

4.3 AIR QUALITY

4.3.1 Setting

a. Climate and Topography. The proposed MBSST Network would be located within the North Central Coast Air Basin (NCCAB). The NCCAB is composed of Monterey, Santa Cruz and San Benito counties and covers an area of more than 5,100 square miles. With Monterey County covering over 3,320 square miles and Santa Cruz County covering only 445 square miles, the air basin consists of one of the largest and one of the smallest counties in the state. The air basin features varied vegetation, climate and geography and includes portions of several mountain ranges: the Santa Lucia and Gabilan Ranges in Monterey and San Benito Counties, the southern portion of the Santa Cruz Mountains in Santa Cruz County, and the Diablo Range in the eastern half of San Benito County. The coastal terraces in the Santa Cruz area, the flat plains surrounding Watsonville, Salinas, and King City, and the southern Santa Clara Valley are sharply defined by the various mountain ranges.

A semi-permanent high pressure cell in the eastern Pacific is the basic controlling factor in the climate of the NCCAB. In the summer, the high-pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. Air descends from the Pacific High, forming a stable temperature inversion of warm air over a cooler coastal layer of air. The onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. The warmer air aloft acts as a lid that inhibits vertical air movement and allows air pollutants to concentrate in the lower level.

The generally northwest-southeast orientation of mountainous ridges tends to restrict and channel the summer onshore air currents. Surface heating in the interior portion of the Salinas and San Benito Valleys creates a weak low pressure that intensifies the onshore air flow during the afternoon and evening.

In the fall, the surface winds become weak, and the marine layer grows shallow, dissipating altogether on some days. The airflow is occasionally reversed in a weak offshore movement, and the relatively stationary air mass is held in place by the Pacific High pressure cell, which allows pollutants to build up over a period of a few days. It is most often during this season that north or east winds develop, which transport pollutants from either the San Francisco Bay area or the Central Valley into the NCCAB.

During the winter, the Pacific High migrates southward and so has less influence on the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito Valleys, especially during night and morning hours. The general absence of deep, persistent inversions and occasional storm systems usually result in good air quality for the basin as a whole in winter and early spring.

b. Air Pollutants of Primary Concern. The state and federal Clean Air Acts mandate the control and reduction of certain air pollutants. Under these Acts, the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for certain “criteria” pollutants. Ambient air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant

emissions, as well as by the climactic and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants (such as CO and PM₁₀) is proximity to major sources. Ambient CO levels in particular usually closely follow the spatial and temporal distributions of vehicular traffic. A discussion of primary criteria pollutants is provided below.

Ozone. Ozone is a colorless gas with a pungent odor. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROG), and oxides of nitrogen (NO_x). ROG (the organic compound fraction relevant to ozone formation, and sufficiently equivalent for the purposes of this analysis to volatile organic compounds, or VOC¹) is composed of non-methane hydrocarbons (with some specific exclusions), and NO_x is made of different chemical combinations of nitrogen and oxygen, mainly NO and NO₂. A highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NO_x levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant.

Carbon Monoxide. Carbon monoxide (CO) is an odorless, colorless, gas. CO causes a number of health problems including fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels in on-road vehicles and at power plants is a major cause of CO. CO is also produced during the winter from wood stoves and fireplaces. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the state CO standard are generally associated with major roadway intersections during peak hour traffic conditions.

Localized carbon monoxide “hotspots” can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal Ambient Air Quality Standards (AAQS) of 35.0 parts per million (ppm) or the state AAQS of 20.0 ppm.

Nitrogen Dioxide. Nitrogen dioxide (NO₂) is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. Nitrogen dioxide is an acute irritant. A relationship between NO₂ and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Nitrogen dioxide absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM₁₀ and acid rain.

Particulate Matter. Suspended particulate matter (airborne dust) consists of particles small enough to remain suspended in the air for long periods. Fine particulate matter includes particles small enough to be inhaled, pass through the respiratory system, and lodge in the lungs, with resultant health effects. Particulate matter can include materials such as sulfates and nitrates, which are particularly damaging to the lungs. Health effects studies resulted in revision of the Total Suspended Particulate (TSP) standard in 1987 to focus on particulates that are small enough to be considered “inhalable,” i.e. 10 microns or less in size (PM₁₀). In July of

¹ ROG is equivalent to volatile organic compounds (VOC) per MBUAPCD Rule 101, 2.32



1997, a further revision of the federal standard added criteria for PM_{2.5}, reflecting recent studies that suggested that particulates less than 2.5 microns in diameter are of particular concern.

Federal and state standards have been established for ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead, and fine particulates (PM₁₀ and PM_{2.5}). Table 4.3-1 summarizes the current federal and state standards for each of these pollutants. Standards have been set at levels intended to be protective of public health. California standards are more restrictive than federal standards for each of these pollutants except for lead and the eight-hour average for CO. Depending on whether the standards are met or exceeded, the local air basin is classified as in “attainment” or “nonattainment.”

**Table 4.3-1
 Current Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	Federal Primary Standards	California Standard
Ozone	1-Hour	---	0.09 ppm
	8-Hour	0.075 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9 ppm	9.0 ppm
	1-Hour	35 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.1 ppm	0.18 ppm
Sulfur Dioxide	24-Hour	0.14 ppm	0.04 ppm
	3-Hour	0.5 ppm	---
	1-Hour	0.075 ppm	0.25 ppm
PM ₁₀	Annual	---	20 µg/m ³
	24-Hour	150 µg/m ³	50 µg/m ³
PM _{2.5}	Annual	15 µg/m ³	12 µg/m ³
	24-Hour	35 µg/m ³	---
Lead	30-Day Average	---	1.5 µg/m ³
	3-Month Average	0.15 µg/m ³	---

ppm = parts per million
 µg/m³ = micrograms per cubic meter
 Source: CARB, June 7, 2012

c. Current Ambient Air Quality. Ambient air quality is monitored at seven Monterey Bay Unified Air Pollution Control District (MBUAPCD) operated monitoring stations located in Salinas, Hollister, Carmel Valley, Santa Cruz, Scotts Valley, Watsonville, and Davenport. In addition, the National Park Service operates a station at the Pinnacles National Monument and an industry consortium operates a station in King City. The MBUAPCD monitors air pollutant levels to assure that air quality standards are met, and if they are not met, to also develop strategies to meet the standards. As indicated above, depending on whether or not the standards are met or exceeded, the air basin is classified as being in “attainment” or as “non-attainment.” Table 4.3-2 summarizes the State and Federal attainment status for criteria pollutants.



**Table 4.3-2
 Attainment Status of the North Central Coast Air Basin**

Pollutant	State Standard	Federal Standard
Ozone (O ₃)	Nonattainment ¹	Attainment ²
Inhalable Particulates (PM ₁₀)	Nonattainment	Unclassifiable/Attainment
Fine Particulates (PM _{2.5})	Attainment	Unclassifiable/Attainment ³
Carbon Monoxide (CO)	Monterey County – Attainment San Benito County – Unclassified Santa Cruz County-Unclassified	Attainment
Nitrogen Dioxide (NO _x)	Attainment	Unclassifiable
Sulfur Dioxide (SO _x)	Attainment	Unclassifiable

¹ Effective July 26, 2007, the ARB designated the NCCAB a nonattainment area for the State ozone standard, which was revised in 2006 to include an 8-hour standard of 0.070 ppm.

² On March 12, 2008, U.S. EPA adopted a new 8-hour ozone standard of 0.075 ppm, while temporarily retaining the existing 8-hour standard of 0.08 ppm.

³ In 2006, the Federal 24-hour standard for PM_{2.5} was revised from 65 to 35 µg/m³. Although final designations have yet to be made, it is expected that the NCCAB will remain designated unclassified/attainment.

Note: Nonattainment pollutants are highlighted in **Bold**.

As shown in Table 4.3-2, although the NCCAB is in attainment or unclassifiable of all federal ambient air quality standards (AAQS), it is designated as nonattainment with respect to the more stringent state PM₁₀ AAQS and is designated as nonattainment with respect to the state's eight-hour ozone AAQS.

Table 4.3-3 summarizes the annual air quality data for the NCCAB over the past three years. The Soquel Avenue monitoring site, located at 2544 Soquel Avenue in the City of Santa Cruz, was chosen as representative of the ambient air conditions of the site vicinity because it is the monitoring station closest to the middle segments of the proposed MBSST Network. However, carbon monoxide and nitrogen dioxide are not monitored at the Soquel Avenue station. These pollutants are monitored at the Davenport station, located at Marine View and Center Avenue in the City of Davenport. The data collected at the MBUAPCD-operated stations, shown below in Table 4.3-3, is considered to be generally representative of the baseline air quality experienced in the project vicinity.

**Table 4.3-3
 Ambient Air Quality Data**

Pollutant	2009	2010	2011
Ozone, ppm - Worst Hour	0.073	0.077	0.071
Number of days of State exceedances (>0.09 ppm)	0	0	0
Ozone, ppm – Worst 8 Hour Average	0.061	0.059	0.065
Number of days of State exceedances (>0.07 ppm)	0	0	0
Number of days of Federal exceedances (>0.075 ppm)	0	0	0
Particulate Matter <10 microns, µg/m ³ Worst 24 Hours	36.0	31.0	22.0
Number of samples of State exceedances (>50 µg/m ³) ^a	0	0	0
Number of samples of Federal exceedances (>150 µg/m ³)	0	0	0
Particulate Matter <2.5 microns, µg/m ³ Worst 24 Hours	24.5	32.8	17.2
Number of days Federal exceedances ^a	0	0	0
Nitrogen Dioxide, ppm – Worst Hour ^b	0.020	0.028	*
Number of days of State exceedances (>0.18 ppm)	0	0	-



**Table 4.3-3
 Ambient Air Quality Data**

Pollutant	2009	2010	2011
Carbon Monoxide, ppm – Worst 8 hour ^b	5.24	0.64	*
Number of days State/Federal exceedances (>9.0 ppm)	0	0	-

Source: California Air Resources Board. Top 4 Summary. Accessed November 2012. Air Quality Monitoring Station: 2544 Soquel Avenue

^a Particulate Matter sampling does not occur daily; the number of days over the State 24-Hour PM₁₀ standard provides the estimated number of days in the year that the standard would have been exceeded had sampling occurred every day of the year.

^b Carbon Monoxide and Nitrogen Dioxide were not measured at the Soquel Avenue station; therefore, measurement data was taken from the Davenport station.

*There was insufficient data to determine a value.

Given that the NCCAB is designated as nonattainment for ozone and PM₁₀, these are the primary pollutants of concern for the NCCAB. As indicated in Table 4.3-3, there were no Federal or State ozone exceedances in 2009, 2010, or 2011. The State and Federal standards for PM₁₀ and the Federal standards for PM_{2.5} were also not exceeded in 2009, 2010, or 2011.

d. Regulatory Setting.

Federal and State. The federal and state governments have been empowered by the federal and state Clean Air Acts to regulate the emission of airborne pollutants and have established ambient air quality standards for the protection of public health. The United States Environmental Protection Agency (U.S. EPA) is the federal agency designated to administer air quality regulation, while the California Air Resources Board (CARB) is the state equivalent in California. Local control in air quality management is provided by CARB through county-level or regional (multi-county) air pollution control districts (APCDs). CARB establishes air quality standards and is responsible for control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. CARB has established 14 air basins statewide.

Regional. The MBUAPCD regulates air quality in the NCCAB, and is responsible for attainment planning related to criteria air pollutants, and for district rule development and enforcement. It also reviews air quality analyses prepared for CEQA assessments, and has published the *CEQA Air Quality Guidelines* document (last revised February 2008) for use in evaluation of air quality impacts. The purpose of the *Guidelines* is to assist in the review and evaluation of air quality impacts from projects which are subject to CEQA. Its guidance applies to the North Central Coast Air Basin (NCCAB), which is comprised of Monterey, Santa Cruz, and San Benito counties. The *Guidelines* are an advisory document intended to provide lead agencies, consultants, and project proponents with uniform procedures for assessing potential air quality impacts and preparing the air quality section of environmental documents. The *Guidelines* are also intended to help these entities anticipate areas of concern from the MBUAPCD in its role as a lead, commenting and/or responsible agency for air quality.

Air Quality Management Plan. In accordance with the California Clean Air Act, the MBUAPCD has developed the *2008 Air Quality Management Plan for the Monterey Bay Region* (2008 AQMP). The 2008 AQMP is a transitional plan shifting focus of MBUAPCD's efforts from achieving the 1- hour component of the state ozone AAQS to achieving the new 8-hour ozone requirement. The plan includes an updated air quality trends analysis, which reflects both the 1-



and 8-hour standards, as well as an updated emission inventory, which includes the latest information on stationary, area and mobile emission sources.

Santa Cruz County. The Conservation and Open Space Element of the Santa Cruz County General Plan and Local Coastal Program provides a list of policies and programs intended to improve the air quality of the NCCAB. The programs and policies applicable to the MBSST Network project are provided below.

- Policy 5.18.1 *Ensure new development projects are consistent at a minimum with the Monterey Bay Unified Air Pollution Control District Air Quality Management Plan and review such projects for potential impact on air quality.*
- Policy 5.18.7 *Emphasize, bicycles and pedestrian modes of transportation rather than automobiles.*
- Program E *Encourage lesser polluting transportation alternatives through the construction of bikeways and the provisions of public transit.*

City of Santa Cruz. The Hazards, Safety, and Noise chapter of the City of Santa Cruz General Plan 2030 includes a policy related to air quality, established to guide development within the City. The policy applicable to the MBSST Network project is described below.

- Policy HZ2.2.1 *Require future development projects to implement applicable Monterey Bay Unified Air Pollution Control District control measure and/or air quality mitigations in the design of new projects as set forth in the District's "CEQA Guidelines."*

City of Capitola. The Capitola General Plan is currently being updated, and a Public Review Draft General Plan is anticipated for June 2013. The current General Plan was adopted in 1989. The City of Capitola General Plan (1989) established goals and policies for the regulation of air quality impacts through the Conservation Element. However, the Conservation Element does not contain specific policies related to air quality that are applicable to the MBSST Network project.

City of Watsonville. An updated City of Watsonville General Plan was adopted by the City Council in January 2013, but was subsequently challenged in court and is on hold until resolution on the legal issues can be reached. Therefore, at this time, the 2005 General Plan remains in effect. The existing 2005 General Plan, adopted in 1994, addresses air quality through the Environmental Resource Management Element. The goals and policies in the Environmental Resources Management Element address State mandates for natural resource conservation, including air quality. The goal applicable to this project is provided below.

- Goal 9.4 *Maintain or improve the present air quality level within the Pajaro Valley.*

Monterey County. Segment 20 of the proposed MBSST Network project, which is 0.74 miles long, would be located in Monterey County. The purpose of this segment is to provide a regional connection to the Monterey County section of the Monterey Bay Sanctuary Scenic Trail. Implementation of this section would require cooperation and coordination with the



Transportation Agency for Monterey County (TAMC) and the County of Monterey. Monterey County General Plan goals and policies, as well as Monterey County Municipal Code regulations, would apply to this segment.

e. Sensitive Receptors. Certain population groups are more sensitive to air pollution than others, in particular, children, the elderly, and acutely ill and chronically ill persons, especially those with cardio-respiratory diseases. As described in the MBUAPCD's 2008 CEQA Guidelines, a sensitive receptor is defined as: any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. Sensitive receptors in the MBSST Network project area include residences, places of worship, and schools located adjacent to the proposed trail corridor. As an active transportation corridor, the proposed MBSST Network is not itself considered a sensitive receptor.

Sensitive receptors near each of the three reaches are described below.

Northern Reach. The nearest sensitive receptors to the northern reach of the proposed trail corridor include residences near the City of Davenport, located along Cement Plant Road approximately 150 feet north of segment 4; and Pacific Elementary School, located approximately 300 feet north of segment 5.1. The St. Vincent de Paul Church is located approximately 700 feet north of segment 5.1.

Central Reach. Due to the dense urban nature of the central reach, the majority of sensitive receptors that would be affected by the proposed MBSST Network project are located along the central reach. The closest sensitive receptors to the central reach include residential communities, with existing residences as close as 50 feet from the proposed trail corridor. Several churches are also located within several hundred feet of the central reach.

Watsonville Reach. The closest sensitive receptors to the Watsonville reach include a large residential community, adjacent to La Selva State Beach, approximately 50 feet east of segment 15, as well as Renaissance High School, which is located approximately 50 feet east of segment 16. The West Presbyterian Church is located approximately 650 feet east of segment 19.

4.3.2 Impact Analysis

a. Methodology and Significance Thresholds. The analysis of the project's air quality impacts follows the guidance and methodologies recommended in the MBUAPCD CEQA Air Quality Guidelines (February 2008) as well as Appendix G of the State CEQA Guidelines.

Appendix G of the CEQA Guidelines contains the following checklist of effects that may be deemed potentially significant:

- 1) Conflict with or obstruct implementation of the applicable air quality plan;
- 2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- 3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality



- standard (including releasing emissions which exceed qualitative thresholds for ozone precursors);*
- 4) *Expose sensitive receptors to substantial pollutant concentrations; or*
 - 5) *Create objectionable odors affecting a substantial number of people.*

The MBUAPCD has issued criteria for determining the level of significance for project specific impacts within its jurisdiction in accordance with the above thresholds. Based on criteria applied in or adapted from the MBUAPCD *Guidelines*, the proposed MBSST Network project's impacts on criteria air pollution would be significant if the project would:

- *Be inconsistent with the adopted AQMP.*
- *During construction, cause a violation of PM₁₀ AAQS at nearby or upwind of sensitive receptors, based on whether the project would:*
 - *Emit greater than 82 lb/day of PM₁₀ if located nearby or upwind of sensitive receptors (note: projects which require minimal earthmoving on 8.1 or more acres per day or grading and excavation on 2.2 or more acres per day are likely to exceed this threshold); or*
 - *Use equipment that is not "typical construction equipment" as specified in Section 5.3 of the MBUAPCD CEQA Guidelines.*
- *During operations:*
 - *Generate direct (area source or stationary) plus indirect (operational or mobile) emissions of either ROG or NO_x that exceed 137 lbs/day;*
 - *Generate on-site emissions of PM₁₀ exceeding 82 lbs/day;*
 - *Generate direct emissions of CO exceeding 550 lbs/day; or*
 - *Generate direct emissions of SO_x exceeding 150 lbs/day.*
- *Cause or substantially contribute to a violation of a CO standard.*

The MBUAPCD's *Guidelines* indicate that the following traffic effects should be assumed to generate a significant CO impact, unless CO dispersion modeling demonstrates otherwise:

- *Intersections or road segments that currently operate at LOS D or better would operate at LOS E or F with addition of the project's traffic.*

The MBSST Network project's potential to create odor impacts was identified as less than significant in the Initial Study (see Appendix A to this document) and will not be discussed further in this section of the EIR.

Air Quality Management Plan Consistency. A project would conflict with or obstruct implementation of the 2008 *Air Quality Management Plan (AQMP)* for the Monterey Bay Region (MBUAPCD, August 2008) if it is inconsistent with the growth assumptions, in terms of population, employment, or regional growth in vehicle miles traveled. These population forecasts were developed, in part, using data obtained from local jurisdictions on projected land uses and population projections identified in community plans. Projects that result in an increase in population that is inconsistent with local community plans would be considered inconsistent with the AQMP.

Construction Emissions. The California Emissions Estimator Model (CalEEMod) 2011 Version 2011.1.1 was used to estimate construction emissions for the proposed MBSST Network



and is based on parameters such as the duration of construction activity, area of disturbance, and anticipated equipment use during construction. Although the trail right-of-way varies from 25 feet up to a maximum width of 148 feet (along segment 17), 25 feet represents an average expected disturbance area for trail components (multi-use paved path, unpaved [decomposed granite] path, landscaping, trail furnishings, and signage). Therefore, for the purposes of estimating emissions, it was assumed that the area of disturbance for the entire length of the proposed MBSST Network would be 25 feet wide. Based on this width and a total trail length of 49.6 miles, the total area of disturbance would be approximately 150.4 acres. This is considered a conservative estimate, as this trail length includes 10.4 miles of paved and un-paved coastal spur trails (which would be a maximum width of six feet) and 7.5 miles of on-shoulder improvements adjacent to Highway 1 (which may not include any ground disturbance).

Construction duration was determined using the phasing plan outlined in the proposed Master Plan and based on the default number of days assigned by CalEEMod. As discussed in Section 2.0, *Project Description*, construction of the entire MBSST Network would occur in three phases. The precise order of construction would depend on funding. According to the proposed Master Plan, the trail segments identified as candidates for Phase I design and implementation are considered the most feasible for implementing within a short time frame. Segments 5, 8, and 9 would be included in Phase I and would take approximately one to five years to construct. Phase II, which would include segments 1, 2, 6, 7, 10, 11, 16, 18, and 19, would be constructed over five to ten years. Phase III would be constructed over ten to 15 years and would include the following segments: 3, 4, 12, 13, 14, 15, 17, and 20.

The MBSST Network is divided into 20 segments, ranging in length from 0.65 miles to 10.66 miles. As a reasonable worst-case scenario, construction of the longest segment (segment 5) was modeled to represent the largest area of disturbance throughout construction of the proposed MBSST Network. Based on this segment's length of 10.66 miles and the average expected disturbance area for trail components (25 feet), the estimated disturbance area of segment 5 is 32.3 acres, or 21.5 percent of the total trail disturbance area (150.3 acres). Using the default number of construction days² in CalEEMod, construction of 32.3 acres of trail would take an estimated 135 days (approximately seven months) to construct. This default construction length is considered conservative, as actual construction of segment 5 may take over seven months.³

It should be noted that, depending on funding availability and other local factors, more than one segment of the trail could be constructed at one time. Therefore, the potential for multiple segments to be constructed at once is also considered.

Operational Emissions. A limitation on the quantitative analysis of operational impacts is that emission models, such as CalEEMod, evaluate aggregate emissions, meaning that all vehicle trips and related emissions assigned to a project are assumed to be new trips and emissions generated by the project itself. Such models do not demonstrate, with respect to a regional air quality impact, what proportion of these emissions are actually "new" emissions, specifically attributable to the project in question. For most projects, a primary contributor to regional air quality emissions is from motor vehicles; however, the quantity of vehicle trips

² The default number of construction days assumes construction would occur five days per week.

³ A shorter construction length would result in a larger area being disturbed at one time, which would increase daily emissions. Thus, shorter construction periods result in higher daily construction emissions.



appropriately characterized as “new” is usually uncertain as traffic associated with a project may be relocated trips from other locales. This is the case with the proposed MBSST Network, as recreation is a land use with inherent demand. In other words, many of the vehicle trips associated with the proposed MBSST Network would be relocated from other existing recreational opportunities as people begin to use the MBSST Network instead. Therefore, because the incremental increase in trips estimated in Section 4.11, *Transportation/Traffic*, would not be perceptible, and because the proportion of “new” trips is unknown, a qualitative discussion of operational emissions is provided herein.

CO Hotspot Analysis. MBUAPCD’s 2008 CEQA Air Quality Guidelines note that localized impacts from programmatic projects, such as Master Plans, should be assessed by identifying whether build-out would create or substantially contribute to carbon monoxide “hotspots” where federal or state AAQS are exceeded. According to MBUAPCD’s CEQA Air Quality Guidelines, a significant CO impact would occur if project-generated traffic would degrade LOS operations at County roadways or intersections, such that those roadways or intersections would operate at LOS E or F with the addition of project-generated traffic.

b. Project Impacts and Mitigation Measures.

Impact AQ-1 **The proposed MBSST Network project would not contribute to population growth, and would therefore be consistent with the growth assumptions in the Air Quality Management Plan (AQMP). Furthermore, the project directly implements a transportation control measure in the AQMP. Thus, the MBSST Network would be consistent with and would also help to implement the AQMP. Impacts would be Class IV, beneficial.**

As noted in Section 4.3.2(a) (Methodology and Significance Thresholds), a project would conflict with or obstruct implementation of the AQMP for the Monterey Bay Region if it is inconsistent with the growth assumptions included in the AQMP, in terms of population, employment, or regional growth in vehicle miles traveled (VMT) (MBUAPCD, August 2008). The proposed MBSST Network does not contain a residential component and would therefore not increase the residential population of the area. In addition, as noted in Section 5.0, *Long-Term Impacts*, no direct growth inducement is expected to result from MBSST Network project implementation. Therefore, the MBSST Network project would not exceed growth assumptions in the AQMP directly (through population growth) or indirectly (through employment or regional growth in VMT).

The AQMP additionally outlines a number of transportation control measures (TCMs) intended to reduce the rate of increase in passenger vehicle trips and miles traveled per trip. One of these TCMs is “new and improved bicycle facilities”. The AQMP lists 15 bicycle facility projects within the MBUAPCD region, including the proposed MBSST Network project. Thus, the project directly implements a TCM identified in the AQMP.

As the proposed MBSST Network project would be consistent with AQMP growth assumptions and would directly implement a TCM identified therein, impacts related to AQMP consistency would be beneficial.



Mitigation Measures. No mitigation measures are required.

Significance After Mitigation. Impacts would be beneficial.

Impact AQ-2 Construction of the proposed MBSST Network would result in the temporary generation of air pollutants, which would affect local air quality. However, construction emissions would not exceed MBUAPCD thresholds. Impacts would therefore be Class III, less than significant.

Construction of the proposed MBSST Network would result in the temporary generation of air pollutants. Construction of the MBSST Network would be anticipated to involve the following construction activities: site preparation, grading, paving, and architectural coating (i.e. trail striping). The use of equipment that is not “typical construction equipment” as specified in Section 5.3 of the MBUAPCD *Guidelines* is not expected. The ozone precursors NO_x and ROG would be emitted by the operation of construction equipment, while PM₁₀ would be emitted by activities that disturb the soil, such as grading and excavation. Emissions would also be generated by construction employees traveling to and from the construction sites, as well as trucks hauling materials to and from the sites. Construction-related emissions could result in adverse health risks to nearby sensitive receptors if emission thresholds are exceeded.

As a reasonable worst-case scenario, construction of the longest segment (segment 5) was modeled to represent the largest probable area of disturbance during construction of the proposed MBSST Network. Based on this segment’s length of 10.66 miles and the average expected disturbance area for trail components (25 feet), the estimated disturbance area of segment 5 is 32.3 acres, or 21.5 percent of the total trail disturbance area (150.3 acres). Using the default number of construction days⁴ in CalEEMod, construction of 32.3 acres of trail would take an estimated 135 days (approximately seven months) to construct. This default construction length is considered conservative, as actual construction of segment 5 may take over seven months.⁵

The MBUAPCD uses a threshold of 82 pounds per day of PM₁₀ for determining significance of construction related emissions (MBUAPCD *CEQA Air Quality Guidelines*, 2008). Table 4.3-4 illustrates the estimated maximum daily PM₁₀ emissions during construction of segment 5.

**Table 4.3-4
 Estimated Construction Emissions
 Segment 5**

Year	Maximum Daily PM ₁₀ Emissions (lbs/day)
Year 1	21.92

*Source: CalEEMod version 2011.1. See Appendix B for calculations.
 Note: construction presumed to occur over seven months, or less than one year.*

⁴ The default number of construction days assumes construction would occur five days per week.

⁵ A shorter construction length would result in a larger area being disturbed at one time, which would increase daily emissions. Thus, shorter construction periods result in higher daily construction emissions.



As shown in Table 4.3-4, construction of segment 5 would result in a maximum of 21.92 lbs/day of PM₁₀, which is well below the MBUAPCD significance threshold of 82 lbs/day of PM₁₀. Therefore, impacts during construction of the longest trail segment would be less than significant.

It should be noted that, depending on funding availability and other local factors, more than one segment of the trail could be constructed at one time. Overlapping construction would increase the lbs/day of PM₁₀ being emitted across the MBSST Network, particularly if multiple segments are being graded concurrently (which is the primary source of PM₁₀ during construction activities). Table 4.3-4 depicts the maximum emissions from the longest segment of the trail (segment 5), which extends for 10.66 miles (or 21.5 percent of the total trail length). As shown, construction of this segment would result in 21.92 lbs/day of PM₁₀; therefore, construction of this segment would result in approximately 2.06 lbs/day of PM₁₀ per mile of construction activity.⁶ Using this factor as a proxy for the remainder of the trail, up to 39.8 miles (or 80 percent) of the MBSST Network could be constructed at one time without exceeding the MBUAPCD's threshold of 82 lbs/day of PM₁₀.⁷ Given funding and infrastructure constraints, concurrent construction of approximately 40 miles of the trail corridor at any one time is highly unlikely. Therefore, air quality impacts from construction would be less than significant.

Mitigation Measures. No mitigation measures are required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

Impact AQ-3 **The proposed MBSST Network would incrementally increase the number of vehicles traveling to staging areas, which would contribute to operational air quality emissions. However, local trips would be balanced by a reduction in trips on cross County arterial corridors and elsewhere due to changes in travel modes by providing an active (non-vehicle) transportation option. Regionally, the proposed MBSST Network project would not generate a substantial amount of new vehicle trips, and resulting operational air quality impacts would be Class III, less than significant.**

The proposed MBSST Network would result in the construction of new facilities for active modes of transportation in Santa Cruz County, including bicycle, pedestrian, and equestrian paths. As noted in Section 4.11, *Transportation/Traffic*, the proposed MBSST Network would incrementally increase the number of vehicles travelling to staging areas from recreational users, commuters and for general maintenance purposes. On an individual basis for each staging area, the peak hour increase in trips would not be perceptible. Further, the minimal increase in localized trips may be balanced regionally by the potential reduction in vehicle trips on cross County arterial corridors. This reduction would occur due to the change in travel modes (from vehicles to bicycles) and also because many of the trips may be relocated from other recreational opportunities, and thus do not constitute "new" trips.

⁶ 21.92 lbs/day PM₁₀ ÷ 10.66 miles = 2.06 lbs/day PM₁₀ per mile

⁷ 82 lbs/day PM₁₀ ÷ 2.06 lbs/day PM₁₀ per mile = 39.8 miles



Because vehicle trips to the proposed MBSST Network would be minimal, and many would be relocated trips rather than “new” trips, from a regional perspective, the proposed MBSST Network would not be expected to generate measurable operational emissions from vehicles. As such, the project would not be expected to exceed the daily emissions thresholds established by the MPUAPCD,⁸ and impacts would therefore be less than significant.

Mitigation Measures. No mitigation measures are required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

Impact AQ-4 **The MBSST Network project would not contribute to an exceedance of any level of service (LOS) standard. Impacts related to CO hotspots would therefore be Class III, less than significant.**

As noted in Section 4.3.2(a) (Methodology and Significance Thresholds), a significant CO impact would occur if project-generated traffic would degrade LOS operations at County roadways or intersections, such that those roadways or intersections would operate at LOS E or F with the addition of project-generated traffic. As noted in Section 4.11, *Transportation/Traffic*, the proposed MBSST Network project would not contribute to an exceedance of any level of service standard. Because the MBSST Network project would not cause operations at County roadways or intersections to degrade from LOS D or better to LOS E or F, impacts related to CO hotspots would be less than significant.

Mitigation Measures. No mitigation measures are required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

d. Cumulative Impacts. The MBUAPCD 2008 CEQA Air Quality Guidelines includes guidelines on analyzing cumulative impacts pertaining to ozone and localized pollutants. As described therein, inconsistency with the AQMP is considered a cumulative adverse air quality impact. As discussed in Impact AQ-1, the proposed MBSST Network project would be consistent with, and in fact would help to implement, the AQMP. Therefore, based on the 2008 CEQA Air Quality Guidelines, the MBSST Network project would not result in a cumulative adverse air quality impact.

As noted in the 2008 CEQA Air Quality Guidelines, consistency with the AQMP does not necessarily mean that a project will not have a project-specific adverse air quality impact. As described in Impacts AQ-2 and AQ-3 above, impacts related to construction and operational emissions would be less than significant. In addition, as indicated in Impact AQ-4, the MBSST Network project would not cause operations at County roadways or intersections to degrade to LOS E or F, and thus would not result in impacts related to CO hotspots. Therefore, project-specific air quality impacts from the MBSST Network project would also be less than significant.

Because the MBSST Network project would be consistent with the AQMP and would result in less than significant impacts pertaining to ozone and localized pollutants, the project's contribution to cumulative air quality impacts would be less than significant.

⁸ 137 lbs/day of ROG or NO_x, 82 lbs/day of PM₁₀, 550 lbs/day of CO, or 150 lbs/day of SO_x.



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