B. AIR

An air quality analysis for the Proposed Project was conducted by Terry A. Hayes Associates in June 2000. This study is attached in full in ***Appendix C*** (under separate cover), and is on file with the Department of City Planning, Environmental Review Section, Room 1500, 221 N. Figueroa St., Los Angeles. The findings of this study have been utilized in this section.

1. Air Quality (Construction)

Environmental Setting

Air quality in the United States is governed by the Federal Clean Air Act (CAA) and is administered by the United States Environmental Protection Agency (USEPA). In addition to being subject to the requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA).

The California Clean Air Act (CCAA), amended in 1992, requires all air districts in the State to endeavor to achieve and maintain State Ambient Air Quality Standards. The CCAA is administered statewide by the California Air Resources Board (CARB). The State of California has also established ambient air quality standards, known as the California Ambient Air Quality Standard (CAAQS). These standards are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. California has established a statewide agency, CARB, to regulate mobile air pollution sources (such as motor vehicles). CARB also oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level. The CCAA is administered by CARB at the state level and by the Air Quality Management Districts at the regional level.

Within the project area, the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG) have responsibility for preparing the Air Quality Management Plan (AQMP), which address federal and state Clean Air Act requirements. The AQMP details goals, policies, and programs for improving air quality and establishes thresholds for daily operation emissions. Environmental review of individual projects within the region must demonstrate that daily construction and operational emissions thresholds as established by the SCAQMD would not be exceeded, nor would the number or severity of existing air quality violations.

In August of 1996, the SCAQMD submitted its Air Quality Management Plan (AQMP*)* to the California Air Resources Board (CARB), for inclusion in the State Implementation Plan (SIP). The AQMP also meets California Clean Air Act (CCAA) requirements. The Plan addressed CCAA requirements which are intended to bring the District into compliance with state air quality standards. The Plan focused on ozone and carbon monoxide emissions, which would be reduced through public education, vehicle and fuels management, transportation controls, indirect source controls, and stationary source controls programs.

The 1997 Draft Air Quality Management Plan has been prepared to reflect the requirements of the 1990 Clean Air Act Amendments and is consistent with the approaches taken in the 1994 AQMP. The Plan is expected to replace, in part or in whole, many of the proposed measures set forth in the State Implementation Plan and anticipates the attainment of all by 2010.

The overall control strategy for the 1997 AQMP was designed to meet applicable state and federal requirements and to demonstrate attainment with ambient air quality standards. The 1997 AQMP is the first plan required by federal law to demonstrate attainment of the federal PM_{10} ambient air quality standards and therefore, places a greater focus on PM_{10}.

Air quality studies generally focus on five pollutants which are most commonly measured and regulated: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), respirable particulate matter (PM_{10}), and sulfur dioxide (SO_2).

Carbon Monoxide (CO): CO, a colorless gas, interferes with the transfer of oxygen to the brain. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. Along with carbon dioxide (CO_2), CO is emitted by motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. Automobile exhausts release most of the CO in urban areas. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability.

Ozone (O_3): O_3, a colorless toxic gas, enters the blood stream and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. O_3 also damages vegetation by inhibiting their growth. Although O_3 is not directly emitted, it forms in the atmosphere through a chemical reaction between reactive organic compounds and nitrogen oxides (NO_x), which are emitted from industrial sources and from automobiles. Substantial O_3 formation generally requires a stable atmosphere with strong sunlight.

Nitrogen Dioxide (NO_2): NO_2, a brownish gas, irritates the lungs. It can cause breathing difficulties at high concentrations. Like O_3, NO_2 is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as nitrogen oxides (NO_x) and are major contributors to ozone formation. NO_2 also contributes to the formation of PM_{10}, small liquid and solid particles that are less than 10 microns in diameter (see discussion of PM_{10} below). At atmospheric concentration, NO_2 is only potentially irritating. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 parts per million (ppm).

Particulate Matter (PM_{10}): PM_{10} refers to particulate matter less than 10 microns in diameter, about one/seventh the thickness of a human hair. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when industry and gases emitted from motor vehicles undergo chemical reactions in the atmosphere. Major sources of PM_{10} include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning, industrial sources, windblown dust from open lands; and atmospheric chemical and photochemical reactions. Suspended particulates produce haze and reduce visibility. Additionally, PM_{10} poses a greater health risk than larger-sized particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections.

Sulfur Dioxide (SO_2): Sulfur oxides, primarily sulfur dioxide (SO_2) are a product of high-sulfur fuel combustion. The main sources of SO_2 are coal and oil used in power stations, industry and for domestic heating. Industrial chemical manufacturing is another source of SO_2. SO_2 is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

As required by the Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: carbon monoxide, nitrogen oxides, ozone, particulate matter smaller than 10 microns (PM_{10}), sulfur oxides and lead. The State of California has also established ambient air quality standards, known as the California Ambient Air Quality Standards (CAAQS). These standards are generally more stringent than the corresponding federal standards and

incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. Because the CAAQS are more stringent than the NAAQS, they are used as the comparative standard in the analysis contained in this report.

Both the State and Federal standards are summarized in **Table 10, State and Federal Ambient Air Quality Standards**, page 50. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare.

The proposed project is located within the South Coast Air Basin (SCAB), a 6,530 square-mile area that includes all of Orange County, the non-desert portions of Los Angeles County, and the western urbanized portions of Riverside and San Bernardino Counties. The SCAB is bounded by the Pacific Ocean to the west; by the San Gabriel, San Bernardino, and San Jacinto mountains to the north and the east; and by the San Diego County line to the south (**Figure 1**). Ambient pollution concentrations recorded in Los Angeles County are among the highest in the four counties comprising the SCAB. Within the SCAB, implementation of measures to attain the objectives of the California Clean Air Act is the responsibility of the SCAQMD.

The SCAB is an area of high air pollution potential due to its climate and topography. The SCAB experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. In addition, the mountains and hills within the area contribute to the variation of rainfall, temperature, and winds throughout the region. The region experiences frequent temperature inversions. Temperature typically decreases with height. However, under inversion conditions, temperature increases as altitude increases. Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and lower layer of the atmosphere, which creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward.

In addition, hydrocarbons and nitrogen dioxide react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland, toward the mountains.

TABLE 10
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Period	California Standard	Federal Standards	
			Primary	Secondary
Ozone (O_3)	1 hour	0.09 ppm (180 µg/m^3)	0.12 ppm (235 µg/m^3)[6]	Same as Primary Standard
	8 hour	--	0.08 ppm (157 µg/m^3)	
Respirable Particulate Matter (PM_{10})	Annual Geometric Mean	30 µg/m^3	--	Same as Primary Standard
	24 hour	50 µg/m^3	150 µg/m^3	
	Annual Arithmetic Mean	--	50 µg/m^3	--
Fine Particulate Matter ($PM_{2.5}$)	24 hour	No Separate Standard	65 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean		15 µg/m^3	
Carbon Monoxide(CO)	8 hour	9.0 (10 mg/m3)	9.0 (10 mg/m3)	None
	1 hour	20 ppm (23 mg/m3)	35 ppm (40 mg/m3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	--	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	1 hour	0.25 ppm (470 µg/m^3)	--	
Sulfur dioxide (SO_2)	Annual Arithmetic Mean	--	0.03 ppm (80 µg/m^3)	--
	24 hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	--
	3 hour	--	--	0.5 ppm (1300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	--	--
Lead	30 day average	1.5 µg/m^3	--	--
	Calendar Quarter	--	1.5 µg/m^3	Same as Primary Standard
Visibility Reducing Particulates	8 hour (10 am to 6 pm, PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer - visibility of ten miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent.	No Federal Standards	
Sulfates	24 hour	25 µg/m^3		
Hydrogen Sulfide	1 hour	0.03 ppm (42 µg/m^3)		

Source: California Air Resources Board, Federal and State Air Quality Standards 1999 (1/25/99)

During the fall and winter, air quality problems are created due to carbon monoxide and nitrogen dioxide emissions. High nitrogen dioxide (NO_2) levels usually occur during autumn or winter, on days with summer-like conditions. Since CO is produced almost entirely from automobiles, the highest CO concentrations in the SCAB are associated with heavy traffic.

The California Air Resources Board will designate an area as non-attainment for a pollutant if air quality data show that a State standard for a pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard, and are not used as a basis for designating areas as non-attainment.

On the basis of regional monitoring data, the Los Angeles County portion of the SCAB has been designated as a non-attainment area for ozone, carbon monoxide, and total suspended particulates. The air basin is designated as an attainment area for nitrogen oxide and sulfur dioxide.[1]

The SCAQMD monitors air quality conditions at 37 locations throughout the SCAB. For the purposes of this report, data from the Reseda monitoring station, located at 18330 Gault Street, in Reseda, was used to characterize existing conditions in the vicinity of the proposed project location and to establish a baseline for estimating future conditions with and without the proposed project. The Reseda monitoring station does not monitor PM_{10} concentrations; therefore, data from the Burbank monitoring station, located at 228 West Palm Avenue, in the City of Burbank, was used to determine ambient PM_{10} conditions.

The Reseda and Burbank monitoring stations are located approximately seven (7) mile northeast and eighteen (18) miles east of the proposed project site, respectively. The criteria pollutants monitored at the Reseda station are ozone (O_3), carbon monoxide (CO), and nitrogen oxides (NO_X). For the purposes of this document, only the PM_{10} data collected at the Burbank station will be utilized. **Table 11, 1996-98 Criteria Pollutant Violations**, page 52, shows the number of violations recorded at the Reseda and Burbank monitoring stations during the 1996-98 period.

The MPTF campus covers approximately 44.8 acres and is generally bounded on the east by Mulholland Drive, on the south by Valmar Road, on the west by Park Sorrento, and on the north by Calabasas Road. Currently, the northern 18 acres of the site is developed with approximately

[1] California Air Resources Board: Proposed Amendments to the Designation Criteria and Amendments to the Area Designations for State Ambient Air Quality Standards and Proposed Maps of the Area Designations for the State and National Ambient Air Quality Standards, August 1998.

277,776 square feet of development, including medical, residential, service/administration, and activity/recreational uses. The central 5 acres are under construction with the Stark Villas, and are not assessed as part of the Project (see Related Project Number 11). The adjacent 15.8 acres of the site are used for agricultural crops. The southern-most 6 acres are currently undeveloped. It should be noted that the agricultural area produces PM_{10} during tilling activities.

TABLE 11
1996-98 CRITERIA POLLUTANT VIOLATIONS

Pollutant	State Standard	Number of Days Above State Standard		
		1996	1997	1998
Ozone	0.09 ppm (hourly)	50	12	23
Carbon Monoxide	9.0 ppm (8-hour average)	0	1	1
Nitrogen Dioxide	0.25 ppm (hourly)	0	0	0
PM_{10}	50 $\mu g/m^3$ (24-hour average)	15	17	9

Source: California Air Resources Board, see **Appendix C**

Significance Criteria

Daily Construction Emissions

The South Coast Air Quality Management District has established that a project would have a significant impact if its daily construction emissions were to exceed thresholds for carbon monoxide (CO), reactive organic gas (ROG), nitrogen oxides (NO_x), sulfur oxides (SO_x), and particulates (PM_{10}). These thresholds are measured in pounds per day, as shown on **Table 12, SCAQMD Threshold Criteria (Construction)**, page 53.

PM_{10} Concentrations

Construction related PM_{10} concentrations would be considered significant if the 24-hour California Ambient Air Quality Standard (CAAS) standard of 50 micrograms per cubic meter ($\mu g/m^3$) is exceeded for a substantial period of time, i.e., greater than ninety (90) days, at sensitive receptor locations within the project vicinity.

TABLE 12
SCAQMD THRESHOLD CRITERIA (CONSTRUCTION)

POLLUTANT	DAILY EMISSION
Carbon Monoxide (CO)	550 pounds
Reactive Organic Gases (ROG)	75 pounds
Nitrogen Oxides (NO_X)	100 pounds
Sulfur Dioxide (SO_X)	150 pounds
Particulates (PM_{10})	150 pounds

Environmental Impacts

Daily Construction Emissions

The Proposed Project would generate pollutant emissions from the following construction activities: (1) demolition, (2) grading, (3) construction worker travel to and from project sites, (4) delivery and hauling of construction supplies and debris to and from project sites, and (5) fuel combustion by on-site construction equipment. Construction would occur in two phases. **Tables 13 and 14, Daily Construction Emissions - Phases I and II**, pages 54 and 54, illustrate the daily emissions associated with the construction phases. Daily emissions related to the construction of the Proposed Project were derived using the applicable emission factors and formulas found in the *SCAQMD CEQA Air Quality Handbook*, Appendix to Chapter 9. As indicated on **Tables 13 and 14**, PM_{10} concentrations are not anticipated to exceed SCAQMD significance thresholds.

PM_{10} Concentrations

Anticipated worst-case PM_{10} emissions would occur during the grading/excavation period of the second construction phase. As previously stated in **Table 14**, total daily PM_{10} emissions are anticipated to be 106 ppd, of which 104 ppd would area emissions (occurring on the project site), and 2 ppd would be mobile emissions. Using the USEPA SCREEN3 dispersion model, PM_{10} concentrations were modeled within the proposed project's area of potential effect, and added to the

background concentration of 41.9 micrograms per cubic meter ($\mu g/m^3$). As shown on **Table 15, Worst-Case Construction PM_{10} Concentrations**, page 55, the 24-hour concentration could potentially exceed the State standard of 50 micrograms/cubic meter ($\mu g/m^3$) within a 2,500 foot radius of the project area. Further, concentrations within a 500 foot radius would exceed 85 $\mu g/m^3$.

TABLE 13
DAILY CONSTRUCTION EMISSIONS - PHASE I (Pounds Per Day)

Construction Phase	Phase Duration	CO	ROG	NOx	SOx	PM_{10}
SCAQMD Threshold		**550**	**75**	**100**	**150**	**150**
Demolition	30 Days	26	5	36	3	65
Grading/Excavation	30 Days	23	4	39	3	103
Foundation	30 Days	20	3	22	2	14
Maximum		**26**	**5**	**39**	**3**	**103**
Exceed Threshold?		**No**	**No**	**No**	**No**	**No**

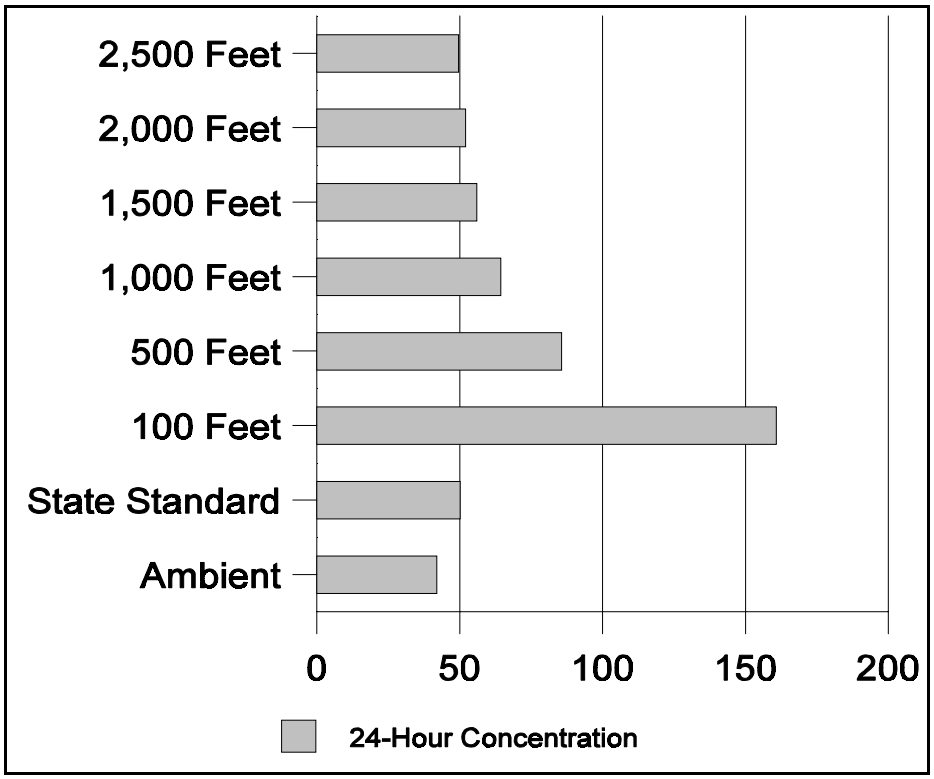
Source: Terry A. Hayes Associates, see ***Appendix C***

TABLE 14
DAILY CONSTRUCTION EMISSIONS - PHASE II (Pounds Per Day)

Construction Phase	Phase Duration	CO	ROG	NOx	SOx	PM_{10}
SCAQMD Threshold		**550**	**75**	**100**	**150**	**150**
Demolition	30 Days	19	4	40	3	55
Grading/Excavation	30 Days	32	6	64	5	106
Foundation	30 Days	27	5	45	3	26
Maximum		**32**	**6**	**64**	**5**	**106**
Exceed Threshold?		**No**	**No**	**No**	**No**	**No**

Source: Terry A. Hayes Associates, see ***Appendix C*.**

Table 15. Worst-Case Construction PM_{10} Concentrations



Cumulative Impacts

After implementation of the mitigation measures described below, the Proposed Project would not result in a daily emission or PM_{10} impact. Furthermore, the radius of exceedance of the State PM_{10} standard would be reduced to approximately 500 feet. Only Related Project No. 11, which is located on the project site, would be located within this radius. It is known that the construction phase of Stark Villa I, which is part of Related Project No. 11, will be completed before the construction phase of the proposed Master Plan commences. However, Stark Villa II will not be constructed until the construction phase for Phase I of the Master Plan commences. In the case that Stark Villa II of Related Project No. 11 is under construction while construction related to the Proposed Project is taking place, there would be a potential cumulative impact to air quality during construction.

Mitigation Measures

! The construction area and vicinity (500-foot radius) shall be swept and watered at least twice daily.

- Site-wetting shall occur often enough to maintain a twelve percent surface soil moisture content throughout any site grading or excavation activity.
- All haul trucks shall either be covered or maintained with two feet of free board.
- All haul trucks shall have a capacity of no less than twelve and three-quarter (12.75) cubic yards.
- All unpaved parking or staging areas shall be watered at least four times daily.
- Any construction site access points shall be swept or washed within thirty minutes of visible dirt deposition on any public roadway.
- On-site stockpiles of debris, dirt, or rusty material shall be covered or watered at least twice daily.
- Operations on any unpaved surfaces shall be suspended when winds exceed twenty-five miles per hour.
- Idling of trucks shall not exceed ten minutes.
- Carpooling for construction workers shall be encouraged.
- The construction contractor shall coordinate all site grading and excavation activity with the Motion Picture and Television Fund hospital administration. The hospital administration shall perform the following: insure that all air conditioner/air filtration filters are in optimal condition; insure that doors and windows remain shut during any grading or excavation activity; and inform patients and staff of grading or excavation activity and encourage everyone to remain indoors with doors and windows shut.

Impacts After Mitigation

Daily Construction Emissions

Post mitigation daily emission for criteria pollutants are shown on **Tables 16 and 17, Mitigated Daily Construction Emissions, Phases I and II**, page 57. As shown, with the application of mitigation measures, criteria pollutant emissions would be further reduced.

TABLE 16
MITIGATED DAILY CONSTRUCTION EMISSIONS - PHASE I [1]

Construction Phase	Duration [2]	CO	ROG	NOx	SOx	PM_{10}
SCAQMD Threshold		**550**	**75**	**100**	**150**	**150**
Demolition	30	26	5	36	3	51
Grading/Excavation	30	23	4	39	3	19
Foundation	30	20	3	22	2	14
Maximum		**26**	**5**	**39**	**3**	**51**
Exceed Threshold?		**No**	**No**	**No**	**No**	**No**

[1] Daily emissions are expressed in pounds per day.
[2] Phase duration expressed in days.
Source: Terry A. Hayes Associates, see **Appendix C**

TABLE 17
MITIGATED DAILY CONSTRUCTION EMISSIONS - PHASE II [1]

Construction Phase	Duration [2]	CO	ROG	NOx	SOx	PM_{10}
SCAQMD Threshold		**550**	**75**	**100**	**150**	**150**
Demolition	30	19	4	40	3	42
Grading/Excavation	30	32	6	64	5	21
Foundation	30	27	5	45	3	26
Maximum		**32**	**6**	**64**	**5**	**42**
Exceed Threshold?		**No**	**No**	**No**	**No**	**No**

[1] Daily emissions are expressed in pounds per day.

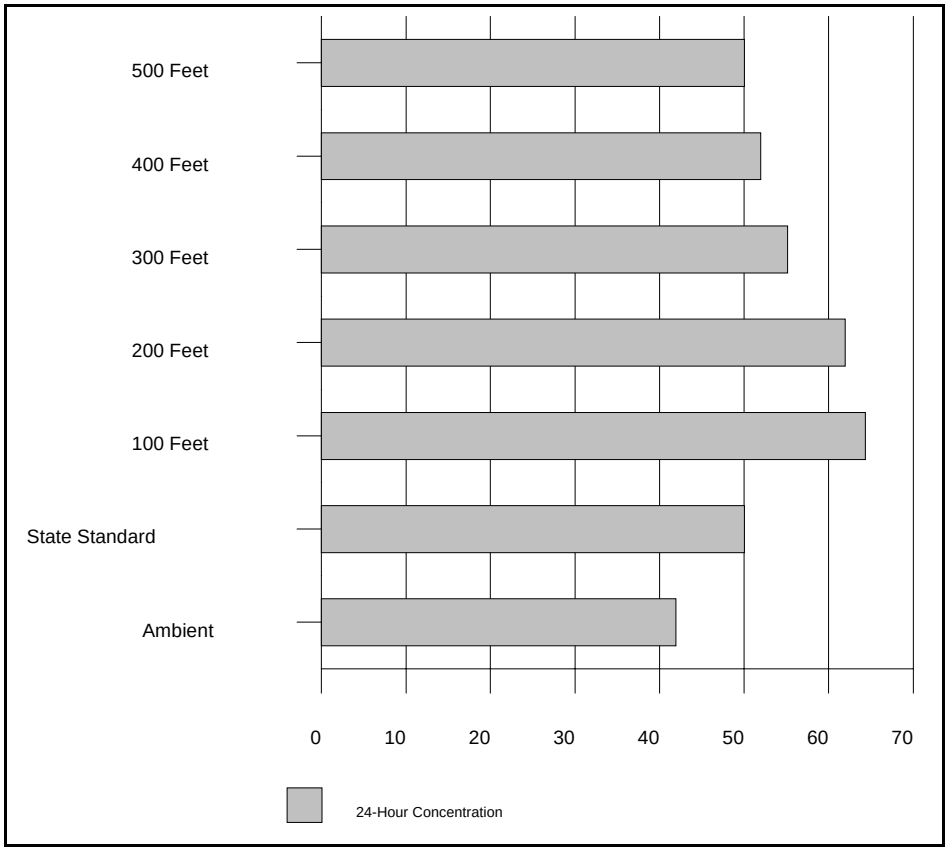
[2] Phase duration expressed in days.

Source: Terry A. Hayes Associates, see **Appendix C**

PM_{10} Concentrations

With proper implementation of prescribed mitigation measures, onsite daily PM_{10} emissions would be reduced by eighty percent (80%) to 19 ppd during the grading period of the second construction phase. The anticipated maximum concentrations are illustrated on **Table 18, Worst-Case PM_{10} Concentrations with Mitigation**, page 58.

Table 18. Worst-Case PM_{10} Concentrations with Mitigation



As illustrated in **Table 18**, post-mitigation 24-hour PM_{10} concentrations are anticipated to exceed the State standard of 50 $\mu g/m^3$ within an approximately 500 foot radius of the project location during the grading period of Phase II. This period is anticipated to have a duration of approximately thirty (30) days.

The Motion Picture and Television Fund hospital is the only sensitive receptor located within the 500 foot radius where the 24-hour PM_{10} concentration could potentially exceed the State standard, as there are no other hospitals, convalescent homes, or schools located within the area of potential effect. Proper implementation of prescribed mitigation measures will reduce potential impacts to the hospital to less than significant levels.