C.1 AIR QUALITY

This section addresses the environmental setting and impacts related to the Proposed Project. Specifically, Section C.1.1 provides a description of the environmental baseline and regulatory settings, followed by an environmental impact analysis of the Proposed Project in Section C.1.2. Impact analysis for the alternatives is provided in Section D.

C.1.1 ENVIRONMENTAL BASELINE AND REGULATORY SETTING

C.1.1.1 Environmental Baseline

Climate and Meteorology

The study area lies within the South Coast Air Basin (SCAB) (see Figure C.1-1), which is characterized as a Mediterranean climate with mild winters, when most rainfall occurs, and warm, dry summers. The regional climate is dominated by a strong and persistent high-pressure system that frequently lies off the Pacific coast (generally known as the *Pacific High*). The Pacific High shifts northward or southward in response to seasonal changes or the presence of cyclonic storms. Besides the influence from the Pacific High, other important meteorological characteristics influencing air quality in the study area are the persistent temperature inversions, predominance of onshore winds, mountain ridge and valley topography, and prevalent sunlight.

Temperature and Precipitation. As described in Table C.1-1, average summer high and low temperatures (July) in the Newport Beach area are 72^{o} F and 62^{o} F, while average winter high and low temperatures (January) are 63^{o} F and 47^{o} F, respectively. Rainfall averages approximately 12 inches per year, with most of the annual rainfall occurring between November and April.

Table C.1-1 Monthly Temperatures and Precipitation

Month	Newport Beach Area		
	Temperature (^{o}F)		Precipitation (inches)
	Maximum	Minimum	
January	63.0	46.5	2.37
February	63.4	47.9	2.44
March	63.7	49.6	1.99
April	65.3	52.4	0.95
May	67.0	55.9	0.16
June	69.2	59.0	0.06
July	72.2	62.0	0.01
August	73.6	63.2	0.06
September	73.3	61.5	0.26
October	71.0	57.3	0.27
November	67.6	51.1	1.26
December	64.2	47.2	1.87

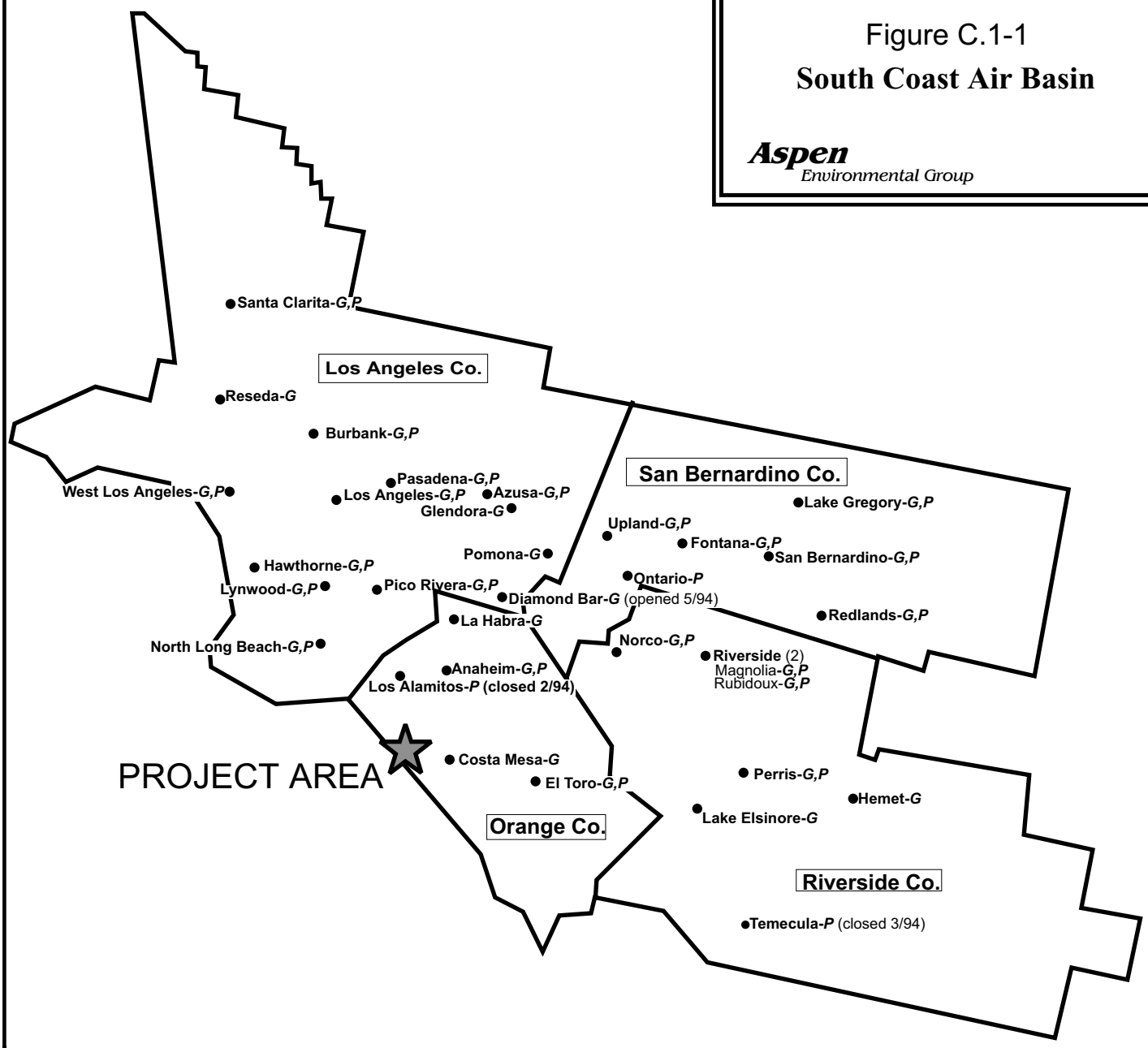
Source: Western Regional Climate Center internet site (http://www.wrcc.sage.dri.edu).

Bolsa Chica Water Line and Wastewater Project

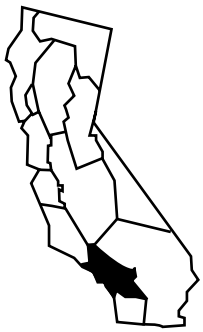
Figure C.1-1

South Coast Air Basin

Aspen Environmental Group



California Air Basins



G Gaseous Monitoring
P Particulate Monitoring

N

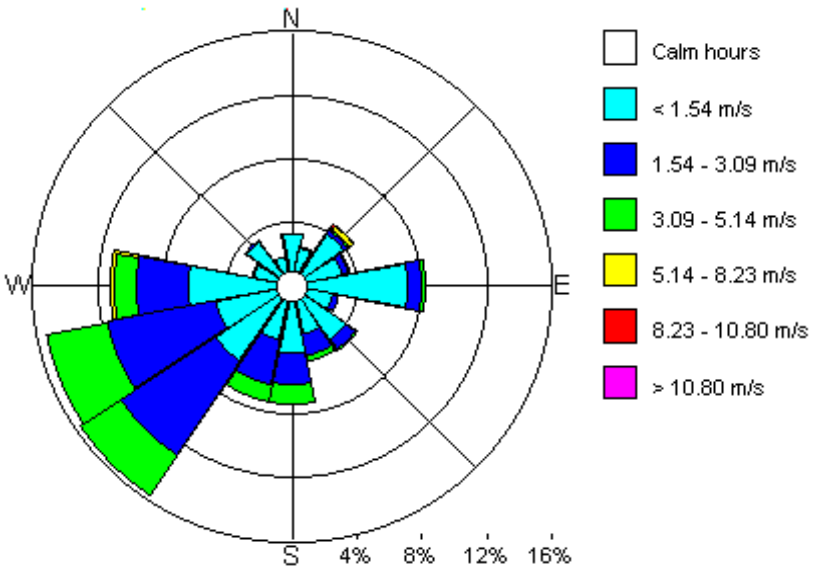
0 ¼ ½ 1

Scale in Miles

d:\ks\projects\bolsa\C.1-1

Winds. As illustrated in Figure C.1-2, wind patterns in the project vicinity display a unidirectional on-shore flow from the southwest that is strongest during the summer, with a weaker offshore return flow; return flow is strongest in the winter nights when the land is colder than the ocean. Local topography in the project area may modify these wind patterns to an extent, but the day-night difference is still very noticeable. The onshore winds that sweep across the region average from seven to nine miles per hour (mph) with stronger winds occurring during the summer. The offshore flow is often calm or drifts slowly southwesterly at two to six mph, with winter nights showing the strongest effects.

Figure C.1-2 Wind Rose for Newport Beach



Existing Air Quality

Criteria Pollutants. The quality of the surface air (air quality) is evaluated by measuring ambient concentrations of pollutants that are known to have deleterious effects. The degree of air quality degradation is then compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS). Because of unique meteorological problems in the State, and because of differences of opinion by medical panels established by the California Air Resources Board (CARB) and the EPA, there is considerable diversity between State and federal standards currently in effect in California. In general, the CAAQS are more stringent than the corresponding NAAQS. Those standards currently in effect in California are shown in Table C.1-2.

Air quality standards are designed to protect those people most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Table C.1-3 provides a summary of the health effects form the major criteria air pollutants. It should be noted that healthy adults can tolerate occasional exposure to air pollutant concentrations above these minimum standards before adverse effects are observed.

Table C.1-2 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
			Primary[3,4]	Secondary[3,5]
Ozone (O3)	8-hour[6] 1-hour	NS 0.09 ppm (180 µg/m3)	0.08 (160 µg/m3) 0.12ppm (235 µg/m3)	NS 0.12 ppm (235 µg/m3)
Carbon Monoxide (CO)	8-hour 1-hour	9.0 ppm (10 mg/m3) 20.0 ppm (23 mg/m)	9.0 ppm (10 mg/m3) 35 ppm (40 mg/m3)	NS NS
Nitrogen Dioxide (NO2)	Annual Avg. 1-hour	NS 0.25 ppm (470 µg/m3)	0.053 ppm (100 µg/m3) NS	0.053 ppm (100 µg/m3) NS
Sulfur Dioxide (SO2)	Annual Avg. 24-hour 3-hour 1-hour	NS 0.05 ppm (131 µg/m3) NS 0.25 ppm (655 µg/m3)	80 µg/m3 (0.03 ppm) 365 µg/m3 (0.14 ppm) NS NS	NS NS 1300 µg/m3 (0.5 ppm) NS
Suspended Particulate Matter (PM10)	Ann.Geo.Mean Ann.Arith.Mean 24-hour	30 µg/m3 NS 50 µg/m3	NS 50 µg/m3 150 µg/m3	NS 50 µg/m3 150 µg/m3
Suspended Particulate Matter (PM 2.5)[8]	24-hour Annual	NS NS	65 µg/m3 15 µg/m3	NS NS
Sulfates (SO4)	24-hour	25 µg/m3	NS	NS
Lead (Pb)	30-day Avg. Calendar Qtr.	1.5 µg/m3 NS	NS 1.5 µg/m3	NS 1.5 µg/m3
Hydrogen Sulfide (H2S)	1-hour	0.03 ppm (42 µg/m3)	NS	NS
Vinyl Chloride	24-hour	0.010 ppm (26 µg/m3)	NS	NS
Visibility Reducing Particles	1 Observation	Insufficient amount to reduce the prevailing visibility[9] to less than 10 miles when the relative humidity is less than 70% (CA only)	NS	NS

Notes: NS = no standard; ppm = parts per million; µg/m3 = microgram per cubic meter; mg/m3 = milligrams per cubic meter

1. California standards for O3, CO, SO2 (l-hour), NO2, and PM10 are values that are not to be exceeded. SO4, Pb, H2S, Vinyl Chloride, and visibility-reducing particles standards are not to be equaled or exceeded.
2. 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 O3 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.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon reference temperature of 25°Centigrade (C) and a reference pressure of 760 mm of mercury. 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 (1,013.2 millibar); ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.
4. 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 U.S. EPA.
5. 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 U.S. EPA.
6. The 8-hour standard was finalized by U.S. EPA in 1997. However, U.S. EPA is being challenged in court and the implementation of the standard is uncertain at this time.
7. At locations where the state standards for ozone and/or PM10 are violated. National standards apply elsewhere.
8. The agency committed to complete another full review of the health science, and allow five years to build a monitoring network, before any areas are designated nonattainment for PM2.5 Following designations (in 2002-2005), areas would have another three years to develop attainment plans (by 2005-2008), with attainment by 2014-2017.
9. Prevailing visibility is defined as the greatest visibility which is attained or surpassed around at least half of the horizon circle, but not necessarily in continuous sectors.

Table C.1-3 Summary of Health Effects of the Major Criteria Pollutants

Air Pollutant	Adverse Effects
Ozone	• Eye Irritation • Respiratory function impairment • Aggravation of respiratory and cardiovascular diseases
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 • Death at high levels of exposure • Aggravation of some heart diseases (angina)
Nitrogen Dioxide	• Risk of acute and chronic respiratory disease
Suspended Particulates	• Increased risk of chronic respiratory disease • Reduced lung function • With SO_2, may produce acute illness • Particulate matter 10 microns or less in size (PM_{10}) may lodge in and/or irritate the lungs

Source: SCAQMD, CEQA Air Quality Handbook, 1993

Attainment Status. A summary of the air quality status of the SCAB, relative to meeting the National and State AAQS, is provided in Table C.1-4. Air quality in the SCAB is in non-attainment of the NAAQS and CAAQS for ozone (O_3), carbon monoxide (CO), and fine particulate matter (PM_{10}). It should be noted that the SCAB is classified as "extreme" non-attainment of the NAAQS for ozone, as well as "serious" non-attainment of the NAAQS for PM_{10}.

Table C.1-4 Attainment Status of South Coast Air Basin

Air Basin	O3		CO		NO2		SO2		PM10	
	State	Federal	State	Federal	State	Federal	State	Federal	State	Federal
South Coast	N	Extreme Non-Attainment	N	N	A	A	A	A	N	Serious Non-Attainment

Notes: A = Attainment of Standards; N = Non-Attainment;
Source: USEPA's website (http://www.epa.gov/region09/air/maps).

Indications of criteria pollutant levels near the project area can be obtained by reviewing recent data collected at a nearby SCAQMD monitoring station (shown on Figure C.1-1). One monitoring station near the study area was selected to provide a general profile of the air quality within the study area. Table C.1-5 provides the monitoring data from 1994 to 1997 for the Costa Mesa monitoring station.

Table C.1-5 Air Quality Summary

Standards	Costa Mesa (Mesa Verde Drive)			
	1994	1995	1996	1997
OZONE (1-Hour) STANDARD				
Maximum Concentration (ppm)	0.12	0.11	0.10	0.09[a]
Days >CAAQS (0.09 ppm)	3	3	1	0
Days > NAAQS (0.12 ppm)	0	0	0	0
NO2 (1-Hour) STANDARD[b]				
Maximum Concentration (ppm)	0.18	0.16	0.13	0.12
Days > CAAQS (0.25 ppm)	0	0	0	0
PM10 (24-Hour) STANDARD				
Maximum Concentration (*u*g/m3)	NM	NM	NM	NM
Days > CAAQS (50 *u*g/m3)	NM	NM	NM	NM
Days > NAAQS (150 *u*g/m3)	NM	NM	NM	NM
CO (8-Hour) STANDARD				
Maximum Concentration (ppm)	7.9	6.7	7.3	5.8
Days > CAAQS (9.0 ppm)	0	0	0	0
Days > NAAQS (9.0 ppm)	0	0	0	0

Source: CARB, Summary of 1994 through 1997
Note: ug/m3=grams per cubic meter; NM=Not monitored
a Data presented are valid, but incomplete in that an insufficient number of valid data points were collected by the monitoring station to meet the U.S. EPA and/or the CARB criteria for representativeness.
b No Federal (1-hour) NO2 standard.

Toxic Air Contaminants. Toxic air contaminants (TACs), which are a component of hazardous air pollutants (HAPs), are air pollutants that are known or suspected to cause cancer, genetic mutations, birth defects, or other serious illnesses in people. TACs come from three basic source types: industrial facilities, internal combustion engines (stationary and mobile), and small "area sources" (such as solvent use). Generally, TACs behave in the atmosphere as other pollutants. Some of the TACs are Volatile Organic Compounds (VOCs) and could contribute to the ozone problems. The concentrations of both inert and toxic pollutants are therefore determined by the level of emissions at the source and the meteorological conditions encountered as these pollutants are transported away from the source. TACs are not regulated by the AAQS, but by Title III of the Clean Air Act Amendments of 1990.

C.1.1.2 Regulatory Setting

Federal, State, and regional agencies have established air quality standards and regulations that affect proposed projects. The following Federal and State regulatory considerations apply to the project and to all alternatives.

Federal Regulations

- The Federal Clean Air Act of 1970 directs the attainment and maintenance of National Ambient Air Quality Standards (NAAQS). The 1990 Amendments to this Act determine attainment and maintenance of NAAQS (Title I), motor vehicles and fuel reformulation (Title II), hazardous air pollutants (Title III), acid deposition (Title IV), operating permits (Titles V), stratospheric ozone protection (Title VI), and enforcement (Title VII).

- The U.S. Environmental Protection Agency (U.S. EPA) implements New Source Review (NSR) and Prevention of Significant Deterioration (PSD).

- The EPA implements the NAAQS and determines attainment of Federal air quality standards on a short- and long-term basis.

State Regulations and Laws

- The California Air Resources Board (CARB) has established the California Ambient Air Quality Standards (CAAQS) and determines attainment status for criteria air pollutants.

- The California Clean Air Act (CCAA) went into effect on January 1, 1989, and was amended in 1992. The CCAA mandates achieving the health-based CAAQS at the earliest practicable date.

- The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) requires an inventory of air toxics emissions from individual existing facilities, an assessment of health risk, and notification of potential significant health risk when found to be present.

- The Calderon Bill, 1992 (SB 1731), altered the 1987 "Hot Spots" Act. This bill sets forth changes in the following four areas: provides guidelines to identify a more realistic health risk, requires high risk facilities to submit an air toxic emission reduction plan, holds air districts accountable for ensuring that the plans will achieve their objectives, and high risk facilities will be required to achieve their planned emission reduction.

- The new Tanner Bill (AB 2728). This bill amends the existing Tanner Bill (AB 1807) by setting forth provisions to implement the Federal program for hazardous air pollutants.

- Toxic Emission Near Schools (AB 3205). This bill requires new or modified sources of air contaminants located within 1,000 ft. from the outer boundary of a school to give public notice to the parents of school children before an air pollution permit is granted.

- Section 21151.4 of the California Environmental Quality Act addresses Hazardous Air Pollutant releases within one-fourth mile of a school site.

SCAQMD Rules and Regulations

Emissions that would result from the Proposed Project are subject to the rules and regulations of the South Coast Air Quality Management District (SCAQMD). Rules and regulations of this agency are designed to achieve defined air quality standards that are protective of public health. To that purpose, they limit the emissions and the permissible impacts of emissions from projects, and specify emission controls and control technologies for each type of emitting source in order to ultimately achieve the air quality standards. The following discussion outlines various SCAQMD rules and regulations that could be applicable to the proposed project.

- *Rule 403 - Fugitive Dust.* Requirements that minimize emission of fugitive dust for any active operation, open storage pile, or disturbed area.

- *Regulation II*. SCAQMD Regulation II contains a series of rules specifying requirements for permits to construct and operate stationary equipment capable of emitting air contaminants, including air emissions control equipment.

- *Regulation IV*. Regulation IV defines the allowable concentration and emission levels for pollutants, as well as inspection and maintenance requirements for hydrocarbon emissions sources. Rules bearing upon the Proposed Project include Rule 463, Organic Liquid Storage.

- *Regulation XI*. Regulation XI contains a series of rules governing emissions from specific sources. Those bearing upon the proposed project include: Rule 1113, Architectural Coatings; Rule 1146.1, Emissions from Small Boilers and Process Heaters; Rule 1149, Storage Tank Degassing; Rule 1166, volatile organic compounds (VOC) Emissions from Soil Decontamination; and Rule 1173, Fugitive VOC Emissions.

- *New Source Review (Regulation XIII)*. Regulation XIII requires that all new and modified stationary emissions sources must use best available control technology (BACT) to control emissions of all affected pollutants. In addition, if there is a net emission increase of any size, emission offsets will be required to counteract the effects of emissions growth. These offsets must be achieved through contemporaneous or third party emissions reduction. Some credit remains available in the form of "banked" emissions.

C.1.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Short-term construction impacts and long-term operational impacts typically result from a Proposed Project or Action. According to the parameters of the Proposed Project, there will be only minor long-term operational impacts associated with the implementation of the SCWC pipeline project (see Appendix 2). Therefore, the primary focus of this analysis was to identify and evaluate the potential short-term construction impacts that may result from the construction of the subject pipeline project, as described in Section B.

C.1.2.1 Significance Criteria

Section 15002 of the California Environmental Quality Act has established guidelines for determining the significance of air quality and other environmental impacts (*CEQA Guidelines, 1992*). Each air quality management/control district establishes its own significance criteria based on the specific conditions in its jurisdiction. The SCAQMD has established guidelines and thresholds to determine potentially significant adverse environmental impacts (SCAQMD, 1993). The following significance criteria are based on these sources.

General Significance Criteria

- Construction emissions are considered significant whenever they would result in a direct violation of an air quality standard.

- Project could result in a population increase, which would be in excess of that projected in the Air Quality Management Plan (AQMP).

- The project would cause objectionable odors offsite.

- Exceeding any Federal or air agency Prevention of Significant Deterioration (PSD) increment threshold or causing or contributing adverse impacts to any Federally classified Class I Area would be considered a significant impact.

SCAQMD's Specific Significance Criteria

- Project could be occupied by sensitive receptors within a quarter mile of an existing facility that emits air toxics identified in SCAQMD Rule 1401, or near carbon monoxide (CO) hot spots.

- SCAQMD thresholds of significance for construction emissions as listed in Table C.1-6 below (i.e., if a proposed project emits pollutants higher than these levels during the construction, its impact on the air quality is considered to be significant):

- Project located in the SCAB has operational emissions in a nonattainment air basin exceeding any of the thresholds as shown in Table C.1-7:

Table C.1-6 SCAQMD Threshold of Significance for Construction Emission

Pollutant	lbs/day	tons/qtr
Nitrogen Oxides (NO_x)	100	2.50
Volatile Organic Compounds (VOC)	75	2.50
Sulfur Oxides (SO_X)	150	6.75
Particulates (PM_{10})	150	6.75
Carbon Monoxide (CO)	550	24.75

Source: SCAQMD, CEQA Air Quality Handbook, 1993

Table C.1-7 SCAQMD Thresholds of Significance for Operational Emissions

Pollutant	(lbs/day) Weekly Averaged Except PM_{10}
Nitrogen Oxides (NO_x)	55
Volatile Organic Compounds (VOC)	55
Sulfur Oxides (SO_X)	150
Particulates (PM_{10})	150
Carbon Monoxide (CO)	550, or exceed CA 1-hour or 8-hour CO standards

Source: SCAQMD, CEQA Air Quality Handbook, 1993

C.1.2.2 Applicant's Environmental Commitments

Table C.1-8 contains measures that have been developed by SCWC to reduce the potential air quality impacts from the proposed project (SCWC 1999c, p.4-12).

Table C.1-8 Applicant Proposed Measures for Air Quality

ID #	Mitigation Measures
PDF 4.3-1	The construction disturbance "footprint" shall be kept as small as possible.
SC 4.3-1	Adequate water and/or other dust palliatives shall be employed during excavation activities on all disturbed areas as required by the SCAQMD.
SC 4.3-2	Streets from which site access are taken shall be washed or swept daily to remove dirt carried from the site to the street to keep vehicles from pulverizing the dirt into fine particles.
SC 4.3-3	Soil excavation, clearing or grading activities shall be terminated when wind speeds exceed 25 mph for an hourly average.
SC 4.3-4	All vehicles hauling dirt or spoils on public roadways shall be covered unless additional moisture is added to prevent material blow-off during transport.
SC 4.3-5	Engine idling shall be prohibited while waiting to load or unload if the expected wait exceeds ten (10) minutes.

Source: SCWC 1999c, pages 4-12 and 4-13.

C.1.2.3 Construction Impacts

Pipeline Construction Emissions

Collectively, the construction activities and equipment used in installing a segment of pipeline are referred to as a "spread." Construction equipment would include machinery such as excavators, backhoe-loaders, rollers, asphalt pavers, and other support vehicles. SCWC has estimated that construction progress would average approximately 100 feet per day; however, this is dependent upon factors such as traffic levels on the roadway easement or in the vicinity of the work area, and density of buried utility lines. As described in Section B.7, construction of the proposed 6.7-mile SCWC pipeline would occur over a 35-week period.

Pipeline construction emissions can be distinguished as *onsite* and *offsite*. Onsite air pollutant emissions during construction would principally consist of exhaust emissions from mobile heavy duty diesel- and gasoline-powered construction equipment, as well as fugitive particulate matter (dust) from material handling. Offsite exhaust emissions would result from the commuting of workers to the work sites, from trucks hauling pipe and other materials to the construction spread, dump trucks hauling away dirt displaced by the pipe, and trucks hauling away shattered asphalt and delivering fresh asphalt to the construction sites.

Onsite Pipeline Construction Emissions. The calculation of onsite construction emissions begins with an analysis of construction study plans and scheduling. SCWC provided construction scheduling data in the Proponent's Environmental Assessment (PEA) (SCWC, 1999) and Plan of Works (SCWC, 1998) that were subsequently updated and incorporated in Part B of this document. The computational methodology consists of two basic steps: first determining the total number of equivalent operating days for each piece of equipment (see Table B.7-2), and applying the appropriate emission factors to compute the associated emissions when the piece would be operating. Second, from these equipment emissions data, and based on operating assumptions for each piece of equipment, total emissions are compiled. Refer to Appendix 4 for the detailed assumptions used in the air quality analysis.

The emissions from onsite construction activities were calculated using emission factors from the U.S. Environmental Protection Agency's (U.S. EPA) AP-42 emission factors for construction equipment (U.S. EPA, 1994). Emissions were computed by multiplying the emission factors for each equipment type by its fuel consumption rate, the number of pieces, the construction hours per day, and equivalent number of "days." Emissions from all equipment types were then summed to obtain total emissions. The calculated daily and quarterly onsite emissions for pipeline construction are listed in Tables C.1-9 and C.1-10, respectively.

Offsite Pipeline Construction Emissions. It was assumed that most of the 20 construction workers would be meeting at the construction site in work trucks and pick-up trucks. Truck trips would also be required to haul pipe and other materials to the construction sites. Appendix 4 provides data on these requirements. Dump trucks would remove the dirt displaced by the pipe, as well as broken asphalt. Other trucks would return with fresh asphalt during the finishing stage at the construction site. The emission factors used to quantify emissions from offsite source were selected from the California Air Resources Board's EMFAC7EP emission factors. Tables C.1-9 and C.1-10 summarize the daily and quarterly project onsite and offsite construction emissions.

Table C.1-9 Estimated Maximum Daily Pipeline Construction Emissions (in lbs)

Source	VOC	NO_X	SOx	CO	PM_{10}
Onsite Exhaust Emissions	25.25	171.69	14.57	187.48	15.06
Offsite Exhaust Emissions	1.26	5.73	0.43	15.66	0.68
Fugitive Dust Emissions	---	---	---	---	43.08
TOTAL EMISSIONS	26.51	177.42	15.00	203.14	58.82
SCAQMD Emission Threshold	75	100	150	550	150
Exceedance of the SCAQMD Threshold?	**NO**	**YES**	**NO**	**NO**	**NO**

Table C.1-10 Estimated Quarterly Pipeline Construction Emissions (tons/qtr)

Source	VOC	NOx	SOx	CO	PM_{10}
Onsite Exhaust Emissions	0.80	5.42	0.43	6.03	0.48
Offsite Exhaust Emissions	0.04	0.19	0.01	0.51	0.02
Fugitive Dust Emissions	---	---	---	---	1.4
TOTAL EMISSIONS	0.84	5.61	0.44	6.54	1.9
SCAQMD Emission Threshold	2.50	2.50	6.75	24.75	6.75
Exceedance of the SCAQMD Threshold?	**NO**	**YES**	**NO**	**NO**	**NO**

Construction Emissions (NOx)

SCAQMD guidelines identify a daily and a quarterly threshold for construction activities (see Tables C.1-9 and C.1-10). As listed in Tables C.1-9 and C.1-10, the estimated maximum daily and quarterly emissions associated with construction of the pipeline would exceed the SCAQMD's significance thresholds for NOx (100 lbs/day), a potentially significant impact. The NOx emissions could be reduced through the implementation of Mitigation Measures A-1 through A-9 (below), which are discussed below. Based on SCAQMD's CEQA Air Quality Handbook, it is assumed that the NOx emissions would be reduced by 20 to 30 percent through the implementation of these mitigation measures. However, the residual NOx emission levels would still be above the SCAQMD's daily and quarterly thresholds of significance, representing a short-term **(Class I)** air quality impact.

Impact: NOx emissions from construction activities would exceed the SCAQMD emission thresholds, and thus would be considered a short-term impact to local air quality conditions (**Class I**).

Mitigation Measures: The following measures would reduce emissions and the potential for exceeding an air quality standard during construction of the pipeline.

A-1 Construction equipment shall be maintained in tune, per manufacturing specifications. SCWC/contractor shall provide a maintenance schedule for all vehicles and equipment. SCWC/contractor shall provide a certification from a third-party certified mechanic stating the timing of all internal combustion construction equipment engines have been properly maintained. SCWC/contractor shall recertify each piece of construction equipment/vehicle based on the maintenance schedule.

A-2 SCWC/contractor shall use catalytic converters on all gasoline equipment (except for small [2-cylinder] generator engines). If this measure is not implemented, emissions from gasoline equipment shall be offset by other means (e.g., Emission Reduction Credits). SCWC/contractor shall provide a certification from a third-party certified mechanic stating that a catalytic converter is installed on each applicable vehicle and gasoline-fueled equipment.

A-3 Retard diesel engine injection timing by two degrees before top center on all construction equipment that was manufactured before 1996, and which does not have an existing IC engine warranty with the manufacturer. SCWC/contractor shall provide a certification from a third-party certified mechanic prior to start of construction, stating the timing of all diesel-powered construction equipment engines have been retarded two degrees before top center.

A-4 Substitute small electric powered equipment for diesel and gasoline powered equipment, where feasible. SCWC shall submit an analysis to the CPUC showing available electric equipment and demonstrate completion of feasibility testing for this project.

A-5 Cease construction during periods of high ambient ozone concentrations (i.e., Stage 2 smog alerts) near the construction area (SCAQMD, 1993). SCWC/contractor shall call (800) CUT-SMOG for

daily ozone forecasts. SCWC/contractor shall document in a written log the ozone forecast on a daily basis.

A-6 Use high-pressure injectors on all diesel engines that were manufactured before 1996, and which do not have existing IC engine warranties with the manufacturer. SCWC/contractor shall provide documentation of warranty and manufacture date or a certification from a third-party certified mechanic stating that all diesel construction equipment engines are utilizing high-pressure fuel injectors.

A-7 Schedule all material deliveries to the construction spread outside of peak traffic hours, and minimize other truck trips during peak traffic hours, or as approved by local jurisdictions.

A-8 Use only solar powered traffic signs (no gasoline-powered generators shall be used).

A-9 Prohibit all vehicles from idling in excess of 10 minutes. SCWC shall ensure that project personnel operating vehicles (including contractors, subcontractors, and service company representatives) sign a statement acknowledging their awareness of idling restrictions. Signs shall be posted in plain view within the construction spread area stating that vehicles shall not idle more than 10 minutes and must be shut off prior to the 10-minute limitation.

It should be noted that the maximum daily and quarterly emissions levels could be reduced by limiting the number of construction spreads to only two spreads operating concurrently, instead of the proposed three-spread schedule. This would essentially lengthen the construction schedule and reduce the quarterly and daily construction levels to below the SCAQMD emission thresholds.

Construction Emissions (VOC, SOx, CO, and PM_{10})

As described in Tables C.1-9 and C.1-10, the other pollutants (VOC, SOx, CO, and PM_{10}) are all below the SCAQMD emission thresholds. As a result, these pollutant emission levels would be less than significant **(Class III)**.

Impact: VOC, SOx, CO, and PM10 emission levels from construction activities would be below the SCAQMD emission thresholds, and thus would be considered adverse, but less than significant (**Class III**).

Mitigation Measures: None required.

C.1.2.4 Operational Impacts

As described in Section B.8.1, the proposed SCWC water transmission system would be remotely operated from SCWC's existing station. A maintenance staff currently works in the field carrying out

routine inspections and maintenance activities, such as repairing main, hydrant and service leaks, gate valve and maintenance programs, and 24-hour emergency response. No additional positions to SCWC's existing staff would be required as a result of this project. However, there would be additional miles traveled associated with the inspection and maintenance operations. These offsite emissions levels would be minimal and considered adverse to local air quality conditions (since the air basin is nonattainment for several criteria pollutants), but less than significant **(Class III)**. As a result, no mitigation measures are required.

Impact: Operational emissions would be minimal, but would be considered adverse to local air quality conditions (**Class III**).

Mitigation Measures: None required.

C.2.2.5 Impact and Mitigation Summary

Table C.1-11 summarizes the potential impacts associated with the construction and operation of the proposed SCWC pipeline project.

Table C.1-11 Impact and Mitigation Summary – Air Quality

Impact	Class	Mitigation Measure
Construction Impacts. NOx emissions from construction activities would exceed the SCAQMD emission thresholds, and thus would be considered a short-term impact to local air quality conditions.	I	A-1 through A-9
Construction Impacts. VOC, SOx, CO, and PM10 emission levels from construction activities would be below the SCAQMD emission thresholds, and thus would be considered adverse but less than significant.	III	NA
Operational Impacts. Operational emissions would be minimal, but would be considered adverse to local air quality conditions.	III	NA

NA = Not Applicable, mitigation not required.

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