.12 ppm averaged over one hour. Under the new ozone standard, it will be much more difficult for the Bay Area to achieve compliance. The prior particulate standards limited concentrations of particulate matter less than 10 microns in diameter (PM₁₀). Due to increased concern over smaller particulate matter being responsible for health impacts, the new standards limit concentrations of particulate matter 2.5 microns or less in diameter (PM_{2.5}). The new standard will be implemented in the year 2000.
 - ⁵ Bay Area Air Quality Management District (BAAQMD), Final San Francisco Bay Area Redesignation Request and Maintenance Plan for National Ozone Standards, September 1993; BAAQMD, Final San Francisco Bay Area Attainment Contingency Plan for National Carbon Monoxide Standards, September 1993.
 - ⁶ BAAQMD, *'97 Clean Air Plan*, Volume I, page 35.
 - ⁷ BAAQMD, *'97 Clean Air Plan*, Volume I, page 36.
 - ⁸ For a detailed description of the components of the TCMs, see BAAQMD, *'97 Clean Air Plan*, Volume II, Appendix E, and for those TCMs requiring local government action for implementation, see pages E-2 to E-4, E-18 to E-20, E-24 to E-27, E-30 to E-32, and E-41 to E-45.
 - ⁹ BAAQMD, *'97 Clean Air Plan*, Volume I, page 61.
 - ¹⁰ BAAQMD, Regulation 2, Rule 1-316, New or Modified Sources of Toxic Air Contaminants, June 1995.
 - ¹¹ BAAQMD, *'97 Clean Air Plan*, Volume I, page i.
 - ¹² Rochelle Walker, BAAQMD, complaint database output, August 14, 1998.
 - ¹³ BAAQMD, *Toxic Air Contaminant Control Program Annual Report 1995*, Volume I, November 1996, page 21.
 - ¹⁴ BAAQMD, *BAAQMD CEQA Guidelines*, 1996, pages 12 to 21.
 - ¹⁵ BAAQMD, *BAAQMD CEQA Guidelines*, 1996, page 20.
 - ¹⁶ BAAQMD, *BAAQMD CEQA Guidelines*, 1996, page 21.
 - ¹⁷ BAAQMD, *BAAQMD CEQA Guidelines*, 1996, page 20.
 - ¹⁸ BAAQMD, *BAAQMD CEQA Guidelines*, 1996, page 20.
 - ¹⁹ BAAQMD, *BAAQMD CEQA Guidelines*, 1996, pages 12 to 21.
 - ²⁰ BAAQMD, *BAAQMD CEQA Guidelines*, 1996, page 20.
 - ²¹ California Department of Transportation, *Transportation Project-Level Carbon Monoxide Protocol*, August 1995.
 - ²² *Pittsburg/Bay Point BART Station Area Specific Plan*, November 1997, page 5.5.
 - ²³ The development assumptions list dwelling units by development zone. Development Zone I is entirely within City of Pittsburg limits. Development Zones II, III, and IV lie within County
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- limits, except for a portion of Zone II, which lies within the City. See the Specific Plan, page 2.12 for the number of dwelling units in each zone.
- ²⁴ Toch Mangat, Bay Area Air Quality Management District, personal communication, August 11, 1998.
- ²⁵ Association of Bay Area Governments, *Projections '96: Forecasts for the San Francisco Bay Area to the Year 2015*, December 1995, page 146. (*Projections '96*.)
- ²⁶ These ABAG population projections differ from those cited in Chapter 9: Population, Employment, and Housing, because that chapter uses the most recent ABAG projections (*Projections '98*), whereas the air quality analysis must use the population projections underlying the most recent Clean Air Plan.
- ²⁷ *Projections '96* states that the population of Contra Costa County was 882,700 persons in 1995 and forecasts a population of 1,120,000 by 2010 (page 133), translating into a growth of 237,300. The planned growth within the portion of the Specific Plan that lies in the County falls within this projected growth.
- ²⁸ *Projections '96* also notes that “Pittsburg and Bay Point, an unincorporated community within its sphere of influence, should add 10,500 households between 1995 and 2015” (page 135).
- ²⁹ Chuck Purvis, Metropolitan Transportation Commission, personal communication, August 14, 1998; Metropolitan Transportation Commission, *Draft 1998 Regional Transportation Plan for the San Francisco Bay Area*, August 1998, pages. 38 and 39.
- ³⁰ *City of Pittsburg General Plan*, 1988, page 60.
- ³¹ *City of Pittsburg General Plan*, 1988, page 60, Table 7.2; Ratio of Jobs to Housing Demand Pittsburg Planning Area.
- ³² Chuck Purvis, Metropolitan Transportation Commission, personal communication, August 14, 1998.
- ³³ Association of Bay Area Governments, *Projections '98: Forecasts for the San Francisco Bay Area to the Year 2020*, December 1997, page 106. (*Projections '98*.) Note: *Projections '96* was not used for this comparison (even though it underlies the ‘97 Clean Air Plan), because no estimate for 2020 was available.
- ³⁴ See BAAQMD, ‘97 Clean Air Plan, Volume II, Appendix E, page E-30.
- ³⁵ *Pittsburg General Plan*, 1988, pages 47, 49–51, 64 (Air Quality Implementing Policy D).
- ³⁶ Contra Costa County, Community Development Department, *Contra Costa County General Plan: 1995–2010*, July 1996, pages 5-22; 5-24–5-30.
- ³⁷ BAAQMD, *BAAQMD CEQA Guidelines*, 1996, pages 12 to 14.
- ³⁸ *Pittsburg General Plan: Existing Conditions and Planning Issues Report*, June 1998, page 323.
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