

# **APPENDIX E**

## **Air Quality and Greenhouse Gas Emissions Assessment**

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### ***Draft Subsequent Environmental Impact Report***

#### **North Bayshore Precise Plan (Residential Uses)**

**City of Mountain View  
March 2017**

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***NORTH BAYSHORE PRECISE PLAN  
AIR QUALITY AND  
GREENHOUSE GAS EMISSIONS ASSESSMENT  
MOUNTAIN VIEW, CALIFORNIA***

**January 17, 2017  
Revised February 14, 2017**



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## **INTRODUCTION**

This report examines air quality and greenhouse gas (GHG) emissions in the Planning Area and region, includes a summary of applicable air quality and GHG regulations, and analyzes potential air quality and GHG impacts associated with the proposed North Bayshore Precise Plan (NBPP).

## **SETTING**

The planning area is Mountain View, which lies in the northwestern portion of Santa Clara County. The planning area is located in the western portion of the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM<sub>10</sub>), and fine particulate matter (PM<sub>2.5</sub>).

### **Air Pollutants**

#### Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO<sub>x</sub>). The main sources of ROG and NO<sub>x</sub>, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, shortness of breath, and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

#### Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. While CO transport is limited, it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal.

## Nitrogen Dioxide

NO<sub>2</sub> is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO<sub>2</sub>. Aside from its contribution to ozone formation, NO<sub>2</sub> also contribute to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO<sub>2</sub> may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO<sub>2</sub> decreases lung function and may reduce resistance to infection. On January 22, 2010 the EPA strengthened the health-based NAAQS for NO<sub>2</sub>.

## Sulfur Dioxide

Sulfur dioxide (SO<sub>2</sub>) is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO<sub>2</sub> levels in the region. SO<sub>2</sub> irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

## Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are larger than 2.5 microns but smaller than 10 microns (PM<sub>10</sub>). PM<sub>2.5</sub> refers to fine suspended particulate matter with an aerodynamic diameter of 2.5 microns or less that is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM<sub>10</sub> and PM<sub>2.5</sub>. These small particles can be directly emitted into the atmosphere as by-products of fuel combustion, through abrasion, such as tire or brake lining wear, or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces, and can enter the human body through the lungs.

## Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufactures.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. EPA established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in

December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Toxic Air Contaminants (TACs)

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the EPA and the CARB. Some examples of TACs include: benzene, butadiene, formaldehyde, and hydrogen sulfide. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

High volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers, or schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

*Sensitive Receptors*

Some groups of people are more affected by air pollution than others. The State has identified the following people who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools.

Health effects of criteria pollutants and their potential sources are described below and summarized in Table 1.

**TABLE 1 Health Effects of Air Pollutants**

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	<ul style="list-style-type: none"> <li>• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust.</li> <li>• Natural events, such as decomposition of organic matter.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced tolerance for exercise.</li> <li>• Impairment of mental function.</li> <li>• Impairment of fetal development.</li> <li>• Death at high levels of exposure.</li> <li>• Aggravation of some heart diseases (angina).</li> </ul>

Nitrogen Dioxide (NO <sub>2</sub> )	<ul style="list-style-type: none"> <li>• Motor vehicle exhaust.</li> <li>• High temperature stationary combustion.</li> <li>• Atmospheric reactions.</li> </ul>	<ul style="list-style-type: none"> <li>• Aggravation of respiratory illness.</li> <li>• Reduced visibility.</li> <li>• Reduced plant growth.</li> <li>• Formation of acid rain.</li> </ul>
Ozone (O <sub>3</sub> )	<ul style="list-style-type: none"> <li>• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.</li> </ul>	<ul style="list-style-type: none"> <li>• Aggravation of respiratory and cardiovascular diseases.</li> <li>• Irritation of eyes.</li> <li>• Impairment of cardiopulmonary function.</li> <li>• Plant leaf injury.</li> </ul>
Lead (Pb)	<ul style="list-style-type: none"> <li>• Contaminated soil.</li> </ul>	<ul style="list-style-type: none"> <li>• Impairment of blood functions and nerve construction.</li> <li>• Behavioral and hearing problems in children.</li> </ul>
Suspended Particulate Matter (PM <sub>2.5</sub> and PM <sub>10</sub> )	<ul style="list-style-type: none"> <li>• Stationary combustion of solid fuels.</li> <li>• Construction activities.</li> <li>• Industrial processes.</li> <li>• Atmospheric chemical reactions.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced lung function.</li> <li>• Aggravation of the effects of gaseous pollutants.</li> <li>• Aggravation of respiratory and cardiorespiratory diseases.</li> <li>• Increased cough and chest discomfort.</li> <li>• Soiling.</li> <li>• Reduced visibility.</li> </ul>
Sulfur Dioxide (SO <sub>2</sub> )	<ul style="list-style-type: none"> <li>• Combustion of sulfur-containing fossil fuels.</li> <li>• Smelting of sulfur-bearing metal ores.</li> <li>• Industrial processes.</li> </ul>	<ul style="list-style-type: none"> <li>• Aggravation of respiratory diseases (asthma, emphysema).</li> <li>• Reduced lung function.</li> <li>• Irritation of eyes.</li> <li>• Reduced visibility.</li> <li>• Plant injury.</li> <li>• Deterioration of metals, textiles, leather, finishes, coatings, etc.</li> </ul>
Toxic Air Contaminants	<ul style="list-style-type: none"> <li>• Cars and trucks, especially diesels.</li> <li>• Industrial sources such as chrome platers.</li> <li>• Neighborhood businesses such as dry cleaners and service stations.</li> <li>• Building materials and product.</li> </ul>	<ul style="list-style-type: none"> <li>• Cancer.</li> <li>• Chronic eye, lung, or skin irritation.</li> <li>• Neurological and reproductive disorders.</li> </ul>

Source: CARB, 2008.

## **Regional Air Quality**

The North Bayshore Precise Plan is in the San Francisco Bay Area Air Basin. The Air Basin includes the counties of San Francisco, Santa Clara, San Mateo, Marin, Napa, Contra Costa, and Alameda, along with the southeast portion of Sonoma County and the southwest portion of Solano County.

The North Bayshore Precise Plan is within the jurisdiction of the BAAQMD. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants, and the number of days during which the region exceeds air quality standards, have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

## **Local Climate and Air Quality**

Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Climate and topography are major influences on air quality.

### Climate and Meteorology

During the summer, mostly clear skies result in warm daytime temperatures and cool nights in the Santa Clara Valley. Winter temperatures are mild, except for very cool but generally frostless mornings. Further inland where the moderating effect of the bay is not as strong, temperature extremes are greater. Wind patterns are influenced by local terrain, with a northwesterly sea breeze typically developing during the daytime. Winds are usually stronger in the spring and summer. Rainfall amounts are modest, ranging from 13 inches in the lowlands to 20 inches in the hills.

### Air Pollution Potential

Ozone and fine particle pollution, or PM<sub>2.5</sub>, are the major regional air pollutants of concern in the San Francisco Bay Area. Ozone is primarily a problem in the summer, and fine particle pollution in the winter. Most of Santa Clara County is well south of the cooler waters of the San Francisco Bay and far from the cooler marine air which usually reaches across San Mateo County in summer. Ozone frequently forms on hot summer days when the prevailing seasonal northerly winds carry ozone precursors southward across the county, causing health standards to be exceeded. Santa Clara County experiences many exceedances of the PM<sub>2.5</sub> standard each winter. This is due to the high population density, wood smoke, industrial and freeway traffic,

and poor wintertime air circulation caused by extensive hills to the east and west that block wind flow into the region.

### Existing Air Pollutant Levels

BAAQMD monitors air pollution at various sites within the Bay Area. The closest official monitoring station to Mountain View is located in Cupertino at 22601 Voss Avenue. That station closed in 2013, so data from San Jose are presented for years 2014 and 2015. Pollutant monitoring results for the years 2010 to 2014 at the Cupertino ambient air quality monitoring station are shown in Table 2.

**TABLE 2 Ambient Air Quality at the Cupertino and San Jose Monitoring Stations**

Pollutant	Average Time	Measured Air Pollutant Levels				
		Cupertino			San Jose	
		2011	2012	2013	2014	2015
Ozone (O <sub>3</sub> )	1-Hour	0.086 ppm	0.083 ppm	0.091 ppm	0.089ppm	0.094 ppm
	8-Hour	0.067 ppm	0.067 ppm	<b>0.077 ppm (1 day)</b>	0.066ppm	<b>0.081 ppm (2 days)</b>
Carbon Monoxide (CO)	8-Hour	1.0 ppm	0.8 ppm	1.3 ppm	1.9 ppm	1.8 ppm
Nitrogen Dioxide (NO <sub>2</sub> )	1-Hour	0.043 ppm	0.045 ppm	0.042 ppm	0.058 ppm	0.049 ppm
	Annual	0.009 ppm	0.008 ppm	0.009 ppm	0.013 ppm	0.013 ppm
Respirable Particulate Matter (PM <sub>10</sub> )	24-Hour	28.9µg/m <sup>3</sup>	41.5µg/m <sup>3</sup>	34 µg/m <sup>3</sup>	<b>56µg/m<sup>3</sup> (1 day)</b>	<b>58µg/m<sup>3</sup> (1 day)</b>
	Annual	14.2µg/m <sup>3</sup>	13.5µg/m <sup>3</sup>	14.6µg/m <sup>3</sup>	19.9 µg/m <sup>3</sup>	<b>22.0µg/m<sup>3</sup></b>
Fine Particulate Matter (PM <sub>2.5</sub> )	24-Hour	ND	ND	<b>57.7µg/m<sup>3</sup> (6 days)</b>	<b>60.4 µg/m<sup>3</sup> (2 days)</b>	<b>49.4µg/m<sup>3</sup> (2 days)</b>
	Annual	ND	ND	<b>12.4µg/m<sup>3</sup></b>	8.4 µg/m <sup>3</sup>	10.0 µg/m <sup>3</sup>

Source: BAAQMD Air Pollution Summaries (2011-2015) at <http://www.baaqmd.gov/about-air-quality/air-quality-summaries>

Note: ppm = parts per million and µg/m<sup>3</sup> = micrograms per cubic meter

Values reported in **bold** exceed ambient air quality standard

ND = No Data available.



## Greenhouse Gases

Global temperatures are affected by naturally occurring and anthropogenic-generated (generated by humankind) atmospheric gases, such as water vapor, carbon dioxide, methane, and nitrous oxide. Gases that trap heat in the atmosphere are called greenhouse gases (GHG). Solar radiation enters the earth's atmosphere from space, and a portion of the radiation is absorbed at the surface. The earth emits this radiation back toward space as infrared radiation. Greenhouse gases, which are mostly transparent to incoming solar radiation, are effective in absorbing infrared radiation and redirecting some of this back to the earth's surface. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This is known as the greenhouse effect. The greenhouse effect helps maintain a habitable climate. Emissions of GHGs from human activities, such as electricity production, motor vehicle use, and agriculture, are elevating the concentration of GHGs in the atmosphere, and are reported to have led to a trend of unnatural warming of the earth's natural climate, known as global warming or global climate change. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred because it implies that there are other consequences to the global climate in addition to rising temperatures. Other than water vapor, the primary GHGs contributing to global climate change include the following gases:

- Carbon dioxide (CO<sub>2</sub>), primarily a byproduct of fuel combustion;
- Nitrous oxide (N<sub>2</sub>O), a byproduct of fuel combustion; also associated with agricultural operations such as the fertilization of crops;
- Methane (CH<sub>4</sub>), commonly created by off-gassing from agricultural practices (e.g. livestock), wastewater treatment and landfill operations;
- Chlorofluorocarbons (CFCs) were used as refrigerants, propellants and cleaning solvents, but their production has been mostly prohibited by international treaty;
- Hydrofluorocarbons (HFCs) are now widely used as a substitute for chlorofluorocarbons in refrigeration and cooling; and
- Perfluorocarbons (PFCs) and sulfur hexafluoride (SF<sub>6</sub>) emissions are commonly created by industries such as aluminum production and semiconductor manufacturing.

These gases vary considerably in terms of Global Warming Potential (GWP), a term developed to compare the propensity of each GHG to trap heat in the atmosphere relative to another GHG. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time of gas remains in the atmosphere. The GWP of each GHG is measured relative to CO<sub>2</sub>. Accordingly, GHG emissions are typically measured and reported in terms of equivalent CO<sub>2</sub> (CO<sub>2</sub>e). For instance, SF<sub>6</sub> is 22,800 times more intense in terms of global climate change contribution than CO<sub>2</sub>.

An expanding body of scientific research supports the theory that global warming is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally-occurring resources within California could be adversely affected by the global warming trend. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

## **REGULATORY FRAMEWORK**

Pursuant to the federal Clean Air Act (CAA) of 1970, the U.S. Environmental Protection Agency (EPA) established national ambient air quality standards (NAAQS). The NAAQS were established for major pollutants, termed “criteria” pollutants. Criteria pollutants are defined as those pollutants for which the Federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

Both the EPA and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants: carbon monoxide (CO), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are designed to protect the health and welfare of the public with a reasonable margin of safety. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each criteria pollutant.

### **Federal Air Quality Regulations**

At the federal level, the EPA has been charged with implementing national air quality programs. EPA’s air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required EPA to establish primary and secondary NAAQS and required each state to prepare an air quality control plan referred to as a State Implement Plan (SIP). Federal standards include both primary and secondary standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased

visibility, damage to animals, crops, vegetation, and buildings.<sup>1</sup> The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area which imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in the application of sanctions on transportation funding and stationary air pollution sources in the air basin.

The 1970 FCAA authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The FCAA Amendments of 1990 changed deadlines for attaining NAAQS as well as the remedial actions required of areas of the nation that exceed the standards. Under the FCAA, State and local agencies in areas that exceed the NAAQS are required to develop SIPs to show how they will achieve the NAAQS by specific dates. The FCAA requires that projects receiving federal funds demonstrate conformity to the approved SIP and local air quality attainment plan for the region. Conformity with the SIP requirements would satisfy the FCAA requirements.

### **State Air Quality Regulations**

The CARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources, and provides districts with the authority to regulate indirect sources.

CARB is also responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. CARB is primarily responsible for statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. CARB combines this data and submits the completed SIP to the EPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area

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<sup>1</sup> U.S. Environmental Protection Agency, 2013. Website: [www.epa.gov/air/criteria.html](http://www.epa.gov/air/criteria.html). February.

designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

### Attainment Status Designations

The CARB is required to designate areas of the State as attainment, nonattainment, or unclassified for all State standards. An “attainment” designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A “non-attainment” designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An “unclassified” designation signifies that data does not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

Table 3 shows the State and Federal standards for criteria pollutants and provides a summary of the attainment status for the San Francisco Bay Area with respect to National and State ambient air quality standards.

**TABLE 3 San Francisco Bay Area Attainment Status**

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Carbon Monoxide (CO)	8-Hour	9 ppm (10 mg/m <sup>3</sup> )	Attainment	9 ppm (10 mg/m <sup>3</sup> )	Attainment
	1-Hour	20 ppm (23 mg/m <sup>3</sup> )	Attainment	35 ppm (40 mg/m <sup>3</sup> )	Attainment
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Mean	0.030 ppm (57 mg/m <sup>3</sup> )	Attainment	0.053 ppm (100 µg/m <sup>3</sup> )	Attainment
	1-Hour	0.18 ppm (338 µg/m <sup>3</sup> )	Attainment	0.100 ppm	Unclassified
Ozone (O <sub>3</sub> )	8-Hour	0.07 ppm (137 µg/m <sup>3</sup> )	Nonattainment	0.070 ppm	Nonattainment
	1-Hour	0.09 ppm (180 µg/m <sup>3</sup> )	Nonattainment	Not Applicable	Not Applicable
Suspended Particulate Matter (PM <sub>10</sub> )	Annual Mean	20 µg/m <sup>3</sup>	Nonattainment	Not Applicable	Not Applicable
	24-Hour	50 µg/m <sup>3</sup>	Nonattainment	150 µg/m <sup>3</sup>	Unclassified

Suspended Particulate Matter (PM <sub>2.5</sub> )	Annual Mean	12 µg/m <sup>3</sup>	Nonattainment	12 µg/m <sup>3</sup>	Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m <sup>3</sup>	Nonattainment
Sulfur Dioxide (SO <sub>2</sub> )	Annual Mean	Not Applicable	Not Applicable	80 µg/m <sup>3</sup> (0.03 ppm)	Attainment
	24-Hour	0.04 ppm (105 µg/m <sup>3</sup> )	Attainment	365 µg/m <sup>3</sup> (0.14 ppm)	Attainment
	1-Hour	0.25 ppm (655 µg/m <sup>3</sup> )	Attainment	0.075 ppm (196 µg/m <sup>3</sup> )	Attainment

Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.

ppm = parts per million

mg/m<sup>3</sup> = milligrams per cubic meter

µg/m<sup>3</sup> = micrograms per cubic meter

Source: Bay Area Air Quality Management District, 2016.

### California Clean Air Act

In 1988, the CCAA required that all air districts in the State endeavor to achieve and maintain CAAQS for carbon monoxide (CO), ozone (O<sub>3</sub>), sulfur dioxide (SO<sub>2</sub>) and nitrogen dioxide (NO<sub>2</sub>) by the earliest practical date. The CCAA provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

### California Air Resources Board Handbook

In 1998, CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.<sup>2</sup> CARB subsequently developed an Air Quality and Land Use Handbook<sup>3</sup> (Handbook) in 2005 that is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. The CARB Handbook recommends that planning agencies consider proximity to air pollution sources when considering new locations for “sensitive” land uses, such as residences, medical facilities, daycare centers, schools, and playgrounds.

<sup>2</sup> California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

<sup>3</sup> California Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. April.

Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the Handbook relative to the Plan Area include taking steps to consider or avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day.
- Within 300 feet of gasoline fueling stations.
- Within 300 feet of dry cleaning operations (note that dry cleaning with TACs is being phased out and will be prohibited in 2023).

### **Bay Area Air Quality Management District (BAAQMD)**

The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin (SFBAAB) through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

#### Clean Air Plan

The BAAQMD is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain the CAAQS. The BAAQMD's 2010 Clean Air Plan is the latest Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO<sub>x</sub>), particulate matter and greenhouse gas emissions.

The Bay Area 2010 Clean Air Plan, which was adopted on September 15, 2010 by the BAAQMD's board of directors:

- Updates the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Provides a control strategy to reduce ozone, particulate matter (PM), air toxics, and greenhouse gases in a single, integrated plan;
- Reviews progress in improving air quality in recent years; and
- Established emission control measures to be adopted or implemented in the 2010 to 2012 timeframe.

## BAAQMD CARE Program

The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San Jose, Redwood City/East Palo Alto, and Eastern San Francisco.

## BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines

The BAAQMD *CEQA Air Quality Guidelines*<sup>4</sup> were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of their *CEQA Guidelines*. In May 2011, the updated BAAQMD *CEQA Air Quality Guidelines* were amended to include a risk and hazards threshold for new receptors and modify procedures for assessing impacts related to risk and hazard impacts.

BAAQMD's adoption of significance thresholds contained in the 2011 CEQA Air Quality Guidelines was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The order requires the BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The ruling made in the case concerned the environmental impacts of adopting the thresholds and how the thresholds would indirectly affect land use development patterns. In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds (Cal. Court of Appeal, First Appellate District, Case Nos. A135335 & A136212). CBIA sought review by the California Supreme Court on three issues, including the

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<sup>4</sup> Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May.

appellate court’s decision to uphold the BAAQMD’s adoption of the thresholds, and the Court granted review on just one: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users of a proposed project? In December 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as “CEQA-in-reverse” – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478). The Supreme Court reversed the Court of Appeal’s decision and remanded the matter back to the appellate court to reconsider the case in light of the Supreme Court’s ruling.

## **Greenhouse Gas Regulatory Framework**

This section summarizes key federal, State, and City statutes, regulations, and policies that would apply to the Master Plan Update. Global climate change resulting from GHG emissions is an emerging environmental concern being raised and discussed at the international, national, and statewide level. At each level, agencies are considering strategies to control emissions of gases that contribute to global climate change.

### Federal Regulations

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). While the United States signed the Kyoto Protocol, which would have required reductions in GHGs, Congress never ratified the protocol. The federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. At this time, there are no federal regulations or policies pertaining to GHG emissions from proposed plans like the NBPP.

### State Regulations

The State of California is concerned about GHG emissions and their effect on global climate change. The State recognizes that “there appears to be a close relationship between the concentration of GHGs in the atmosphere and global temperatures” and that “the evidence for climate change is overwhelming.” The effects of climate change on California, in terms of how it would affect the ecosystem and economy, remain uncertain. The State has many areas of concern regarding climate change with respect to global warming. According to the 2006 Climate Action Team Report, the following climate change effects and conditions can be expected in California over the course of the next century:

- A diminishing Sierra snowpack declining by 70 percent to 90 percent, effecting the state’s water supply;



- Increasing temperatures from 8 to 10.4 degrees Fahrenheit (°F) under the higher emission scenarios, leading to a 25 to 35 percent increase in the number of days ozone pollution standards are exceeded in most urban areas;
- Coastal erosion along the length of California and seawater intrusion into the Sacramento River Delta from a 4- to 33-inch rise in sea level. This would exacerbate flooding in already vulnerable regions;
- Increased vulnerability of forests due to pest infestation and increased temperatures;
- Increased challenges for the state’s important agricultural industry from water shortages, increasing temperatures, and saltwater intrusion into the Delta; and
- Increased electricity demand, particularly in the hot summer months.

*Assembly Bill 1575 (1975)*

In 1975, the Legislature created the California Energy Commission (CEC). The CEC regulates electricity production that is one of the major sources of GHGs.

*Title 24, Part 6 of the California Code of Regulations (1978)*

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

*Assembly Bill 1493 (2002)*

Assembly Bill (AB) 1493 required CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks.

*State of California Executive Order S-3-05 (2005)*

The Governor’s Executive Order established aggressive emissions reductions goals: by 2010, GHG emissions must be reduced to 2000 levels; by 2020, GHG emissions must be reduced to 1990 levels; and by 2050, GHG emissions must be reduced to 80 percent below 1990 levels.

In June 2005, the Governor of California signed Executive Order S-3-05, which identified Cal/EPA as the lead coordinating State agency for establishing climate change emission reduction targets in California. A “Climate Action Team,” a multi-agency group of State agencies, was set up to implement Executive Order S-3-05. Under this order, the State plans to reduce GHG emissions to 80 percent below 1990 levels by 2050. GHG emission reduction

strategies and measures to reduce global warming were identified by the California Climate Action Team in 2006.

*Assembly Bill 32 (AB 32), California Global Warming Solutions Act (2006)*

AB 32, the Global Warming Solutions Act of 2006, codifies the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons of carbon dioxide equivalent (MMT CO<sub>2</sub>e) as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 million metric tons of CO<sub>2</sub>e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 million metric tons of CO<sub>2</sub>e. Thus, an estimated reduction of 80 million metric tons of CO<sub>2</sub>e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

*Senate Bill 375, California's Regional Transportation and Land Use Planning Efforts (2008)*

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles

traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

#### *Executive Order S-13-08 (2008)*

This Executive Order directed California agencies to assess and reduce the vulnerability of future construction projects to impacts associated with sea-level rise.

#### Bay Area Air Quality Management District

BAAQMD is the regional government agency that regulates sources of air pollution within the nine San Francisco Bay Area counties. The BAAQMD regulates GHG emissions through the following plans, programs, and guidelines.

#### *Regional Clean Air Plans*

BAAQMD and other air districts prepare clean air plans in accordance with the State and Federal Clean Air Acts. The Bay Area 2010 Clean Air Plan (CAP) is a comprehensive plan to improve Bay Area air quality and protect public health through implementation of a control strategy designed to reduce emissions and ambient concentrations of harmful pollutants. The most recent CAP also includes measures designed to reduce GHG emissions.

#### *BAAQMD Climate Protection Program*

The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing emissions of GHG and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

## *BAAQMD CEQA Air Quality Guidelines*

The BAAQMD adopted revised CEQA Air Quality Guidelines on June 2, 2010 and then adopted a modified version of the Guidelines in May, 2011. The BAAQMD CEQA Air Quality Guidelines include thresholds of significance for greenhouse gas emissions. Under the latest CEQA Air Quality Guidelines, a local government may prepare a qualified greenhouse gas Reduction Strategy that is consistent with AB 32 goals. If a project is consistent with an adopted qualified greenhouse gas Reduction Strategy, it can be presumed that the project will not have significant GHG emissions under CEQA.<sup>5</sup> The BAAQMD also developed a quantitative threshold for project- and plan-level analyses based on estimated GHG emissions, as well as per capita metrics.

### **City of Mountain View GHG Reduction Program**

The City of Mountain View has adopted qualified GHG reduction program (GGRP).<sup>6</sup> This program meets the requirements of a GHG Reduction Strategy under State CEQA Guidelines Section 15183.5. The program includes a goal to improve communitywide emissions efficiency (per-service population – residents and full-time employees) by 15 to 20 percent over 2005 levels by 2020 and by 30 percent over 2005 levels by 2030. The GGRP implements the following goal, policy, and actions from the Mountain View General Plan Mobility Element:

**Goal MOB-9:** Achievement of state and regional air quality and greenhouse gas emission reduction targets

***Policy MOB 9.1 Greenhouse gas emissions:*** Develop cost-effective strategies for reducing greenhouse gas emissions in coordination with the Greenhouse Gas Reduction Program.

- *Action MOB 9.1.1 Greenhouse Gas Inventory: Maintain and regularly update the City's municipal and community Greenhouse Gas Inventory to track emissions.*
- *Action MPB 9.1.2 Greenhouse Gas Reduction Program: Regularly update the Greenhouse Gas Reduction Program to address transportation emissions reductions.*

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<sup>5</sup> Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May.

<sup>6</sup> AECOM. 2012. City of Mountain View Greenhouse Gas Reduction Program. August.

## **PROJECT IMPACTS AND MITIGATION MEASURES**

### **Significance Criteria**

Per Appendix G of the CEQA Guidelines and BAAQMD recommendations, air quality and GHG impacts are considered significant if implementation of the NBPP would:

- 1) Conflict with or obstruct implementation of an applicable air quality plan;
- 2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- 3) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- 4) Expose sensitive receptors to substantial pollutant concentrations;
- 5) Create objectionable odors affecting a substantial number of people;
- 6) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- 7) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The BAAQMD adopted CEQA Guidelines in June 2010, which were revised in May 2011. Methodology and thresholds for criteria air pollutant impacts and community health risk, as set forth in the BAAQMD Guidelines, are utilized in this analysis.

The following screening thresholds and significance criteria would be applicable to the NBPP.

### Consistency with Clean Air Planning Efforts

According to the BAAQMD Air Quality Guidelines, proposed plans must show over the planning period of the plan that:

- The plan supports the primary goals of the current air quality plan;
- The plan incorporates current air quality plan control measures as appropriate to the plan area
- The plan does not disrupt or hinder implementation of any air quality plan control measures; and

- The rate of increase in vehicle miles traveled or vehicle trips (either measure may be used) within the plan area is equal to or lower than the rate of increase in population projected for the proposed plan.

### Construction and Operation Emissions

The BAAQMD Air Quality Guidelines do not have thresholds related to direct and indirect criteria pollutant emissions resulting from plan implementation. Traffic resulting from the implementation of the plan would cause a significant local air quality impact if emissions of CO cause a projected exceedance of the ambient CO State standard of 9.0 parts per million (ppm) for 8-hour averaging period. This would be considered to cause or contribute substantially to an existing or projected air quality violation.

### Exposure of New Residences to Toxic Air Contaminants

Unlike industrial or stationary sources of air pollution, residential development and other development where sensitive receptors would be located do not require air quality permits. Nonetheless, this type of development can expose people to unhealthy conditions. The BAAQMD Air Quality Guidelines Thresholds of Significance for plans with regard to community risk and hazard impacts are:

- Identify special overlay zones around existing and planned sources of TACs and PM (including adopted risk reduction plan areas), and special overlay zones on each side of all freeways and high-volume roadways; and
- The plan must also identify goals, policies, and objectives to minimize potential impacts and create overlay zones around sources of TACs, PM, and hazards.

### Odors

Odors are assessed based on the potential of the Plan to result in odor complaints. The BAAQMD Air Quality Guidelines Thresholds of Significance for plans with regard to odor impacts are:

- Identify special overlay zones around existing and planned sources of odors; and
- The plan must identify goals, policies, and objectives to minimize potential impacts and create buffer distances between sources of odors and receptors.

## Greenhouse Gas Emissions

The BAAQMD thresholds were developed specifically for the Bay Area after considering the latest Bay Area GHG inventory and the effects of AB 32 scoping plan measures that would reduce regional emissions. BAAQMD intends to achieve GHG reductions from new land use developments to close the gap between projected regional emissions with AB 32 scoping plan measures and the AB 32 targets. The BAAQMD GHG recommendations include a specific plan- and project-level GHG emission efficiency metric of 4.6 MT of CO<sub>2</sub>e per service population (future residences and full-time workers) per year. In addition, the City's GGRP established an efficiency metric of 4.5 MT of CO<sub>2</sub>e per service population/year for 2030.

### **Impact: Conflict with or obstruct implementation of an applicable air quality plan?**

BAAQMD is the regional agency responsible for overseeing compliance with State and Federal laws, regulations, and programs within the SFBAAB. BAAQMD, with assistance from ABAG and MTC, has prepared and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2010 Clean Air Plan*.<sup>7</sup> The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHG.

The proposed North Bayshore Precise Plan would result in up to an additional 9,850 multi-family residential units between 2015 and 2030. Daily vehicle miles traveled (VMT) for 2015 and 2030 were from the project traffic consultant (total VMT accounting method). Table 4 identifies the VMT and population increases for the NBPP. Using 2015 as a baseline year, VMT attributable to implementation of the NBPP is anticipated to increase 65 percent. The increase in population is estimated to be 2,268 percent. As a result, VMT would not increase at a higher rate than population with implementation of the NBPP and this impact would be considered less than significant.

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<sup>7</sup> Bay Area Air Quality Management District (BAAQMD). 2010. *Bay Area 2010 Clean Air Plan*.

**TABLE 4 Summary of Existing and Future Vehicle Miles Traveled and Service Population**

<b>Metric/ Variable</b>	<b>Existing</b>	<b>2030 Cumulative with NBPP</b>	<b>Increase with NBPP</b>
Total VMT	1,001,640	1,655,690	65%
Population	760	18,000	2,268%

Consistency with Bay Area Clean Air Plan Control Measures

Consistency of the North Bayshore Precise Plan (NBPP) with Clean Air Plan control measures is demonstrated by assessing whether the proposed Plan implements all of the applicable Clean Air Plan control measures. The 2010 Clean Air Plan includes 55 control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. The control measures are divided into five categories that include:

- 18 measures to reduce stationary and area sources;
- 10 mobile source measures;
- 17 transportation control measures;
- Six land use and local impact measures; and
- Four energy and climate measures.

In developing the control strategy, BAAQMD identified the full range of tools and resources available, both regulatory and non-regulatory, to develop each measure. Implementation of each control measure will rely on some combination of the following:

- Adoption and enforcement of rules to reduce emissions from stationary sources, area sources, and indirect sources.
- Revisions to the BAAQMD’s permitting requirements for stationary sources.
- Enforcement of CARB rules to reduce emissions from heavy-duty diesel engines.
- Allocation of grants and other funding by the Air District and/or partner agencies.
- Promotion of best policies and practices that can be implemented by local agencies through guidance documents, model ordinances, and other measures.
- Partnerships with local governments, other public agencies, the business community, non-profits, and other groups.
- Public outreach and education.
- Enhanced air quality monitoring.
- Development of land use guidance and CEQA guidelines, and Air District review and comment on Bay Area projects pursuant to CEQA.



- Leadership and advocacy.

This approach relies upon lead agencies to assist in implementing some of the control measures. A key tool for local agency implementation is the development of land use policies and implementing measures that address new development or redevelopment in local communities.

The BAAQMD, with assistance from ABAG and MTC, has prepared and implemented the Clean Air Plan to meet the applicable laws, regulations, and programs. The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHG.

The Guidelines set forth criteria for determining consistency with the Clean Air Plan. In general a plan is considered consistent if a) the plan supports the primary goals of the Clean Air Plan; b) includes control measures; and c) does not interfere with implementation of the Clean Air Plan measures. The NBPP would be consistent with Clean Air Plan measures intended to reduce automobile use and conserve energy, which are discussed below. Table 5 lists the relevant Clean Air Plan policies to the NBPP and indicates consistency with the policies.

**TABLE 5 BAAQMD Control Strategy Measures**

BAAQMD Control Strategy Measures	Consistency
<b>Transportation Control Measures</b>	
TCM B-2: Improve Transit Efficiency	<p>Consistent</p> <p>While this is mostly a regionally implemented TCM, the NBPP would improve connectivity to the region and City through investments in non-automobile infrastructure and transportation demand management measures promoting transit use, walking and biking. Improved transportation services would connect to the Mountain View Transit Center and other City and regional destinations.</p>

<b>BAAQMD Control Strategy Measures</b>	<b>Consistency</b>
TCM C-1: Support Voluntary Employer-Based Trip Reduction Program	<p>Consistent</p> <p>The City has an aggressive drive-alone rate 45 percent by 2030 for North Bayshore. To achieve this goal, the Precise Plan would promote the use of transit, carpools, walking and biking in the area. From priority pedestrian and bicycle networks to TDM programs, the NBPP would make it easier, more comfortable, and more efficient for employees and residents to walk, bike, carpool, or use transit. The NBPP acknowledges that businesses should continue to lead the way with innovative vehicle trip reduction strategies. The TMA would oversee coordinating and expanding employer-sponsored shuttles.</p>
TCM C-2: Safe Routes to School and Safe Routes to Transit	<p>Consistent</p> <p>The NBPP would require that developers ensure access to school through support of Safe Routes to Schools programs. Neighborhoods would be close to transit facilities.</p>
TCM C-3: Promote Rideshare Services and Incentives	<p>Consistent</p> <p>The City has an aggressive drive-alone rate 45 percent by 2030 for North Bayshore. To achieve this goal, the Precise Plan would promote the use of transit, carpools, walking and biking in the area. From priority pedestrian and bicycle networks to TDM programs, the NBPP would make it easier, more comfortable, and more efficient for employees and residents to walk, bike, carpool, or use transit. The NBPP acknowledges that businesses should continue to lead the way with innovative vehicle trip reduction strategies.</p>
TCM C-4: Conduct Public Outreach	<p>Consistent</p> <p>The NBPP would include TDM strategies to reduce auto trips and vehicle miles traveled by increasing travel options and providing information to encourage and help individuals modify their travel behavior. The City may implement a congestion pricing system and, if so, community outreach would be required.</p>

<b>BAAQMD Control Strategy Measures</b>	<b>Consistency</b>
TCM C-5: Promote Smart Driving/Speed Moderation	<p>Consistent</p> <p>Under the NBPP, neighborhood streets, access streets, and service streets are designated as “shared” streets and will be designed for both cars and bicycles to share the road at a more moderate speed.</p>
TCM D-1: Improve Bicycle Access and Facilities	<p>Consistent</p> <p>The NBPP would include new complete mixed-use neighborhoods within comfortable walking distance to services and open space. Neighborhoods are also close to bicycle and transit facilities to make it easy for residences to live in North Bayshore without a car.</p>
TCM D-2: Improve Pedestrian Access and Facilities	<p>Consistent</p> <p>The NBPP would include new complete mixed-use neighborhoods within comfortable walking distance to services and open space. Neighborhoods are also close to bicycle and transit facilities to make it easy for residences to live in North Bayshore without a car. North Bayshore’s large blocks would be broken down into a more walkable, finer grained set of blocks with new pedestrian and bicycle connections. These new blocks would make it easier, and more comfortable, efficient, and sustainable for residents, employees, and visitors to move around.</p>
TCM D-3: Support Local Land Use Strategies	<p>Consistent</p> <p>The NBPP area would transition into an innovative, sustainable, and complete mixed-use district that protects and stewards biological habitat and open space. It would include new complete mixed-use neighborhoods within comfortable walking distance to services and open space and sustainable transportation systems.</p>
TCM E-2: Parking Pricing and Management Strategies	<p>Consistent</p> <p>The NBPP would improve connectivity to the region and City through investments in non-automobile infrastructure and transportation demand management measures promoting transit use, walking and biking. The Plan would encourage smaller units to unbundle parking costs from the housing unit costs. Shared parking will also be implemented.</p>

BAAQMD Control Strategy Measures	Consistency
<b>Land Use and Local Impact Control Measures</b>	
LUM 3: Enhanced CEQA Program	<p>Consistent</p> <p>While this TCM addresses BAAQMD actions, the City requires the appropriate air quality evaluation of projects during CEQA review using the BAAQMD CEQA Air Quality Guidelines.</p>
LUM 5: Reduce Risk in Impacted Communities	<p>This issue is addressed in this EIR, in which the impact of existing or new TAC sources upon sensitive receptors is evaluated and mitigation measures to reduce any substantial TAC exposures are identified.</p>
<b>Energy and Climate Measures</b>	
ECM 1: Energy Efficiency	<p>Consistent</p> <p>Environmental sustainability will be implemented by building-, site-, and district-scale improvements. Strategies will enable the City and North Bayshore to proactively address climate change, sea level rise, and water demand reduction strategies, for example. The Plan includes an Environmental Sustainability Framework which builds upon the Environmental Sustainability Action Plan, the Mountain View Green Building Code, and the Greenhouse Gas Reduction Program and new development would incorporate highly-sustainable design features and materials. For example, the Plan includes FAR incentives for buildings to meet LEED Platinum or zero net energy.</p>
ECM 2: Renewable Energy	<p>Consistent</p> <p>Under the NBPP, new construction and renovations should offset a proportion of building energy use with on-site renewable energy. In addition, all construction shall be designed to be solar ready and electric vehicle ready.</p>
ECM 3: Urban Heat Island Mitigation	<p>Consistent</p> <p>Under the NBPP, new construction, additions and alterations should use cool exterior siding, roofing, and paving material with relatively high solar reflectivity and shading to reduce solar heat gain. Parking lots shall implement a combination of strategies to reduce the heat island effect.</p>
ECM 4: Tree-Planting	<p>Consistent</p> <p>The NBPP would include provisions for street tree plantings in 6.4, Streetscape Design.</p>

As indicated in Table 5, the NBPP would include implementing policies and measures that are consistent with the applicable Clean Air Plan control measures. In addition, VMT growth in the Plan Area would not outpace population growth. Therefore, this impact would be considered less than significant.

**Impact 2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

Implementation of the NBPP would result in short-term emissions from construction activities associated with subsequent development, including site grading, asphalt paving, building construction, and architectural coating. Emissions commonly associated with construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM<sub>10</sub> and PM<sub>2.5</sub> emissions, is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. The potential health risk impact from construction is addressed in Impact 4.

Demolition and renovation of buildings can also generate PM<sub>10</sub> and PM<sub>2.5</sub> emissions. Off-road construction equipment is often diesel-powered and can be a substantial source of NO<sub>x</sub> emissions, in addition to PM<sub>10</sub> and PM<sub>2.5</sub> emissions. Worker commute trips and architectural coatings are dominant sources of ROG emissions. The BAAQMD CEQA Air Quality Guidelines do not identify plan level thresholds that apply to construction. Although construction activities at individual project sites are expected to occur during a relatively short time period, the combination of temporary dust from activities and diesel exhaust from construction equipment poses both a health and nuisance impact to nearby receptors. In addition, NO<sub>x</sub> emissions during grading and soil import/export for large projects may exceed the BAAQMD NO<sub>x</sub> emission thresholds. Without application of appropriate control measures to reduce construction dust and exhaust, construction period impacts would be considered a potentially significant impact. Implementation of Mitigation Measure AQ-1 would reduce this impact to less than significant.

**Mitigation Measure AQ-1: Implement BAAQMD-Recommended Measures to Control Particulate Matter Emissions during Construction.** Measures to reduce diesel particulate matter (DPM) and PM<sub>10</sub> from construction are recommended to ensure that short-term health impacts to nearby sensitive receptors are avoided.

Dust (PM<sub>10</sub>) Control Measures:

- Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences should be kept damp at all times.
- Cover all hauling trucks or maintain at least two feet of freeboard.
- Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads.
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (i.e., previously-graded areas that are inactive for 10 days or more).
- Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles.
- Limit traffic speeds on any unpaved roads to 15 mph.
- Replant vegetation in disturbed areas as quickly as possible.
- Suspend construction activities that cause visible dust plumes to extend beyond the construction site.
- Post a publically visible sign(s) with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Additional measures to reduce exhaust emissions from large construction projects:

- The developer or contractor shall provide a plan for approval by the City or BAAQMD demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NO<sub>x</sub> reduction and 45 percent particulate reduction compared to the most recent CARB fleet average for the year 2011.
- Clear signage at all construction sites will be posted indicating that diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite or adjacent to the construction site.

- The contractor shall install temporary electrical service whenever possible to avoid the need for independently powered equipment (e.g. compressors).
- Properly tune and maintain equipment for low emissions.

Additionally, implementation of the NBPP would result in long-term area and mobile source emissions from operation and use of subsequent development. Implementation of the NBPP could include stationary sources of pollutants that would be required to obtain permits to operate in compliance with BAAQMD rules. These sources include, but are not limited to, gasoline stations, dry cleaners, internal combustion engines, and surface coating operations. The permit process ensures that these sources would be equipped with the required emission controls and that, individually, these sources would result in a less than significant impact.

As discussed above, the BAAQMD Air Quality Guidelines do not have thresholds related to direct and indirect regional criteria pollutant emissions resulting from plan implementation. The BAAQMD CEQA Air Quality Guidelines only require emissions computations for project-level analysis. From a planning standpoint, this impact would be considered less than significant, since the NBPP would not cause significant increases in vehicle trips compared to population growth and would not interfere with Clean Air Plan control measures. However, for informational purposes, estimated operational period emissions in tons per year and pounds per day are summarized in Table 6. These emissions were computed using the same CalEEMod runs and mobile emissions methodology that were used to assess GHG emissions, described under Impact 6. *Attachment 1* contains the CalEEMod output data and *Attachment 2* contains the CARB EMFAC2014 emission factors, VMT-by-speed-bin calculations and overall mobile emissions calculations.

**TABLE 6 2030 Operational Air Pollutant Emissions**

Scenario	ROG	NOx	PM <sub>10</sub>	PM <sub>2.5</sub>
Proposed NBPP Operational Emissions (tons)	157.30 tons	371.92 tons	86.19 tons	20.96 tons
Existing Operational Emissions (tons)	72.81 tons	246.63 tons	58.17 tons	13.16 tons
Net Operational Emissions (tons)	84.49 tons	125.29 tons	28.02 tons	7.80 tons
Average Daily Net Operational Emissions (pounds) <sup>1</sup>	463.0 lbs.	686.5 lbs.	153.5 lbs.	42.7 lbs.
Notes: <sup>1</sup> Assumes 365-day operation.				

**Impact 3: Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

Monitoring data from all ambient air quality monitoring stations in the Bay Area indicate that existing carbon monoxide levels are currently below national and California ambient air quality standards. Monitored CO levels have decreased substantially since 1990 as newer vehicles with greatly improved exhaust emission control systems have replaced older vehicles. The Bay Area has been designated as an attainment area for the CO standards. The highest measured levels in Cupertino (the closest monitoring stations to the Planning Area) during the past five years are less than 1.0 ppm for 8-hour averaging periods, compared with State and federal criteria of 9.0 ppm.

Even though current CO levels in the Bay Area are well below ambient air quality standards, and there have been no exceedances of CO standards in the Bay Area since 1991, elevated levels of CO still warrant analysis. CO hotspots (occurrences of localized high CO concentrations) could still occur near busy congested intersections. Recognizing the relatively low CO concentrations experienced in the Bay Area, the BAAQMD's CEQA Air Quality Guidelines state that a project would have a less-than-significant impact if it would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. 2030 NBPP peak hour traffic volumes would be far less. Since intersections affected by the project would have volumes less than the threshold of 44,000 vehicles per hour, the impact of the project related to localized CO concentrations would therefore be less than significant.

**Impact 4: Expose project sensitive receptors to substantial pollutant concentrations?**

Subsequent land use activities associated with implementation of the NBPP could potentially include short-term construction sources of TACs and long-term operational sources of TACs, including stationary and mobile sources.

Implementation of the NBPP would result in the potential construction of a variety of projects. This construction would result in short-term emissions of DPM, a TAC. Construction would result in the generation of DPM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities. The amount to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The calculation of cancer risk associated with exposure to TACs is typically based on a long-term exposure (e.g., 30- or 70-year period). The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively large area. Cancer risk and PM<sub>2.5</sub>



exposure would have to be analyzed through project-level analysis to identify the potential for significant impacts and measures to reduce those impacts to less than significant. Health risks associated with temporary construction would, therefore, be considered potentially significant. Implementation of Mitigation Measure AQ-2 would reduce this impact to less than significant.

**Mitigation Measure AQ-2 Implement Appropriate Construction Emissions R Measures.**

Construction health risk assessment shall be required on a project-by-project basis, either through screening or refined modeling, to identify impacts and, if necessary, include measures to reduce exposure. Reduction in health risk can be accomplished through, though is not limited to, the following measures:

- Construction equipment selection;
- Use of alternative fuels, engine retrofits, and added exhaust devices;
- Modify construction schedule; and
- Implementation of BAAQMD Basic and/or Additional Construction Mitigation Measures for control of fugitive dust.

**Long-Term Operational Sources**

According to the BAAQMD CEQA Air Quality Guidelines, for a plan to have a less-than-significant impact with respect to TACs, overlay zones must be established around existing and proposed land uses that would emit these air pollutants. Overlay zones to avoid TAC impacts must be reflected in local plan policies, land use maps, or implementing ordinances.

The BAAQMD CEQA Air Quality Guidelines consider exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard, to be significant. For cancer risk, which is a concern with DPM and other mobile-source TACs, the BAAQMD Risk Management Policy considers an increased risk of contracting cancer that is 10 in one million chances or greater, to be significant risk for a single source. The BAAQMD CEQA Guidelines also consider exposure to annual PM<sub>2.5</sub> concentrations that exceed 0.3 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) to be significant. Non-cancer risk would be considered significant if the computed Hazard Index is greater than 1.0.<sup>8</sup> For cumulative sources, the BAAQMD CEQA Guidelines consider 100 in one million excess cancer risk, PM<sub>2.5</sub> concentrations that exceed 0.8  $\mu\text{g}/\text{m}^3$ , and non-cancer Hazard Index greater than 10.0 to be significant.

The North Bayshore Precise Plan Update would permit and facilitate the development of new sensitive receptors, such as new homes, in locations near arterial and collector roadways,

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<sup>8</sup> The Hazard Index is the ratio of the computed receptor exposure level to the level known to cause acute or chronic adverse health impacts, as identified by BAAQMD.

highways, and stationary sources of TAC emissions. Screening levels indicate that sensitive receptors within the Planning Area would be exposed to levels of TACs and/or PM<sub>2.5</sub> that could cause an unacceptable cancer risk or hazard near highways and stationary sources. Though not necessarily a CEQA issue due to the CBIA v. BAAQMD decision, the potential effect of existing TAC sources on future projects is discussed to comply with General Plan Policy INC 20.7 to “protect the public from substantial pollutant concentrations.”

TAC sources were identified within a 1,000 foot radius from the Planning Area. These sources include: stationary sources permitted by BAAQMD, roadways with more than 10,000 annual average daily traffic (AADT), and highways or freeways. Then, using the screening analysis tools – the stationary source screening analysis tool, the highway screening analysis tool, and the roadway screening analysis tool – potential risk and hazard impacts were assessed.

### Stationary Sources

The Planning Area has numerous permitted stationary sources. These sources are located throughout the Plan Area, but mostly in industrial and commercial areas. The impact of these sources can only be addressed on a project-by-project basis, since impacts are generally localized. To assist lead agencies, BAAQMD has provided a database of permitted sources for each County. The database is contained in a Google Earth tool that allows a user to identify stationary sources within 1,000 feet of a receptor. The database can then be accessed through Google Earth to determine conservative screening levels of cancer risk, hazards and PM<sub>2.5</sub> concentrations. This allows many of the sources to be screened out of any additional analysis. Stationary sources that show the potential for significant community risk impacts after this first level of review are further analyzed by contacting BAAQMD for additional information and applying distance adjustment factors. A refined modeling analysis would be required if there are sources that still have potentially significant impacts after this level of review. A refined analysis would include dispersion modeling of the source using emissions and source information provided by BAAQMD. If the source still has significant community risk impacts following this level of effort, then risk reduction strategies would have to be implemented by the project on a case-by-case basis, including but not limited to, mechanical air filtration systems. Figure 1 illustrates the approximate location of all permitted stationary sources as reported by BAAQMD that could affect existing and future receptors in the Planning Area. The reported screening risk values are assumed to be at a distance of 50 feet.

When siting new sensitive receptors, the BAAQMD Guidelines advise that lead agencies examine existing or future proposed sources of TAC and/or PM<sub>2.5</sub> emissions that would adversely affect individuals within the planned project. New residences and sensitive receptors could be located near stationary sources of TACs located throughout the Planning Area, such as gasoline dispensing stations, emergency back-up diesel generators, and dry cleaners. Without

proper setbacks or mitigation measures, these sources could result in TAC levels that are considered significant for new sensitive receptors.

#### *Gasoline Stations*

The Plan Bay Area DEIR<sup>9</sup> recommends a screening setback of 300 feet for large gasoline dispensing facilities (3.6 million gallons of throughput a year) and 50 feet for small facilities.

#### *Emergency Back-Up Generators*

Electricity generators that are powered by diesel engines are common. They are typically located at facilities where uninterrupted electricity is necessary. Common facilities include fire and police stations, hospital or medical treatment facilities, pump stations, schools, offices, and data centers. Diesel engines powering these generators are regulated by BAAQMD and CARB. CARB has established strict emissions limits and operating restrictions for engines larger than 50 horsepower. BAAQMD has developed criteria (Regulation 2 Rule 5) for approval of projects with new or modified emission sources of TACs. As a result, all new engines have very localized impacts and would not be permitted if they would cause significant cancer risks or hazards. Existing engines are permitted to operate for a maximum of 50 hours per year for maintenance or routine testing.

#### *Moffett Airfield*

Located to the east of the Plan Area, Moffet Federal Airfield contains multiple sources of TACs. The Plan Bay Area DEIR does not provide a screening distance for airfield sources and would require project-specific review.

#### *Screening Setback Distances*

Specific stationary sources in the Plan Area were identified using BAAQMD's Google Earth *Stationary Source Screening Analysis Tool*, as described above. The BAAQMD data provide the screening risk, hazard and PM<sub>2.5</sub> concentration levels associated with each source. Table 7 identifies the approximate setback distances from stationary sources that have potentially significant impacts using the screening data provided by BAAQMD and the *Cancer Risk and Hazard Distance Adjustment Multiplier* tool. However, refined analysis of the effects from these sources through emissions and dispersion modeling would likely show lower TAC exposure. It should be noted that certain stationary sources could be removed as part of implementation of the Precise Plan, thus removing their associated community risk.

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<sup>9</sup> Association of Bay Area Governments, Metropolitan Transportation Commission, 2013. *Draft Plan Bay Area Environmental Impact Report*. State Clearinghouse No. 2012062029. April.

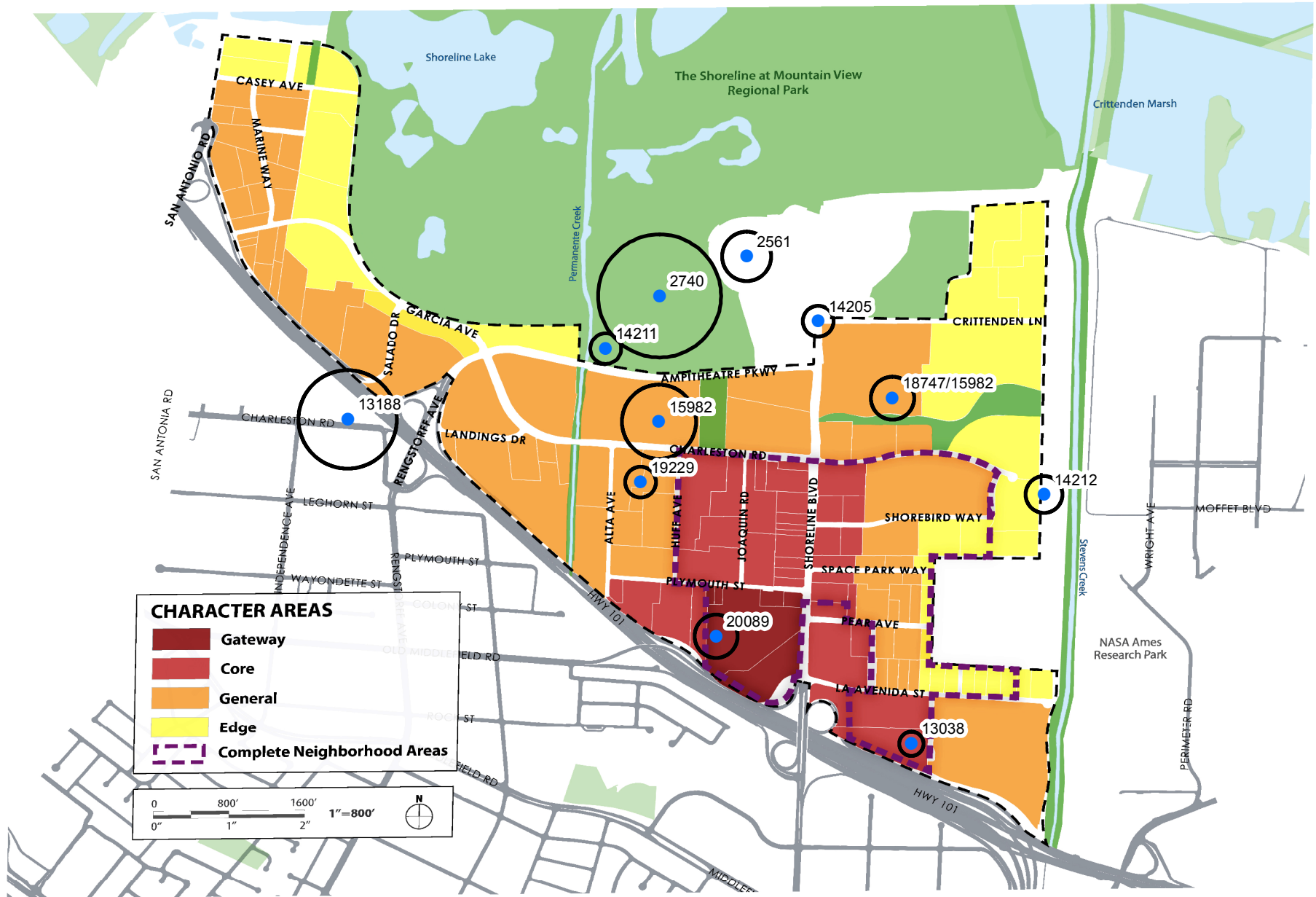
Instances where PM<sub>2.5</sub> screening concentrations exceed the threshold have been marked in Table 7 as “project-specific analysis required.” For example, the City of Mountain View Shoreline Landfill (Source 2740) is reported as having a screening PM<sub>2.5</sub> concentration of 42.8 µg/m<sup>3</sup> at 50 feet, or 1.7 µg/m<sup>3</sup> at 918 feet (which is the greatest distance contained in the *Cancer Risk and Hazard Distance Adjustment Multiplier* tool), which would still be potentially significant. Stationary sources that do not have potentially significant impacts at 50 feet or greater were not included in Table 7. Additionally, BAAQMD was contacted through a Stationary Source Inquiry Form (SSIF) to determine which facilities are still operational.<sup>10</sup> In cases where BAAQMD has indicated closed facilities, these were not included in the table. Stationary sources are generally reported in Table 7 from west to east and north to south across the Plan Area. Figure 1 shows the approximate locations of Plan Area or nearby stationary TAC sources with potentially significant risk and their respective screening buffer zones.

**TABLE 7 Approximate Screening Setback Distances for Stationary TAC Sources**

Facility	Source	Screening Distance in Feet to Cancer Risk Threshold	Screening Distance in Feet to PM <sub>2.5</sub> Threshold
Space Systems/Loral, Plant 13188 2288 Charleston Road	Standby diesel engine, solvents	525	<50
City of Mountain View Fleet Services, Plant 14211 Amphitheatre Parkway A	Three standby diesel engines	164	<50
City of Mountain View Shoreline Landfill, Plant 2740, 2600 Shoreline Boulevard	Landfill gas collection system, standby diesel engine	656	Project-specific analysis required
American Century Investments, Plant 19229, 1665 Charleston Road	Standby diesel engine	164	<50
Google Inc., Plant 15982, 1600 Amphitheatre Parkway	Multiple standby diesel engines	394	<50
Shoreline Amphitheatre, Plant 2561, One Amphitheatre Parkway	Landfill gas collection system, standby diesel engine	262	426
Layer42 Net, Inc., Plant 20089, 1555 Plymouth Street	Two standby diesel engines	230	<50
City of Mountain View Fleet Services, Plant 14205, 2100 Crittenden Lane	Standby diesel engine	164	<50
Google, Inc., Plant 15982 (formerly Alexa Pharmaceuticals, Plant 18747),	Multiple standby diesel engines	230	<50

<sup>10</sup> Correspondence between Alison Kirk, BAAQMD and Josh Carman, Illingworth and Rodkin, December 22, 2016.

Facility	Source	Screening Distance in Feet to Cancer Risk Threshold	Screening Distance in Feet to PM <sub>2.5</sub> Threshold
2023 Stierlin Court			
City of Mountain View Fleet Services, Plant 14212, End of Charleston Road	Two standby diesel engines	197	<50
Santa Clara Valley Transportation Authority, Plant 13038, 1235 L' Avenida	Standby diesel engine, paint applications	131	<50



**CHARACTER AREAS**

- Gateway
- Core
- General
- Edge
- Complete Neighborhood Areas

0 800' 1600' 1"=800' N  
 0" 1" 2"

Figure 1. Approximate Location of Plan Area or Nearby Stationary Sources with Potentially Significant Risk

**Legend**

- Sources
- Buffer



## Surface Streets

Traffic on high volume roadways (such as San Antonio Road, Amphitheatre Parkway, N. Shoreline Boulevard, and Charleston Road) is a source of TAC emissions that may adversely affect sensitive receptors in close proximity to the roadway. For roadways, BAAQMD has provided the *Roadway Screening Analysis Calculator* to determine if roadways with traffic volumes of over 10,000 vehicles per day may have a significant effect. Two adjustments were made to the cancer risk predictions made by this calculator: (1) adjustment for latest vehicle emissions rates and (2) adjustment of cancer risk to reflect new OEHHA guidance (see *Attachment 1*).

The calculator uses EMFAC2011 emission rates for the year 2014. Overall, emission rates will decrease by the time the project is constructed and occupied. In addition, a new version of the emissions factor model, EMFAC2014 is available. This version predicts lower emission rates. An adjustment factor of 0.5 was developed by comparing emission rates of total organic gases (TOG) for running exhaust and running losses developed using EMFAC2011 for year 2014 and those from EMFAC2014 for the year 2018. Operations after the year 2018 would result in lower risk values.

The predicted cancer risk was then adjusted using a factor of 1.3744 to account for new OEHHA guidance. This factor was provided by BAAQMD for use with their CEQA screening tools that are used to predict cancer risk.<sup>11</sup> Table 8 identifies the approximate screening setback distance to the threshold, using the roadway calculator along with cumulative plus NBPP traffic data (assuming that average daily traffic – ADT – is approximately ten times p.m. peak hour volumes) and roadway direction.

**TABLE 8     Approximate Screening Setback Distances for Surface Street TAC Sources**

<b>Source</b>	<b>Distance in Feet to Cancer Risk Threshold</b>	<b>Distance in Feet to PM<sub>2.5</sub> Threshold</b>
San Antonio Road (east of)	35	35
Charleston Road (north of)	10	10
Charleston Road (south of)	15	15
Amphitheatre Parkway (south of)	55	65
N. Shoreline Boulevard (east of)	125	125
N. Shoreline Boulevard (west of)	65	45

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<sup>11</sup> Correspondence with Alison Kirk, BAAQMD, November 23, 2015.

## US Highway 101

US Highway is adjacent to the southern boundary of the Plan Area. The primary source of TAC emissions is from diesel trucks that emit DPM. Additional TAC emissions come from gasoline fueled vehicles which emit organic TAC compounds. PM<sub>2.5</sub>, which is also of concern, is emitted from vehicle exhaust, tire and brake wear, and from re-suspended roadway dust. A review of the traffic information reported by Caltrans for 2015 indicates that in the vicinity of the project area, US Highway 101 has 227,000 ADT. About 4.5 percent of these trips are made by trucks.

To assess potential health impacts in the Plan Area from traffic on US Highway 101, a refined analysis was conducted to evaluate potential cancer risks and PM<sub>2.5</sub> concentrations from traffic. The refined analysis involved developing traffic emissions for the traffic volume and mix of vehicle types on US Highway 101. Then using these emissions as input to an atmospheric dispersion model for roadways, TAC and PM<sub>2.5</sub> concentrations were calculated throughout the Plan Area. Based on the modeled concentrations, potential exposure to TACs was calculated and associated cancer risks were computed.

Vehicle emissions were calculated using emission factors for traffic on US Highway 101 using CARB's EMFAC2014 model. Default EMFAC2014 vehicle model year distributions for Santa Clara County were used in calculating emissions for 2030. Average daily traffic volumes and truck percentages were based on Caltrans data for US Highway 101 for 2013.<sup>12</sup> Traffic volumes were assumed to increase 1 percent per year. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,<sup>13</sup> which were then applied to the average daily traffic volumes to obtain estimated hourly traffic volumes and emissions for US Highway 101. The modeling was conducted conservatively assuming emissions for the year 2030. While traffic may increase in the future, vehicle emission rates would continue to decrease at a greater rate than the traffic increase.

For all hours of the day, other than during peak a.m. and p.m. periods, an average speed of 65 mph was assumed for all vehicles other than heavy duty trucks which were assumed to travel at a speed of 60 mph. Based on traffic data from the Santa Clara Valley Transportation Authority's 2014 Monitoring and Conformance Report, traffic speeds during the peak a.m. and p.m. periods were identified.<sup>14</sup> For two hours during the peak a.m. and p.m. periods, average travel speeds of 25 mph and 45 mph were used for north-bound and south-bound traffic, respectively.

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<sup>12</sup> Caltrans, 2016. *2015 Annual Average Daily Truck Traffic on the California State Highway System*. Available: <http://www.dot.ca.gov/trafficops/census/>

<sup>13</sup> The Burden output from EMFAC2007, CARB's previous version of the EMFAC model, was used for this since the current web-based version of EMFAC2014 does not include Burden type output with hour by hour traffic volume information.

<sup>14</sup> Santa Clara Valley Transportation Authority. *Santa Clara County Annual Monitoring and Conformance Report 2015*.



Dispersion modeling of DPM, PM<sub>2.5</sub>, and organic TAC emissions was conducted using the CAL3QHCR model, which is recommended by the BAAQMD for this type of analysis.<sup>15</sup> North- and south-bound traffic on US Highway 101 in the vicinity of the Plan Area was evaluated with the model. A five-year data set of hourly meteorological data (1968 - 1972) from Moffett Field, formatted for use with the CAL3QHCR model by the BAAQMD, was used in the modeling. Other inputs to the model included road geometry, hourly traffic volumes, and emission factors. TAC and PM<sub>2.5</sub> concentrations were calculated in the Plan Area using a grid of receptors throughout the Plan Area. A receptor height of 1.5 meters (about 5 feet) was used for all receptors to represent the breathing heights of potential residents in the Plan Area.

Increased cancer risks were calculated using the modeled maximum annual DPM and TOG concentrations, and BAAQMD recommended risk assessment methods.<sup>16</sup> These methods evaluate cancer risk due to a 30 year exposure period and incorporate age sensitivity factors methods for infant (third trimester to two years of age) and children (two years of age to 16 years). The increased cancer risks in the Plan Area from traffic on US Highway 101 were calculated to be less than the BAAQMD significance threshold of an increased cancer risk of more than 10 in one million. The maximum infant cancer risk in the Plan Area from US Highway 101 was 3.7 in one million.

In addition to evaluating the cancer risks from TACs, potential PM<sub>2.5</sub> impacts from vehicle traffic were evaluated. Annual average PM<sub>2.5</sub> concentrations were computed at each receptor location. To evaluate potential non-cancer health effects due to PM<sub>2.5</sub>, the BAAQMD adopted a significance threshold of an annual average PM<sub>2.5</sub> concentration greater than 0.3 µg/m<sup>3</sup>. Figure 2 shows the Plan Area and contours lines of maximum annual PM<sub>2.5</sub> concentration. The contour lines where the PM<sub>2.5</sub> concentrations are at the BAAQMD significant impact level of 0.3 µg/m<sup>3</sup> or higher are highlighted in the figure. For distances within about 650 feet from US Highway 101, potentially significant PM<sub>2.5</sub> concentrations would occur.

### Summary

The NBPP would allow growth of new residential land uses that would be sensitive receptors and new non-residential land uses that are a potential for new emissions sources. Typically, these new sources would be evaluated through the BAAQMD permit process or the CEQA process to identify and mitigate any significant exposures. However, some sources that would not undergo such a review, such as truck loading docks or truck parking areas, may have the potential to cause significant increases in TAC exposure. This impact would be potentially significant. Implementation of Mitigation Measure AQ-3 would reduce this impact to a level of less than significant.

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<sup>15</sup> BAAQMD, 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May.

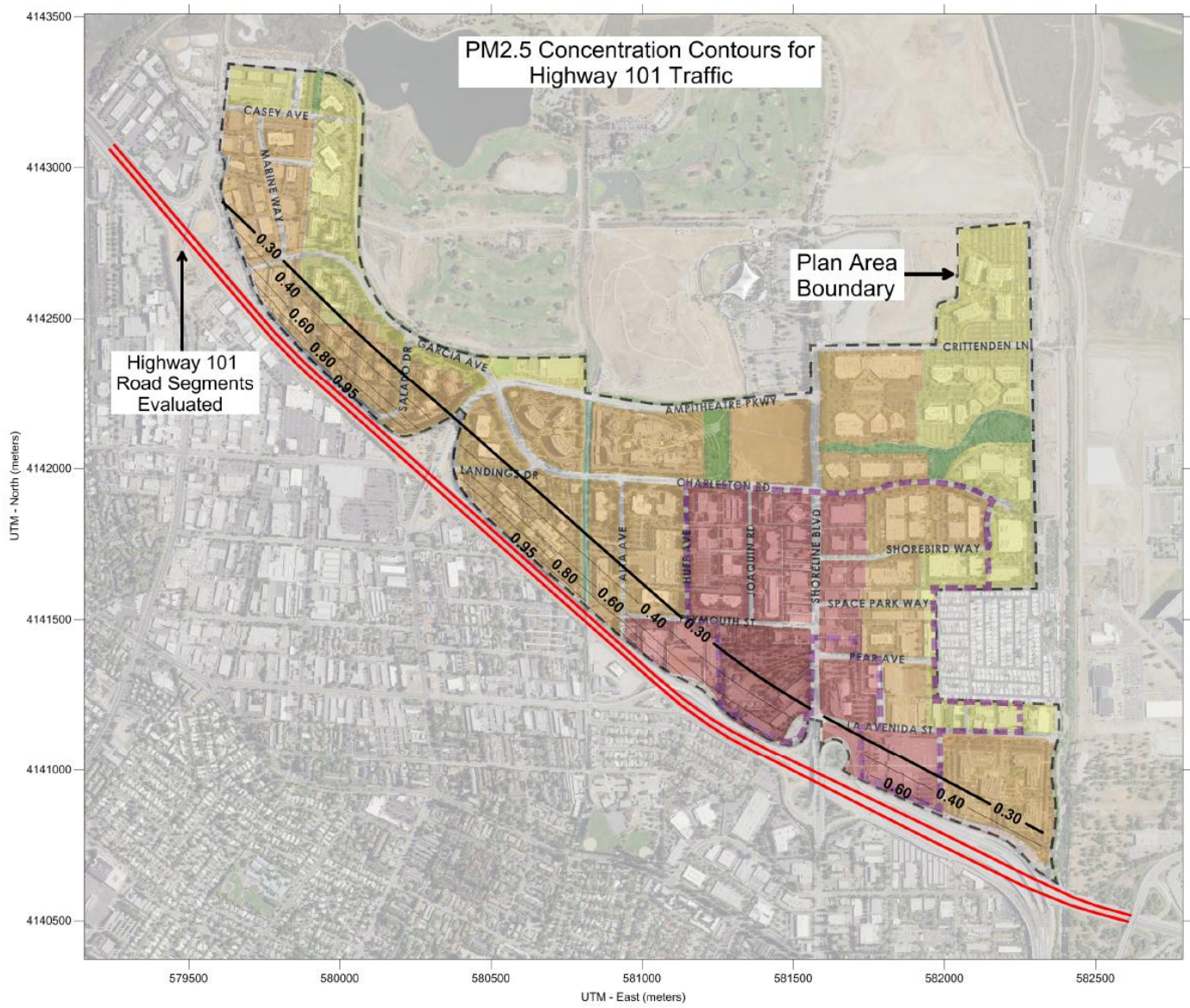
<sup>16</sup> BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. January.

**Mitigation Measure AQ-3** The following measures shall be utilized in site planning and building designs to reduce TAC and PM<sub>2.5</sub> exposure where new receptors are located within the setback distances identified above:

- Future development under the NBPP that includes sensitive receptors (such as schools, hospitals, daycare centers, or retirement homes) located within the setback distances from US Highway 101, local roadways, and stationary sources shall require site-specific analysis to quantify the level of TAC and PM<sub>2.5</sub> exposure. This analysis shall be conducted following procedures outlined by BAAQMD. If the site-specific analysis reveals significant exposures, such as cancer risk greater than 10 in one million acute or chronic hazards with a Hazard Index greater than 1.0, or annual PM<sub>2.5</sub> exposures greater than 0.3 µg/m<sup>3</sup>, or a significant cumulative health risk in terms of excess cancer risk greater than 100 in one million, acute or chronic hazards with a Hazard Index greater than 10.0, or annual PM<sub>2.5</sub> exposures greater than 0.8 µg/m<sup>3</sup>, additional measures such as those detailed below shall be employed to reduce the risk to below the threshold. If this is not possible, the sensitive receptors shall be relocated.
- Future developments that would include TAC sources would be evaluated through the CEQA process or BAAQMD permit process to ensure that they do not cause a significant health risk in terms of excess cancer risk greater than 10 in one million, acute or chronic hazards with a Hazard Index greater than 1.0, or annual PM<sub>2.5</sub> exposures greater than 0.3 µg/m<sup>3</sup>, or a significant cumulative health risk in terms of excess cancer risk greater than 100 in one million, acute or chronic hazards with a Hazard Index greater than 10.0, or annual PM<sub>2.5</sub> exposures greater than 0.8 µg/m<sup>3</sup>.
- For significant cancer risk exposure, as defined by BAAQMD, indoor air filtration systems shall be installed to effectively reduce particulate levels to a less-than-significant level. Project sponsors shall submit performance specifications and design details to demonstrate that lifetime residential exposures would result in less-than-significant cancer risks (less than 10 in one million chances or 100 in one million for cumulative sources), Hazard Index or PM<sub>2.5</sub> concentration.
- Air filtration systems installed shall be rated MERV-13 or higher and a maintenance plan for the air filtration system shall be implemented.
- Trees and/or vegetation shall be planted between sensitive receptors and pollution sources, if feasible. Trees that are best suited to trapping particulate matter shall be planted, including the following: Pine (*Pinus nigra* var. *maritime*), Cypress (*X Cupressocyparis leylandii*), Hybrid poplar (*Populus deltoids* X *trichocarpa*), and Redwoods (*Sequoia sempervirens*).
- Sites shall be designed to locate sensitive receptors as far as possible from any freeways, roadways, refineries, diesel generators, distribution centers, and rail lines.

- Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall not be located immediately adjacent to a loading dock or where trucks concentrate to deliver goods.

Figure 2. Increased PM2.5 Concentrations from US Highway 101 Traffic



## 5: Create objectionable odors affecting a substantial number of people?

Subsequent land use activities associated with implementation of the NBPP could allow for the development of uses that have the potential to produce odorous emissions either during the construction or operation of future development. Additionally, subsequent land use activities may allow for the construction of sensitive land uses (i.e., residential development, schools, parks, offices, etc.) near existing or future sources of odorous emissions. Future construction activities could result in odorous emissions from diesel exhaust associated with construction equipment. However, because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, exposure of sensitive receptors to these emissions would be limited.

Significant sources of offending odors are typically identified based on complaint histories received and compiled by BAAQMD. It is difficult to identify sources of odors without requesting information by specific facility from BAAQMD. Typical large sources of odors that result in complaints are wastewater treatment facilities, landfills including composting operations, food processing facilities, and chemical plants. Other sources, such as restaurants, paint or body shops, and coffee roasters typically result in localized sources of odors. Table 9 identifies screening buffers included in the BAAQMD CEQA Air Quality Guidelines that could apply to the Plan Area.

**TABLE 9 Odor Screening Distances for the NBPP**

<b>Land Use/Type of Operation</b>	<b>Project Screening Distance</b>
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Green Waste and Recycling Operations	1 mile

According to the BAAQMD CEQA Guidelines, an odor source with five or more confirmed complaints per year averaged over three years is considered to have a significant impact. Future construction activities in the Precise Plan area could result in odorous emissions from diesel exhaust associated with construction equipment. Because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, exposure of sensitive receptors to these emissions would be limited.

Subsequent land use activities associated with implementation of the Precise Plan could allow for the development of uses that have the potential to produce odorous emissions either during the construction or operation of future development. Additionally, subsequent land use activities may allow for the construction of sensitive land uses (i.e., residential development, schools, parks, offices, etc.) near existing or future sources of odorous emissions. However, significant sources of odors are not proposed as part of the Precise Plan. Further, the City would implement General Plan Policy INC 20.8 as part of the development review process to ensure that residents are protected from odors that might be associated with implementation of the Precise Plan.

**Impact 6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

The BAAQMD CEQA Air Quality Guidelines contain methodology and thresholds of significance for evaluating GHG emissions from land use type projects. As discussed above, the City of Mountain View has adopted qualified GHG reduction program (GGRP). This program meets the requirements of a GHG Reduction Strategy under State CEQA Guidelines Section 15183.5. The program includes a goal to improve communitywide emissions efficiency (per-service population – residents and full-time employees) by 30 percent over 2005 levels by 2030. The City intends to achieve GHG reductions from new land use developments to close the gap between projected regional emissions with AB 32 scoping plan measures and the AB 32 targets. The City suggests applying a 2030 GHG efficiency threshold of 4.5 MT per year per service population (S.P.). Projects with emissions above the threshold would be considered to have a cumulatively significant impact.

GHG emissions were computed for the full build-out traffic scenario, with operational emissions in 2030 using the California Emissions Estimator Model Version 2016.3.1 (CalEEMod) and EMFAC2014. NBPP land use types and size were input to CalEEMod. CalEEMod predicts emissions of GHG in the form of equivalent carbon dioxide emissions or CO<sub>2</sub>e. Since daily trip generation rates by land use type were not available, mobile emissions were calculated using the VMT-by-speed-bin data and the CARB EMFAC2014 emissions factor model.

## **Construction Period Emissions**

The BAAQMD does not have an adopted Threshold of Significance for construction-related GHG emissions. BAAQMD encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable, including, but not limited to: using alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment for at least 15 percent of the fleet, using local building materials of at least 10 percent, and recycling or reusing at least 50 percent of construction waste or demolition materials. The NBPP would require that all new construction, additions, and alterations recycle or salvage 65 percent of nonhazardous construction and demolition debris generated at the site.

## **Operational Period Emissions**

The CalEEMod model was used to predict GHG emissions associated with operation of fully developed sites under the NBPP aside from mobile emissions. Daily trip generation rates were not available by each specific land use proposed under the Plan, so the VMT-by-speed bin data and the CARB EMFAC2014 emissions factor model was used to estimate vehicle emissions associated with operation of the NBPP. Adjustments to the modeling are described below. CalEEMod output worksheets are provided in *Attachment 1*.

### Year of Analysis

Three analysis years were used for modeling: an existing 2015 run and two 2030 runs. Of the 2030 runs, one was the NBPP 2030 scenario and the other was the proposed (smaller unit residential) NBPP 2030.

### Land Use Descriptions

The following land uses types and sizes were input to CalEEMod:

#### *Existing 2015*

- 1 dwelling unit entered as “Single Family Housing;”
- 362 dwelling units entered as “Apartments Low Rise;”
- 68,964 square feet (sf) “Strip Mall”/commercial/retail;
- 412,910 sf entered as “General Office Building;”
- 6,374,650 sf entered as “Research & Development;”
- 100 seats entered as “Place of Worship;”
- 249,521 sf entered as “General Light Industry;” and
- 90,730 sf entered as “Free Standing Discount Store.”

## *NBPP 2030*

- 1 dwelling unit entered as “Single Family Housing;”
- 362 dwelling units entered as “Apartments Low Rise;”
- 132,481 square feet (sf) “Strip Mall”/commercial/retail;
- 4,844,563 sf entered as “General Office Building;”
- 4,724,329 sf entered as “Research & Development;”
- 100 seats entered as “Place of Worship;”
- 221,897 sf entered as “General Light Industry;”
- 400 rooms entered as “Motel;” and
- 39,932 sf entered as “Free Standing Discount Store.”

## *Proposed NBPP 2030*

- 1 dwelling unit entered as “Single Family Housing;”
- 10,212 dwelling units entered as “Apartments Low Rise;”
- 192,931 square feet (sf) “Strip Mall”/commercial/retail;
- 5,875,378 sf entered as “General Office Building;”
- 3,834,661 sf entered as “Research & Development;”
- 100 seats entered as “Place of Worship;”
- 137,671 sf entered as “General Light Industry;”
- 400 rooms entered as “Motel;” and
- 24,308 sf entered as “Free Standing Discount Store.”

## Mobile Emissions

Since daily trip generation rates by land use type were not available, mobile emissions were calculated using daily vehicle miles traveled (VMT) that were provided in the traffic studies. For each project scenario, the daily VMT was provided, broken down by 5-mph increments or speedbins. These data were combined with vehicle emissions factors for the corresponding speeds using the CARB EMFAC2014 emissions factor model. In addition, the total number of traffic trips were used to estimate additional emissions from vehicle startup conditions. Dust entrainment from vehicles was also computed using methods developed by CARB and US EPA that included silt loading factors specific to Santa Clara County. The VMT estimates were assumed to represent weekday conditions. The CalEEMod modeling defaults for the various land use types were used to develop emission for Saturday and Sunday traffic. The VMT estimates for the proposed NBPP include the proposed TDM.



## Electricity Generation

Default rates for energy consumption were assumed in the model. CalEEMod has a default rate of 641.3 pounds of CO<sub>2</sub> per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The Existing 2015 run PG&E rate was updated to be the most recent rate reported in the California Climate Registry that was for 2013, which is 429.6 pounds of CO<sub>2</sub> per megawatt of electricity produced.<sup>17</sup> For the 2030 runs, emissions rates associated with electricity consumption were adjusted to account for PG&E's projected 2020 CO<sub>2</sub> intensity rate in place of 2030, since 2020 is the latest year published to date. This 2020 rate is based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. The derived 2020 rate for PG&E was estimated at 289.84 pounds of CO<sub>2</sub> per megawatt of electricity delivered and is based on the California Public Utilities Commission (CPUC) GHG Calculator.<sup>18</sup> Default model assumptions for GHG emissions associated with area sources, solid waste generation and water/wastewater use were applied. It should be noted that an agreement was made to sell Mountain View Shoreline Landfill gas produced by the MVSL between the City and Alza Corporation (transferred to Google Inc.) dated September 29, 2004. Google agreed to purchase gas from the City to fuel an electric power generating plant to serve certain buildings owned or leased by Google. The expiration date is fifteen years after the commencement date (2006), but no later than January 1, 2021, with two options to extend the expiration date for five-year periods each. However, for the purposes of this analysis, it is conservatively assumed that electricity generation would come from PG&E.

## Service Population Rate

The service population rate for this NBPP is the annual GHG emissions expressed in metric tons divided by the estimated number of new residents and employees. The estimated 2030 service population for the proposed NBPP is 56,910. For the NBPP 2030 without project, the estimated service population is 38,650. For existing conditions, the estimated service population is 25,600.

## GHG Operational Emissions

Table 10 presents the results of the CalEEMod model analysis in terms of annual metric tons of equivalent CO<sub>2</sub>e emissions (MT of CO<sub>2</sub>e/yr) and service population values. The CalEEMod modeling data are provided in *Attachment 1*.

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<sup>17</sup> See Climate Registry most current version of default emissions factors: <http://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol>. Accessed: October 30, 2015

<sup>18</sup> California Public Utilities Commission's GHG Calculator version 3c, October 7, 2010. Available on-line at: [http://ethree.com/public\\_projects/cpuc2.php](http://ethree.com/public_projects/cpuc2.php). Accessed: June 18, 2015.

As shown in Table 10, 2030 full build-out operation of the NBPP would have annual service population emissions of 5.4 MT of CO<sub>2</sub>e/yr/S.P., which would exceed the City GGRP threshold of 4.5 MT of CO<sub>2</sub>e/year/S.P. This impact is, therefore, considered potentially significant. There are no additional feasible and reasonable measures beyond those already included in the plan for transportation and energy efficiency, and this impact would be considered *significant and unavoidable*.

**TABLE 10 2030 NBPP GHG Emissions (MT of CO<sub>2</sub>e)**

Source Category	Existing 2015	2030 NBPP	Proposed 2030 NBPP
Area	29	29	812
Energy Consumption	23,098	31,934	44,549
Mobile	151,247	205,034	250,537
Solid Waste Generation	1,362	3,388	6,060
Water Usage	8,041	7,078	8,091
<b>Total</b>	183,777	247,463	310,049
<b>Efficiency Metric</b>	7.2 <sup>1</sup>	6.4 <sup>2</sup>	5.4 <sup>3</sup>
<b>City GGRP 2030 Threshold</b>	4.5 MT CO <sub>2</sub> e/year/S.P.		

Notes: <sup>1</sup>Based on an existing service population of 25,600, <sup>2</sup>Based on a NBPP 2030 without project service population of 38,650,

<sup>3</sup>Based on a total proposed 2030 NBPP service population of 56,910.

GGRP = Greenhouse Gas Reduction Program

S.P. = service population

**Attachment 1: CalEEMod Input and Output Worksheets**

North Bayshore Precise Plan, Existing - Santa Clara County, Annual

**North Bayshore Precise Plan, Existing  
Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	412.91	1000sqft	9.48	412,910.00	1027
Research & Development	6,374.65	1000sqft	14.63	6,374,650.00	22194
Place of Worship	100.00	Seat	0.12	5,050.51	10
General Light Industry	249.52	1000sqft	5.73	249,521.00	299
Motel	0.00	Room	0.00	0.00	0
Apartments Mid Rise	362.00	Dwelling Unit	9.53	362,000.00	760
Single Family Housing	1.00	Dwelling Unit	0.32	1,800.00	2
Free-Standing Discount Store	90.73	1000sqft	2.08	90,730.00	0
Strip Mall	68.96	1000sqft	1.58	68,964.00	227

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	4			<b>Operational Year</b>	2015
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	429.6	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Revised CO2 Emission Intensity

Land Use - Assuming the church to have a capacity of 100 seats

Construction Phase - No Construction Emission Modelled

Off-road Equipment -

Off-road Equipment - only operational emission modeled

Trips and VMT -

Demolition -

Vehicle Trips -

Woodstoves - default used, since unknown how many residential units could have woodstoves or fireplaces

Energy Use - default values used

Table Name	Column Name	Default Value	New Value
tblLandUse	BuildingSpaceSquareFeet	249,520.00	249,521.00
tblLandUse	BuildingSpaceSquareFeet	68,960.00	68,964.00
tblLandUse	LandUseSquareFeet	249,520.00	249,521.00
tblLandUse	LandUseSquareFeet	68,960.00	68,964.00
tblLandUse	LotAcreage	146.34	14.63
tblLandUse	Population	0.00	1,027.00
tblLandUse	Population	0.00	22,194.00
tblLandUse	Population	0.00	10.00
tblLandUse	Population	0.00	299.00
tblLandUse	Population	1,035.00	760.00
tblLandUse	Population	3.00	2.00
tblLandUse	Population	0.00	227.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2018	2015

## 2.0 Emissions Summary

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### 2.2 Overall Operational

#### Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr									MT/yr						
	Area	34.4948	0.0524	3.9739	2.4500e-003		0.1806	0.1806		0.1806	0.1806	16.6306	11.3431	27.9737	0.0317	1.0900e-003
Energy	1.0070	9.1429	7.6028	0.0549		0.6958	0.6958		0.6958	0.6958	0.0000	22,962.5481	22,962.5481	1.0683	0.3642	23,097.7960
Mobile	25.4621	94.8778	303.7404	0.6296	48.3143	1.0883	49.4025	12.9420	1.0306	13.9725	0.0000	57,261.7555	57,261.7555	2.8567	0.0000	57,333.1716
Waste						0.0000	0.0000		0.0000	0.0000	549.6610	0.0000	549.6610	32.4840	0.0000	1,361.7618
Water						0.0000	0.0000		0.0000	0.0000	1,047.2880	3,526.6607	4,573.9487	107.8046	2.5891	8,040.6251
<b>Total</b>	<b>60.9639</b>	<b>104.0730</b>	<b>315.3171</b>	<b>0.6870</b>	<b>48.3143</b>	<b>1.9646</b>	<b>50.2789</b>	<b>12.9420</b>	<b>1.9070</b>	<b>14.8489</b>	<b>1,613.5795</b>	<b>83,762.3074</b>	<b>85,375.8869</b>	<b>144.2453</b>	<b>2.9545</b>	<b>89,862.4459</b>

**Mitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr									MT/yr						
Area	34.4948	0.0524	3.9739	2.4500e-003		0.1806	0.1806		0.1806	0.1806	16.6306	11.3431	27.9737	0.0317	1.0900e-003	29.0914
Energy	1.0070	9.1429	7.6028	0.0549		0.6958	0.6958		0.6958	0.6958	0.0000	22,962.5481	22,962.5481	1.0683	0.3642	23,097.7960
Mobile	25.4621	94.8778	303.7404	0.6296	48.3143	1.0883	49.4025	12.9420	1.0306	13.9725	0.0000	57,261.7555	57,261.7555	2.8567	0.0000	57,333.1716
Waste						0.0000	0.0000		0.0000	0.0000	549.6610	0.0000	549.6610	32.4840	0.0000	1,361.7618
Water						0.0000	0.0000		0.0000	0.0000	1,047.2880	3,526.6607	4,573.9487	107.8046	2.5891	8,040.6251
<b>Total</b>	<b>60.9639</b>	<b>104.0730</b>	<b>315.3171</b>	<b>0.6870</b>	<b>48.3143</b>	<b>1.9646</b>	<b>50.2789</b>	<b>12.9420</b>	<b>1.9070</b>	<b>14.8489</b>	<b>1,613.5795</b>	<b>83,762.3074</b>	<b>85,375.8869</b>	<b>144.2453</b>	<b>2.9545</b>	<b>89,862.4459</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**4.0 Operational Detail - Mobile**

#### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	25.4621	94.8778	303.7404	0.6296	48.3143	1.0883	49.4025	12.9420	1.0306	13.9725	0.0000	57,261.75	57,261.755	2.8567	0.0000	57,333.17
												55	5			16
Unmitigated	25.4621	94.8778	303.7404	0.6296	48.3143	1.0883	49.4025	12.9420	1.0306	13.9725	0.0000	57,261.75	57,261.755	2.8567	0.0000	57,333.17
												55	5			16

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,407.30	2,313.18	2121.32	5,434,506	5,434,506
Free-Standing Discount Store	5,193.39	6,448.18	5113.54	8,359,569	8,359,569
General Light Industry	1,739.15	329.37	169.67	3,834,908	3,834,908
General Office Building	4,554.40	1,015.76	433.56	8,268,989	8,268,989
Motel	0.00	0.00	0.00		
Place of Worship	61.00	90.00	185.00	155,000	155,000
Research & Development	51,698.41	12,111.84	7075.86	99,419,165	99,419,165
Single Family Housing	9.52	9.91	8.62	21,819	21,819
Strip Mall	3,056.31	2,899.08	1408.85	4,309,775	4,309,775
<b>Total</b>	<b>68,719.48</b>	<b>25,217.31</b>	<b>16,516.43</b>	<b>129,803,731</b>	<b>129,803,731</b>

#### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Motel	9.50	7.30	7.30	19.00	62.00	19.00	58	38	4
Place of Worship	9.50	7.30	7.30	0.00	95.00	5.00	64	25	11
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

#### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.581066	0.044264	0.192756	0.115658	0.019411	0.004878	0.012376	0.018919	0.001909	0.001745	0.005487	0.000584	0.000947
Research & Development	0.581066	0.044264	0.192756	0.115658	0.019411	0.004878	0.012376	0.018919	0.001909	0.001745	0.005487	0.000584	0.000947
Place of Worship	0.581066	0.044264	0.192756	0.115658	0.019411	0.004878	0.012376	0.018919	0.001909	0.001745	0.005487	0.000584	0.000947
General Light Industry	0.581066	0.044264	0.192756	0.115658	0.019411	0.004878	0.012376	0.018919	0.001909	0.001745	0.005487	0.000584	0.000947
Motel	0.581066	0.044264	0.192756	0.115658	0.019411	0.004878	0.012376	0.018919	0.001909	0.001745	0.005487	0.000584	0.000947
Apartments Mid Rise	0.581066	0.044264	0.192756	0.115658	0.019411	0.004878	0.012376	0.018919	0.001909	0.001745	0.005487	0.000584	0.000947
Single Family Housing	0.581066	0.044264	0.192756	0.115658	0.019411	0.004878	0.012376	0.018919	0.001909	0.001745	0.005487	0.000584	0.000947
Free-Standing Discount Store	0.581066	0.044264	0.192756	0.115658	0.019411	0.004878	0.012376	0.018919	0.001909	0.001745	0.005487	0.000584	0.000947
Strip Mall	0.581066	0.044264	0.192756	0.115658	0.019411	0.004878	0.012376	0.018919	0.001909	0.001745	0.005487	0.000584	0.000947

#### 5.0 Energy Detail

Historical Energy Use: N

#### 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12,996.47	12,996.473	0.8773	0.1815	13,072.49
												36	6			82



Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	12,996.4736	12,996.4736	0.8773	0.1815	13,072.4982
NaturalGas Mitigated	1.0070	9.1429	7.6028	0.0549		0.6958	0.6958		0.6958	0.6958	0.0000	9,966.0745	9,966.0745	0.1910	0.1827	10,025.2979
NaturalGas Unmitigated	1.0070	9.1429	7.6028	0.0549		0.6958	0.6958		0.6958	0.6958	0.0000	9,966.0745	9,966.0745	0.1910	0.1827	10,025.2979

## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	4.007e+006	0.0216	0.1846	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149	0.0000	213.8290	213.8290	4.1000e-003	3.9200e-003	215.0996
Free-Standing Discount Store	215937	1.1600e-003	0.0106	8.8900e-003	6.0000e-005		8.0000e-004	8.0000e-004		8.0000e-004	8.0000e-004	0.0000	11.5232	11.5232	2.2000e-004	2.1000e-004	11.5917
General Light Industry	6.60732e+006	0.0356	0.3239	0.2721	1.9400e-003		0.0246	0.0246		0.0246	0.0246	0.0000	352.5916	352.5916	6.7600e-003	6.4600e-003	354.6868
General Office Building	6.79237e+006	0.0366	0.3330	0.2797	2.0000e-003		0.0253	0.0253		0.0253	0.0253	0.0000	362.4667	362.4667	6.9500e-003	6.6500e-003	364.6207
Motel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Place of Worship	133738	7.2000e-004	6.5600e-003	5.5100e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1367	7.1367	1.4000e-004	1.3000e-004	7.1792
Research & Development	1.68801e+008	0.9102	8.2746	6.9506	0.0497		0.6289	0.6289		0.6289	0.6289	0.0000	9,007.8499	9,007.8499	0.1727	0.1651	9,061.3790
Single Family Housing	35952.6	1.9000e-004	1.6600e-003	7.0000e-004	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9186	1.9186	4.0000e-005	4.0000e-005	1.9300
Strip Mall	164134	8.9000e-004	8.0500e-003	6.7600e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7588	8.7588	1.7000e-004	1.6000e-004	8.8109
<b>Total</b>		<b>1.0070</b>	<b>9.1429</b>	<b>7.6028</b>	<b>0.0549</b>		<b>0.6958</b>	<b>0.6958</b>		<b>0.6958</b>	<b>0.6958</b>	<b>0.0000</b>	<b>9,966.0745</b>	<b>9,966.0745</b>	<b>0.1910</b>	<b>0.1827</b>	<b>10,025.2979</b>

### Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	4.007e+006	0.0216	0.1846	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149	0.0000	213.8290	213.8290	4.1000e-003	3.9200e-003	215.0996
Free-Standing Discount Store	215937	1.1600e-003	0.0106	8.8900e-003	6.0000e-005		8.0000e-004	8.0000e-004		8.0000e-004	8.0000e-004	0.0000	11.5232	11.5232	2.2000e-004	2.1000e-004	11.5917
General Light Industry	6.60732e+006	0.0356	0.3239	0.2721	1.9400e-003		0.0246	0.0246		0.0246	0.0246	0.0000	352.5916	352.5916	6.7600e-003	6.4600e-003	354.6868
General Office Building	6.79237e+006	0.0366	0.3330	0.2797	2.0000e-003		0.0253	0.0253		0.0253	0.0253	0.0000	362.4667	362.4667	6.9500e-003	6.6500e-003	364.6207
Motel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Place of Worship	133738	7.2000e-004	6.5600e-003	5.5100e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1367	7.1367	1.4000e-004	1.3000e-004	7.1792
Research & Development	1.68801e+008	0.9102	8.2746	6.9506	0.0497		0.6289	0.6289		0.6289	0.6289	0.0000	9,007.8499	9,007.8499	0.1727	0.1651	9,061.3790
Single Family Housing	35952.6	1.9000e-004	1.6600e-003	7.0000e-004	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9186	1.9186	4.0000e-005	4.0000e-005	1.9300
Strip Mall	164134	8.9000e-004	8.0500e-003	6.7600e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7588	8.7588	1.7000e-004	1.6000e-004	8.8109
<b>Total</b>		<b>1.0070</b>	<b>9.1429</b>	<b>7.6028</b>	<b>0.0549</b>		<b>0.6958</b>	<b>0.6958</b>		<b>0.6958</b>	<b>0.6958</b>	<b>0.0000</b>	<b>9,966.0745</b>	<b>9,966.0745</b>	<b>0.1910</b>	<b>0.1827</b>	<b>10,025.2979</b>

### 5.3 Energy by Land Use - Electricity

#### Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.59677e+006	311.1521	0.0210	4.3500e-003	312.9722
Free-Standing Discount Store	993493	193.5954	0.0131	2.7000e-003	194.7279
General Light Industry	2.10097e+006	409.4013	0.0276	5.7200e-003	411.7961
General Office Building	7.52322e+006	1,465.9994	0.0990	0.0205	1,474.5749

Motel	0	0.0000	0.0000	0.0000	0.0000
Place of Worship	42525.3	8.2866	5.6000e-004	1.2000e-004	8.3351
Research & Development	5.36746e+007	10,459.1996	0.7060	0.1461	10,520.3820
Single Family Housing	8658.17	1.6872	1.1000e-004	2.0000e-005	1.6970
Strip Mall	755156	147.1521	9.9300e-003	2.0600e-003	148.0129
<b>Total</b>		<b>12,996.4736</b>	<b>0.8773</b>	<b>0.1815</b>	<b>13,072.4982</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.59677e+006	311.1521	0.0210	4.3500e-003	312.9722
Free-Standing Discount Store	993493	193.5954	0.0131	2.7000e-003	194.7279
General Light Industry	2.10097e+006	409.4013	0.0276	5.7200e-003	411.7961
General Office Building	7.52322e+006	1,465.9994	0.0990	0.0205	1,474.5749
Motel	0	0.0000	0.0000	0.0000	0.0000
Place of Worship	42525.3	8.2866	5.6000e-004	1.2000e-004	8.3351
Research & Development	5.36746e+007	10,459.1996	0.7060	0.1461	10,520.3820
Single Family Housing	8658.17	1.6872	1.1000e-004	2.0000e-005	1.6970
Strip Mall	755156	147.1521	9.9300e-003	2.0600e-003	148.0129
<b>Total</b>		<b>12,996.4736</b>	<b>0.8773</b>	<b>0.1815</b>	<b>13,072.4982</b>

**6.0 Area Detail**

## 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	34.4948	0.0524	3.9739	2.4500e-003		0.1806	0.1806		0.1806	0.1806	16.6306	11.3431	27.9737	0.0317	1.0900e-003	29.0914
Unmitigated	34.4948	0.0524	3.9739	2.4500e-003		0.1806	0.1806		0.1806	0.1806	16.6306	11.3431	27.9737	0.0317	1.0900e-003	29.0914

## 6.2 Area by SubCategory

### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.0114					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	29.5476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.8411	0.0194	1.1587	2.3100e-003		0.1657	0.1657		0.1657	0.1657	16.6306	6.8100	23.4406	0.0268	1.0900e-003	24.4344
Landscaping	0.0947	0.0330	2.8152	1.5000e-004		0.0150	0.0150		0.0150	0.0150	0.0000	4.5331	4.5331	4.9600e-003	0.0000	4.6570
<b>Total</b>	<b>34.4948</b>	<b>0.0524</b>	<b>3.9739</b>	<b>2.4600e-003</b>		<b>0.1806</b>	<b>0.1806</b>		<b>0.1806</b>	<b>0.1806</b>	<b>16.6306</b>	<b>11.3431</b>	<b>27.9737</b>	<b>0.0317</b>	<b>1.0900e-003</b>	<b>29.0914</b>

### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.0114						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	29.5476						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.8411	0.0194	1.1587	2.3100e-003			0.1657	0.1657		0.1657	16.6306	6.8100	23.4406	0.0268	1.0900e-003	24.4344
Landscaping	0.0947	0.0330	2.8152	1.5000e-004			0.0150	0.0150		0.0150	0.0000	4.5331	4.5331	4.9600e-003	0.0000	4.6570
<b>Total</b>	<b>34.4948</b>	<b>0.0524</b>	<b>3.9739</b>	<b>2.4600e-003</b>			<b>0.1806</b>	<b>0.1806</b>		<b>0.1806</b>	<b>16.6306</b>	<b>11.3431</b>	<b>27.9737</b>	<b>0.0317</b>	<b>1.0900e-003</b>	<b>29.0914</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4,573.9487	107.8046	2.5891	8,040.6251
Unmitigated	4,573.9487	107.8046	2.5891	8,040.6251

### 7.2 Water by Land Use

#### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	23.5858 / 14.8693	42.4928	0.7709	0.0186	67.3189
Free-Standing Discount Store	6.7206 / 4.11908	12.0277	0.2197	5.3100e-003	19.1012
General Light Industry	57.7015 / 0	79.1468	1.8843	0.0453	139.7377
General Office Building	73.388 / 44.9798	131.3405	2.3986	0.0580	208.5830
Motel	0 / 0	0.0000	0.0000	0.0000	0.0000
Place of Worship	0.158025 / 0.247167	0.3853	5.1700e-003	1.3000e-004	0.5523
Research & Development	3134.38 / 0	4,299.2964	102.3568	2.4578	7,590.6280
Single Family Housing	0.065154 / 0.0410754	0.1174	2.1300e-003	5.0000e-005	0.1860
Strip Mall	5.10804 / 3.13073	9.1417	0.1670	4.0400e-003	14.5180
<b>Total</b>		<b>4,573.9487</b>	<b>107.8046</b>	<b>2.5892</b>	<b>8,040.6251</b>

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	23.5858 / 14.8693	42.4928	0.7709	0.0186	67.3189
Free-Standing Discount Store	6.7206 / 4.11908	12.0277	0.2197	5.3100e-003	19.1012
General Light Industry	57.7015 / 0	79.1468	1.8843	0.0453	139.7377

General Office Building	73.388 / 44.9798	131.3405	2.3986	0.0580	208.5830
Motel	0 / 0	0.0000	0.0000	0.0000	0.0000
Place of Worship	0.158025 / 0.247167	0.3853	5.1700e-003	1.3000e-004	0.5523
Research & Development	3134.38 / 0	4,299.2964	102.3568	2.4578	7,590.6280
Single Family Housing	0.065154 / 0.0410754	0.1174	2.1300e-003	5.0000e-005	0.1860
Strip Mall	5.10804 / 3.13073	9.1417	0.1670	4.0400e-003	14.5180
<b>Total</b>		<b>4,573.9487</b>	<b>107.8046</b>	<b>2.5892</b>	<b>8,040.6251</b>

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	549.6610	32.4840	0.0000	1,361.7618
Unmitigated	549.6610	32.4840	0.0000	1,361.7618

### 8.2 Waste by Land Use

#### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Apartments Mid Rise	166.52	33.8021	1.9976	0.0000	83.7432
Free-Standing Discount Store	390.2	79.2071	4.6810	0.0000	196.2322
General Light Industry	309.4	62.8054	3.7117	0.0000	155.5977
General Office Building	384.01	77.9506	4.6068	0.0000	193.1192
Motel	0	0.0000	0.0000	0.0000	0.0000
Place of Worship	900	182.6919	10.7968	0.0000	452.6114
Research & Development	484.43	98.3349	5.8114	0.0000	243.6206
Single Family Housing	0.84	0.1705	0.0101	0.0000	0.4224
Strip Mall	72.41	14.6986	0.8687	0.0000	36.4151
<b>Total</b>		<b>549.6610</b>	<b>32.4840</b>	<b>0.0000</b>	<b>1,361.7618</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	166.52	33.8021	1.9976	0.0000	83.7432
Free-Standing Discount Store	390.2	79.2071	4.6810	0.0000	196.2322
General Light Industry	309.4	62.8054	3.7117	0.0000	155.5977
General Office Building	384.01	77.9506	4.6068	0.0000	193.1192
Motel	0	0.0000	0.0000	0.0000	0.0000
Place of Worship	900	182.6919	10.7968	0.0000	452.6114



Research & Development	484.43	98.3349	5.8114	0.0000	243.6206
Single Family Housing	0.84	0.1705	0.0101	0.0000	0.4224
Strip Mall	72.41	14.6986	0.8687	0.0000	36.4151
<b>Total</b>		<b>549.6610</b>	<b>32.4840</b>	<b>0.0000</b>	<b>1,361.7618</b>

## 9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Stationary Equipment

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### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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North Bayshore Precise Plan, Operational - Santa Clara County, Annual

**North Bayshore Precise Plan, Operational  
Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	4,844.56	1000sqft	111.22	4,844,563.00	19378
Research & Development	4,724.33	1000sqft	108.46	4,724,329.00	16535
Place of Worship	100.00	Seat	0.12	5,050.51	10
General Light Industry	221.90	1000sqft	5.09	221,897.00	266
Motel	400.00	Room	18.00	784,080.00	160
Apartments Mid Rise	362.00	Dwelling Unit	9.53	362,000.00	760
Single Family Housing	1.00	Dwelling Unit	0.32	1,800.00	2
Free-Standing Discount Store	39.93	1000sqft	0.92	39,932.00	120
Strip Mall	132.48	1000sqft	3.04	132,481.00	371

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	4			<b>Operational Year</b>	2030
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	289.84	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Revised CO2 Emission Intensity  
 Land Use - From Land Use and Sizes Worksheet  
 Construction Phase - No construction emission modeled

Off-road Equipment -

Off-road Equipment - Only operational emission modeled

Woodstoves - Default used, since unknown how many residential units could have woodstoves or fireplaces

Energy Use - default values used

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	150	0
tblConstructionPhase	NumDays	180.00	1.00
tblLandUse	BuildingSpaceSquareFeet	4,844,560.00	4,844,563.00
tblLandUse	BuildingSpaceSquareFeet	4,724,330.00	4,724,329.00
tblLandUse	BuildingSpaceSquareFeet	221,900.00	221,897.00
tblLandUse	BuildingSpaceSquareFeet	39,930.00	39,932.00
tblLandUse	BuildingSpaceSquareFeet	132,480.00	132,481.00
tblLandUse	LandUseSquareFeet	4,844,560.00	4,844,563.00
tblLandUse	LandUseSquareFeet	4,724,330.00	4,724,329.00
tblLandUse	LandUseSquareFeet	221,900.00	221,897.00
tblLandUse	LandUseSquareFeet	39,930.00	39,932.00
tblLandUse	LandUseSquareFeet	132,480.00	132,481.00
tblLandUse	Population	0.00	19,378.00
tblLandUse	Population	0.00	16,535.00
tblLandUse	Population	0.00	10.00
tblLandUse	Population	0.00	266.00
tblLandUse	Population	0.00	160.00
tblLandUse	Population	1,035.00	760.00
tblLandUse	Population	3.00	2.00
tblLandUse	Population	0.00	120.00
tblLandUse	Population	0.00	371.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	289.84
tblProjectCharacteristics	OperationalYear	2018	2030

tblTripsAndVMT	WorkerTripNumber	0.00	18.00
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## 2.0 Emissions Summary

### 2.2 Overall Operational Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	50.2071	0.0512	3.9426	2.4600e-003		0.1810	0.1810		0.1810	0.1810	16.6306	11.3997	28.0303	0.0314	1.0900e-003	29.1410
Energy	1.3489	12.2506	10.2133	0.0736		0.9320	0.9320		0.9320	0.9320	0.0000	31,695.9373	31,695.9373	2.0915	0.6245	31,934.3365
Mobile	12.5744	54.3410	145.6040	0.6289	72.8485	0.4211	73.2695	19.4954	0.3914	19.8869	0.0000	57,871.0927	57,871.0927	1.6606	0.0000	57,912.6078
Waste						0.0000	0.0000		0.0000	0.0000	1,367.5116	0.0000	1,367.5116	80.8176	0.0000	3,387.9520
Water						0.0000	0.0000		0.0000	0.0000	1,041.2295	2,588.6823	3,629.9118	107.2033	2.5788	7,078.4679
<b>Total</b>	<b>64.1304</b>	<b>66.6429</b>	<b>159.7599</b>	<b>0.7050</b>	<b>72.8485</b>	<b>1.5340</b>	<b>74.3824</b>	<b>19.4954</b>	<b>1.5043</b>	<b>20.9998</b>	<b>2,425.3716</b>	<b>92,167.1120</b>	<b>94,592.4835</b>	<b>191.8045</b>	<b>3.2044</b>	<b>100,342.5052</b>

### Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	50.2071	0.0512	3.9426	2.4600e-003		0.1810	0.1810		0.1810	0.1810	16.6306	11.3997	28.0303	0.0314	1.0900e-003	29.1410
Energy	1.3489	12.2506	10.2133	0.0736		0.9320	0.9320		0.9320	0.9320	0.0000	31,695.9373	31,695.9373	2.0915	0.6245	31,934.3365
Mobile	12.5744	54.3410	145.6040	0.6289	72.8485	0.4211	73.2695	19.4954	0.3914	19.8869	0.0000	57,871.0927	57,871.0927	1.6606	0.0000	57,912.6078

Waste						0.0000	0.0000		0.0000	0.0000	1,367.5116	0.0000	1,367.5116	80.8176	0.0000	3,387.9520
Water						0.0000	0.0000		0.0000	0.0000	1,041.2295	2,588.6823	3,629.9118	107.2033	2.5788	7,078.4679
<b>Total</b>	<b>64.1304</b>	<b>66.6429</b>	<b>159.7599</b>	<b>0.7050</b>	<b>72.8485</b>	<b>1.5340</b>	<b>74.3824</b>	<b>19.4954</b>	<b>1.5043</b>	<b>20.9998</b>	<b>2,425.3716</b>	<b>92,167.1120</b>	<b>94,592.4835</b>	<b>191.8045</b>	<b>3.2044</b>	<b>100,342.5052</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	12.5744	54.3410	145.6040	0.6289	72.8485	0.4211	73.2695	19.4954	0.3914	19.8869	0.0000	57,871.0927	57,871.0927	1.6606	0.0000	57,912.6078
Unmitigated	12.5744	54.3410	145.6040	0.6289	72.8485	0.4211	73.2695	19.4954	0.3914	19.8869	0.0000	57,871.0927	57,871.0927	1.6606	0.0000	57,912.6078

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,407.30	2,313.18	2121.32	5,434,506	5,434,506
Free-Standing Discount Store	2,285.59	2,837.83	2250.45	3,679,021	3,679,021
General Light Industry	1,546.64	292.91	150.89	3,410,412	3,410,412
General Office Building	53,435.50	11,917.62	5086.79	97,017,782	97,017,782
Motel	2,252.00	2,252.00	2252.00	4,273,775	4,273,775
Place of Worship	61.00	90.00	185.00	155,000	155,000

Research & Development	38,314.32	8,976.23	5244.01	73,680,742	73,680,742
Single Family Housing	9.52	9.91	8.62	21,819	21,819
Strip Mall	5,871.51	5,569.46	2706.57	8,279,568	8,279,568
<b>Total</b>	<b>106,183.38</b>	<b>34,259.13</b>	<b>20,005.65</b>	<b>195,952,625</b>	<b>195,952,625</b>

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Motel	9.50	7.30	7.30	19.00	62.00	19.00	58	38	4
Place of Worship	9.50	7.30	7.30	0.00	95.00	5.00	64	25	11
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Research & Development	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Place of Worship	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
General Light Industry	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Motel	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Apartments Mid Rise	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Single Family Housing	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Free-Standing Discount Store	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Strip Mall	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651

### 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18,346.6838	18,346.6838	1.8357	0.3798	18,505.7550
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18,346.6838	18,346.6838	1.8357	0.3798	18,505.7550
NaturalGas Mitigated	1.3489	12.2506	10.2133	0.0736		0.9320	0.9320		0.9320	0.9320	0.0000	13,349.2535	13,349.2535	0.2559	0.2447	13,428.5814
NaturalGas Unmitigated	1.3489	12.2506	10.2133	0.0736		0.9320	0.9320		0.9320	0.9320	0.0000	13,349.2535	13,349.2535	0.2559	0.2447	13,428.5814

## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	4.007e+006	0.0216	0.1846	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149	0.0000	213.8290	213.8290	4.1000e-003	3.9200e-003	215.0996
Free-Standing Discount Store	95038.2	5.1000e-004	4.6600e-003	3.9100e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	5.0716	5.0716	1.0000e-004	9.0000e-005	5.1017
General Light Industry	5.87583e+006	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	313.5568	313.5568	6.0100e-003	5.7500e-003	315.4201
General Office Building	7.96931e+007	0.4297	3.9065	3.2815	0.0234		0.2969	0.2969		0.2969	0.2969	0.0000	4,252.7252	4,252.7252	0.0815	0.0780	4,277.9971
Motel	3.48994e+007	0.1882	1.7108	1.4370	0.0103		0.1300	0.1300		0.1300	0.1300	0.0000	1,862.3649	1,862.3649	0.0357	0.0341	1,873.4320
Place of Worship	133738	7.2000e-004	6.5600e-003	5.5100e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1367	7.1367	1.4000e-004	1.3000e-004	7.1792
Research & Development	1.251e+008	0.6746	6.1324	5.1512	0.0368		0.4661	0.4661		0.4661	0.4661	0.0000	6,675.8248	6,675.8248	0.1280	0.1224	6,715.4959

Single Family Housing	35952.6	1.9000e-004	1.6600e-003	7.0000e-004	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9186	1.9186	4.0000e-005	4.0000e-005	1.9300
Strip Mall	315305	1.7000e-003	0.0155	0.0130	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	16.8259	16.8259	3.2000e-004	3.1000e-004	16.9259
<b>Total</b>		<b>1.3489</b>	<b>12.2506</b>	<b>10.2133</b>	<b>0.0736</b>		<b>0.9320</b>	<b>0.9320</b>		<b>0.9320</b>	<b>0.9320</b>	<b>0.0000</b>	<b>13,349.2535</b>	<b>13,349.2535</b>	<b>0.2559</b>	<b>0.2447</b>	<b>13,428.5814</b>

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	4.007e+006	0.0216	0.1846	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149	0.0000	213.8290	213.8290	4.1000e-003	3.9200e-003	215.0996
Free-Standing Discount Store	95038.2	5.1000e-004	4.6600e-003	3.9100e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	5.0716	5.0716	1.0000e-004	9.0000e-005	5.1017
General Light Industry	5.87583e+006	0.0317	0.2880	0.2420	1.7300e-003		0.0219	0.0219		0.0219	0.0219	0.0000	313.5568	313.5568	6.0100e-003	5.7500e-003	315.4201
General Office Building	7.96931e+007	0.4297	3.9065	3.2815	0.0234		0.2969	0.2969		0.2969	0.2969	0.0000	4,252.7252	4,252.7252	0.0815	0.0780	4,277.9971
Motel	3.48994e+007	0.1882	1.7108	1.4370	0.0103		0.1300	0.1300		0.1300	0.1300	0.0000	1,862.3649	1,862.3649	0.0357	0.0341	1,873.4320
Place of Worship	133738	7.2000e-004	6.5600e-003	5.5100e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1367	7.1367	1.4000e-004	1.3000e-004	7.1792
Research & Development	1.251e+008	0.6746	6.1324	5.1512	0.0368		0.4661	0.4661		0.4661	0.4661	0.0000	6,675.8248	6,675.8248	0.1280	0.1224	6,715.4959
Single Family Housing	35952.6	1.9000e-004	1.6600e-003	7.0000e-004	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9186	1.9186	4.0000e-005	4.0000e-005	1.9300
Strip Mall	315305	1.7000e-003	0.0155	0.0130	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	16.8259	16.8259	3.2000e-004	3.1000e-004	16.9259
<b>Total</b>		<b>1.3489</b>	<b>12.2506</b>	<b>10.2133</b>	<b>0.0736</b>		<b>0.9320</b>	<b>0.9320</b>		<b>0.9320</b>	<b>0.9320</b>	<b>0.0000</b>	<b>13,349.2535</b>	<b>13,349.2535</b>	<b>0.2559</b>	<b>0.2447</b>	<b>13,428.5814</b>

**5.3 Energy by Land Use - Electricity**

**Unmitigated**



	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.59677e+006	209.9262	0.0210	4.3500e-003	211.7464
Free-Standing Discount Store	437255	57.4856	5.7500e-003	1.1900e-003	57.9840
General Light Industry	1.86837e+006	245.6335	0.0246	5.0800e-003	247.7632
General Office Building	8.82679e+007	11,604.5163	1.1611	0.2402	11,705.1309
Motel	6.10014e+006	801.9809	0.0802	0.0166	808.9343
Place of Worship	42525.3	5.5908	5.6000e-004	1.2000e-004	5.6392
Research & Development	3.97789e+007	5,229.6941	0.5233	0.1083	5,275.0371
Single Family Housing	8658.17	1.1383	1.1000e-004	2.0000e-005	1.1482
Strip Mall	1.45067e+006	190.7180	0.0191	3.9500e-003	192.3716
<b>Total</b>		<b>18,346.6838</b>	<b>1.8357</b>	<b>0.3798</b>	<b>18,505.7550</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.59677e+006	209.9262	0.0210	4.3500e-003	211.7464
Free-Standing Discount Store	437255	57.4856	5.7500e-003	1.1900e-003	57.9840
General Light Industry	1.86837e+006	245.6335	0.0246	5.0800e-003	247.7632
General Office Building	8.82679e+007	11,604.5163	1.1611	0.2402	11,705.1309

Motel	6.10014e+006	801.9809	0.0802	0.0166	808.9343
Place of Worship	42525.3	5.5908	5.6000e-004	1.2000e-004	5.6392
Research & Development	3.97789e+007	5,229.6941	0.5233	0.1083	5,275.0371
Single Family Housing	8658.17	1.1383	1.1000e-004	2.0000e-005	1.1482
Strip Mall	1.45067e+006	190.7180	0.0191	3.9500e-003	192.3716
<b>Total</b>		<b>18,346.6838</b>	<b>1.8357</b>	<b>0.3798</b>	<b>18,505.7550</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	50.2071	0.0512	3.9426	2.4600e-003		0.1810	0.1810		0.1810	0.1810	16.6306	11.3997	28.0303	0.0314	1.0900e-003	29.1410
Unmitigated	50.2071	0.0512	3.9426	2.4600e-003		0.1810	0.1810		0.1810	0.1810	16.6306	11.3997	28.0303	0.0314	1.0900e-003	29.1410

### 6.2 Area by SubCategory

#### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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SubCategory	tons/yr								MT/yr							
Architectural Coating	5.8628					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Consumer Products	43.4141					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Hearth	0.8411	0.0194	1.1587	2.3100e-003		0.1657	0.1657		0.1657	0.1657	16.6306	6.8100	23.4406	0.0268	1.0900e-003	24.4344
Landscaping	0.0892	0.0319	2.7839	1.5000e-004		0.0153	0.0153		0.0153	0.0153	0.0000	4.5897	4.5897	4.6800e-003	0.0000	4.7066
<b>Total</b>	<b>50.2071</b>	<b>0.0512</b>	<b>3.9426</b>	<b>2.4600e-003</b>		<b>0.1810</b>	<b>0.1810</b>		<b>0.1810</b>	<b>0.1810</b>	<b>16.6306</b>	<b>11.3997</b>	<b>28.0303</b>	<b>0.0314</b>	<b>1.0900e-003</b>	<b>29.1410</b>

### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr								MT/yr							
Architectural Coating	5.8628						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	43.4141						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.8411	0.0194	1.1587	2.3100e-003		0.1657	0.1657		0.1657	0.1657	16.6306	6.8100	23.4406	0.0268	1.0900e-003	24.4344
Landscaping	0.0892	0.0319	2.7839	1.5000e-004		0.0153	0.0153		0.0153	0.0153	0.0000	4.5897	4.5897	4.6800e-003	0.0000	4.7066
<b>Total</b>	<b>50.2071</b>	<b>0.0512</b>	<b>3.9426</b>	<b>2.4600e-003</b>		<b>0.1810</b>	<b>0.1810</b>		<b>0.1810</b>	<b>0.1810</b>	<b>16.6306</b>	<b>11.3997</b>	<b>28.0303</b>	<b>0.0314</b>	<b>1.0900e-003</b>	<b>29.1410</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3,629.9118	107.2033	2.5788	7,078.4679
Unmitigated	3,629.9118	107.2033	2.5788	7,078.4679

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	23.5858 / 14.8693	31.1031	0.7709	0.0186	55.9292
Free-Standing Discount Store	2.95772 / 1.81279	3.8766	0.0967	2.3400e-003	6.9896
General Light Industry	51.3144 / 0	52.7837	1.6757	0.0402	106.6677
General Office Building	861.042 / 527.735	1,128.5300	28.1426	0.6802	2,034.7941
Motel	10.1467 / 1.12741	10.9560	0.3314	7.9700e-003	21.6153
Place of Worship	0.158025 / 0.247167	0.2763	5.1700e-003	1.3000e-004	0.4432
Research & Development	2322.92 / 0	2,389.4386	75.8579	1.8215	4,828.6841
Single Family Housing	0.065154 / 0.0410754	0.0859	2.1300e-003	5.0000e-005	0.1545
Strip Mall	9.81313 / 6.0145	12.8616	0.3207	7.7500e-003	23.1902
<b>Total</b>		<b>3,629.9118</b>	<b>107.2033</b>	<b>2.5788</b>	<b>7,078.4679</b>

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	23.5858 / 14.8693	31.1031	0.7709	0.0186	55.9292
Free-Standing Discount Store	2.95772 / 1.81279	3.8766	0.0967	2.3400e-003	6.9896
General Light Industry	51.3144 / 0	52.7837	1.6757	0.0402	106.6677
General Office Building	861.042 / 527.735	1,128.5300	28.1426	0.6802	2,034.7941
Motel	10.1467 / 1.12741	10.9560	0.3314	7.9700e-003	21.6153
Place of Worship	0.158025 / 0.247167	0.2763	5.1700e-003	1.3000e-004	0.4432
Research & Development	2322.92 / 0	2,389.4386	75.8579	1.8215	4,828.6841
Single Family Housing	0.065154 / 0.0410754	0.0859	2.1300e-003	5.0000e-005	0.1545
Strip Mall	9.81313 / 6.0145	12.8616	0.3207	7.7500e-003	23.1902
<b>Total</b>		<b>3,629.9118</b>	<b>107.2033</b>	<b>2.5788</b>	<b>7,078.4679</b>

**8.0 Waste Detail**

**8.1 Mitigation Measures Waste**

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			

Mitigated	1,367.5116	80.8176	0.0000	3,387.9520
Unmitigated	1,367.5116	80.8176	0.0000	3,387.9520

## 8.2 Waste by Land Use

### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	166.52	33.8021	1.9976	0.0000	83.7432
Free-Standing Discount Store	171.73	34.8596	2.0602	0.0000	86.3633
General Light Industry	275.16	55.8550	3.3009	0.0000	138.3784
General Office Building	4505.44	914.5636	54.0492	0.0000	2,265.7926
Motel	219	44.4550	2.6272	0.0000	110.1354
Place of Worship	900	182.6919	10.7968	0.0000	452.6114
Research & Development	359.02	72.8778	4.3070	0.0000	180.5517
Single Family Housing	0.84	0.1705	0.0101	0.0000	0.4224
Strip Mall	139.1	28.2360	1.6687	0.0000	69.9536
<b>Total</b>		<b>1,367.5116</b>	<b>80.8176</b>	<b>0.0000</b>	<b>3,387.9520</b>

### Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	166.52	33.8021	1.9976	0.0000	83.7432
Free-Standing Discount Store	171.73	34.8596	2.0602	0.0000	86.3633
General Light Industry	275.16	55.8550	3.3009	0.0000	138.3784
General Office Building	4505.44	914.5636	54.0492	0.0000	2,265.7926
Motel	219	44.4550	2.6272	0.0000	110.1354
Place of Worship	900	182.6919	10.7968	0.0000	452.6114
Research & Development	359.02	72.8778	4.3070	0.0000	180.5517
Single Family Housing	0.84	0.1705	0.0101	0.0000	0.4224
Strip Mall	139.1	28.2360	1.6687	0.0000	69.9536
<b>Total</b>		<b>1,367.5116</b>	<b>80.8176</b>	<b>0.0000</b>	<b>3,387.9520</b>

## 9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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**11.0 Vegetation**

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Proposed NBPP 2030, Operational - Santa Clara County, Annual

**Proposed NBPP 2030, Operational  
Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5,875.38	1000sqft	134.88	5,875,378.00	23502
Research & Development	3,834.66	1000sqft	88.03	3,834,661.00	13421
Place of Worship	100.00	Seat	0.12	5,050.51	10
General Light Industry	137.67	1000sqft	3.16	137,671.00	165
Motel	400.00	Room	18.00	784,080.00	160
Apartments Mid Rise	10,212.00	Dwelling Unit	268.74	10,212,000.00	17998
Single Family Housing	1.00	Dwelling Unit	0.32	1,800.00	2
Free-Standing Discount Store	24.31	1000sqft	0.56	24,308.00	73
Strip Mall	192.93	1000sqft	4.43	192,931.00	532

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	4			<b>Operational Year</b>	2030
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	289.84	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - Revised CO2 Emission Intensity  
 Land Use - Assuming the capacity of the church to be 100  
 Land Use Size from "Modeling Land Use" spreadsheet  
 Construction Phase - only operational emissions modeled

Off-road Equipment -

Off-road Equipment - Only operational emission modeled

Woodstoves - defaults used, since unknown how many residential units could have woodstoves or fireplaces

Energy Use - Default energy intensity values considered

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	360.00	1.00
tblLandUse	BuildingSpaceSquareFeet	5,875,380.00	5,875,378.00
tblLandUse	BuildingSpaceSquareFeet	3,834,660.00	3,834,661.00
tblLandUse	BuildingSpaceSquareFeet	137,670.00	137,671.00
tblLandUse	BuildingSpaceSquareFeet	24,310.00	24,308.00
tblLandUse	BuildingSpaceSquareFeet	192,930.00	192,931.00
tblLandUse	LandUseSquareFeet	5,875,380.00	5,875,378.00
tblLandUse	LandUseSquareFeet	3,834,660.00	3,834,661.00
tblLandUse	LandUseSquareFeet	137,670.00	137,671.00
tblLandUse	LandUseSquareFeet	24,310.00	24,308.00
tblLandUse	LandUseSquareFeet	192,930.00	192,931.00
tblLandUse	Population	0.00	23,502.00
tblLandUse	Population	0.00	13,421.00
tblLandUse	Population	0.00	10.00
tblLandUse	Population	0.00	165.00
tblLandUse	Population	0.00	160.00
tblLandUse	Population	29,206.00	17,998.00
tblLandUse	Population	3.00	2.00
tblLandUse	Population	0.00	73.00
tblLandUse	Population	0.00	532.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	289.84
tblProjectCharacteristics	OperationalYear	2018	2030
tblTripsAndVMT	WorkerTripNumber	0.00	18.00

## 2.0 Emissions Summary

### 2.2 Overall Operational

#### Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	120.9695	1.4152	108.1829	0.0686		5.0608	5.0608		5.0608	5.0608	465.6892	315.3202	781.0094	0.8670	0.0305	811.7844
Energy	1.8897	16.8469	11.9919	0.1031		1.3056	1.3056		1.3056	1.3056	0.0000	44,216.3284	44,216.3284	2.9113	0.8710	44,548.6821
Mobile	22.7360	98.1926	262.0320	1.1296	130.7268	0.7570	131.4837	34.9846	0.7037	35.6883	0.0000	103,944.4453	103,944.4453	2.9882	0.0000	104,019.1506
Waste						0.0000	0.0000		0.0000	0.0000	2,446.1852	0.0000	2,446.1852	144.5654	0.0000	6,060.3204
Water						0.0000	0.0000		0.0000	0.0000	1,159.0499	3,091.6479	4,250.6978	119.3549	2.8749	8,091.2967
<b>Total</b>	<b>145.5952</b>	<b>116.4546</b>	<b>382.2068</b>	<b>1.3013</b>	<b>130.7268</b>	<b>7.1234</b>	<b>137.8502</b>	<b>34.9846</b>	<b>7.0701</b>	<b>42.0547</b>	<b>4,070.9243</b>	<b>151,567.7417</b>	<b>155,638.6660</b>	<b>270.6868</b>	<b>3.7765</b>	<b>163,531.2342</b>

#### Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	120.9695	1.4152	108.1829	0.0686		5.0608	5.0608		5.0608	5.0608	465.6892	315.3202	781.0094	0.8670	0.0305	811.7844
Energy	1.8897	16.8469	11.9919	0.1031		1.3056	1.3056		1.3056	1.3056	0.0000	44,216.3284	44,216.3284	2.9113	0.8710	44,548.6821
Mobile	22.7360	98.1926	262.0320	1.1296	130.7268	0.7570	131.4837	34.9846	0.7037	35.6883	0.0000	103,944.4453	103,944.4453	2.9882	0.0000	104,019.1506

Waste						0.0000	0.0000		0.0000	0.0000	2,446.1852	0.0000	2,446.1852	144.5654	0.0000	6,060.3204
Water						0.0000	0.0000		0.0000	0.0000	1,159.0499	3,091.6479	4,250.6978	119.3549	2.8749	8,091.2967
<b>Total</b>	<b>145.5952</b>	<b>116.4546</b>	<b>382.2068</b>	<b>1.3013</b>	<b>130.7268</b>	<b>7.1234</b>	<b>137.8502</b>	<b>34.9846</b>	<b>7.0701</b>	<b>42.0547</b>	<b>4,070.9243</b>	<b>151,567.7417</b>	<b>155,638.6660</b>	<b>270.6868</b>	<b>3.7765</b>	<b>163,531.2342</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	22.7360	98.1926	262.0320	1.1296	130.7268	0.7570	131.4837	34.9846	0.7037	35.6883	0.0000	103,944.4453	103,944.4453	2.9882	0.0000	104,019.1506
Unmitigated	22.7360	98.1926	262.0320	1.1296	130.7268	0.7570	131.4837	34.9846	0.7037	35.6883	0.0000	103,944.4453	103,944.4453	2.9882	0.0000	104,019.1506

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	67,909.80	65,254.68	59842.32	153,307,113	153,307,113
Free-Standing Discount Store	1,391.50	1,727.71	1370.11	2,239,845	2,239,845
General Light Industry	959.56	181.72	93.62	2,115,870	2,115,870
General Office Building	64,805.44	14,453.43	6169.15	117,661,116	117,661,116
Motel	2,252.00	2,252.00	2252.00	4,273,775	4,273,775
Place of Worship	61.00	90.00	185.00	155,000	155,000

Research & Development	31,099.09	7,285.85	4256.47	59,805,432	59,805,432
Single Family Housing	9.52	9.91	8.62	21,819	21,819
Strip Mall	8,550.66	8,110.78	3941.56	12,057,496	12,057,496
<b>Total</b>	<b>177,038.58</b>	<b>99,366.09</b>	<b>78,118.85</b>	<b>351,637,465</b>	<b>351,637,465</b>

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Motel	9.50	7.30	7.30	19.00	62.00	19.00	58	38	4
Place of Worship	9.50	7.30	7.30	0.00	95.00	5.00	64	25	11
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Research & Development	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Place of Worship	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
General Light Industry	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Motel	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Apartments Mid Rise	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Single Family Housing	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Free-Standing Discount Store	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651
Strip Mall	0.621541	0.034056	0.180136	0.101248	0.011859	0.005060	0.013110	0.022881	0.002221	0.001470	0.005122	0.000646	0.000651

### 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	25,514.4064	25,514.4064	2.5529	0.5282	25,735.6240
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	25,514.4064	25,514.4064	2.5529	0.5282	25,735.6240
NaturalGas Mitigated	1.8897	16.8469	11.9919	0.1031		1.3056	1.3056		1.3056	1.3056	0.0000	18,701.9220	18,701.9220	0.3585	0.3429	18,813.0581
NaturalGas Unmitigated	1.8897	16.8469	11.9919	0.1031		1.3056	1.3056		1.3056	1.3056	0.0000	18,701.9220	18,701.9220	0.3585	0.3429	18,813.0581

## 5.2 Energy by Land Use - NaturalGas

### Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.13037e+008	0.6095	5.2086	2.2164	0.0333		0.4211	0.4211		0.4211	0.4211	0.0000	6,032.1031	6,032.1031	0.1156	0.1106	6,067.9489
Free-Standing Discount Store	57853	3.1000e-004	2.8400e-003	2.3800e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	3.0873	3.0873	6.0000e-005	6.0000e-005	3.1056
General Light Industry	3.64553e+006	0.0197	0.1787	0.1501	1.0700e-003		0.0136	0.0136		0.0136	0.0136	0.0000	194.5393	194.5393	3.7300e-003	3.5700e-003	195.6953
General Office Building	9.665e+007	0.5212	4.7377	3.9797	0.0284		0.3601	0.3601		0.3601	0.3601	0.0000	5,157.6104	5,157.6104	0.0989	0.0946	5,188.2595
Motel	3.48994e+007	0.1882	1.7108	1.4370	0.0103		0.1300	0.1300		0.1300	0.1300	0.0000	1,862.3649	1,862.3649	0.0357	0.0341	1,873.4320
Place of Worship	133738	7.2000e-004	6.5600e-003	5.5100e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1367	7.1367	1.4000e-004	1.3000e-004	7.1792
Research & Development	1.01542e+008	0.5475	4.9775	4.1811	0.0299		0.3783	0.3783		0.3783	0.3783	0.0000	5,418.6584	5,418.6584	0.1039	0.0993	5,450.8588

Single Family Housing	35952.6	1.9000e-004	1.6600e-003	7.0000e-004	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9186	1.9186	4.0000e-005	4.0000e-005	1.9300
Strip Mall	459176	2.4800e-003	0.0225	0.0189	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5034	24.5034	4.7000e-004	4.5000e-004	24.6490
<b>Total</b>		<b>1.8897</b>	<b>16.8469</b>	<b>11.9919</b>	<b>0.1031</b>		<b>1.3056</b>	<b>1.3056</b>		<b>1.3056</b>	<b>1.3056</b>	<b>0.0000</b>	<b>18,701.9220</b>	<b>18,701.9220</b>	<b>0.3585</b>	<b>0.3429</b>	<b>18,813.0581</b>

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.13037e+008	0.6095	5.2086	2.2164	0.0333		0.4211	0.4211		0.4211	0.4211	0.0000	6,032.1031	6,032.1031	0.1156	0.1106	6,067.9489
Free-Standing Discount Store	57853	3.1000e-004	2.8400e-003	2.3800e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	3.0873	3.0873	6.0000e-005	6.0000e-005	3.1056
General Light Industry	3.64553e+006	0.0197	0.1787	0.1501	1.0700e-003		0.0136	0.0136		0.0136	0.0136	0.0000	194.5393	194.5393	3.7300e-003	3.5700e-003	195.6953
General Office Building	9.665e+007	0.5212	4.7377	3.9797	0.0284		0.3601	0.3601		0.3601	0.3601	0.0000	5,157.6104	5,157.6104	0.0989	0.0946	5,188.2595
Motel	3.48994e+007	0.1882	1.7108	1.4370	0.0103		0.1300	0.1300		0.1300	0.1300	0.0000	1,862.3649	1,862.3649	0.0357	0.0341	1,873.4320
Place of Worship	133738	7.2000e-004	6.5600e-003	5.5100e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1367	7.1367	1.4000e-004	1.3000e-004	7.1792
Research & Development	1.01542e+008	0.5475	4.9775	4.1811	0.0299		0.3783	0.3783		0.3783	0.3783	0.0000	5,418.6584	5,418.6584	0.1039	0.0993	5,450.8588
Single Family Housing	35952.6	1.9000e-004	1.6600e-003	7.0000e-004	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9186	1.9186	4.0000e-005	4.0000e-005	1.9300
Strip Mall	459176	2.4800e-003	0.0225	0.0189	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003	0.0000	24.5034	24.5034	4.7000e-004	4.5000e-004	24.6490
<b>Total</b>		<b>1.8897</b>	<b>16.8469</b>	<b>11.9919</b>	<b>0.1031</b>		<b>1.3056</b>	<b>1.3056</b>		<b>1.3056</b>	<b>1.3056</b>	<b>0.0000</b>	<b>18,701.9220</b>	<b>18,701.9220</b>	<b>0.3585</b>	<b>0.3429</b>	<b>18,813.0581</b>

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	4.50448e+007	5,922.0078	0.5925	0.1226	5,973.3533
Free-Standing Discount Store	266173	34.9935	3.5000e-003	7.2000e-004	35.2969
General Light Industry	1.15919e+006	152.3978	0.0153	3.1500e-003	153.7191
General Office Building	1.07049e+008	14,073.6986	1.4082	0.2913	14,195.7218
Motel	6.10014e+006	801.9809	0.0802	0.0166	808.9343
Place of Worship	42525.3	5.5908	5.6000e-004	1.2000e-004	5.6392
Research & Development	3.22878e+007	4,244.8576	0.4247	0.0879	4,281.6618
Single Family Housing	8658.17	1.1383	1.1000e-004	2.0000e-005	1.1482
Strip Mall	2.11259e+006	277.7411	0.0278	5.7500e-003	280.1492
<b>Total</b>		<b>25,514.4064</b>	<b>2.5529</b>	<b>0.5282</b>	<b>25,735.6240</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	4.50448e+007	5,922.0078	0.5925	0.1226	5,973.3533
Free-Standing Discount Store	266173	34.9935	3.5000e-003	7.2000e-004	35.2969
General Light Industry	1.15919e+006	152.3978	0.0153	3.1500e-003	153.7191
General Office Building	1.07049e+008	14,073.6986	1.4082	0.2913	14,195.7218



Motel	6.10014e+006	801.9809	0.0802	0.0166	808.9343
Place of Worship	42525.3	5.5908	5.6000e-004	1.2000e-004	5.6392
Research & Development	3.22878e+007	4,244.8576	0.4247	0.0879	4,281.6618
Single Family Housing	8658.17	1.1383	1.1000e-004	2.0000e-005	1.1482
Strip Mall	2.11259e+006	277.7411	0.0278	5.7500e-003	280.1492
<b>Total</b>		<b>25,514.4064</b>	<b>2.5529</b>	<b>0.5282</b>	<b>25,735.6240</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	120.9695	1.4152	108.1829	0.0686		5.0608	5.0608		5.0608	5.0608	465.6892	315.3202	781.0094	0.8670	0.0305	811.7844
Unmitigated	120.9695	1.4152	108.1829	0.0686		5.0608	5.0608		5.0608	5.0608	465.6892	315.3202	781.0094	0.8670	0.0305	811.7844

### 6.2 Area by SubCategory

#### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
--	-----	-----	----	-----	---------------	--------------	------------	----------------	---------------	-------------	----------	-----------	-----------	-----	-----	------

SubCategory	tons/yr								MT/yr							
Architectural Coating	12.8496					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	82.2806					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	23.5682	0.5424	32.4540	0.0646		4.6399	4.6399		4.6399	4.6399	465.6892	191.2600	656.9492	0.7485	0.0305	684.7617
Landscaping	2.2711	0.8728	75.7289	4.0100e-003		0.4209	0.4209		0.4209	0.4209	0.0000	124.0602	124.0602	0.1185	0.0000	127.0228
<b>Total</b>	<b>120.9695</b>	<b>1.4152</b>	<b>108.1829</b>	<b>0.0686</b>		<b>5.0608</b>	<b>5.0608</b>		<b>5.0608</b>	<b>5.0608</b>	<b>465.6892</b>	<b>315.3202</b>	<b>781.0094</b>	<b>0.8670</b>	<b>0.0305</b>	<b>811.7844</b>

### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr								MT/yr							
Architectural Coating	12.8496						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	82.2806						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	23.5682	0.5424	32.4540	0.0646			4.6399	4.6399		4.6399	465.6892	191.2600	656.9492	0.7485	0.0305	684.7617
Landscaping	2.2711	0.8728	75.7289	4.0100e-003			0.4209	0.4209		0.4209	0.0000	124.0602	124.0602	0.1185	0.0000	127.0228
<b>Total</b>	<b>120.9695</b>	<b>1.4152</b>	<b>108.1829</b>	<b>0.0686</b>			<b>5.0608</b>	<b>5.0608</b>		<b>5.0608</b>	<b>465.6892</b>	<b>315.3202</b>	<b>781.0094</b>	<b>0.8670</b>	<b>0.0305</b>	<b>811.7844</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4,250.6978	119.3549	2.8749	8,091.2967
Unmitigated	4,250.6978	119.3549	2.8749	8,091.2967

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	665.353 / 419.462	877.4165	21.7472	0.5257	1,577.7606
Free-Standing Discount Store	1.8007 / 1.10366	2.3601	0.0589	1.4200e-003	4.2554
General Light Industry	31.8362 / 0	32.7478	1.0397	0.0250	66.1782
General Office Building	1044.25 / 640.026	1,368.6573	34.1308	0.8249	2,467.7553
Motel	10.1467 / 1.12741	10.9560	0.3314	7.9700e-003	21.6153
Place of Worship	0.158025 / 0.247167	0.2763	5.1700e-003	1.3000e-004	0.4432
Research & Development	1885.48 / 0	1,939.4675	61.5726	1.4785	3,919.3625
Single Family Housing	0.065154 / 0.0410754	0.0859	2.1300e-003	5.0000e-005	0.1545
Strip Mall	14.2908 / 8.75888	18.7303	0.4671	0.0113	33.7717
<b>Total</b>		<b>4,250.6977</b>	<b>119.3549</b>	<b>2.8749</b>	<b>8,091.2967</b>

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	665.353 / 419.462	877.4165	21.7472	0.5257	1,577.7606
Free-Standing Discount Store	1.8007 / 1.10366	2.3601	0.0589	1.4200e-003	4.2554
General Light Industry	31.8362 / 0	32.7478	1.0397	0.0250	66.1782
General Office Building	1044.25 / 640.026	1,368.6573	34.1308	0.8249	2,467.7553
Motel	10.1467 / 1.12741	10.9560	0.3314	7.9700e-003	21.6153
Place of Worship	0.158025 / 0.247167	0.2763	5.1700e-003	1.3000e-004	0.4432
Research & Development	1885.48 / 0	1,939.4675	61.5726	1.4785	3,919.3625
Single Family Housing	0.065154 / 0.0410754	0.0859	2.1300e-003	5.0000e-005	0.1545
Strip Mall	14.2908 / 8.75888	18.7303	0.4671	0.0113	33.7717
<b>Total</b>		<b>4,250.6977</b>	<b>119.3549</b>	<b>2.8749</b>	<b>8,091.2967</b>

**8.0 Waste Detail**

**8.1 Mitigation Measures Waste**

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			

Mitigated	2,446.1852	144.5654	0.0000	6,060.3204
Unmitigated	2,446.1852	144.5654	0.0000	6,060.3204

## 8.2 Waste by Land Use

### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	4697.52	953.5541	56.3534	0.0000	2,362.3899
Free-Standing Discount Store	104.55	21.2227	1.2542	0.0000	52.5784
General Light Industry	170.71	34.6526	2.0479	0.0000	85.8503
General Office Building	5464.1	1,109.1629	65.5497	0.0000	2,747.9042
Motel	219	44.4550	2.6272	0.0000	110.1354
Place of Worship	900	182.6919	10.7968	0.0000	452.6114
Research & Development	291.41	59.1536	3.4959	0.0000	146.5505
Single Family Housing	0.84	0.1705	0.0101	0.0000	0.4224
Strip Mall	202.58	41.1219	2.4302	0.0000	101.8778
<b>Total</b>		<b>2,446.1852</b>	<b>144.5654</b>	<b>0.0000</b>	<b>6,060.3204</b>

### Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	4697.52	953.5541	56.3534	0.0000	2,362.3899
Free-Standing Discount Store	104.55	21.2227	1.2542	0.0000	52.5784
General Light Industry	170.71	34.6526	2.0479	0.0000	85.8503
General Office Building	5464.1	1,109.1629	65.5497	0.0000	2,747.9042
Motel	219	44.4550	2.6272	0.0000	110.1354
Place of Worship	900	182.6919	10.7968	0.0000	452.6114
Research & Development	291.41	59.1536	3.4959	0.0000	146.5505
Single Family Housing	0.84	0.1705	0.0101	0.0000	0.4224
Strip Mall	202.58	41.1219	2.4302	0.0000	101.8778
<b>Total</b>		<b>2,446.1852</b>	<b>144.5654</b>	<b>0.0000</b>	<b>6,060.3204</b>

## 9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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**11.0 Vegetation**

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**Attachment 2: Mobile Emissions Calculations from NBPP Operation**



**North Bayshore Precise Plan AQ & GHG Emissions Analysis**  
**Mobile Emissions**

	<u>Total Tons Per Year</u>						<u>CO2/Capita</u>
	<u>Service Population</u>	<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>	
<b>Existing 2015</b>	25,605	37	237	57	12	151,247	5.91
<b>North Bayshore Precise Plan 2030</b>	38,649	23	190	87	15	205,034	5.31
<b>Proposed North Bayshore Precise Plan 2030 (smaller unit residential)</b>	56,910	34	354	80	15	250,537	4.40

# North Bayshore Precise Plan AQ & GHG Emissions Analysis

## Mobile Emissions

Land Use	Size <sup>1</sup>	Units	Service Population <sup>2</sup>	Units	Trip Rate/unit	VMT <sup>3</sup>
<b>Existing 2015</b>						
Single Family Dwelling Units		1 dwellings		2 Residents		
Multi-Family Dwelling Units		362 dwellings		760 Residents		
Office	412910 square feet		1027 Employees			
Research & Development	6374650 square feet		22194 Employees			
Industrial	249521 square feet		299 Employees			
Retail and Restaurant	68954 square feet		227 Employees			
Service Commercial	90732 square feet		272 Employees			
Motel Rooms	0 Rooms		0 Employees			
Church Building	1 Building		10 Employees			
Institutional/Recreation Trips	8135 Trips		814 Employees			
<b>Total</b>			25,605		73,450 trips	501,530 shared 1,001,640 total miles
<b>North Bayshore Precise Plan 2030</b>						
Single Family Dwelling Units		1 dwellings		2 Residents		
Multi-Family Dwelling Units		362 dwellings		760 Residents		
Office	4844563 square feet		19378 Employees			
Research & Development	4724329 square feet		16535 Employees			
Industrial	221897 square feet		266 Employees			
Retail and Restaurant	132481 square feet		371 Employees			
Service Commercial	39932 square feet		120 Employees			
Motel Rooms	400 Rooms		160 Employees			
Church Building	1 Building		10 Employees			
Institutional/Recreation Trips	10469 Trips		1047 Employees			
<b>Total</b>			38,649		92,210 trips	605,210 shared 1,208,320 total miles
<b>Proposed North Bayshore Precise Plan 2030 (smaller unit residential)</b>						
Single Family Dwelling Units		1 dwellings		2 Residents		
Multi-Family Dwelling Units		10212 dwellings		17998 Residents		
Office	5875378 square feet		23502 Employees			
Research & Development	3834661 square feet		13421 Employees			
Industrial	137671 square feet		165 Employees			
Retail and Restaurant	192931 square feet		532 Employees			
Service Commercial	24308 square feet		73 Employees			
Motel Rooms	400 Rooms		160 Employees			
Church Building	1 Building		10 Employees			
Institutional/Recreation Trips	10469 Trips		1047 Employees			
<b>Total</b>			56,910		132,820 or.. 119,940	812,480 shared 1,617,580 total miles

1 Based on Occupied Building Area (Table 3)

2 Based on estimated number of employees and residents (Table 5)

3 Based on shared and then total VMT

**North Bayshore Precise Plan AQ & GHG Emissions Analysis**  
**Mobile Emissions**

Speed Bin	Existing 2015											North Bayshore Precise Plan 2030											Proposed Northbay Shore Precise Plan (Smaller Unit Residential)													
	VMT	ROG	NOx	PM10	PM2.5	CO2	Trips	ROG	NOx	PM10	PM2.5	CO2	VMT	ROG	NOx	PM10	PM2.5	CO2	Trips	ROG	NOx	PM10	PM2.5	CO2	VMT	ROG	NOx	PM10	PM2.5	CO2	Trips	ROG	NOx	PM10	PM2.5	CO2
<b>Sum/Total:</b>	1,001,640	217	1,637	408	87	1,065,860	73450	49.4	56.3	0.44	0.4	12874.6	1,617,580	155	1,297	623	109	1,457,047	92210	12.6	70.7	0.38	0.35	16163	1,655,690	224	2,395	556	101	1,730,844	119940	16.3	70.7	0.38	0.35	16163
5	55,370	75	351	30	11	185,925							94,040	49	391	41	9	246,648							310,090	161	1,291	134	29	813,302						
10	26,400	46	306	18	8	97,408							49,400	28	382	21	5	161,277							189,230	106	1,463	82	18	617,781						
15	29,430	21	152	15	5	64,284							103,760	28	269	44	9	189,237							155,450	43	403	66	13	283,509						
20	66,210	31	342	33	11	119,477							189,630	28	319	80	16	264,504							190,250	28	320	80	16	265,369						
25	185,630	38	261	78	15	217,770							469,810	37	195	191	32	396,298							276,930	22	115	113	19	233,598						
30	245,080	33	131	100	17	218,980							378,250	20	53	153	25	224,779							323,960	17	46	131	22	192,516						
35	128,820	18	162	54	10	122,184							167,050	9	48	68	11	117,503							77,870	4	22	31	5	54,774						
40	87,400	10	98	36	7	75,990							40,980	2	9	17	3	26,418							40,260	2	9	16	3	25,954						
45	63,650	6	52	26	5	49,916							26,990	1	4	11	2	15,127							30,590	1	5	12	2	17,144						
50	31,710	4	56	13	3	30,203							19,740	1	5	8	1	14,761							23,890	1	6	10	2	17,864						
55	47,620	5	58	20	4	41,482							41,730	1	7	17	3	27,226							17,580	1	3	7	1	11,470						
60	26,030	3	14	11	2	20,865							29,090	1	3	12	2	15,748							13,840	1	1	6	1	7,492						
65	8,290	1	4	3	1	7,302							7,110	0	1	3	0	4,171							5,750	0	1	2	0	3,373						
70	0	0	0	0	0	0							0	0	0	0	0	0							0	0	0	0	0	0						

**North Bayshore Precise Plan AQ & GHG Emissions Analysis**  
**Mobile Emissions**

	Annual VMT	Trips			CalEEMod VMT Weekday
		Weekday	Sat	Sun	
Existing 2015	129,803,731	68,719	25217	16516	310,611
	% of weekday	62%	23%	15%	
North Bayshore Precise Plan 2030	195,952,625	106,183	34259	20006	498,768
	% of weekday	66%	21%	12%	
Proposed North Bayshore Precise Plan 2030 (smaller unit residential)	351,637,465	177,039	99366	78119	675,375
	% of weekday	50%	28%	22%	

## North Bayshore Precise Plan AQ & GHG Emissions Analysis

### Mobile Emissions

#### 2015 Emission Rates by VMT (g/mi)

Speed	Running Exhaust						Tire and Brake Wear		Entrained Roadway Dust		
	ROG_RUN	TOG_RUN	CO_RUNEX	NOx_RUNE	CO2_RUNE	PM10_RU	PM2_5_RU	PM10_PM	PM2_5_P	PM10	PM2.5
	EX	EX		X	X	NEX	NEX	TW+BW	MTW+BW		
5	0.615373			2.877642	1524.469	0.067464	0.064219	0.049725	0.019774	0.132471	0.009088
10	0.790485			5.254058	1675.122	0.120103	0.114761	0.049725	0.019774	0.132471	0.009088
15	0.322469			2.35229	991.6734	0.049614	0.047344	0.049725	0.019774	0.132471	0.009088
20	0.215225			2.34557	819.2498	0.047278	0.045133	0.049725	0.019774	0.132471	0.009088
25	0.093546			0.6385	532.6048	0.009041	0.008564	0.049725	0.019774	0.132471	0.009088
30	0.061034			0.242897	405.6512	0.003202	0.00299	0.049725	0.019774	0.132471	0.009088
35	0.063221			0.571209	430.614	0.007192	0.006824	0.049725	0.019774	0.132471	0.009088
40	0.054206			0.509579	394.7331	0.006745	0.006403	0.049725	0.019774	0.132471	0.009088
45	0.045825			0.370137	356.0352	0.004519	0.004276	0.049725	0.019774	0.132471	0.009088
50	0.053754			0.799623	432.4191	0.010356	0.009866	0.049725	0.019774	0.132471	0.009088
55	0.049065			0.555046	395.4788	0.008496	0.008084	0.049725	0.019774	0.132471	0.009088
60	0.04603			0.252776	363.9091	0.004088	0.003861	0.049725	0.019774	0.132471	0.009088
65	0.050562			0.231068	399.8831	0.003098	0.002907	0.049725	0.019774	0.132471	0.009088
70											

#### 2015 Emission Rates by Trip (g/trip)

Trips	ROG_STR	NOx_STR	CO2_STR	PM10_ST	PM2_5_S
	EX	EX	EX	REX	TREX
8144196	0.305214	0.347891	79.57909	0.002694	0.002485

## North Bayshore Precise Plan AQ & GHG Emissions Analysis

### Mobile Emissions

#### 2030 Emission Rates by VMT (g/mi)

Speed	Running Exhaust						Tire and Brake Wear		Entrained Roadway Dust		
	ROG_RUN	TOG_RUN	CO_RUNEX	NOx_RUNE	CO2_RUNE	PM10_RU	PM2_5_RU	PM10_PM	PM2_5_P	PM10	PM2.5
	EX	EX		X	X	NEX	NEX	TW+BW	MTW+BW		
5	0.235899			1.889515	1190.749	0.014707	0.013818	0.049322	0.019581	0.132471	0.009088
10	0.253939			3.510944	1482.178	0.015587	0.014814	0.049322	0.019581	0.132471	0.009088
15	0.124434			1.178437	828.0038	0.009842	0.009326	0.049322	0.019581	0.132471	0.009088
20	0.066755			0.764808	633.2579	0.009325	0.008845	0.049322	0.019581	0.132471	0.009088
25	0.035323			0.188027	382.9619	0.002786	0.002599	0.049322	0.019581	0.132471	0.009088
30	0.023466			0.064182	269.7937	0.001676	0.001547	0.049322	0.019581	0.132471	0.009088
35	0.023227			0.129995	319.3444	0.00171	0.001593	0.049322	0.019581	0.132471	0.009088
40	0.019226			0.100472	292.6724	0.001448	0.001347	0.049322	0.019581	0.132471	0.009088
45	0.016633			0.071624	254.4438	0.001231	0.001141	0.049322	0.019581	0.132471	0.009088
50	0.017412			0.118837	339.4845	0.001675	0.001571	0.049322	0.019581	0.132471	0.009088
55	0.016176			0.080717	296.1993	0.00137	0.001277	0.049322	0.019581	0.132471	0.009088
60	0.01649			0.049127	245.77	0.00115	0.001062	0.049322	0.019581	0.132471	0.009088
65	0.018747			0.049042	266.3472	0.001274	0.001174	0.049322	0.019581	0.132471	0.009088
70											

#### 2030 Emission Rates by Trip (g/trip)

Trips	ROG_STR	NOx_STR	CO2_STR	PM10_ST	PM2_5_S
	EX	EX	EX	REX	TREX
9972519	0.061806	0.347891	79.57909	0.001864	0.001715











EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Santa Clara

Calendar Year: 2030

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, g/mile for RUXEM, PMWB and PMTWT

Table with 14 columns: Region, CalYr, VehClass, MdYr, Speed, Fuel, VMT, ROG\_RUXEM, TOG\_RUNI CO\_RUNED NOx\_RUXEM, CO2\_RUXEM, PM10\_RUXEM, PM2\_5\_RUXEM. The table lists various vehicle classes and their corresponding emission rates for the year 2030 in Santa Clara.







PM2\_5\_PMSW  
0.02646 379.2369  
0.026153 40332.46  
0.01575 486410.4  
0.01575 6466.386  
0.01575 67804.68  
0.01575 30689.58  
0.01575 16.54714  
0.01575 14.98413  
0.01575 162141.6  
0.01575 355.8188  
0.03276 8311.795  
0.03276 13002.11  
0.03822 3023.63  
0.03822 7501.213  
0.00504 1572.362  
0.01575 88968.11  
0.01575 2366.037  
0.05586 1515.568  
0.05586 438.2942  
0.05586 5292.279  
0.05586 33925.45  
0.05586 2945.281  
0.05586 3697.531  
0.3192 4345.3  
0.3192 6222.283  
0.05586 1890.92  
0.36078 15486.24

# North Bayshore Precise Plan AQ & GHG Emissions Analysis

## Mobile Emissions

### Santa Clara County Entrained Roadway Dust Calculations

#### PM10

<u>Silt Loading in g/m<sup>2</sup></u>	Freeway	Major	Collector	Local
	0.02	0.032	0.032	0.32

Calculated silt loading factor 0.045
---

<u>Fraction of travel</u>	million VMT per y	Freeway	Major	Collector	Local
Santa Clara County BA	15,374	0.434	0.449	0.054	0.064

<u>Total PM10 emissions</u>		tons per year			
Santa Clara County BA	2,243	487.36	773.45	92.29	889.86

Rate	0.14589307
	0.00029179 lbs/mi
	<b>0.1324709 g/mi</b>

[http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9\\_2014.pdf](http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2014.pdf)



# North Bayshore Precise Plan AQ & GHG Emissions Analysis

## Mobile Emissions

### Santa Clara County Entrained Roadway Dust Calculations

#### PM2.5

<u>Total PM10 emissions</u>		tons per year			
Santa Clara County BA	2,243	487.36	773.45	92.29	889.86

PM2.5 Emissions -	ARB Multiplier =	0.0686			
	154	33.4329	53.05867	6.331094	61.0444

million VMT per year  
15,374

Rate	0.01000826
	2.0017E-05 lbs/mi
	<b>0.0091 g/mi</b>

[http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9\\_2014.pdf](http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2014.pdf)

**Attachment 3: US Highway 101 Emissions and Risk Calculations**

Highway 101 Emission Calculations and Roadway Modeling Parameters

North Bayshore Precise Plan, Redwood City, CA

Hwy-101

DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions

Year = 2030

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	Diesel ADT	Average Speed (mph)
NB 101	Northbound 101	NW	4	14056	68	20.6	3.4	4,008	variable
SB 101	Southbound 101	SE	4	14092	68	20.6	3.4	4,008	variable

2030 Hourly Diesel Traffic Volumes Per Direction and DPM Emissions - NB 101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	2.77%	111	0.0040	9	6.39%	256	0.0055	17	5.81%	233	0.0052
2	1.82%	73	0.0046	10	7.09%	284	0.0032	18	4.12%	165	0.0054
3	1.97%	79	0.0049	11	6.35%	254	0.0031	19	3.42%	137	0.0027
4	2.27%	91	0.0037	12	6.78%	272	0.0032	20	2.48%	100	0.0021
5	1.52%	61	0.0041	13	6.27%	251	0.0031	21	4.04%	162	0.0028
6	2.31%	93	0.0036	14	6.19%	248	0.0031	22	4.87%	195	0.0029
7	6.13%	245	0.0029	15	5.45%	219	0.0029	23	1.79%	72	0.0040
8	4.99%	200	0.0049	16	4.59%	184	0.0029	24	0.58%	23	0.0042
Total										4,008	

2030 Hourly Diesel Traffic Volumes Per Direction and DPM Emissions - SB 101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	2.77%	111	0.0040	9	6.39%	256	0.0039	17	5.81%	233	0.0038
2	1.82%	73	0.0046	10	7.09%	284	0.0032	18	4.12%	165	0.0034
3	1.97%	79	0.0049	11	6.35%	254	0.0031	19	3.42%	137	0.0027
4	2.27%	91	0.0037	12	6.78%	272	0.0032	20	2.48%	100	0.0021
5	1.52%	61	0.0041	13	6.27%	251	0.0031	21	4.04%	162	0.0028
6	2.31%	93	0.0036	14	6.19%	248	0.0031	22	4.87%	195	0.0029
7	6.13%	245	0.0029	15	5.45%	219	0.0029	23	1.79%	72	0.0040
8	4.99%	200	0.0036	16	4.59%	184	0.0029	24	0.58%	23	0.0042
Total										4,008	

North Bayshore Precise Plan, Redwood City, CA

Hwy-101

PM2.5 & TOG Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions

Year = 2030

Group Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	ADT	Average Speed (mph)
NB 101	Northbound 101	NW	4	14056	68	20.6	1.3	130,525	variable
SB 101	Southbound 101	SE	4	14092	68	20.6	1.3	130,525	variable

2030 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - NB 101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.11%	1446	0.0209	9	7.09%	9249	0.0206	17	7.38%	9631	0.0203
2	0.38%	493	0.0219	10	4.31%	5625	0.0203	18	8.25%	10774	0.0201
3	0.32%	412	0.0222	11	4.62%	6024	0.0199	19	5.77%	7530	0.0192
4	0.21%	276	0.0288	12	5.86%	7649	0.0198	20	4.34%	5664	0.0192
5	0.46%	602	0.0214	13	6.17%	8054	0.0196	21	3.28%	4277	0.0195
6	0.85%	1110	0.0222	14	6.04%	7877	0.0197	22	3.31%	4322	0.0197
7	3.79%	4942	0.0200	15	7.06%	9222	0.0195	23	2.47%	3225	0.0195
8	7.87%	10270	0.0201	16	7.20%	9396	0.0193	24	1.88%	2457	0.0192
Total										130,525	

2030 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - SB 101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.11%	1446	0.0209	9	7.09%	9249	0.0196	17	7.38%	9631	0.0193
2	0.38%	493	0.0219	10	4.31%	5625	0.0203	18	8.25%	10774	0.0191
3	0.32%	412	0.0222	11	4.62%	6024	0.0199	19	5.77%	7530	0.0192
4	0.21%	276	0.0288	12	5.86%	7649	0.0198	20	4.34%	5664	0.0192
5	0.46%	602	0.0214	13	6.17%	8054	0.0196	21	3.28%	4277	0.0195
6	0.85%	1110	0.0222	14	6.04%	7877	0.0197	22	3.31%	4322	0.0197
7	3.79%	4942	0.0200	15	7.06%	9222	0.0195	23	2.47%	3225	0.0195
8	7.87%	10270	0.0191	16	7.20%	9396	0.0193	24	1.88%	2457	0.0192
Total										130,525	

North Bayshore Precise Plan, Redwood City, CA

Hwy-101

Entrained PM2.5 Road Dust Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions

Year = 2030

Group Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	ADT	Average Speed (mph)
NB 101	Northbound 101	NW	4	14056	68	20.6	1.3	130,525	variable
SB 101	Southbound 101	SE	4	14092	68	20.6	1.3	130,525	variable

2030 Hourly Traffic Volumes Per Direction and Road Dust PM2.5 Emissions - NB 101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.11%	1446	0.0100	9	7.09%	9249	0.0100	17	7.38%	9631	0.0100
2	0.38%	493	0.0100	10	4.31%	5625	0.0100	18	8.25%	10774	0.0100
3	0.32%	412	0.0100	11	4.62%	6024	0.0100	19	5.77%	7530	0.0100
4	0.21%	276	0.0100	12	5.86%	7649	0.0100	20	4.34%	5664	0.0100
5	0.46%	602	0.0100	13	6.17%	8054	0.0100	21	3.28%	4277	0.0100
6	0.85%	1110	0.0100	14	6.04%	7877	0.0100	22	3.31%	4322	0.0100
7	3.79%	4942	0.0100	15	7.06%	9222	0.0100	23	2.47%	3225	0.0100
8	7.87%	10270	0.0100	16	7.20%	9396	0.0100	24	1.88%	2457	0.0100
Total										130,525	

2030 Hourly Traffic Volumes Per Direction and Road Dust PM2.5 Emissions - SB 101

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.11%	1446	0.0100	9	7.09%	9249	0.0100	17	7.38%	9631	0.0100
2	0.38%	493	0.0100	10	4.31%	5625	0.0100	18	8.25%	10774	0.0100
3	0.32%	412	0.0100	11	4.62%	6024	0.0100	19	5.77%	7530	0.0100
4	0.21%	276	0.0100	12	5.86%	7649	0.0100	20	4.34%	5664	0.0100
5	0.46%	602	0.0100	13	6.17%	8054	0.0100	21	3.28%	4277	0.0100
6	0.85%	1110	0.0100	14	6.04%	7877	0.0100	22	3.31%	4322	0.0100
7	3.79%	4942	0.0100	15	7.06%	9222	0.0100	23	2.47%	3225	0.0100
8	7.87%	10270	0.0100	16	7.20%	9396	0.0100	24	1.88%	2457	0.0100
Total										130,525	

**North Bayshore Precise Plan, Redwood City, CA**  
**Highway 101 Traffic Data and PM2.5 & TOG Emission Factors - 60 mph Trucks & 65 mph Other Vehicles**

Analysis Year = 2030

Vehicle Type	2015 Caltrans Number Vehicles (veh/day)	2030 Number Vehicles (veh/day)	2030 Percent Diesel	Number Diesel Vehicles (veh/day)	Vehicle Speed (mph)	Emission Factors				
						Diesel Vehicles DPM (g/VMT)	All Vehicles		Gas Vehicles	
							Total PM2.5 (g/VMT)	Exhaust PM2.5 (g/VMT)	Exhaust TOG (g/VMT)	Running TOG (g/VMT)
LDA	155,737	179,098	1.31%	2,350	65	0.0014	0.0189	0.0011	0.0073	0.036
LDT	61,048	70,205	0.19%	135	65	0.0034	0.0189	0.0011	0.0103	0.063
MDT	5,599	6,439	11.30%	728	60	0.0060	0.0219	0.0014	0.0154	0.151
HDT	4,616	5,309	90.47%	4,803	60	0.0036	0.0526	0.0033	0.0236	0.069
Total	227,000	261,050	-	8,016	62.5	-	-	-	-	-
<b>Mix Avg Emission Factor</b>						<b>0.00315</b>	<b>0.01963</b>	<b>0.00117</b>	<b>0.00834</b>	<b>0.04631</b>

Increase From 2015 1.15  
 Vehicles/Direction 130,525  
 Avg Vehicles/Hour/Direction 5,439

4,008  
 167

Traffic Data Year = 2015

Caltrans 2015 Truck AADT Report	Total	Total Truck	Truck by Axle			
			2	3	4	5
101-A Mountain View, Jct Rte 85 South	227,000	10,215	5,599	1,547	360	2,710
0			54.81%	15.14%	3.52%	26.53%
Percent of Total Vehicles		4.50%	2.47%	0.68%	0.16%	1.19%

Traffic Increase per Year (%) = 1.00%

**North Bayshore Precise Plan, Redwood City, CA**  
**Hwy-101 Traffic Data and PM2.5 & TOG Emission Factors - 45 mph**

Analysis Year = 2030

Vehicle Type	2015 Caltrans Number Vehicles (veh/day)	2030 Number Vehicles (veh/day)	2030 Percent Diesel	Number Diesel Vehicles (veh/day)	Vehicle Speed (mph)	Emission Factors				
						Diesel Vehicles DPM (g/VMT)	All Vehicles		Gas Vehicles	
							Total PM2.5 (g/VMT)	Exhaust PM2.5 (g/VMT)	Exhaust TOG (g/VMT)	Running TOG (g/VMT)
LDA	155,737	179,098	1.31%	2,350	45	0.0016	0.0187	0.0009	0.0061	0.036
LDT	61,048	70,205	0.19%	135	45	0.0038	0.0187	0.0010	0.0088	0.063
MDT	5,599	6,439	11.30%	728	45	0.0056	0.0217	0.0012	0.0149	0.151
HDT	4,616	5,309	90.47%	4,803	45	0.0047	0.0537	0.0044	0.0417	0.069
Total	227,000	261,050	-	8,016	45	-	-	-	-	-
<b>Mix Avg Emission Factor</b>						<b>0.00386</b>	<b>0.01948</b>	<b>0.00102</b>	<b>0.00714</b>	<b>0.04631</b>

**North Bayshore Precise Plan, Redwood City, CA**  
**Hwy-101 Traffic Data and PM2.5 & TOG Emission Factors - 25 mph**

Analysis Year = 2030

Vehicle Type	2015 Caltrans Number Vehicles (veh/day)	2030 Number Vehicles (veh/day)	2030 Percent Diesel	Number Diesel Vehicles (veh/day)	Vehicle Speed (mph)	Emission Factors				
						Diesel Vehicles DPM (g/VMT)	All Vehicles		Gas Vehicles	
							Total PM2.5 (g/VMT)	Exhaust PM2.5 (g/VMT)	Exhaust TOG (g/VMT)	Running TOG (g/VMT)
LDA	155,737	179,098	1.31%	2,350	25	0.0023	0.0196	0.0018	0.0121	0.036
LDT	61,048	70,205	0.19%	135	25	0.0056	0.0196	0.0019	0.0172	0.063
MDT	5,599	6,439	11.30%	728	25	0.0129	0.0254	0.0049	0.0286	0.151
HDT	4,616	5,309	90.47%	4,803	25	0.0060	0.0547	0.0054	0.0610	0.069
Total	227,000	261,050	-	8,016	25	-	-	-	-	-
<b>Mix Avg Emission Factor</b>						<b>0.00553</b>	<b>0.02045</b>	<b>0.00199</b>	<b>0.01394</b>	<b>0.04631</b>

**North Bayshore Precise Plan, Redwood City, CA  
Hwy-101 Traffic Data and Entrained PM2.5 Road Dust Emission Factors**

$$E_{2.5} = [k(sL)^{0.91} \times (W)^{1.02} \times (1-P/4N) \times 453.59]$$

where:

$E_{2.5}$  = PM<sub>2.5</sub> emission factor (g/VMT)

k = particle size multiplier (g/VMT) [ $k_{PM2.5} = k_{PM10} \times (0.0686/0.4572) = 1.0 \times 0.15 = 0.15$  g/VMT]

sL = roadway specific silt loading (g/m<sup>2</sup>)

W = average weight of vehicles on road (Bay Area default = 2.4 tons)<sup>a</sup>

P = number of days with at least 0.01 inch of precipitation in the annual averaging period

N = number of days in the annual averaging period (default = 365)

Notes: <sup>a</sup> CARB 2014, Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust (Revised and updated, April 2014)

Road Type	Silt Loading (g/m <sup>2</sup> )	Average Weight (tons)	County	No. Days ppt > 0.01"	PM <sub>2.5</sub> Emission Factor (g/VMT)
Freeway	0.02	2.4	Santa Clara	64	0.00996

**SFBAAB<sup>a</sup>**

Road Type	Silt Loading (g/m <sup>2</sup> )
Collector	0.032
Freeway	0.02
Local	0.32
Major	0.032

**SFBAAB<sup>a</sup>**

County	>0.01 inch precipitation
Alameda	61
Contra Costa	60
Marin	66
Napa	68
San Francisco	67
San Mateo	60
Santa Clara	64
Solano	54
Sonoma	69

## Highway 101 Traffic Cancer Risk and PM2.5 Concentration Calculations

### North Bayshore Precise Plan - Highway 101 DPM, PM2.5 & TOG TACs CAL3QHCR Risk Modeling Parameters and Maximum Concentrations On-Site Residential Receptors (1.5 meter receptor heights)

#### Receptor Information

Number of Receptors = 880  
 Receptor Height = 1.5 meters  
 Receptor distances = Variable

#### Meteorological Conditions

Moffett Field Hourly Data = 1968-1972  
 Land Use Classification = urban  
 Wind speed = variable  
 Wind direction = variable

#### MEI Maximum Concentrations

Meteorological Data Year	Concentration ( $\mu\text{g}/\text{m}^3$ )		
	DPM	Exhaust TOG	Evaporative TOG
1968	0.00345	0.28664	1.43932
1969	0.00312	0.24963	1.25344
1970	0.00252	0.21496	1.07937
1971	0.00287	0.24723	1.24141
1972	0.00332	0.28061	1.40901
<b>Maximum</b>	<b>0.0035</b>	<b>0.2866</b>	<b>1.4393</b>
<b>Average</b>	<b>0.0031</b>	<b>0.2558</b>	<b>1.2845</b>

Meteorological Data Year	PM2.5 Concentrations ( $\mu\text{g}/\text{m}^3$ )		
	Total PM2.5	Road Dust PM2.5	Vehicle PM2.5
1968	0.9170	0.3071	0.60988
1969	0.7983	0.2672	0.53112
1970	0.6878	0.2304	0.45736
1971	0.7912	0.2652	0.52602
1972	0.8977	0.3007	0.59704
<b>Maximum</b>	<b>0.9170</b>	<b>0.3071</b>	<b>0.6099</b>
<b>Average</b>	<b>0.8184</b>	<b>0.2741</b>	<b>0.5443</b>



**North Bayshore Precise Plan, Redwood City, CA - Highway 101 Traffic Maximum Cancer Risks  
On-Site Residential Receptors (1.5 meter receptor heights)  
30-Year Residential Exposure**

**Cancer Risk Calculation Method**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)<sup>-1</sup>  
 ASF = Age sensitivity factor for specified age group  
 ED = Exposure duration (years)  
 AT = Averaging time for lifetime cancer risk (years)  
 FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C<sub>air</sub> x DBR x A x (EF/365) x 10<sup>-6</sup>

Where: C<sub>air</sub> = concentration in air (µg/m<sup>3</sup>)  
 DBR = daily breathing rate (L/kg body weight-day)  
 A = Inhalation absorption factor  
 EF = Exposure frequency (days/year)  
 10<sup>-6</sup> = Conversion factor

**Values**

**Cancer Potency Factors (mg/kg-day)<sup>-1</sup>**

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Age -->	Infant/Child			Adult
	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

\* 95th percentile breathing rates

**Road Traffic Cancer Risk by Year - Maximum Impact Receptor Location**

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information			Cancer Risk (per million)				
				Age Sensitivity Factor	Annual DPM Conc (ug/m3)			DPM	Exhaust TOG	Evaporative TOG	Total
					DPM	TOG	Evaporative				
0	2018	0.25	-0.25 - 0*	10	0.0031	0.2558	1.2845	0.042	0.020	0.006	0.07
1	2018	1	1	10	0.0031	0.2558	1.2845	0.50	0.240	0.071	0.81
2	2019	1	2	10	0.0031	0.2558	1.2845	0.50	0.240	0.071	0.81
3	2020	1	3	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
4	2021	1	4	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
5	2022	1	5	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
6	2023	1	6	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
7	2024	1	7	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
8	2025	1	8	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
9	2026	1	9	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
10	2027	1	10	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
11	2028	1	11	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
12	2029	1	12	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
13	2030	1	13	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
14	2031	1	14	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
15	2032	1	15	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
16	2033	1	16	3	0.0031	0.2558	1.2845	0.08	0.038	0.011	0.13
17	2034	1	17	1	0.0031	0.2558	1.2845	0.01	0.0042	0.001	0.014
18	2035	1	18	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
19	2036	1	19	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
20	2037	1	20	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
21	2038	1	21	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
22	2039	1	22	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
23	2040	1	23	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
24	2041	1	24	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
25	2042	1	25	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
26	2043	1	26	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
27	2044	1	27	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
28	2045	1	28	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
29	2046	1	29	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
30	2047	1	30	1	0.0031	0.2558	1.2845	0.01	0.004	0.001	0.014
<b>Total Increased Cancer Risk</b>			<b>Total</b>					2.27	1.087	0.322	<b>3.7</b>

\* Third trimester of pregnancy

North Bayshore Precise Plan - Highway 101 Traffic Cancer Risks by Receptor

Receptor	UTM-X (m)	UTM-Y (m)	Concentration			Total Cancer Risk (per million)			
			DPM	Exh TOG	Evap TOG	DPM	Exh TOG	Evap TOG	TOTAL
1	579327.31	4143065.25	0.0017	0.1277	0.6411	1.233	0.543	0.161	1.936
2	579336.75	4143092.50	0.00107	0.0802	0.4029	0.795	0.341	0.101	1.237
3	579346.19	4143120.00	0.00081	0.0604	0.3034	0.606	0.257	0.076	0.939
4	579355.62	4143147.50	0.00067	0.0494	0.2479	0.499	0.210	0.062	0.771
5	579376.00	4143008.25	0.00221	0.1769	0.8881	1.646	0.752	0.223	2.621
6	579385.44	4143035.50	0.00142	0.1104	0.5545	1.060	0.469	0.139	1.668
7	579394.88	4143063.00	0.00101	0.0764	0.3837	0.749	0.325	0.096	1.170
8	579404.31	4143090.50	0.00077	0.0579	0.2906	0.573	0.246	0.073	0.892
9	579413.75	4143118.00	0.00063	0.0471	0.2364	0.469	0.200	0.059	0.728
10	579423.19	4143145.25	0.00054	0.0401	0.2015	0.405	0.171	0.050	0.626
11	579424.69	4142951.00	0.00250	0.2035	1.0220	1.861	0.865	0.256	2.982
12	579432.62	4143172.75	0.00048	0.0351	0.1764	0.354	0.149	0.044	0.548
13	579434.12	4142978.50	0.00169	0.1337	0.6713	1.255	0.568	0.168	1.991
14	579443.56	4143006.00	0.00122	0.0950	0.4772	0.911	0.404	0.120	1.435
15	579451.50	4143227.75	0.00039	0.0284	0.1424	0.287	0.121	0.036	0.444
16	579453.00	4143033.50	0.00093	0.0713	0.3578	0.691	0.303	0.090	1.083
17	579462.50	4143061.00	0.00074	0.0559	0.2807	0.548	0.238	0.070	0.856
18	579471.94	4143088.25	0.00061	0.0458	0.2302	0.454	0.195	0.058	0.707
19	579473.44	4142894.00	0.00266	0.2184	1.0967	1.978	0.928	0.275	3.181
20	579481.38	4143115.75	0.00052	0.0389	0.1954	0.387	0.165	0.049	0.601
21	579482.88	4142921.50	0.00185	0.1483	0.7444	1.374	0.630	0.187	2.191
22	579492.31	4142949.00	0.00137	0.1089	0.5466	1.023	0.463	0.137	1.622
23	579500.25	4143170.75	0.00041	0.0303	0.1524	0.305	0.129	0.038	0.472
24	579501.75	4142976.50	0.00107	0.0835	0.4195	0.798	0.355	0.105	1.258
25	579511.19	4143003.75	0.00086	0.0662	0.3322	0.639	0.281	0.083	1.003
26	579519.12	4143225.50	0.00034	0.0252	0.1264	0.255	0.107	0.032	0.393
27	579520.62	4143031.25	0.00070	0.0537	0.2695	0.524	0.228	0.068	0.820
28	579522.12	4142837.00	0.00276	0.2283	1.1466	2.056	0.970	0.287	3.314
29	579530.06	4143058.75	0.00059	0.0447	0.2243	0.441	0.190	0.056	0.687
30	579531.56	4142864.50	0.00195	0.1580	0.7932	1.448	0.671	0.199	2.319
31	579538.00	4143280.50	0.00029	0.0216	0.1084	0.217	0.092	0.027	0.336
32	579541.00	4142892.00	0.00148	0.1183	0.5939	1.100	0.503	0.149	1.752
33	579548.94	4143113.50	0.00044	0.0333	0.1673	0.330	0.142	0.042	0.514
34	579550.44	4142919.50	0.00117	0.0926	0.4648	0.874	0.393	0.117	1.384
35	579559.88	4142946.75	0.00095	0.0745	0.3742	0.710	0.317	0.094	1.121
36	579567.81	4143168.50	0.00036	0.0268	0.1347	0.268	0.114	0.034	0.416
37	579569.31	4142974.25	0.00079	0.0611	0.3068	0.587	0.260	0.077	0.923
38	579570.81	4142780.00	0.00283	0.2352	1.1810	2.109	1.000	0.296	3.405
39	579578.75	4143001.75	0.00067	0.0510	0.2561	0.496	0.217	0.064	0.777
40	579580.25	4142807.50	0.00202	0.1649	0.8280	1.503	0.701	0.208	2.412
41	579586.69	4143223.50	0.00031	0.0227	0.1138	0.228	0.096	0.029	0.353
42	579589.75	4142835.00	0.00155	0.1251	0.6283	1.157	0.532	0.157	1.846
43	579597.62	4143056.50	0.00049	0.0374	0.1877	0.368	0.159	0.047	0.574
44	579599.19	4142862.25	0.00125	0.0994	0.4990	0.930	0.422	0.125	1.478
45	579605.56	4143278.25	0.00027	0.0197	0.0990	0.201	0.084	0.025	0.310
46	579608.62	4142889.75	0.00103	0.0809	0.4064	0.764	0.344	0.102	1.210
47	579616.50	4143111.50	0.00039	0.0292	0.1467	0.290	0.124	0.037	0.451
48	579618.06	4142917.25	0.00086	0.0671	0.3371	0.639	0.285	0.084	1.008
49	579619.56	4142723.00	0.00288	0.2402	1.2060	2.147	1.021	0.302	3.470
50	579624.50	4143333.25	0.00024	0.0175	0.0877	0.179	0.074	0.022	0.275
51	579627.50	4142944.75	0.00073	0.0565	0.2837	0.540	0.240	0.071	0.852
52	579629.00	4142750.50	0.00207	0.1700	0.8536	1.542	0.722	0.214	2.479
53	579635.44	4143166.25	0.00032	0.0241	0.1212	0.241	0.103	0.030	0.374
54	579638.44	4142778.00	0.00161	0.1302	0.6536	1.195	0.553	0.164	1.912
55	579643.38	4143388.00	0.00021	0.0157	0.0788	0.159	0.067	0.020	0.246
56	579646.38	4142999.50	0.00055	0.0417	0.2092	0.406	0.177	0.052	0.636
57	579647.88	4142805.25	0.00130	0.1044	0.5242	0.969	0.444	0.131	1.544
58	579654.31	4143221.25	0.00028	0.0207	0.1039	0.210	0.088	0.026	0.324
59	579657.31	4142832.75	0.00108	0.0860	0.4318	0.805	0.366	0.108	1.279
60	579665.25	4143054.50	0.00043	0.0322	0.1619	0.319	0.137	0.041	0.496
61	579666.75	4142860.25	0.00092	0.0721	0.3621	0.682	0.306	0.091	1.079
62	579668.25	4142666.00	0.00292	0.2441	1.2259	2.175	1.038	0.307	3.520
63	579673.19	4143276.00	0.00025	0.0182	0.0913	0.185	0.077	0.023	0.285
64	579676.19	4142887.75	0.00078	0.0613	0.3077	0.582	0.260	0.077	0.920
65	579677.69	4142693.50	0.00211	0.1739	0.8733	1.572	0.739	0.219	2.530
66	579684.12	4143109.25	0.00035	0.0261	0.1310	0.259	0.111	0.033	0.403
67	579687.12	4142720.75	0.00165	0.1344	0.6750	1.230	0.571	0.169	1.970
68	579692.06	4143331.00	0.00022	0.0162	0.0815	0.165	0.069	0.020	0.255
69	579695.06	4142942.50	0.00059	0.0458	0.2297	0.442	0.194	0.058	0.694























870	582708.69	4141219.50	0.00016	0.0132	0.0664	0.118	0.056	0.017	0.190
871	582709.75	4140855.00	0.00027	0.0228	0.1145	0.201	0.097	0.029	0.327
872	582723.38	4140903.00	0.00024	0.0204	0.1023	0.179	0.087	0.026	0.291
873	582735.88	4141316.00	0.00014	0.0115	0.0575	0.103	0.049	0.014	0.166
874	582736.94	4140951.25	0.00022	0.0184	0.0924	0.162	0.078	0.023	0.264
875	582750.50	4140999.25	0.00020	0.0168	0.0841	0.147	0.071	0.021	0.240
876	582763.44	4141413.25	0.00012	0.0100	0.0504	0.089	0.043	0.013	0.145
877	582777.62	4141095.50	0.00017	0.0142	0.0711	0.125	0.060	0.018	0.203
878	582804.75	4141191.75	0.00015	0.0122	0.0613	0.109	0.052	0.015	0.176
879	582831.88	4141288.00	0.00013	0.0107	0.0535	0.095	0.045	0.013	0.154
880	582859.00	4141384.25	0.00011	0.0094	0.0473	0.083	0.040	0.012	0.135
		Max	0.003056	0.2558	1.2845	<b>2.3</b>	<b>1.1</b>	<b>0.3</b>	<b>3.68</b>









236	580254	4142086.75	585.39	512.15	438.41	496.89	566.35	0.5198	0.24432	1.22682
237	580256.69	4142553.75	95.36	84.78	70.18	74.48	88.2	0.0826	0.03882	0.19494
238	580259.94	4143128	32.88	31.63	26.62	20.62	28.6	0.0281	0.01319	0.06625
239	580262.19	4142113	432.11	378.75	322.63	363.56	415.36	0.3825	0.17977	0.90266
240	580263.5	4142346.5	155.36	137.52	115.05	125.5	145.31	0.1357	0.06380	0.32037
241	580270.38	4142139.25	344.95	302.78	256.89	288.14	329.85	0.3045	0.14313	0.71867
242	580273.06	4142606.25	83.06	73.97	61.14	63.94	76.54	0.0717	0.03371	0.16928
243	580278.56	4142165.5	287.8	253.04	213.92	238.91	274	0.2535	0.11916	0.59834
244	580279.88	4142399	130.1	115.4	96.12	104.12	121.16	0.1134	0.05329	0.26758
245	580286.75	4142191.75	246.88	217.37	183.24	203.78	234.13	0.2171	0.10203	0.51231
246	580287.44	4142942.5	43.55	40.13	33.51	29.6	38.75	0.0371	0.01744	0.08757
247	580289.44	4142658.75	72.88	65.11	53.78	55.21	66.93	0.0628	0.02951	0.14817
248	580294.88	4142218	215.96	190.34	160.09	177.31	204.05	0.1896	0.08909	0.44734
249	580296.25	4142451.5	110.88	98.55	81.78	87.84	102.93	0.0964	0.04531	0.22749
250	580297.69	4143237.75	27.29	26.93	22.62	16.44	23.45	0.0233	0.01097	0.05510
251	580303.06	4142244.25	191.64	169.07	141.9	156.54	180.4	0.1679	0.07892	0.39627
252	580309.94	4142037	584.68	511.57	437.75	496.43	565.47	0.5192	0.24401	1.22526
253	580312.62	4142504	95.89	85.33	70.59	75.1	88.74	0.0831	0.03907	0.19619
254	580318.06	4142063	433.03	379.59	323.21	364.53	416.09	0.3833	0.18015	0.90456
255	580319.44	4142296.5	155.88	137.86	115.24	126.12	145.87	0.1362	0.06401	0.32142
256	580322.69	4142764.25	57.19	51.51	42.65	41.67	52	0.0490	0.02303	0.11565
257	580325.06	4143052.25	35.04	33.12	27.72	22.66	30.74	0.0299	0.01403	0.07046
258	580326.25	4142089.25	345.75	303.51	257.38	289.01	330.5	0.3052	0.14346	0.72034
259	580329	4142556.25	83.9	74.74	61.7	64.89	77.4	0.0725	0.03409	0.17116
260	580334.44	4142115.5	288.65	253.79	214.4	239.83	274.76	0.2543	0.11951	0.60011
261	580335.81	4142349	130.47	115.73	96.33	104.58	121.57	0.1137	0.05346	0.26842
262	580342.62	4142141.75	247.8	218.15	183.72	204.8	235.04	0.2179	0.10241	0.51425
263	580345.31	4142608.75	73.9	65.98	54.39	56.35	67.98	0.0637	0.02995	0.15038
264	580350.81	4142168	216.85	191.07	160.5	178.33	204.97	0.1903	0.08946	0.44921
265	580352.19	4142401.5	111.5	99.08	82.16	88.54	103.55	0.0970	0.04557	0.22884
266	580356.31	4142870	45.81	41.81	34.69	31.93	41.09	0.0391	0.01836	0.09220
267	580359	4142194.25	192.45	169.7	142.24	157.52	181.27	0.1686	0.07926	0.39798
268	580362.75	4143161.75	28.87	28.01	23.43	17.87	25.01	0.0246	0.01158	0.05815
269	580365.81	4141987	585.85	512.66	438.55	497.64	566.51	0.5202	0.24451	1.22777
270	580368.56	4142454	96.6	85.96	71.05	75.92	89.47	0.0838	0.03939	0.19777
271	580374	4142013.25	433.06	379.67	323.12	364.77	416.06	0.3833	0.18017	0.90467
272	580375.38	4142246.5	156.57	138.37	115.5	126.97	146.62	0.1368	0.06430	0.32286
273	580382.19	4142039.25	346.56	304.26	257.87	289.94	331.27	0.3060	0.14381	0.72211
274	580384.88	4142506.25	84.6	75.39	62.16	65.7	78.12	0.0732	0.03440	0.17274
275	580390.38	4142065.5	289.35	254.44	214.82	240.65	275.43	0.2549	0.11982	0.60165
276	580391.31	4142977.25	37.17	34.6	28.8	24.74	32.86	0.0316	0.01487	0.07466
277	580391.75	4142299	131.13	116.22	96.61	105.41	122.29	0.1143	0.05374	0.26982
278	580396.69	4142697	58.7	52.75	43.44	43.38	53.6	0.0504	0.02368	0.11888
279	580398.56	4142091.75	248.43	218.74	184.12	205.52	235.63	0.2185	0.10269	0.51563
280	580401.25	4142558.75	74.65	66.7	54.88	57.24	68.78	0.0645	0.03029	0.15210
281	580406.75	4142118	217.48	191.68	160.92	179.03	205.62	0.1909	0.08974	0.45063
282	580408.06	4142351.5	112.12	99.58	82.48	89.3	104.22	0.0975	0.04584	0.23019
283	580414.94	4142144.25	193.17	170.4	142.72	158.29	182.07	0.1693	0.07959	0.39962
284	580421.75	4141937	586.65	513.4	439.05	498.49	567.2	0.5210	0.24485	1.22946
285	580424.44	4142404	97.27	86.53	71.46	76.71	90.17	0.0844	0.03968	0.19925
286	580427.88	4143086	30.58	29.18	24.3	19.46	26.69	0.0260	0.01224	0.06146
287	580429.44	4142801.75	47.36	43	35.46	33.68	42.77	0.0405	0.01901	0.09547
288	580429.94	4141963.25	433.82	380.37	323.57	365.62	416.72	0.3840	0.18049	0.90629
289	580431.31	4142196.75	157.31	139.03	115.92	127.81	147.44	0.1375	0.06463	0.32450
290	580438.12	4141989.25	347.28	304.93	258.28	290.79	331.91	0.3066	0.14412	0.72367
291	580440.81	4142456.25	85.34	76.04	62.63	66.59	78.9	0.0739	0.03473	0.17440
292	580446.31	4142015.5	290.08	255.09	215.22	241.52	276.11	0.2556	0.12013	0.60323
293	580447.62	4142249	131.96	116.89	97.06	106.33	123.18	0.1151	0.05409	0.27160
294	580454.5	4142041.75	249.17	219.4	184.51	206.42	236.39	0.2192	0.10301	0.51726
295	580457.19	4142508.75	75.43	67.36	55.35	58.16	69.59	0.0652	0.03063	0.15382
296	580462.62	4142907.25	38.8	35.74	29.58	26.46	34.58	0.0330	0.01553	0.07796
297	580462.69	4142068	218.25	192.34	161.32	179.96	206.43	0.1917	0.09008	0.45232
298	580464	4142301.5	112.81	100.11	82.85	90.12	104.97	0.0982	0.04614	0.23169
299	580470.88	4142094.25	193.94	171.05	143.13	159.22	182.87	0.1700	0.07992	0.40130
300	580471.25	4142630.25	59.87	53.77	44.07	44.74	54.84	0.0515	0.02419	0.12144
301	580477.69	4141887	587.46	514.13	439.57	499.34	567.92	0.5217	0.24519	1.23117
302	580480.38	4142354	97.91	87.02	71.8	77.5	90.86	0.0850	0.03996	0.20064
303	580485.88	4141913.25	434.66	381.15	324.14	366.5	417.47	0.3848	0.18085	0.90809
304	580487.19	4142146.75	158.06	139.66	116.34	128.69	148.29	0.1382	0.06496	0.32617
305	580494.06	4141939.5	347.56	305.23	258.42	291.19	332.14	0.3069	0.14425	0.72430
306	580496.25	4143013	32.17	30.26	25.06	21.02	28.27	0.0274	0.01286	0.06456
307	580496.75	4142406.5	85.97	76.54	62.97	67.35	79.57	0.0745	0.03501	0.17577
308	580502.25	4141965.5	290.73	255.73	215.61	242.29	276.74	0.2562	0.12042	0.60468
309	580503.56	4142199	132.7	117.53	97.46	107.13	123.98	0.1158	0.05441	0.27319
310	580504	4142735.25	48.56	43.92	36.02	35.07	44.06	0.0415	0.01952	0.09800
311	580510.44	4141991.75	249.66	219.87	184.73	207.11	236.88	0.2197	0.10324	0.51837
312	580513.12	4142458.75	76.16	67.96	55.78	59.03	70.36	0.0659	0.03095	0.15542
313	580518.56	4142018	218.64	192.7	161.43	180.6	206.83	0.1920	0.09026	0.45321
314	580519.94	4142251.5	113.59	100.79	83.28	90.97	105.8	0.0989	0.04648	0.23337
315	580526.75	4142044.25	194.29	171.34	143.19	159.84	183.27	0.1704	0.08008	0.40211

316	580533.62	4141837	587.89	514.53	439.75	499.89	568.39	0.5221	0.24538	1.23213
317	580536.31	4142304	98.66	87.66	72.22	78.34	91.66	0.08571	0.04028	0.20227
318	580536.75	4142840	39.99	36.59	30.1	27.82	35.86	0.0341	0.01601	0.08041
319	580541.75	4141863.25	435.4	381.83	324.57	367.33	418.22	0.3855	0.18117	0.90971
320	580543.12	4142096.75	158.52	140.05	116.51	129.38	148.82	0.1387	0.06517	0.32723
321	580545.81	4142563.75	60.89	54.59	44.63	45.97	55.93	0.0524	0.02463	0.12367
322	580549.94	4141889.5	348.38	306	258.94	292.09	332.91	0.3077	0.14460	0.72609
323	580552.69	4142356.5	86.63	77.08	63.35	68.14	80.28	0.0751	0.03530	0.17723
324	580558.12	4141915.75	291.26	256.27	215.95	242.91	277.24	0.2567	0.12066	0.60587
325	580559.5	4142149	133.25	118	97.69	107.9	124.63	0.1163	0.05466	0.27445
326	580566.31	4141941.75	250.55	220.75	185.36	208.01	237.76	0.2205	0.10363	0.52035
327	580569	4142408.75	76.8	68.46	56.15	59.81	71.05	0.0665	0.03123	0.15683
328	580569.44	4142945	33.35	31.02	25.57	22.3	29.53	0.0284	0.01333	0.06692
329	580574.5	4141968	219.41	193.51	161.97	181.41	207.61	0.1928	0.09061	0.45497
330	580575.88	4142201.5	114.19	101.28	83.55	91.68	106.44	0.0994	0.04673	0.23465
331	580578.56	4142668.5	49.63	44.77	36.54	36.33	45.21	0.0425	0.01997	0.10029
332	580582.69	4141994.25	194.92	172.04	143.6	160.56	183.93	0.1710	0.08037	0.40358
333	580589.5	4141787	589.06	515.6	440.59	500.93	569.49	0.5231	0.24587	1.23460
334	580592.25	4142254	99.28	88.2	72.53	79.05	92.31	0.0863	0.04055	0.20361
335	580597.69	4141813.25	436.14	382.55	325.06	368.04	418.94	0.3861	0.18149	0.91130
336	580599.06	4142046.75	158.93	140.48	116.66	130.02	149.29	0.1391	0.06537	0.32822
337	580605.88	4141839.5	348.89	306.55	259.19	292.7	333.49	0.3082	0.14484	0.72727
338	580608.56	4142306.5	87.31	77.66	63.71	68.92	80.97	0.0757	0.03559	0.17869
339	580611.31	4142773.5	41.01	37.31	30.54	29.02	36.97	0.0350	0.01644	0.08253
340	580614.06	4141865.75	291.61	256.68	216.03	243.49	277.69	0.2571	0.12084	0.60676
341	580615.44	4142099.25	133.6	118.3	97.82	108.49	125.06	0.1167	0.05483	0.27530
342	580620.38	4142497	61.87	55.33	45.17	47.13	56.96	0.0533	0.02505	0.12577
343	580622.25	4141891.75	250.92	221.17	185.47	208.66	238.17	0.2209	0.10381	0.52127
344	580624.94	4142358.75	77.48	69.04	56.51	60.61	71.75	0.0671	0.03153	0.15830
345	580630.44	4141918	219.93	194.03	162.24	182.18	208.19	0.1933	0.09086	0.45622
346	580631.75	4142151.5	114.71	101.72	83.84	92.42	107.05	0.0999	0.04698	0.23588
347	580638.62	4141944.25	195.62	172.72	144.03	161.44	184.71	0.1717	0.08070	0.40522
348	580644	4142878.25	34.31	31.64	25.95	23.41	30.55	0.0292	0.01371	0.06885
349	580645.44	4141737	589.87	516.57	441.13	501.63	570.29	0.5239	0.24623	1.23640
350	580648.12	4142204	99.85	88.66	72.85	79.77	92.94	0.0868	0.04080	0.20488
351	580653.12	4142602	50.62	45.53	37.03	37.5	46.27	0.0434	0.02039	0.10240
352	580653.62	4141763.25	436.26	382.81	324.92	368.42	419.16	0.3863	0.18157	0.91170
353	580655	4141996.75	159.62	141.13	117.09	130.82	150.05	0.1397	0.06568	0.32979
354	580661.81	4141789.5	348.89	306.56	258.97	293.08	333.59	0.3082	0.14486	0.72739
355	580664.5	4142256.5	87.88	78.13	64.03	69.61	81.59	0.0762	0.03584	0.17995
356	580670	4141815.75	291.89	256.99	216.11	244.03	278.02	0.2574	0.12098	0.60748
357	580671.31	4142049.25	134.2	118.84	98.15	109.26	125.76	0.1172	0.05510	0.27669
358	580678.19	4141842	251.07	221.45	185.46	209.06	238.4	0.2211	0.10391	0.52177
359	580680.88	4142309	78.05	69.5	56.82	61.26	72.34	0.0676	0.03177	0.15952
360	580685.88	4142706.75	41.96	38.01	30.97	30.13	37.96	0.0358	0.01683	0.08450
361	580686.38	4141868	220.36	194.57	162.42	182.83	208.68	0.1938	0.09107	0.45730
362	580687.69	4142101.5	115.22	102.13	84.08	93.15	107.69	0.1005	0.04721	0.23707
363	580694.56	4141894.25	196.03	173.18	144.19	162.09	185.17	0.1721	0.08090	0.40623
364	580694.94	4142430.5	62.7	56.01	45.62	48.13	57.83	0.0541	0.02541	0.12758
365	580701.38	4141687	589.6	516.36	440.55	501.82	570.18	0.5237	0.24614	1.23594
366	580704.06	4142154	100.36	89.01	73.1	80.51	93.52	0.0873	0.04103	0.20603
367	580709.56	4141713.25	436.7	383.29	325.06	369.04	419.61	0.3867	0.18177	0.91271
368	580710.88	4141946.75	160.17	141.68	117.39	131.61	150.75	0.1403	0.06595	0.33116
369	580717.75	4141739.5	349.87	307.6	259.68	293.95	334.52	0.3091	0.14529	0.72953
370	580718.56	4142811.75	35.18	32.21	26.31	24.44	31.49	0.0299	0.01407	0.07063
371	580720.44	4142206.5	88.42	78.5	64.31	70.3	82.21	0.0767	0.03607	0.18113
372	580725.94	4141765.75	292.64	257.69	216.63	244.78	278.81	0.2581	0.12131	0.60914
373	580727.25	4141999.25	134.84	119.43	98.51	110.02	126.5	0.1179	0.05539	0.27815
374	580727.69	4142535.25	51.49	46.17	37.47	38.54	47.16	0.0442	0.02076	0.10423
375	580734.06	4141792	251.46	221.6	185.67	209.63	238.91	0.2215	0.10408	0.52263
376	580736.81	4142259	78.64	69.93	57.14	61.98	72.96	0.0681	0.03202	0.16079
377	580742.25	4141818.25	220.37	194.36	162.33	183.14	208.87	0.1938	0.09109	0.45740
378	580743.62	4142051.75	115.81	102.64	84.39	93.89	108.39	0.1010	0.04748	0.23842
379	580750.44	4141844.25	196.23	173.19	144.24	162.58	185.56	0.1724	0.08101	0.40677
380	580757.31	4141637	589.79	516.46	440.57	502.14	570.46	0.5239	0.24623	1.23637
381	580760	4142104	100.95	89.46	73.38	81.28	94.25	0.0879	0.04130	0.20736
382	580760.44	4142640.25	42.84	38.65	31.39	31.17	38.9	0.0366	0.01720	0.08635
383	580765.5	4141663.25	436.9	383.37	325.1	369.39	419.94	0.3869	0.18186	0.91318
384	580766.81	4141896.75	160.53	141.93	117.55	132.19	151.17	0.1407	0.06612	0.33199
385	580769.5	4142363.75	63.53	56.64	46.08	49.11	58.66	0.0548	0.02576	0.12934
386	580773.62	4141689.5	349.95	307.61	259.58	294.35	334.76	0.3093	0.14535	0.72983
387	580776.38	4142156.5	89	78.89	64.58	71.1	82.87	0.0773	0.03633	0.18240
388	580781.81	4141715.75	292.84	257.9	216.65	245.27	279.14	0.2584	0.12143	0.60973
389	580783.19	4141949.25	135.29	119.8	98.74	110.72	127.07	0.1183	0.05561	0.27924
390	580790	4141742	251.94	222.19	185.96	210.26	239.5	0.2220	0.10433	0.52385
391	580792.75	4142209	79.19	70.28	57.4	62.76	73.59	0.0686	0.03226	0.16200
392	580793.12	4142745	36.01	32.78	26.66	25.41	32.36	0.0306	0.01440	0.07232
393	580798.19	4141768.25	220.97	195.07	162.72	183.83	209.56	0.1944	0.09138	0.45885
394	580799.56	4142001.75	116.34	103.09	84.66	94.61	109	0.1015	0.04772	0.23963
395	580802.25	4142468.75	52.32	46.78	37.91	39.54	48.03	0.0449	0.02111	0.10600

396	580806.38	4141794.25	196.78	173.83	144.59	163.25	186.19	0.1729	0.08128	0.40811
397	580813.25	4141587.25	590.18	516.67	440.63	502.21	570.68	0.5241	0.24631	1.23681
398	580815.94	4142054	101.59	89.99	73.74	82.06	94.95	0.0885	0.04158	0.20878
399	580821.44	4141613.25	437.78	384.36	325.87	369.84	420.72	0.3877	0.18223	0.91501
400	580822.75	4141846.75	160.88	142.27	117.72	132.77	151.69	0.1411	0.06630	0.33292
401	580829.62	4141639.5	350.52	308.36	260	294.75	335.34	0.3098	0.14560	0.73111
402	580832.25	4142106.5	89.68	79.45	64.96	71.92	83.6	0.0779	0.03662	0.18390
403	580835	4142573.5	43.66	39.23	31.78	32.17	39.78	0.0373	0.01754	0.08808
404	580837.75	4141665.75	293.34	258.56	216.88	245.83	279.71	0.2589	0.12167	0.61092
405	580839.12	4141899.25	135.66	120.12	98.92	111.31	127.52	0.1187	0.05579	0.28015
406	580844.06	4142297.25	64.33	57.19	46.48	50.09	59.49	0.0555	0.02609	0.13102
407	580845.94	4141692	252.21	222.64	185.98	210.76	239.87	0.2223	0.10448	0.52461
408	580848.62	4142159	79.87	70.8	57.77	63.57	74.31	0.0693	0.03255	0.16346
409	580854.12	4141718.25	221.18	195.39	162.72	184.34	209.87	0.1947	0.09151	0.45949
410	580855.5	4141951.75	116.87	103.56	84.97	95.31	109.59	0.1021	0.04797	0.24086
411	580862.31	4141744.5	196.89	173.98	144.54	163.66	186.43	0.1731	0.08136	0.40852
412	580867.69	4142678.25	36.79	33.31	27	26.35	33.19	0.0313	0.01472	0.07393
413	580869.19	4141537.25	591.65	518.56	441.52	503.68	572.39	0.5256	0.24701	1.24032
414	580871.81	4142004	102.25	90.62	74.15	82.84	95.66	0.0891	0.04188	0.21029
415	580876.81	4142402	53.16	47.42	38.34	40.52	48.88	0.0457	0.02146	0.10777
416	580877.38	4141563.5	437.69	384.52	325.19	370.33	420.96	0.3877	0.18224	0.91506
417	580878.69	4141796.75	161.29	142.63	117.95	133.35	152.16	0.1415	0.06649	0.33388
418	580885.56	4141589.5	350.01	307.94	259.22	294.87	335.2	0.3094	0.14544	0.73030
419	580888.19	4142056.5	90.34	80.01	65.36	72.7	84.31	0.0785	0.03692	0.18536
420	580893.75	4141615.75	292.72	258.08	216.3	245.7	279.39	0.2584	0.12147	0.60991
421	580895	4141849.25	136.08	120.44	99.15	111.93	128.06	0.1191	0.05599	0.28115
422	580901.94	4141642	252.21	222.72	185.95	211.01	240.09	0.2224	0.10453	0.52485
423	580904.56	4142109	80.53	71.33	58.16	64.34	75.01	0.0699	0.03284	0.16490
424	580909.56	4142506.75	44.48	39.82	32.19	33.14	40.62	0.0381	0.01788	0.08980
425	580910.06	4141668.25	221.52	195.8	162.91	184.86	210.41	0.1951	0.09170	0.46044
426	580911.38	4141901.75	117.32	103.87	85.21	95.95	110.11	0.1025	0.04817	0.24188
427	580918.25	4141694.5	197.3	174.44	144.76	164.26	186.98	0.1735	0.08157	0.40957
428	580918.62	4142230.5	65.2	57.81	46.95	51.13	60.4	0.0563	0.02646	0.13286
429	580925.12	4141487.25	592.03	518.88	441.18	504.59	573.13	0.5260	0.24720	1.24127
430	580927.75	4141954.25	102.67	90.89	74.37	83.46	96.12	0.0895	0.04207	0.21122
431	580933.31	4141513.5	438.14	384.78	325.11	371.27	421.77	0.3882	0.18246	0.91619
432	580934.62	4141747	161.64	142.97	118.11	133.92	152.67	0.1419	0.06668	0.33479
433	580941.5	4141539.75	350.76	308.62	259.39	295.9	336.18	0.3102	0.14578	0.73200
434	580942.25	4142611.75	37.56	33.84	27.36	27.36	34.02	0.0320	0.01504	0.07554
435	580944.12	4142006.5	90.92	80.47	65.7	73.39	84.93	0.0791	0.03717	0.18663
436	580949.69	4141566	293.36	258.61	216.39	246.59	280.24	0.2590	0.12175	0.61133
437	580951	4141799.25	136.63	120.89	99.51	112.61	128.68	0.1197	0.05624	0.28241
438	580951.38	4142335.25	53.99	48	38.78	41.5	49.73	0.0464	0.02181	0.10950
439	580957.88	4141592	252.57	222.95	185.91	211.73	240.7	0.2228	0.10470	0.52574
440	580960.5	4142059	81.18	71.81	58.57	65.08	75.67	0.0705	0.03312	0.16629
441	580966.06	4141618.25	221.64	195.75	162.79	185.39	210.78	0.1953	0.09178	0.46084
442	580967.31	4141851.75	117.91	104.32	85.61	96.61	110.76	0.1030	0.04843	0.24318
443	580974.25	4141644.5	197.56	174.48	144.81	164.88	187.5	0.1738	0.08171	0.41028
444	580981	4141437.25	591.98	519.13	440.99	504.74	573.49	0.5261	0.24725	1.24152
445	580983.69	4141904.25	103.27	91.34	74.78	84.12	96.78	0.0901	0.04233	0.21254
446	580984.12	4142440.25	45.27	40.41	32.58	34.05	41.44	0.0388	0.01821	0.09145
447	580989.25	4141463.5	437.57	384.58	324.32	371.3	421.7	0.3879	0.18231	0.91543
448	580990.56	4141697	162.05	143.16	118.33	134.57	153.23	0.1423	0.06687	0.33575
449	580993.19	4142163.75	66.07	58.45	47.48	52.11	61.3	0.0571	0.02683	0.13471
450	580997.44	4141489.75	349.98	307.96	258.49	295.91	335.89	0.3096	0.14553	0.73076
451	581000.06	4141956.5	91.52	80.91	66.1	74.09	85.54	0.0796	0.03743	0.18793
452	581005.62	4141516	293.13	258.35	216.01	247	280.4	0.2590	0.12172	0.61119
453	581006.94	4141749.25	137.13	121.17	99.8	113.29	129.29	0.1201	0.05646	0.28352
454	581013.81	4141542.25	252.7	223.03	185.86	212.3	241.11	0.2230	0.10481	0.52628
455	581016.44	4142009	81.79	72.31	58.96	65.76	76.29	0.0710	0.03338	0.16761
456	581016.81	4142545	38.33	34.4	27.72	28.15	34.82	0.0327	0.01536	0.07713
457	581022	4141568.25	222.31	196.32	163.17	186.27	211.61	0.1959	0.09209	0.46241
458	581023.25	4141801.75	118.42	104.61	85.92	97.3	111.36	0.1035	0.04866	0.24431
459	581025.94	4142268.75	54.75	48.51	39.2	42.39	50.53	0.0471	0.02213	0.11110
460	581030.19	4141594.5	198.19	175.04	145.19	165.67	188.28	0.1745	0.08200	0.41176
461	581036.75	4141387	594.08	520.66	441.43	508.02	576.53	0.5281	0.24823	1.24642
462	581039.62	4141854.25	103.86	91.69	75.14	84.83	97.38	0.0906	0.04257	0.21377
463	581044.94	4141413.25	439.43	385.8	325.27	373.6	424.15	0.3897	0.18314	0.91957
464	581046.5	4141647	162.76	143.73	118.85	135.41	154.09	0.1430	0.06719	0.33740
465	581053.19	4141439.5	352.41	310.03	260.21	298.22	338.65	0.3119	0.14659	0.73609
466	581056	4141906.75	92.12	81.3	66.49	74.77	86.17	0.0802	0.03768	0.18920
467	581058.69	4142373.5	45.97	40.87	32.94	34.88	42.17	0.0394	0.01850	0.09290
468	581061.38	4141465.75	295.48	260.33	217.62	249.24	283.02	0.2611	0.12273	0.61629
469	581062.88	4141699.5	137.82	121.64	100.32	114.06	130.08	0.1208	0.05677	0.28505
470	581067.75	4142097.25	66.87	59.04	47.98	53.01	62.1	0.0578	0.02717	0.13641
471	581069.56	4141492	254.58	224.47	187.09	214.23	243.21	0.2247	0.10562	0.53033
472	581072.31	4141959	82.44	72.77	59.39	66.5	76.96	0.0716	0.03366	0.16900
473	581077.81	4141518.25	223.5	197.08	163.94	187.66	213.05	0.1970	0.09261	0.46503
474	581079.25	4141751.75	119.26	105.2	86.54	98.13	112.19	0.1043	0.04900	0.24606
475	581086	4141544.5	199.23	175.67	145.91	166.87	189.5	0.1754	0.08245	0.41403

476	581091.38	4142478.5	38.98	34.85	28.03	28.93	35.51	0.0333	0.01563	0.07849
477	581093.06	4141337.5	592.85	520.48	441.08	506.26	575.64	0.5273	0.24781	1.24434
478	581095.56	4141804.25	104.68	92.3	75.75	85.64	98.22	0.0913	0.04292	0.21551
479	581100.5	4142202	55.53	49.06	39.66	43.27	51.29	0.0478	0.02245	0.11272
480	581101	4141363.5	441.39	388.4	327.14	374.99	426.22	0.3916	0.18407	0.92424
481	581102.44	4141597	163.73	144.4	119.56	136.42	155.12	0.1438	0.06761	0.33948
482	581108.88	4141389.25	355	312.56	262.26	300.59	341.43	0.3144	0.14775	0.74191
483	581111.94	4141856.75	92.87	81.84	67.01	75.53	86.9	0.0808	0.03799	0.19076
484	581117.12	4141415.5	296.65	261.43	218.69	250.5	284.46	0.2623	0.12330	0.61914
485	581118.81	4141649.5	138.82	122.41	101.08	115.09	131.12	0.1217	0.05720	0.28722
486	581125.31	4141441.75	255.7	225.48	188.14	215.41	244.61	0.2259	0.10616	0.53305
487	581128.31	4141909	83.11	73.23	59.84	67.2	77.62	0.0722	0.03393	0.17039
488	581133.25	4142307	46.64	41.32	33.3	35.66	42.86	0.0400	0.01878	0.09430
489	581133.5	4141468	225.03	198.42	165.26	189.12	214.76	0.1985	0.09330	0.46850
490	581135.19	4141702	120.06	105.78	87.18	98.98	113.04	0.1050	0.04935	0.24782
491	581141.75	4141494.25	200.93	177.1	147.3	168.41	191.28	0.1770	0.08319	0.41773
492	581142.38	4142030.5	67.69	59.68	48.52	53.92	62.93	0.0585	0.02752	0.13817
493	581150.75	4141289.5	589.18	517.01	438.54	501.61	572.18	0.5237	0.24614	1.23594
494	581151.56	4141754.25	105.48	92.85	76.37	86.44	99.01	0.0920	0.04325	0.21719
495	581158.19	4141546.75	165.24	145.57	120.76	137.8	156.67	0.1452	0.06825	0.34269
496	581158.69	4141315.5	438.86	385.89	325.71	371.85	424.03	0.3893	0.18296	0.91867
497	581165.94	4142411.75	39.56	35.22	28.3	29.65	36.13	0.0338	0.01587	0.07970
498	581166.62	4141341.5	353.41	311.02	261.52	298.58	340.06	0.3129	0.14707	0.73849
499	581167.88	4141806.75	93.68	82.4	67.62	76.3	87.69	0.0815	0.03832	0.19243
500	581174.5	4141367.25	297.96	262.49	219.96	251.1	285.71	0.2634	0.12382	0.62173
501	581174.56	4141599.25	139.97	123.28	102.01	116.11	132.28	0.1227	0.05768	0.28964
502	581175.06	4142135.5	56.27	49.6	40.12	44.11	52.05	0.0484	0.02276	0.11429
503	581182.44	4141393.25	257.66	227.22	189.88	216.64	246.4	0.2276	0.10695	0.53704
504	581184.25	4141859.25	83.86	73.77	60.39	67.91	78.34	0.0729	0.03424	0.17194
505	581190.38	4141419.25	227.01	200.28	167.03	190.49	216.6	0.2003	0.09413	0.47267
506	581191	4141651.75	121.11	106.62	88.03	99.93	114.07	0.1060	0.04980	0.25005
507	581198.31	4141445	203.07	179.08	149.18	170.05	193.35	0.1789	0.08410	0.42231
508	581207.44	4141704.25	106.43	93.63	77.15	87.33	99.94	0.0929	0.04366	0.21923
509	581207.81	4142240.25	47.33	41.81	33.69	36.46	43.54	0.0406	0.01907	0.09574
510	581210.69	4141244.5	575.69	507.26	429.64	486.2	558.11	0.5114	0.24035	1.20686
511	581214.12	4141497	167.39	147.43	122.59	139.53	158.75	0.1471	0.06915	0.34725
512	581216.94	4141964	68.57	60.32	49.12	54.78	63.77	0.0593	0.02788	0.13998
513	581218.19	4141270	432.17	381.12	321.36	364.28	417.06	0.3832	0.18010	0.90435
514	581223.88	4141756.75	94.6	83.16	68.36	77.14	88.58	0.0824	0.03871	0.19439
515	581225.69	4141295.25	350.71	309.41	260.12	295.12	337.25	0.3105	0.14595	0.73283
516	581230.31	4141549.25	141.91	124.95	103.62	117.72	134.11	0.1245	0.05850	0.29373
517	581233.19	4141320.25	296.49	261.76	219.59	249.02	284.25	0.2622	0.12324	0.61884
518	581240.19	4141809.25	84.73	74.49	61.07	68.7	79.17	0.0736	0.03461	0.17377
519	581240.5	4142345.25	40.14	35.61	28.59	30.34	36.73	0.0343	0.01611	0.08091
520	581240.69	4141346	257.98	227.79	190.78	216.28	246.69	0.2279	0.10711	0.53785
521	581246.75	4141601.75	122.71	108	89.35	101.24	115.62	0.1074	0.05047	0.25343
522	581248.19	4141371.25	228.58	201.76	168.74	191.31	218.05	0.2017	0.09479	0.47598
523	581249.69	4142068.75	57.01	50.2	40.61	44.91	52.79	0.0491	0.02308	0.11589
524	581256	4141397.25	204.56	180.43	150.74	170.91	194.7	0.1803	0.08473	0.42543
525	581263.19	4141654.25	107.73	94.75	78.21	88.41	101.16	0.0941	0.04420	0.22196
526	581271.88	4141449	168.82	148.78	124.01	140.48	160.1	0.1484	0.06977	0.35031
527	581272.62	4141202.25	565.09	498.54	421.82	473.85	547.05	0.5013	0.23560	1.18300
528	581279.56	4141706.75	95.66	84.09	69.26	78.07	89.6	0.0833	0.03917	0.19667
529	581279.75	4141227.25	427.14	377.09	318.45	357.18	411.48	0.3783	0.17779	0.89271
530	581282.38	4142173.75	47.98	42.29	34.07	37.19	44.2	0.0411	0.01934	0.09710
531	581286.94	4141252	348.51	307.91	259.55	290.94	334.52	0.3083	0.14489	0.72755
532	581287.69	4141500.75	143.33	126.17	104.95	118.76	135.43	0.1257	0.05909	0.29672
533	581291.56	4141897.5	69.55	61.11	49.83	55.7	64.7	0.0602	0.02828	0.14202
534	581294.25	4141277	295.54	261.32	219.83	246.37	282.82	0.2612	0.12275	0.61638
535	581296	4141759.25	85.68	75.3	61.84	69.54	80.07	0.0745	0.03501	0.17579
536	581301.75	4141302.5	256.48	226.89	190.45	213.55	244.77	0.2264	0.10642	0.53437
537	581303.56	4141552.75	124.08	109.1	90.56	102.28	116.82	0.1086	0.05103	0.25622
538	581309.25	4141327.75	227.05	200.84	168.3	188.88	216.24	0.2003	0.09412	0.47262
539	581315.06	4142278.5	40.75	36.05	28.91	31.03	37.35	0.0348	0.01636	0.08217
540	581316.75	4141353.25	203.67	180.03	150.7	169.25	193.59	0.1794	0.08434	0.42350
541	581319.38	4141604.5	109.13	95.9	79.38	89.5	102.45	0.0953	0.04478	0.22484
542	581324.25	4142002.25	57.85	50.89	41.19	45.71	53.58	0.0498	0.02343	0.11763
543	581331.75	4141404	168.96	149.15	124.59	139.98	160.01	0.1485	0.06981	0.35055
544	581335.31	4141656.5	97.02	85.23	70.34	79.18	90.85	0.0845	0.03973	0.19948
545	581337.56	4141164.75	544.99	482.42	408.49	451.32	525.61	0.4826	0.22681	1.13886
546	581344.5	4141189.5	414.17	367.25	310.28	342.24	397.51	0.3663	0.17216	0.86444
547	581346.69	4141454.75	144.17	127.13	105.95	119.05	136.1	0.1265	0.05945	0.29849
548	581351.5	4141214	338.21	300.16	253.02	279.42	323.53	0.2989	0.14047	0.70533
549	581351.75	4141709	86.8	76.27	62.75	70.48	81.12	0.0755	0.03548	0.17814
550	581357	4142107	48.7	42.9	34.54	37.93	44.91	0.0418	0.01964	0.09864
551	581358.5	4141238.5	287.6	255.36	214.86	237.69	274.47	0.2540	0.11938	0.59943
552	581361.69	4141505.25	125.35	110.39	91.8	103.07	117.95	0.1097	0.05156	0.25892
553	581365.56	4141263.25	250.7	222.59	187.06	207.18	238.76	0.2213	0.10399	0.52217
554	581366	4141830.75	70.63	62.07	50.68	56.67	65.72	0.0612	0.02874	0.14432
555	581372.75	4141288	222.7	197.57	165.87	183.97	211.63	0.1963	0.09228	0.46338

556	581377.06	4141556.5	110.23	96.96	80.44	90.2	103.37	0.0962	0.04523	0.22713
557	581379.94	4141313	200.41	177.6	148.98	165.45	190.08	0.1765	0.08296	0.41655
558	581389.69	4142212	41.36	36.56	29.26	31.7	37.96	0.0354	0.01662	0.08347
559	581392.94	4141608.5	97.85	86.02	71.13	79.69	91.51	0.0852	0.04006	0.20117
560	581394.25	4141362.5	167.27	148.03	123.9	137.78	158.13	0.1470	0.06910	0.34697
561	581398.88	4141935.75	58.75	51.66	41.83	46.53	54.44	0.0506	0.02380	0.11952
562	581404.19	4141130.5	522.51	463.41	391.56	428.78	502.43	0.4617	0.21702	1.08970
563	581408.56	4141412.25	143.31	126.67	105.76	117.71	135.07	0.1257	0.05908	0.29666
564	581408.75	4141660.25	87.68	77.1	63.51	71.09	81.86	0.0762	0.03584	0.17995
565	581411.12	4141155	398.07	353.38	298.55	326.03	380.93	0.3514	0.16515	0.82929
566	581418.12	4141179.5	325.97	289.62	244.36	266.97	310.92	0.2876	0.13516	0.67866
567	581422.88	4141462	124.98	110.31	91.86	102.36	117.43	0.1094	0.05141	0.25816
568	581425.12	4141204	278.01	247.21	208.24	227.73	264.49	0.2451	0.11521	0.57852
569	581431.56	4142040.5	49.43	43.54	35.02	38.66	45.59	0.0424	0.01995	0.10018
570	581432.12	4141228.5	243.23	216.33	181.99	199.28	230.91	0.2143	0.10074	0.50586
571	581437.75	4141512.5	110.15	97.09	80.62	89.86	103.2	0.0962	0.04521	0.22699
572	581439.06	4141253	216.56	192.5	161.8	177.43	205.19	0.1907	0.08963	0.45004
573	581440.44	4141764	71.83	63.18	51.61	57.65	66.8	0.0622	0.02924	0.14683
574	581446.06	4141277.5	195.24	173.39	145.61	159.98	184.69	0.1718	0.08074	0.40541
575	581452.75	4141563.25	98.09	86.37	71.47	79.71	91.66	0.0855	0.04017	0.20169
576	581460	4141326.75	163.19	144.67	121.23	133.62	153.93	0.1433	0.06736	0.33825
577	581464.31	4142145.5	41.95	37.07	29.62	32.33	38.53	0.0359	0.01687	0.08472
578	581467.75	4141614	88.07	77.53	63.91	71.27	82.12	0.0766	0.03599	0.18073
579	581471.25	4141097	512.57	454.33	383.68	418.41	491.78	0.4522	0.21251	1.06708
580	581473.19	4141868.75	59.69	52.58	42.52	47.36	55.28	0.0515	0.02420	0.12151
581	581474	4141375.75	140.3	124.2	103.78	114.69	132	0.1230	0.05781	0.29027
582	581478.19	4141121.25	389.82	346.16	292.15	317.42	372.23	0.3436	0.16147	0.81079
583	581485.12	4141145.75	318.12	282.84	238.62	258.77	302.77	0.2802	0.13171	0.66133
584	581488	4141424.75	122.74	108.5	90.4	100.1	115.17	0.1074	0.05047	0.25342
585	581492.06	4141170.25	270.78	241	203.18	220.12	257.02	0.2384	0.11206	0.56267
586	581499	4141194.5	237.02	211.07	177.76	192.68	224.47	0.2086	0.09804	0.49230
587	581501.94	4141473.75	108.69	95.97	79.72	88.34	101.69	0.0949	0.04459	0.22392
588	581505.94	4141219	211.06	187.88	158.08	171.64	199.5	0.1856	0.08725	0.43809
589	581506	4141973.75	50.18	44.28	35.51	39.32	46.3	0.0431	0.02027	0.10176
590	581512.81	4141243.5	190.48	169.42	142.4	154.97	179.76	0.1674	0.07868	0.39508
591	581515.94	4141523	97.17	85.73	70.95	78.73	90.69	0.0847	0.03979	0.19978
592	581518.06	4141701	72.35	63.77	52.07	57.99	67.16	0.0627	0.02945	0.14790
593	581526.69	4141292.25	159.61	141.74	118.84	129.85	150.21	0.1401	0.06582	0.33052
594	581530.19	4141572.5	87.51	77.18	63.6	70.66	81.51	0.0761	0.03576	0.17958
595	581538.81	4141064.25	504.17	446.2	376.42	410.29	483.06	0.4440	0.20869	1.04791
596	581538.88	4142078.75	42.54	37.63	29.96	32.91	39.13	0.0364	0.01712	0.08598
597	581540.62	4141341.25	137.08	121.59	101.66	111.38	128.7	0.1201	0.05644	0.28339
598	581545.75	4141088.75	381.63	338.46	285.59	309.3	363.69	0.3357	0.15779	0.79233
599	581549.12	4141803.75	60.35	53.25	43.02	47.91	55.86	0.0521	0.02448	0.12290
600	581552.62	4141113	311.66	276.83	233.53	252.17	295.97	0.2740	0.12880	0.64672
601	581554.56	4141390.25	119.87	106.18	88.48	97.23	112.25	0.1048	0.04926	0.24733
602	581559.56	4141137.5	264.88	235.65	198.64	214.16	250.9	0.2328	0.10944	0.54952
603	581566.5	4141162	231.21	205.91	173.42	186.89	218.54	0.2032	0.09550	0.47954
604	581568.56	4141439.5	106.15	93.9	77.96	85.89	99.13	0.0926	0.04352	0.21855
605	581573.44	4141186.5	205.62	183.14	154.14	166.21	194	0.1806	0.08489	0.42627
606	581580.38	4141210.75	185.58	165.17	138.95	150	174.79	0.1629	0.07656	0.38444
607	581580.75	4141907.25	50.83	44.94	35.96	39.95	46.92	0.0437	0.02055	0.10318
608	581582.5	4141488.5	95.02	83.97	69.42	76.72	88.56	0.0827	0.03889	0.19526
609	581594.19	4141259.75	155.38	138.14	115.94	125.57	145.93	0.1362	0.06401	0.32141
610	581596.5	4141537.5	85.72	75.71	62.32	69.03	79.74	0.0745	0.03502	0.17583
611	581602.25	4141647.25	71.47	63.12	51.42	57.2	66.26	0.0619	0.02909	0.14607
612	581606.31	4141031.75	497.03	439.55	370.24	404.17	475.84	0.4374	0.20556	1.03218
613	581608.06	4141308.5	133.7	118.75	99.34	107.98	125.24	0.1170	0.05499	0.27612
614	581613.12	4142011.75	43.07	38.16	30.29	33.49	39.67	0.0369	0.01736	0.08717
615	581613.25	4141056	376.57	333.65	281.07	304.77	358.57	0.3309	0.15554	0.78099
616	581620.19	4141080.5	306.27	271.8	229.02	247.28	290.61	0.2690	0.12643	0.63483
617	581621.94	4141357.25	117.08	103.86	86.56	94.43	109.4	0.1023	0.04807	0.24135
618	581627.12	4141105	259.99	231.06	194.66	209.59	246.01	0.2283	0.10728	0.53870
619	581630.38	4141745.75	60.11	53.18	42.83	47.75	55.59	0.0519	0.02439	0.12247
620	581634	4141129.25	227.02	201.94	170.06	182.84	214.29	0.1992	0.09364	0.47018
621	581635.75	4141406.25	103.74	91.95	76.29	83.53	96.68	0.0904	0.04251	0.21343
622	581640.94	4141153.75	201.57	179.37	150.97	162.27	189.87	0.1768	0.08310	0.41727
623	581647.88	4141178.25	181.43	161.43	135.79	146	170.61	0.1591	0.07475	0.37536
624	581649.62	4141455	92.85	82.25	67.91	74.6	86.37	0.0808	0.03797	0.19068
625	581659.44	4141845.75	50.93	45.14	35.99	40.13	47.01	0.0438	0.02060	0.10346
626	581661.75	4141227	151.69	134.9	113.23	121.96	142.23	0.1328	0.06242	0.31341
627	581663.5	4141503.75	83.78	74.19	60.94	67.17	77.76	0.0728	0.03420	0.17173
628	581673.81	4140999	492.7	435.46	366.4	400.64	471.55	0.4334	0.20367	1.02271
629	581675.56	4141275.75	130.46	115.96	97.02	104.79	122.01	0.1140	0.05360	0.26915
630	581680.75	4141023.5	372.13	329.37	277.21	300.95	354.15	0.3268	0.15358	0.77116
631	581687.69	4141047.75	303.06	268.58	226.12	244.33	287.34	0.2659	0.12497	0.62749
632	581689.44	4141324.75	114.2	101.44	84.5	91.6	106.52	0.0997	0.04684	0.23518
633	581689.44	4141947.25	43.38	38.51	30.43	33.9	39.99	0.0372	0.01750	0.08789
634	581691.19	4141601.5	69.42	61.49	49.88	55.41	64.25	0.0601	0.02824	0.14181
635	581694.62	4141072.25	256.95	228.03	192	206.68	242.88	0.2253	0.10589	0.53173

636	581701.56	4141096.75	223.68	198.74	167.29	179.63	210.88	0.1960	0.09214	0.46266
637	581703.31	4141373.5	101.29	89.91	74.52	81.12	94.21	0.0882	0.04146	0.20818
638	581708.5	4141121	198.49	176.45	148.48	159.25	186.74	0.1739	0.08172	0.41036
639	581715.38	4141145.5	178.4	158.59	133.38	143.04	167.53	0.1562	0.07341	0.36860
640	581717.12	4141422.25	90.67	80.48	66.33	72.54	84.16	0.0788	0.03705	0.18605
641	581719	4141699.25	58.42	51.81	41.53	46.39	53.98	0.0504	0.02370	0.11901
642	581729.25	4141194.25	148.67	132.16	110.89	119.05	139.19	0.1300	0.06110	0.30678
643	581731	4141471.25	81.73	72.55	59.44	65.28	75.73	0.0709	0.03334	0.16743
644	581741.38	4140966.62	488.96	431.82	363.03	397.74	467.76	0.4299	0.20204	1.01447
645	581743.12	4141243.25	127.45	113.3	94.72	101.92	118.99	0.1113	0.05230	0.26261
646	581746.94	4141797.5	49.64	44.11	34.97	39.19	45.84	0.0428	0.02009	0.10089
647	581748.25	4140990.75	369.03	326.28	274.33	298.49	351.08	0.3238	0.15221	0.76427
648	581755.19	4141015.25	299.71	265.25	223.09	241.58	284.05	0.2627	0.12349	0.62006
649	581756.94	4141292	111.54	99.14	82.49	89.08	103.88	0.0972	0.04570	0.22945
650	581762.12	4141039.5	254.25	225.28	189.47	204.38	240.21	0.2227	0.10468	0.52561
651	581769.06	4141064	221.06	196.13	164.89	177.33	208.29	0.1935	0.09096	0.45675
652	581770.81	4141340.75	98.9	87.9	72.73	78.86	91.86	0.0861	0.04044	0.20308
653	581774.88	4141895.5	42.57	37.86	29.75	33.37	39.3	0.0366	0.01719	0.08631
654	581776	4141088.5	195.69	173.76	146.01	156.76	183.96	0.1712	0.08048	0.40412
655	581781.25	4141558	67.03	59.6	48.08	53.32	61.95	0.0580	0.02726	0.13687
656	581782.94	4141112.75	175.75	156.1	131.11	140.64	164.91	0.1537	0.07224	0.36274
657	581784.69	4141389.75	88.46	78.65	64.69	70.49	81.96	0.0769	0.03612	0.18137
658	581796.75	4141161.75	145.97	129.7	108.67	116.6	136.55	0.1275	0.05992	0.30090
659	581798.5	4141438.5	79.74	70.92	57.93	63.49	73.77	0.0692	0.03251	0.16324
660	581808.88	4140933.75	484.51	427.6	359.32	394.23	463.35	0.4258	0.20013	1.00489
661	581808.94	4141655.75	56.33	50.17	39.93	44.68	52.04	0.0486	0.02286	0.11477
662	581810.62	4141210.5	124.98	111.05	92.7	99.65	116.57	0.1090	0.05123	0.25272
663	581815.81	4140958	366.46	323.73	272.05	296.43	348.51	0.3214	0.15107	0.75859
664	581822.75	4140982.5	297.26	262.83	220.9	239.52	281.59	0.2604	0.12240	0.61459
665	581824.5	4141259.25	109.08	96.94	80.52	86.86	101.42	0.0950	0.04463	0.22412
666	581829.69	4141007	251.45	222.57	187.02	201.99	237.44	0.2201	0.10344	0.51942
667	581836.56	4141031.25	218.72	193.83	162.76	175.27	205.99	0.1913	0.08992	0.45150
668	581836.62	4141753.25	47.89	42.71	33.59	37.85	44.26	0.0413	0.01939	0.09737
669	581838.31	4141308.25	96.43	85.73	70.79	76.66	89.42	0.0838	0.03939	0.19778
670	581843.5	4141055.75	193.51	171.61	144	154.77	181.82	0.1691	0.07950	0.39918
671	581850.44	4141080.25	173.59	154.01	129.13	138.62	162.77	0.1516	0.07126	0.35783
672	581852.19	4141357	86.12	76.62	62.84	68.44	79.68	0.0747	0.03513	0.17639
673	581864.31	4141129	144.09	127.94	107	114.78	134.61	0.1257	0.05907	0.29661
674	581864.38	4141851	41.08	36.64	28.53	32.29	37.99	0.0353	0.01659	0.08332
675	581866.06	4141406	77.5	69.02	56.18	61.59	71.63	0.0672	0.03158	0.15855
676	581871.25	4141514.5	64.6	57.6	46.21	51.33	59.66	0.0559	0.02626	0.13188
677	581876.38	4140901	482.01	425.26	357.2	392.19	460.69	0.4235	0.19903	0.99939
678	581878.12	4141178	122.91	109.2	90.98	97.72	114.45	0.1071	0.05031	0.25264
679	581883.31	4140925.5	362.96	320.61	269.11	293.63	344.99	0.3183	0.14958	0.75109
680	581890.25	4140949.75	294.14	259.98	218.15	237.16	278.59	0.2576	0.12107	0.60795
681	581892	4141226.75	106.9	95.01	78.74	84.88	99.21	0.0929	0.04369	0.21936
682	581897.19	4140974.25	248.28	219.53	184.17	199.61	234.44	0.2172	0.10209	0.51261
683	581898.94	4141612	54.2	48.42	38.26	43.03	50.1	0.0468	0.02200	0.11045
684	581904.12	4140998.75	215.53	190.7	159.9	172.83	202.94	0.1884	0.08854	0.44458
685	581905.88	4141275.5	94.23	83.79	69	74.77	87.23	0.0818	0.03845	0.19306
686	581911	4141023.25	190.7	168.79	141.44	152.54	179.08	0.1665	0.07826	0.39296
687	581917.94	4141047.5	171.16	151.53	126.88	136.63	160.37	0.1493	0.07018	0.35238
688	581919.69	4141324.5	83.84	74.63	61.01	66.55	77.52	0.0727	0.03417	0.17160
689	581926.69	4141709.75	46.02	41.17	32.08	36.48	42.61	0.0397	0.01865	0.09363
690	581931.81	4141096.5	141.7	125.56	104.82	112.76	132.26	0.1234	0.05801	0.29127
691	581933.56	4141373.25	75.3	67.08	54.41	59.79	69.57	0.0652	0.03066	0.15394
692	581943.94	4140868.5	476.78	420.76	352.92	388.17	455.54	0.4188	0.19685	0.98845
693	581945.69	4141145.25	120.63	107.01	88.92	95.77	112.23	0.1049	0.04931	0.24759
694	581950.81	4140892.75	359.56	317.41	266.02	291.22	341.77	0.3152	0.14814	0.74386
695	581954.38	4141807.5	39.48	35.3	27.21	31.17	36.62	0.0340	0.01596	0.08014
696	581957.75	4140917.25	291.25	257.2	215.49	234.93	275.77	0.2549	0.11982	0.60163
697	581959.5	4141194	104.65	92.94	76.78	82.96	97.07	0.0909	0.04271	0.21448
698	581961.25	4141471	61.95	55.32	44.08	49.23	57.25	0.0536	0.02518	0.12642
699	581964.69	4140941.75	245.93	217.27	181.98	197.7	232.07	0.2150	0.10105	0.50738
700	581971.62	4140966	213.33	188.51	157.81	171.04	200.73	0.1863	0.08755	0.43963
701	581973.38	4141243	91.95	81.77	67.08	72.87	85.08	0.0798	0.03748	0.18821
702	581978.56	4140990.5	188.16	166.24	139.09	150.55	176.61	0.1641	0.07714	0.38735
703	581985.5	4141015	168.28	148.62	124.26	134.4	157.61	0.1466	0.06892	0.34606
704	581987.25	4141291.75	81.67	72.76	59.2	64.77	75.5	0.0708	0.03327	0.16704
705	581989	4141568.5	51.95	46.5	36.43	41.33	48.12	0.0449	0.02109	0.10588
706	581999.31	4141063.75	138.94	122.75	102.31	110.61	129.65	0.1209	0.05680	0.28521
707	582001.06	4141340.5	73.21	65.3	52.66	58.1	67.63	0.0634	0.02979	0.14958
708	582011.31	4140835.5	473.75	417.39	350.07	386.29	452.59	0.4160	0.19553	0.98180
709	582013.19	4141112.5	118	104.42	86.55	93.65	109.75	0.1025	0.04816	0.24184
710	582016.69	4141666.25	44.14	39.53	30.52	35.1	40.98	0.0381	0.01789	0.08981
711	582018.31	4140860	356.4	314.17	263.26	288.91	338.6	0.3123	0.14677	0.73695
712	582025.25	4140884.5	288.4	254.29	212.97	232.83	272.94	0.2523	0.11857	0.59539
713	582027.06	4141161.5	102.09	90.56	74.53	80.9	94.69	0.0886	0.04162	0.20899
714	582032.19	4140909	243.26	214.57	179.59	195.69	229.47	0.2125	0.09988	0.50154
715	582039.12	4140933.5	210.61	185.84	155.38	168.92	198.09	0.1838	0.08637	0.43369

716	582040.88	4141210.25	89.59	79.66	65.03	70.95	82.9	0.0776	0.03648	0.18320
717	582044.44	4141764	37.89	33.89	25.86	30.07	35.25	0.0326	0.01532	0.07692
718	582046.06	4140957.75	185.82	163.97	136.94	148.68	174.32	0.1619	0.07611	0.38219
719	582051.31	4141427.5	59.31	53.07	41.91	47.24	54.9	0.0513	0.02410	0.12103
720	582053	4140982.25	165.96	146.42	122.12	132.53	155.35	0.1445	0.06790	0.34096
721	582054.75	4141259	79.4	70.8	57.28	62.98	73.44	0.0688	0.03233	0.16232
722	582066.88	4141031	136.49	120.49	100.04	108.65	127.3	0.1186	0.05574	0.27988
723	582068.62	4141308	70.99	63.41	50.83	56.39	65.65	0.0615	0.02888	0.14503
724	582078.5	4140802.25	472.01	415.46	348.29	385.26	450.83	0.4144	0.19475	0.97791
725	582079	4141525	49.61	44.45	34.49	39.62	46.06	0.0428	0.02014	0.10112
726	582080.69	4141080	115.38	102.04	84.16	91.64	107.28	0.1001	0.04705	0.23624
727	582085.44	4140826.5	355.33	312.84	261.96	288.3	337.48	0.3112	0.14626	0.73439
728	582092.38	4140851	286.66	252.46	211.1	231.67	271.19	0.2506	0.11779	0.59145
729	582094.56	4141128.75	99.46	88.21	72.16	78.91	92.26	0.0862	0.04051	0.20343
730	582099.31	4140875.5	241.01	212.4	177.31	194.16	227.34	0.2104	0.09891	0.49665
731	582106.31	4140900	208.06	183.42	152.89	167.15	195.76	0.1815	0.08528	0.42824
732	582106.75	4141622.75	42.15	37.76	28.85	33.72	39.26	0.0363	0.01708	0.08578
733	582108.44	4141177.5	86.95	77.34	62.7	69.01	80.55	0.0753	0.03540	0.17773
734	582113.25	4140924.5	183.04	161.39	134.3	146.68	171.79	0.1594	0.07494	0.37628
735	582120.19	4140949	163.26	143.92	119.56	130.54	152.88	0.1420	0.06676	0.33520
736	582122.25	4141226.5	76.8	68.52	55.02	61.06	71.12	0.0665	0.03126	0.15695
737	582134.06	4140997.75	133.89	118.09	97.57	106.7	124.88	0.1162	0.05463	0.27429
738	582134.44	4141720.5	36.27	32.41	24.47	29	33.86	0.0312	0.01466	0.07364
739	582136.12	4141275.25	68.54	61.27	48.7	54.62	63.51	0.0593	0.02788	0.14001
740	582141.31	4141383.75	56.57	50.67	39.6	45.26	52.52	0.0489	0.02299	0.11546
741	582145.62	4140768.75	469.91	413.53	346.23	384.09	448.74	0.4125	0.19388	0.97350
742	582148	4141046.75	112.76	99.62	81.69	89.71	104.86	0.0977	0.04593	0.23064
743	582152.62	4140793.25	352.25	309.96	259.13	286.32	334.51	0.3084	0.14496	0.72790
744	582159.56	4140817.75	283.93	249.83	208.59	229.85	268.61	0.2482	0.11664	0.58566
745	582161.88	4141095.75	96.78	85.75	69.66	76.98	89.8	0.0838	0.03938	0.19775
746	582166.5	4140842.25	238.52	209.93	174.98	192.38	224.95	0.2082	0.09783	0.49124
747	582169.06	4141481.5	47.21	42.3	32.46	37.95	43.98	0.0408	0.01917	0.09624
748	582173.44	4140866.5	205.94	181.35	150.79	165.58	193.68	0.1795	0.08435	0.42354
749	582175.81	4141144.75	84.25	74.89	60.22	67.09	78.08	0.0729	0.03427	0.17206
750	582180.38	4140891	180.75	159.22	132.03	144.98	169.58	0.1573	0.07394	0.37126
751	582187.38	4140915.5	160.75	141.63	117.09	128.71	150.51	0.1397	0.06568	0.32978
752	582189.69	4141193.5	74.19	66.18	52.63	59.24	68.82	0.0642	0.03018	0.15154
753	582196.75	4141579.25	40.11	35.87	27.1	32.34	37.51	0.0346	0.01626	0.08162
754	582201.25	4140964.5	131.02	115.54	94.81	104.64	122.26	0.1137	0.05342	0.26822
755	582203.56	4141242.5	65.99	59	46.41	52.86	61.3	0.0571	0.02684	0.13478
756	582212.81	4140735.25	467.98	411.62	344.16	382.91	446.92	0.4107	0.19304	0.96929
757	582215.12	4141013.5	109.82	97.01	78.91	87.65	102.21	0.0951	0.04471	0.22448
758	582219.75	4140759.75	350.48	308.35	257.18	285.17	332.78	0.3068	0.14419	0.72403
759	582224.44	4141677	34.55	30.77	22.97	27.88	32.39	0.0297	0.01396	0.07012
760	582226.69	4140784.25	281.52	247.66	206.11	228.26	266.32	0.2460	0.11561	0.58050
761	582229.06	4141062.25	93.9	83.16	66.96	75.01	87.29	0.0813	0.03819	0.19178
762	582231.38	4141340.25	53.6	47.98	37.02	43.23	49.99	0.0464	0.02179	0.10942
763	582233.69	4140808.75	235.45	207.07	171.97	190.32	222.1	0.2054	0.09653	0.48470
764	582240.62	4140833.25	202.3	177.86	147.36	163.09	190.32	0.1762	0.08281	0.41580
765	582242.94	4141111.25	81.44	72.33	57.6	65.2	75.68	0.0705	0.03311	0.16626
766	582247.56	4140857.75	177.12	155.65	128.59	142.46	166.21	0.1540	0.07238	0.36345
767	582254.5	4140882.25	157.2	138.1	113.7	126.22	147.2	0.1365	0.06415	0.32210
768	582256.88	4141160.25	71.46	63.67	50.12	57.43	66.49	0.0618	0.02906	0.14593
769	582259.06	4141438	44.75	39.98	30.31	36.32	41.91	0.0387	0.01817	0.09122
770	582268.44	4140931	127.59	112.22	91.51	102.27	119.14	0.1105	0.05196	0.26089
771	582270.75	4141209	63.46	56.64	44.09	51.21	59.17	0.0549	0.02581	0.12960
772	582280	4140702	463.76	407.48	340.42	380.15	443.09	0.4070	0.19128	0.96047
773	582282.31	4140980	106.35	93.79	75.6	85.32	99.18	0.0920	0.04326	0.21723
774	582286.75	4141535.75	38.08	33.88	25.33	31.03	35.79	0.0328	0.01543	0.07746
775	582286.94	4140726.5	346.31	303.95	253.42	282.45	328.91	0.3030	0.14241	0.71510
776	582293.88	4140751	277.78	243.68	202.64	225.76	262.74	0.2425	0.11398	0.57235
777	582296.19	4141029	90.45	80.01	63.73	72.76	84.38	0.0783	0.03679	0.18471
778	582300.81	4140775.25	232.34	203.86	168.92	188.25	219.08	0.2025	0.09517	0.47788
779	582307.75	4140799.75	198.99	174.71	144.12	160.81	187.15	0.1732	0.08138	0.40865
780	582310.12	4141077.75	78.22	69.37	54.61	63.15	73.04	0.0677	0.03181	0.15972
781	582314.5	4141633.25	32.87	29.06	21.5	26.84	30.97	0.0282	0.01328	0.06667
782	582314.75	4140824.25	173.44	152.34	125.05	139.89	162.77	0.1507	0.07083	0.35565
783	582320.94	4141295.75	50.69	45.17	34.38	41.38	47.58	0.0438	0.02060	0.10346
784	582321.69	4140848.75	153.23	134.63	109.94	123.46	143.58	0.1330	0.06249	0.31380
785	582324	4141126.75	68.5	60.89	47.37	55.58	64.12	0.0593	0.02787	0.13993
786	582335.56	4140897.75	123.28	108.45	87.5	99.37	115.34	0.1068	0.05019	0.25202
787	582337.88	4141175.75	60.74	54.03	41.57	49.52	56.96	0.0526	0.02471	0.12405
788	582347.56	4140669.5	460.91	405.51	338.71	376.71	439.75	0.4043	0.19003	0.95419
789	582348.75	4141393.75	42.31	37.54	28.13	34.79	39.88	0.0365	0.01717	0.08621
790	582349.44	4140946.5	102.23	90.08	71.75	82.66	95.67	0.0885	0.04158	0.20881
791	582354.5	4140694	342.34	301.07	250.4	278.9	324.83	0.2995	0.14077	0.70684
792	582361.38	4140718.25	273.42	240.22	198.95	222.33	258.51	0.2387	0.11218	0.56330
793	582363.38	4140995.5	86.56	76.41	60.07	70.33	81.11	0.0749	0.03520	0.17675
794	582368.31	4140742.75	226.84	199.14	164.05	184.15	213.84	0.1976	0.09287	0.46635
795	582375.25	4140767	193.34	169.72	138.92	156.78	181.85	0.1681	0.07902	0.39677

796	582376.5	4141491.5	36.08	31.8	23.55	29.71	34.11	0.0311	0.01459	0.07328
797	582377.25	4141044.5	74.63	65.95	51.22	60.97	70.09	0.0646	0.03035	0.15239
798	582382.12	4140791.5	167.52	147.1	119.56	135.77	157.32	0.1455	0.06836	0.34327
799	582389	4140815.75	147.3	129.4	104.41	119.47	138.24	0.1278	0.06005	0.30152
800	582391.19	4141093.5	65.29	57.72	44.31	53.66	61.46	0.0565	0.02655	0.13331
801	582402.88	4140864.5	117.39	103.24	82.07	95.59	110.25	0.1017	0.04780	0.24003
802	582404.31	4141589.5	31.21	27.27	20.04	25.75	29.58	0.0268	0.01258	0.06318
803	582405.06	4141142.25	57.89	51.15	38.86	47.85	54.64	0.0501	0.02354	0.11818
804	582410.5	4141251.25	47.72	42.11	31.62	39.61	45.15	0.0412	0.01938	0.09733
805	582415.44	4140637.75	455.39	400.59	333.88	372.14	434.49	0.3993	0.18767	0.94234
806	582416.69	4140913.25	96.79	85.12	66.73	79.29	91.11	0.0838	0.03939	0.19779
807	582422.38	4140662	336	295.04	245.1	273.67	318.54	0.2937	0.13802	0.69306
808	582429.25	4140686.5	265.38	232.8	192.12	215.89	250.56	0.2314	0.10873	0.54599
809	582430.5	4140962.25	81.85	71.9	55.66	67.51	77.25	0.0708	0.03329	0.16717
810	582436.19	4140710.75	218.53	191.68	156.72	177.81	205.81	0.1901	0.08935	0.44866
811	582438.25	4141349.25	39.91	34.96	25.95	33.36	37.91	0.0344	0.01618	0.08123
812	582443.06	4140735.25	184.31	161.74	130.85	150.22	173.4	0.1601	0.07525	0.37785
813	582444.44	4141011	70.65	61.94	47.44	58.66	66.86	0.0611	0.02872	0.14422
814	582450	4140759.5	158.53	139.19	111.42	129.61	149.2	0.1376	0.06467	0.32471
815	582456.94	4140784	138.26	121.4	96.21	113.49	130.3	0.1199	0.05637	0.28304
816	582458.31	4141060	61.9	54.16	41.08	51.75	58.73	0.0535	0.02516	0.12632
817	582466.06	4141447	34.11	29.61	21.8	28.54	32.49	0.0293	0.01378	0.06917
818	582470.75	4140832.75	109.34	95.83	74.66	90.58	103.45	0.0948	0.04454	0.22366
819	582472.25	4141109	54.97	47.95	36.07	46.21	52.25	0.0475	0.02232	0.11208
820	582484.56	4140881.5	89.99	78.53	60.4	75.22	85.45	0.0779	0.03662	0.18389
821	582484.81	4140609.25	439.51	387.83	322.57	357.11	417.91	0.3850	0.18094	0.90857
822	582491.62	4140633.5	317.73	279.37	230.13	258.74	300.67	0.2773	0.13034	0.65449
823	582493.88	4141545	29.59	25.41	18.62	24.79	28.24	0.0253	0.01191	0.05978
824	582498.38	4140657.5	247.09	216.88	176.32	201.9	233.3	0.2151	0.10110	0.50763
825	582498.38	4140930.25	76.27	66.2	50.44	64.26	72.63	0.0660	0.03100	0.15567
826	582500	4141206.75	44.72	38.7	28.81	37.94	42.71	0.0386	0.01813	0.09104
827	582505.19	4140681.5	200.59	175.93	140.95	164.78	189.42	0.1743	0.08194	0.41143
828	582512	4140705.75	167.67	146.92	116.02	138.71	158.64	0.1456	0.06843	0.34360
829	582512.19	4140979	66.07	57.01	43.15	56.05	63.06	0.0571	0.02682	0.13468
830	582518.81	4140729.75	143.66	125.61	97.95	119.79	136.31	0.1247	0.05859	0.29421
831	582525.62	4140754	125.22	109.13	84.23	105.24	119.18	0.1086	0.05104	0.25630
832	582526	4141027.75	58.14	49.91	37.55	49.62	55.65	0.0502	0.02358	0.11841
833	582527.81	4141304.75	37.51	32.14	23.77	31.91	35.96	0.0323	0.01516	0.07613
834	582539.19	4140802.25	99.42	85.91	65.41	84.69	95.15	0.0861	0.04047	0.20323
835	582539.81	4141076.5	51.86	44.28	33.17	44.44	49.72	0.0447	0.02101	0.10548
836	582552.81	4140850.5	82.34	70.43	53.28	70.84	79.11	0.0712	0.03346	0.16803
837	582555.62	4141402.5	32.17	27.28	20.09	27.42	30.93	0.0276	0.01296	0.06508
838	582556.19	4140586.5	378.24	333.02	272.11	307.55	358.21	0.3298	0.15502	0.77839
839	582563	4140610.5	262.64	230.53	183.06	217.35	249.57	0.2286	0.10746	0.53957
840	582566.44	4140898.75	70.29	59.53	44.93	60.89	67.72	0.0607	0.02852	0.14319
841	582569.75	4140634.5	200.36	174.56	135.58	169.05	191.56	0.1742	0.08188	0.41116
842	582576.56	4140658.75	162.05	139.77	107.05	138.98	155.83	0.1407	0.06615	0.33214
843	582580.06	4140947	61.32	51.47	38.81	53.4	59.2	0.0528	0.02483	0.12470
844	582583.31	4140682.75	136.74	116.67	88.73	118.72	132.1	0.1186	0.05574	0.27988
845	582583.44	4141500.25	28.02	23.48	17.27	23.88	27	0.0239	0.01125	0.05647
846	582590.06	4141163.25	41.68	34.91	26.02	36.18	40.25	0.0358	0.01683	0.08451
847	582590.12	4140706.75	118.62	100.13	75.94	103.91	114.98	0.1027	0.04828	0.24241
848	582593.88	4140995.75	54.27	45.22	34.07	47.46	52.52	0.0467	0.02195	0.11023
849	582596.88	4140730.75	105.01	87.81	66.53	92.59	102.04	0.0908	0.04267	0.21428
850	582607.69	4141044.5	48.65	40.29	30.32	42.66	47.16	0.0418	0.01965	0.09869
851	582610.5	4140779	85.63	70.53	53.47	76.13	83.46	0.0738	0.03471	0.17427
852	582617.69	4141260.75	35.18	29.19	21.69	30.6	34.11	0.0302	0.01417	0.07116
853	582624	4140827	72.49	59.09	44.84	64.74	70.79	0.0624	0.02932	0.14724
854	582628.38	4140566.25	231.4	177.42	139.4	214.54	231.39	0.1988	0.09345	0.46924
855	582635.19	4140590.25	176.47	135.95	106.27	163.59	176.21	0.1517	0.07130	0.35801
856	582637.62	4140875.25	62.84	50.83	38.63	56.28	61.47	0.0540	0.02538	0.12746
857	582641.94	4140614.25	145.03	112.02	87.24	134.5	144.73	0.1247	0.05861	0.29430
858	582645.31	4141358.25	30.31	24.92	18.48	26.36	29.48	0.0259	0.01218	0.06115
859	582648.75	4140638.25	124.08	95.98	74.54	115.12	123.8	0.1067	0.05015	0.25182
860	582651.19	4140923.25	55.52	44.65	33.97	49.8	54.4	0.0477	0.02240	0.11250
861	582655.5	4140662.5	108.8	84.21	65.28	100.94	108.54	0.0936	0.04397	0.22079
862	582662.31	4140686.5	97.16	75.21	58.24	90.13	96.92	0.0835	0.03926	0.19714
863	582664.75	4140971.5	49.71	39.79	30.3	44.62	48.78	0.0426	0.02004	0.10063
864	582669.06	4140710.5	87.94	68.05	52.66	81.53	87.7	0.0756	0.03552	0.17836
865	582672.94	4141455.75	26.52	21.59	16.01	23	25.84	0.0226	0.01062	0.05332
866	582678.31	4141019.5	45	35.89	27.29	40.39	44.2	0.0386	0.01812	0.09099
867	582681.5	4141123	38.6	30.96	23.37	34.38	37.81	0.0330	0.01552	0.07794
868	582682.62	4140758.75	74.13	57.29	44.3	68.6	73.83	0.0636	0.02991	0.15017
869	582696.25	4140806.75	64.24	49.57	38.32	59.32	63.88	0.0551	0.02588	0.12996
870	582708.69	4141219.5	32.94	26.28	19.77	29.28	32.32	0.0281	0.01322	0.06636
871	582709.75	4140855	56.66	43.7	33.75	52.2	56.28	0.0485	0.02280	0.11450
872	582723.38	4140903	50.67	39.07	30.14	46.58	50.31	0.0434	0.02038	0.10232
873	582735.88	4141316	28.6	22.71	17.04	25.35	28.12	0.0244	0.01145	0.05750
874	582736.94	4140951.25	45.76	35.3	27.17	42	45.46	0.0391	0.01839	0.09237
875	582750.5	4140999.25	41.73	32.18	24.7	38.21	41.45	0.0357	0.01676	0.08414



876	582763.44	4141413.25	25.15	19.84	14.87	22.2	24.76	0.0214	0.01004	0.05042
877	582777.62	4141095.5	35.35	27.25	20.82	32.2	35.11	0.0301	0.01417	0.07114
878	582804.75	4141191.75	30.5	23.51	17.89	27.64	30.3	0.0260	0.01220	0.06128
879	582831.88	4141288	26.69	20.55	15.57	24.06	26.52	0.0227	0.01066	0.05352
880	582859	4141384.25	23.63	18.13	13.72	21.18	23.48	0.0200	0.00941	0.04727
	<b>Max</b>		<b>609.88</b>	<b>531.12</b>	<b>457.36</b>	<b>526.02</b>	<b>597.04</b>	0.544284	0.25581348	1.28451024