

BOREL MIDDLE SCHOOL PROJECT

CEQA ANALYSIS

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CATEGORICAL EXEMPTION ANALYSIS

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CATEGORICAL EXEMPTION ANALYSIS

PROJECT DESCRIPTION

The San Mateo-Foster City School District (District) proposes to construct two new structures consisting of six classrooms and a gymnasium on the existing Borel Middle School (BMS) campus at 425 Barneson Avenue in San Mateo, California (**Figure 1, Project Location and Vicinity**). BMS is a public middle school for students in grades 6 through 8. The school currently has a student population of approximately 1,080. Assuming an average class size consistent with the state average of 30 students per classroom, the project is anticipated to increase the student capacity at BMS by 180 students, to a total of 1,260 (NCES 2008). BMS is primarily attended by students from San Mateo and Foster City, the majority of whom live in neighboring residential areas.

The project site within the school campus is approximately 1.8 acres, located on the southwest corner of the property between the existing school buildings and Borel Avenue. The proposed classrooms would be adjacent to Borel Park on the east side of property. The gymnasium would be located parallel to Borel Avenue, on the south side of the blacktop. **Figure 2, Proposed Project Plan**, shows the square footage of the new structures.

The project would construct 22,835 square feet of new educational and athletic facilities, including classrooms totaling 6,120 square feet. The proposed 15,934-square-foot gymnasium would include a 9,858-square-foot basketball court, locker rooms, bathrooms, support rooms, and one physical education classroom. The project would include all necessary connections to existing water, sewer, and electrical services. The project would also require tree removal.

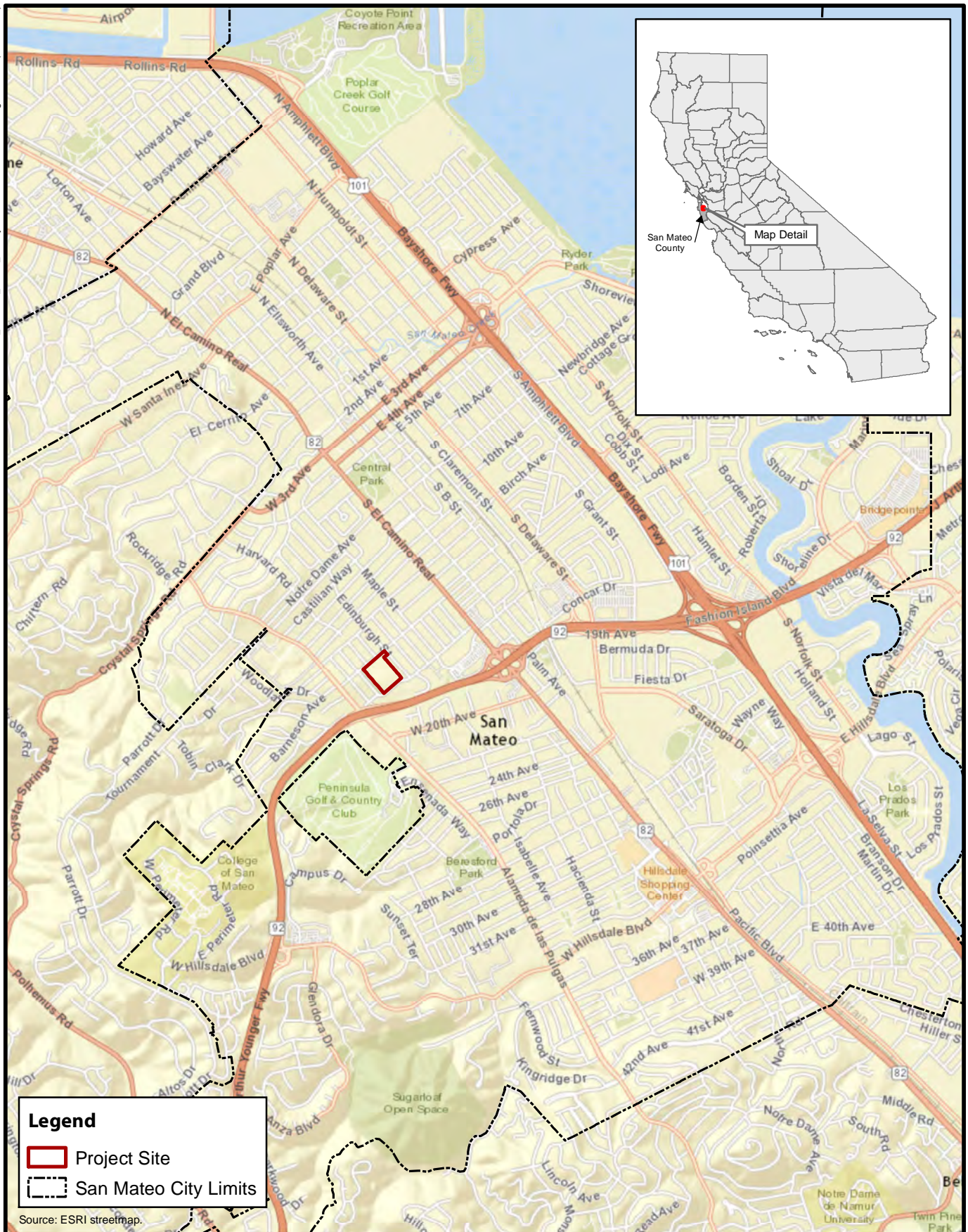
The project would accommodate anticipated increases in student enrollment in the San Mateo-Foster City School District and is part of Measure X, a facilities bond measure passed by district residents in 2015. In January 2016, the District's Board of Trustees approved Measure X development plans for school facility expansion and repair. The projects, which would be developed in two phases, include the expansion of two elementary schools and four middle schools, and the addition of two new elementary schools. The BMS project is included under Phase 1, completion of which is anticipated by January 2020.

Project Construction

Construction would occur over three phases. Phase I would consist of excavation and site work, including foundation for the new classrooms. Phase II would include relocating the existing music portable to the south and pre-fabricating and locating the classroom buildings. Phase III would be constructing the new gymnasium. Although only some of these activities need approval from the Division of the State Architect, they are described herein so as to consider the "whole of the project" under CEQA.

Construction activities are anticipated to occur as follows: Phase I from June 2018 to September 2018; Phase II from January 2018 to "winter break" 2018; and Phase III from spring 2018 to January 2020. Construction activities would occur when school is in and out of session. Although the District has jurisdiction over the project site, the project would comply with the construction noise requirements in San Mateo (2016) Municipal Code Chapter 23.06. Consistent with these requirements, construction would occur Monday through Friday between 7:00 a.m. and 7:00 p.m. Occasional work may occur on Saturdays and would be limited to the hours between 9:00 a.m. and 5:00 p.m.

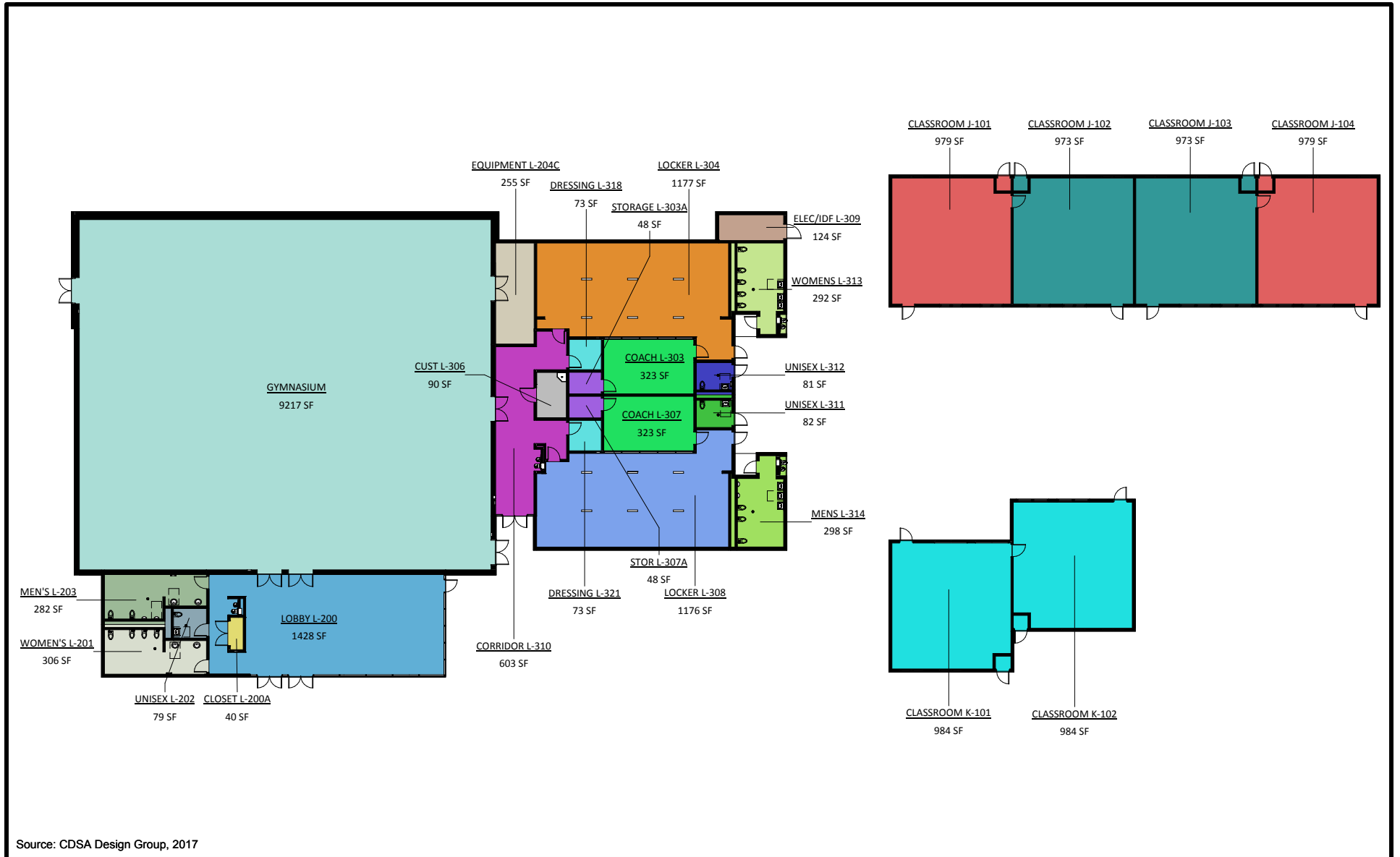
Construction activities would consist of site preparation and pavement removal. Construction areas would be excavated to a sufficient depth to remove all existing pavement and debris. Construction equipment would potentially include heavy equipment such as scrapers, loaders, compactors, rollers, and paving machines. Construction crews would vary in size and would comprise approximately 10 to 30 people, depending on the construction phase.



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Feet

FIGURE 1

Project Location and Vicinity



Source: CDSA Design Group, 2017

FIGURE 2
Proposed Project Site Plan

There are four access points to and from the project site: two on Barneson Avenue and two on Borel Avenue. Construction vehicles would access the site through the Borel Avenue west gate. No roads would be closed, and access would be maintained during construction. Signage would be used during construction to warn approaching motorists of construction traffic as needed. Construction traffic would be coordinated during BMS classroom hours to avoid traffic backups in the project area and conflicts with student pickup and drop-off activities.

ENVIRONMENTAL SETTING

BMS is located on a lot bordered by Barneson Avenue to the north, Shafter Street to the west, Borel Avenue to the south, and Edinburgh Street to the east. The school consists of eight buildings: a library, an office, a gym, a weight room, boys' and girls' locker rooms, and five classroom buildings (**Figure 3, Borel Middle School Existing Buildings**). BMS has two connected parking lots on the northeast corner of the property. Basketball courts, a rectangular grass field, and a blacktop recreation area line the property along Borel Avenue. The field, basketball courts, and paved areas are currently used for school activities. Borel Park, owned and maintained by the City, is located along the west side of the property, between the BMS campus and Shafter Street. The park and the school are separated by a fence.

The project site is in an urban area surrounded by various land uses, including residential, office, and open space. The project site is adjacent to single-family residential areas to the north and east, a narrow strip of open space land to the west, and an executive park including Morgan Stanley and 3Q Digital offices to the south.

The San Mateo (2010) General Plan land use designation for the project site is Public Facility. This designation supports the provision and maintenance of adequate sites and public facilities to support existing and projected 2030 population needs for employment, schools, post office facilities, recreation facilities, libraries, art centers, museums, and offices.

The City of San Mateo (2013) zones the property One Family Dwelling (R1-C). The R1 zoning district is intended to protect the character and variety of neighborhoods, preserve privacy, and prevent burdens on public facilities, while allowing reasonable housing opportunities for families. The permitted uses allowed in the zoning district are single-family homes and community care facilities. Public and private educational uses are allowed; however, exclusive use permits are required for the development of these facilities.

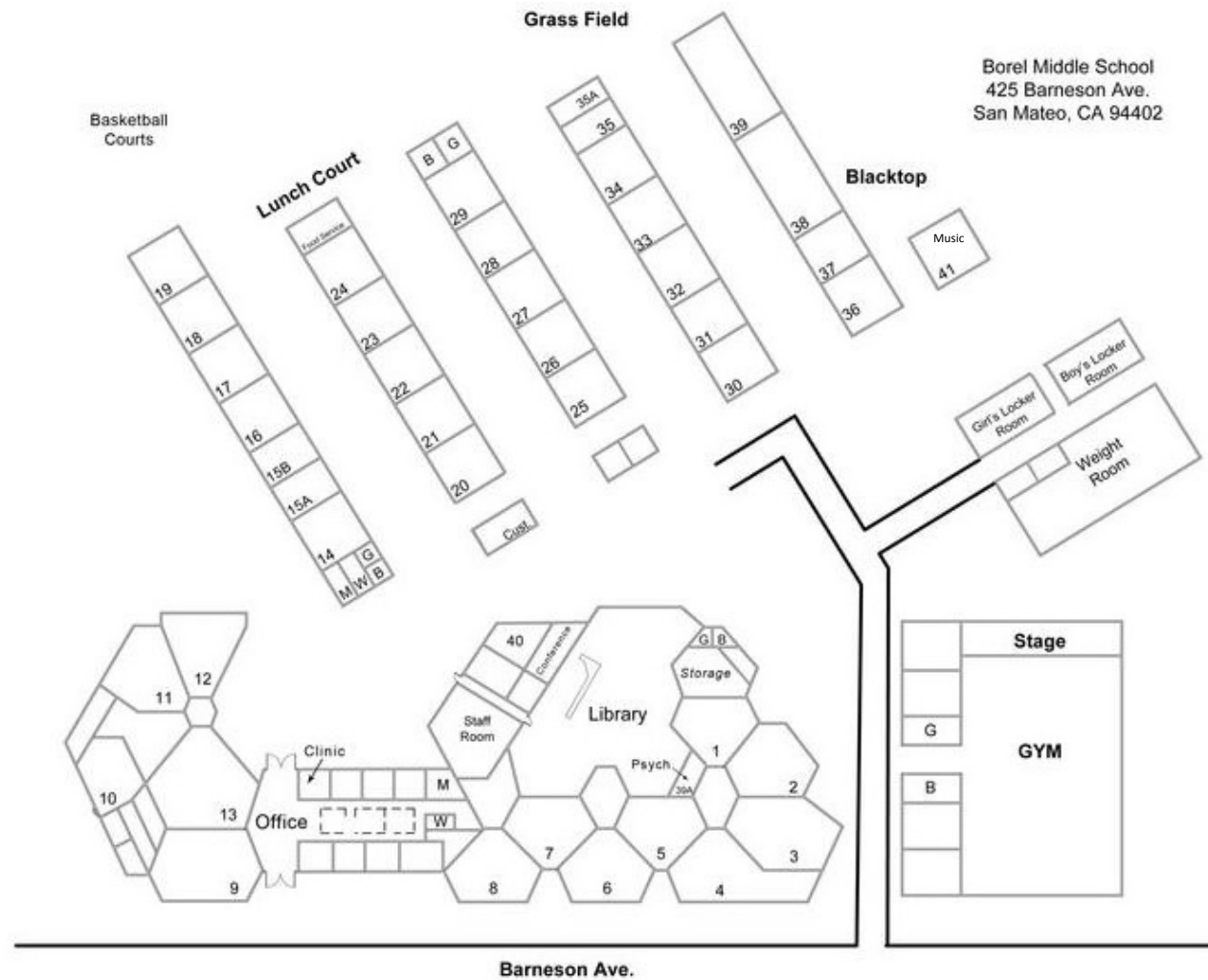
A. EXEMPT STATUS

The project qualifies for a California Environmental Quality Act (CEQA) Categorical Exemption under Section 15314, Minor Additions to Schools (Class 14).

B. REASON WHY THE PROJECT IS EXEMPT

The project qualifies under Class 15314, Minor Additions to Schools. Below is a description of the categorical exemption categories and an explanation of why the project qualifies for exemptions under this category.

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Source: Borel Middle School



Not To Scale

FIGURE 3
Borel Middle School Existing Buildings

Categorical Exemption Analysis

CEQA Guidelines Article 19 (Categorical Exemptions) lists classes of projects that are exempt from CEQA requirements. This section analyzes why this project meets the conditions for a Class 14 Minor Additions to Schools exemption and includes the reasons why none of the possible exceptions to categorical exemptions, found in Section 15300.2, Exceptions, apply to the project. The statutory language of each condition and possible exception is printed in bold italics, followed by the project-related analysis for each condition and exception.

15314, Minor Additions to Schools

Class 14 consists of minor additions to existing schools within existing school grounds where the addition does not increase original student capacity by more than 25% or ten classrooms, whichever is less.

The proposed project meets this condition. The project is categorically exempt from environmental review under CEQA because it would include three new buildings; two pre-fabricated buildings would accommodate six additional classrooms, and one would include a new gymnasium with a full-size basketball court and support rooms. The new structures would be built on existing San Mateo-Foster City School District land which is currently used for school facilities as part of BMS. The additional classrooms would accommodate approximately 180 students, which is less than 25 percent of the current student population.¹

Conclusion

As outlined above, the proposed project qualifies for the exemption category under Section 15314, Minor Additions to Schools (Class 14), under CEQA.

C. EXCEPTIONS TO CATEGORICAL EXEMPTION ANALYSIS

15300.2 Exceptions

Exception (a) only applies to Classes 3, 4, 5, 6, and 11 and as such, it is not discussed further.

(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

This exception does not apply to the project. The project would increase student capacity at BMS by 180 students. No other similar projects are planned on the project site or in the project vicinity. San Mateo's population is projected to grow by over 10,000 people by 2030 (San Mateo 2009). The project is consistent with General Plan Goal 4b to support the provision and maintenance of the City's school facilities, and would also help to accommodate the expected growth in the District. Further, the analysis discussed below and technical studies included in this report show the project would not result in any significant environmental impacts and would not contribute to any cumulative environmental impacts. Therefore, this exception would not apply to the proposed project.

¹ Current capacity = 1,080. New capacity = 1,260. Equals 17% increase in capacity.

(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

This exception does not apply to the proposed project. No unusual circumstances at the project site or planned project operations would result in the possibility of significant effects on the environment. Project implementation would comply with City of San Mateo regulations as they relate to construction. Because the project is in a residential area with construction anticipated to occur over the course of 18 months, an analysis was performed for the project's potential impacts on the following resources: air quality, biological resources, noise, transportation, and water quality. A summary of findings is presented below, and technical analyses are included in **Attachment A** for air quality and **Attachment B** for transportation.

Air Quality

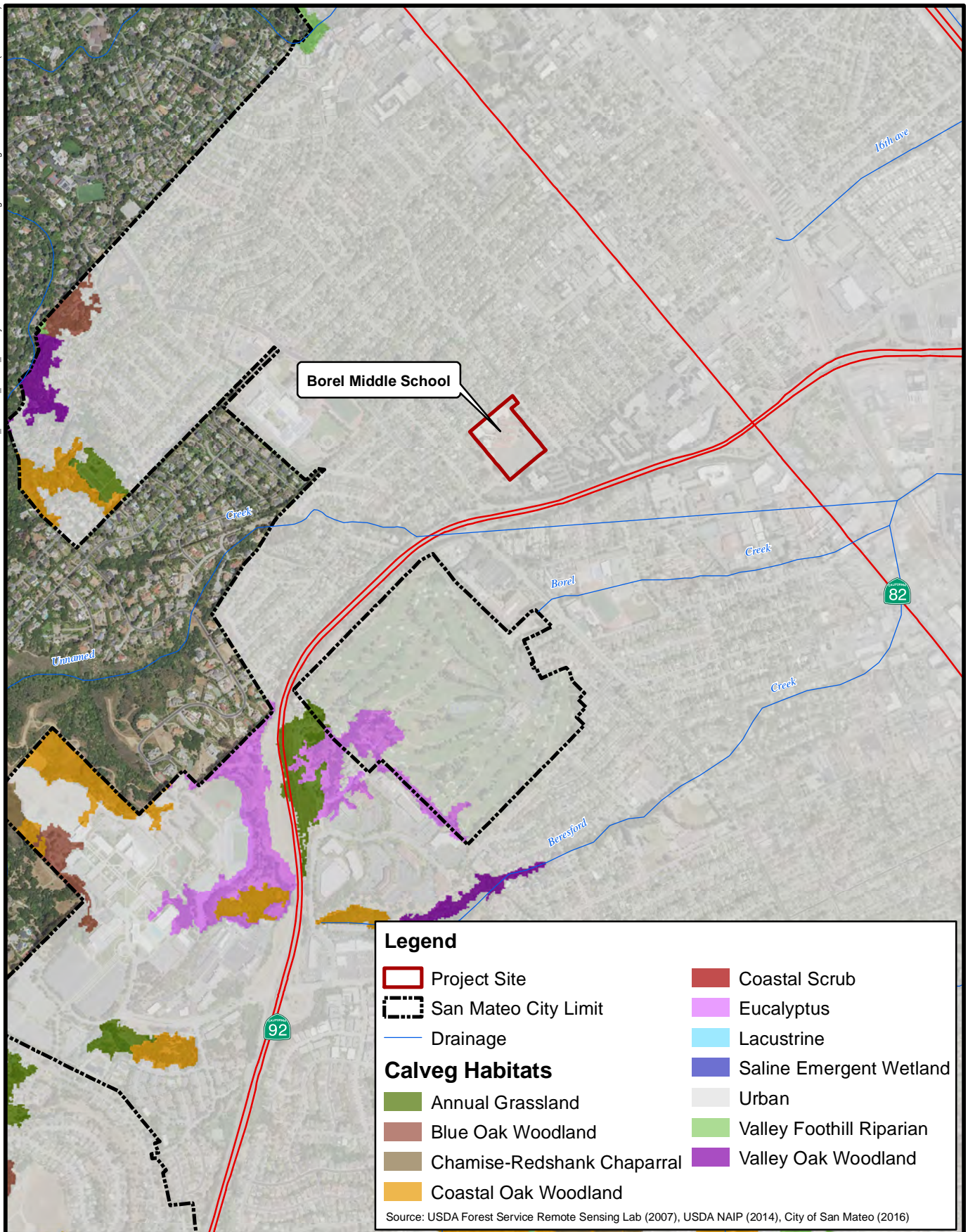
An air quality technical memorandum was prepared for the project and is presented as **Attachment A** of the categorical exemption analysis. The air quality analysis was based on worst-case scenarios for classroom size and student population. Even though the project design has changed since the preparation of the technical memorandum, the data was used as a basis for the analysis because the revised project would not exceed the Bay Area Air Quality Management District's (BAAQMD) significance thresholds for air quality and greenhouse gas emissions.

As shown in **Attachment A**, estimated project emissions during both construction and operations fall below all significance thresholds developed by the BAAQMD. The project would not result in a violation of any air quality standard or contribute substantially to an existing or projected air quality violation. Further, by its very nature, air pollution is largely a cumulative impact. According to the BAAQMD, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. According to the BAAQMD, if a project exceeds its identified significance thresholds, the project's impact would be cumulatively considerable. As concluded in **Attachment A**, the project would not exceed thresholds for air pollutant emissions during construction or operations (Michael Baker International, n.d.). Therefore, the project would not result in cumulative impacts.

Biological Resources

The project site is in an area surrounded by urban development. Currently, the site is covered in asphalt pavement and contains no natural vegetation. There are several trees in the project vicinity. The project would require tree removal. Borel Park is located to the west of the project site, is approximately 2 acres, and does not provide habitat for any special-status species (San Mateo 2010). The nearest habitat for plants, birds, reptiles, insects, and mammal species of concern is eucalyptus and annual grassland habitat, located 0.8 mile to the southwest of the project site (San Mateo 2010). This habitat is shown in **Figure 4, Biological Communities in Proximity to the Project Site**. The project would have no impact on biological resources.

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0 750 1,500
FEET

FIGURE 4
Biological Communities in Proximity to the Project Site

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Noise

The major noise sources in the project vicinity are related to vehicular traffic, including automobile and truck traffic on State Route (SR) 92 and Alameda de las Pulgas and noise associated with nearby residences. BMS is also an existing noise source and generates noise that is typical of a school with 1,080 students in grades 6 through 8. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear (A-weighted decibels, or dB).

San Mateo Municipal Code Section 7.30.100, Nuisances Declared, outlines criteria and guiding policies for establishing acceptable noise levels. The project site is zoned R1-C and is adjacent to single-family residences to the north and east. As noted in Municipal Code Section 7.30.040, Maximum Permissible Sound Levels, the noise levels for Noise Zone 1, which includes single-family residential zones, should not exceed 60 dB between 7:00 a.m. and 10:00 p.m. or 50 dB between 10:00 p.m. and 7:00 a.m. As discussed in the Project Description above, construction would occur between 7:00 a.m. and 7:00 p.m. Monday through Friday, and on Saturdays between 9:00 a.m. and 5:00 p.m.

Construction Noise

Short-term noise levels related to project construction would temporarily increase noise levels in the project vicinity. Site preparation activities, which would include the excavation/removal of existing pavement and vegetated areas, tend to generate the highest noise levels due to the use of earth-moving equipment. This equipment includes excavating machinery such as backhoes and earth-moving and compacting equipment, which includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings.

The nearest existing noise-sensitive receptors are BMS students in existing classrooms, as well as single-family homes along streets bordering the project site. During project construction, noise levels could affect the nearest existing noise-sensitive receptors in the project vicinity. Noise levels generated by individual pieces of construction equipment typically range from approximately 74 dB to 89 dB L_{\max} at 50 feet (FTA 2006).² Average-hourly noise levels associated with construction projects can vary, depending on the activities performed, reaching levels of up to approximately 83 dB L_{\max} at 50 feet. Short-term increases in vehicle traffic, including worker commute trips and haul truck trips, may also result in temporary increases in ambient noise levels at nearby receptors.

However, this impact would be temporary and would cease fully when construction is complete. The project would also comply with construction noise requirements in San Mateo Municipal Code Section 23.06.060, which limit construction to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 9:00 a.m. and 5:00 p.m. on Saturdays. This construction hour limitation would ensure that construction activities would not impact sensitive receivers during the nighttime and early morning hours when residents are sleeping and most sensitive to noise. As such, the project would not have a significant impact on ambient noise levels due to project construction.

Operational Noise

The educational facilities constructed on the project site would operate as BMS classrooms and would increase the total number of students present on the school campus to approximately 1,260. The students would use the existing outdoor space, which includes the lunch court, field, basketball courts, and remaining

² L_{\max} describes the maximum sound level.

blacktop. The use of these outdoor facilities would generate noise, particularly during physical education classes, athletic practices, recess, and lunch periods. The noise levels would vary depending on the level of activity taking place at any one time. Noise levels associated with exterior recreational activities at schools, such as recess and physical education activities, average less than 60 dB at 50 feet from the acoustical center of the source, decreasing as the acoustical center gets farther away (Ambient 2010).

Operational impacts on students and nearby residents would be minimal. While the campus has a paved play area and athletic field, their use would be limited to physical education classes, recess, and lunch during school hours and for athletic practices after school. Further, the project site is on a property that is already in use as a school facility, and the existing noise environment includes operational noise from BMS. As such, the project would not exceed decibel limits pursuant to Chapter 7.30 of the San Mateo Municipal Code. Therefore, project operation would not result in a substantial change in ambient noise levels at nearby noise-sensitive receptors.

Transportation

The traffic analysis was based on worst-case scenarios for classroom size and student population. Even though project design has changed since the preparation of the traffic study, it was used as a basis for the analysis because the revised project design would result in fewer trips than what was previously analyzed (see **Attachment B**).

Construction Traffic

Construction equipment would include heavy equipment such as scrapers, excavators, loaders, compactors, rollers, and paving machines. Construction crews would vary in size and would comprise approximately 10 to 30 people, depending on the construction phase. Construction traffic would be temporary and would take place during non-peak travel times. Construction traffic would also vary depending on the stage of construction. Thirty-five estimated AM and PM peak-hour trips, as described in **Attachment B**, would represent a slight increase over existing traffic conditions. No roads would be closed during construction; equipment would be parked on-site and would not interfere with adjacent access points. Because construction traffic would be minimal and temporary, the project would not have a significant impact on transportation due to construction traffic.

Operational Traffic

The additional project traffic volumes related to the student enrollment increase are considered small from a traffic circulation standpoint, with approximately 3 additional trips per minute in the AM peak hour and 2 additional vehicles per minute in the PM peak hour. The traffic increase attributable to the project would be approximately 486 daily trips, with 162 AM peak-hour trips and 93 PM peak-hour trips.

Entrances to BMS are located on Borel Avenue, as well as on Barneson Avenue on the north side of the project site. The existing level of service (LOS) at the largest intersection on Barneson Avenue at El Camino Real is LOS A during both the AM and PM peak hours (San Mateo 2010). LOS measures the quality of traffic service. In the year 2030, the service level at this intersection is still predicted to be LOS A for both the AM and PM peak hours (San Mateo 2010). Based on the intersection operational analysis in **Attachment B**, project operation would not significantly impact the intersection, which is projected to continue to operate at LOS A during the AM and PM peak hours. Therefore, additional traffic from project implementation would be considered minimal and would not significantly impact traffic on Barneson Avenue.

Water Quality

The project site is already paved, and the project would not increase the amount of impervious surface at the project site. In fact, the project would decrease the total impervious surface at BMS. The project would not alter drainage patterns, with the project area continuing to drain to the municipal water system.

Construction Water Quality Impacts

Project construction activities would remove existing pavement at the project site, potentially increasing the amount of debris entering the municipal water system. In addition, refueling and parking of equipment and other vehicles on-site during construction could result in oil, grease, or related pollutant leaks and spills that may discharge into storm drains. Improper handling, storage, or disposal of fuels and materials or improper cleaning of machinery close to on-site drainages could cause water quality degradation.

The project would be designed to comply with San Mateo Municipal Code Chapter 7.39, Stormwater Management and Discharge Control, which is intended to protect the water quality of water bodies in the city. Municipal Code Section 7.39.235 requires that any construction project which involves a land disturbance activity obtain a Stormwater Management permit from the City's Director of Public Works. The permit would reduce the amount of polluted runoff that flows into the municipal water system.

Operational Water Quality Impacts

Project operation could result in direct surface water quality impacts from motor vehicle operation. The project would replace existing asphalt with classroom and gymnasium buildings, which would not increase impervious surfaces at the site. The project would not increase peak runoff rates; no expansion of existing off-site facilities would be required.

The project would comply with the San Francisco Bay Municipal Regional Stormwater Permit (MRP) (Permit No. CAS612008), administered by the San Francisco Bay Regional Water Quality Control Board. The City of San Mateo is included in the San Mateo permittee group. The MRP ensures attainment of applicable water quality objectives and protection of the beneficial uses of receiving waters and associated habitat. It also requires that discharges not cause exceedances of water quality objectives or cause certain conditions to occur that create a condition of nuisance or water quality impairment in receiving waters. Provision C.3 of the MRP requires new and redevelopment projects that create or replace 10,000 square feet or more of impervious surface to implement certain measures to protect water quality and prevent erosion by minimizing sediment and other pollutants in site runoff and so that post-project runoff will not exceed pre-project rates and durations. The goal of Provision C.3 is to include appropriate source control, site design, and stormwater treatment measures in new development and adaptive reuse projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and adaptive reuse projects. Compliance with Provision C.3 would reduce potential water quality impacts associated with the proposed project.

Compliance with State General Construction Activity Storm Water Permit requirements (where applicable), with San Mateo Municipal Code Section 7.39.235, and with provision C.3 of the MRP would reduce surface water quality impacts associated with the project. Therefore, the project would not have a significant impact on water quality.

(d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not

apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.

This exception does not apply to the project. There are no designated state scenic highways in the project vicinity (Caltrans 2016). As such, the project would not impact any scenic resources within an officially designated state scenic highway.

(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.

This exception does not apply to the proposed project. Per Government Code Section 65962.5, the Cortese List includes locations of hazardous materials release sites in California that meet certain criteria. These sites are compiled from the EnviroStor database, the GeoTracker database, and other state and local agency lists. A search of the EnviroStor database (DTSC 2016a), the GeoTracker database (SWRCB 2016), and the Cortese List web page (DTSC 2016b) was conducted in October 2016 for the project site. A review of the records indicates that the project would not be located on a site included on the Cortese List.

Further, in the case of discovery of unknown contamination, all applicable measures, including stop work procedures and removal of contaminated soils, would be implemented in accordance with federal, state, and local regulations.

(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

This exception does not apply to the proposed project. Although the project would include ground-disturbing activities such as pavement removal and excavation, the possibility of discovering archaeological resources is low because none are known to exist within the project site or within a quarter-mile of the project site. In the case of discovery of unknown cultural materials during construction, stop work procedures would be implemented in accordance with federal, state, and local regulations until a qualified archaeologist is able to inspect the site. Regarding built environment resources, BMS is a built environment resource that has not been evaluated for inclusion in the California Register.

On December 20, 2017, Michael Baker International staff conducted a records search at the Northwest Information Center, of the California Historical Resources Information System, California State University, Sonoma. The records search (#17-1683) was conducted with a quarter-mile search radius of the project site. Three cultural resources studies have been completed within the search radius and no studies have been completed within the project site. One built environment resource, the San Mateo Fire Station #25 located at 545 Barneson Avenue, not within sight of the project site, approximately 530 feet down Barneson Avenue, was recommended not eligible for inclusion in the National Register.

Before becoming a part of San Mateo, the project site was a part of a district called *Homestead*, which hosted a school in the current location of BMS. In the April 9, 1929, *San Mateo Times*, says discussions for a modern school that would add rooms to accommodate the growing population were underway with local area residents. On June 12, 1929, construction started and on January 10, 1930, the school opened with four classrooms and a large auditorium (*San Mateo Times* January 10, 1930).

According to the School's website the Home Arts building and the gymnasium were added in the 1940s and four classroom wings were added in the 1950s, with a fifth classroom wing added in 2000. The "new" main building was opened in September 1969. The Home Arts Building, the oldest building on the campus,

was remodeled in 1999. With the use of California State Modernization funds and local school bond monies, BMS underwent modernization from June 1999 until September 2000. New heating, ventilation and air conditioning were installed. Wiring was brought up to date to accommodate computers, provide Internet access and cable TV school wide. Improvements included seismic upgrades, handicapped access, Internet access, plumbing, paving and painting as well as a new gym floor, stage and ceiling lights. Parent volunteers landscaped the front of the school (SMFCSD 2018). Although BMS was not evaluated for its historic eligibility, the proposed project has a low probability to cause a substantial adverse change in the significance of a historical resource given the location of the new structures and the modernization efforts of the buildings over the years.

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ATTACHMENTS

ATTACHMENT A:
AIR QUALITY TECHNICAL ANALYSIS

Air Quality – Borel Middle School Expansion Project

The project could result in short-term air quality impacts associated with emissions generated from the construction of 24,900 square feet of school building space. Operation of the new school buildings would also generate air pollutant emissions. The California Emissions Estimator Model (CalEEMod), version 2016.3.1, computer program was used to estimate the project's air pollutant emissions from construction of the proposed improvements.

As shown in the table below, projected emissions resulting from the project fall below the construction-related significance thresholds developed by the Bay Area Air Quality Management District (BAAQMD), the air pollution control officer for the region.

Construction Activities	Reactive Organic Gases	Oxides of Nitrogen	Exhaust PM ₁₀	Exhaust PM _{2.5}	Fugitive Dust PM ₁₀	Fugitive Dust PM _{2.5}
Site Preparation	0.89	10.92	0.49	0.45	0.57	0.06
Grading	1.35	11.26	0.80	0.77	0.83	0.43
Building Construction	1.45	14.45	0.94	0.86	0.10	0.02
Paving	1.20	10.83	0.66	0.61	0.14	0.03
Painting	1.11	10.01	0.60	0.56	0.14	0.03
Maximum Daily Emissions	5.64	27.66	1.81	1.69	0.83	0.43
BAAQMD Potentially Significant Impact Threshold	54 pounds/day	54 pounds/day	82 pounds/day	54 pounds/day	Basic Construction Mitigation Measures	Basic Construction Mitigation Measures
Exceed BAAQMD Threshold?	No	No	No	No	No	No

Source: CalEEMod version 2016.3.1. Emission model outputs are also included in this report.

Notes: Building construction, paving, and painting assumed to occur simultaneously. All construction projects in San Mateo are required to implement the BAAQMD's Basic Construction Mitigation Measures as a condition of project approval. Emissions estimates account for the quantifiable components of the BAAQMD's Basic Construction Mitigation Measures, specifically watering unpaved portions of the construction site twice daily, limiting off-road equipment to speeds of 15 mph, and removing dirt track-out on adjacent public roads with a wet power vacuum once daily.

Operation of the new school building space would also generate air pollutant emissions. As shown in the table below, projected emissions resulting from the project fall below the operational significance thresholds developed by the BAAQMD.

School Operations	Reactive Organic Gases	Oxides of Nitrogen	Total PM ₁₀	Total PM _{2.5}	Carbon Monoxide
Summer					
Area Source	0.60	0.00	0.00	0.00	0.00
Energy	0.01	0.11	0.00	0.00	0.09
Mobile	0.62	1.73	1.67	0.47	6.43
Total	1.24	1.84	1.67	0.47	6.53
Winter					
Area Source	0.60	0.00	0.00	0.00	0.00
Energy	0.01	0.11	0.00	0.00	0.09
Mobile	0.58	1.89	1.67	0.47	6.74
Total	1.19	2.00	1.67	0.47	6.84
Thresholds					
BAAQMD Potentially Significant Impact Threshold	54 pounds/day	54 pounds/day	82 pounds/day	54 pounds/day	—
Exceed BAAQMD Threshold?	No	No	No	No	N/A

Source: CalEEMod version 2016.3.1. Emission model outputs are also included in this report.

As demonstrated, projected emissions resulting from the project fall below all significance thresholds developed by the BAAQMD during both construction and operations. Therefore, the project would not result in a violation of any air quality standard or contribute substantially to an existing or projected air quality violation. Furthermore, by its very nature, air pollution is largely a cumulative impact. According to the BAAQMD, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. According to the BAAQMD, if a project exceeds its identified significance thresholds, the project would be cumulatively considerable. As demonstrated, the proposed project would not exceed thresholds for air pollutant emissions during construction or operations. Therefore, since the project does not exceed significance thresholds, it would result in no cumulative impacts.

Project implementation would not result in the development of any sources of toxic air contaminants (TACs). However, there is a potential that future students could be exposed to TAC emissions from stationary and/or mobile sources. Stationary sources include gasoline stations and dry cleaners and mobile sources include freeways and major roadways. Per BAAQMD guidance, all TAC sources within 1,000 feet of a proposed sensitive receptor need to be identified and analyzed. According to the BAAQMD's (2012) Stationary Source Screening Analysis Tool, there are no stationary sources of TACs within 1,000 feet. However, Highway 92 is located approximately 700 feet south of the site. Highway 92 is a source of the TAC, diesel particulate matter as a result of automobile

emissions. The following table identifies the cancer risk, non-cancer hazard index, and PM_{2.5} concentration at the project site as a result of the DPM emissions from Highway 92.

Sources	Combined TAC Concentration at Project Site			
	Cancer Risk (Per Million)	Chronic Hazard Index	Acute Hazard Index	PM _{2.5} Concentration (µg/m ³)
Stationary Sources	N/A	N/A	N/A	N/A
Highway 101	2.93	0.00	0.01	0.02
Total	2.93	0.00	0.01	0.08
Thresholds				
BAAQMD Potentially Significant Impact Threshold ¹	100	10.0	10.0	0.8
Exceed BAAQMD Threshold?	No	No	No	No

Sources: BAAQMD's Highway Screening Analysis Tool and Stationary Source Screening Analysis Tool.

Notes: The BAAQMD thresholds are cumulative thresholds. This table accounts for the health risk from all local sources (i.e., stationary and mobile sources in a 1,000 foot radius) affecting the project site.

The BAAQMD is responsible for preparing plans to attain ambient air quality standards in the San Francisco Bay Area Air Basin. The BAAQMD prepares ozone attainment plans and clean air plans in order to achieve national air pollutant standards under the Clean Air Act. These plans provides local guidance for the State Implementation Plan (SIP), which provides the framework for air quality basins to achieve attainment of federal ambient air quality standards.

As shown in the table below, projected emissions resulting from the project fall below the EPA Conformity Determination thresholds.

School Expansion Project	Pollutant (Tons/Year)					
	Reactive Organic Gases	Oxides of Nitrogen	Total PM ₁₀	Total PM _{2.5}	Carbon Monoxide	Sulfur Dioxide
Project Construction	0.29	1.32	0.09	0.07	0.92	0.00
Project Operations	0.18	0.25	0.20	0.05	0.85	0.00
Thresholds						
EPA Conformity Determination Thresholds (40 CFR 93.153)	50 tons/year	100 tons/year	100 tons/year	100 tons/year	100 tons/year	100 tons/year
Exceed EPA Threshold?	No	No	No	No	No	No

Source: CalEEMod version 2016.3.1. Note: Reactive Organic Gas and Oxides of Nitrogen thresholds are based on the San Francisco Bay Area Air Basin's "Marginal" nonattainment status for ozone. The SO₂, CO, and PM₁₀ thresholds are for air basins classified as attainment for those pollutants. The EPA only has one threshold for PM_{2.5}, regardless of attainment status.

In addition, the emissions inventories contained in the air quality attainment plans are based on projected population growth and vehicle miles traveled (VMT) for the region. These inventories are largely based on the predicted growth identified in regional and community general plans, including associated development projects. Projects that result in an increase in population or employment growth beyond that identified in regional or community plans could result in increases in VMT and subsequently increase mobile source emissions, which would not have been accounted for in the BAAQMD's air quality plans, making the projects inconsistent with the plans. While the project would increase the intensity of the land use on the project site, the project would not represent a new type of land use on the site or a wholly new land use or air emissions generation source. No population growth would occur as a result of the project. Also, the proposed project is consistent with the land use designation of the City of San Mateo's General Plan; therefore, the proposed project would not result in an increase in VMT beyond that anticipated in BAAQMD's air quality plans. Therefore, the proposed project would not conflict with or obstruct Clean Air Act air quality standards.

Greenhouse Gas Emissions

The project's greenhouse gas (GHG) emissions would occur over the short construction duration, and would consist primarily of emissions from equipment exhaust. There would also be long-term regional emissions associated with project-related new vehicular trips and indirect source emissions, such as electricity usage for lighting.

BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. For operational GHG emissions, the applicable BAAQMD threshold of significance is whether the project would exceed 1,100 metric tons per year of carbon dioxide equivalents (CO₂e). As shown in the table below, the proposed project would be below BAAQMD significance thresholds for operational GHG emissions and would result in less than significant GHG impacts.

Source	CO ₂ e
School Expansion Project	294
BAAQMD Potentially Significant Impact Threshold	1,100
Exceed BAAQMD Threshold?	No

Source: CalEEMod version 2016.3.1. Model data outputs are also included in this report.

REFERENCES

BAAQMD (Bay Area Air Quality Management District). 2010. *Bay Area 2010 Clean Air Plan*.

———. 2011a. *Bay Area Air Quality Management District CEQA Guidelines*.

———. 2011b. *Highway Screening Analysis Tool*.
<http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>

———. 2012. *Stationary Source Screening Analysis Tool*.
<http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>

Borel Middle School Expansion Project - San Mateo County, Summer

Borel Middle School Expansion Project

San Mateo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	24.90	1000sqft	0.57	24,900.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	70
Climate Zone	5			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Building construction, paving, & painting assumed to occur simultaneously

Borel Middle School Expansion Project - San Mateo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	PhaseEndDate	4/25/2017	4/11/2017
tblConstructionPhase	PhaseEndDate	4/18/2017	4/11/2017
tblConstructionPhase	PhaseStartDate	4/19/2017	11/23/2016
tblConstructionPhase	PhaseStartDate	4/12/2017	11/23/2016

2.0 Emissions Summary

Borel Middle School Expansion Project - San Mateo County, Summer

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	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
Year	lb/day										lb/day					
2016	5.6445	27.6655	18.7414	0.0294	0.8349	1.8178	2.0912	0.4356	1.6919	1.7651	0.0000	2,948.5749	2,948.5749	0.7110	0.0000	2,966.3494
2017	5.3991	25.5656	18.3571	0.0293	0.2734	1.6481	1.9215	0.0731	1.5338	1.6069	0.0000	2,906.3322	2,906.3322	0.7060	0.0000	2,923.9809
Maximum	5.6445	27.6655	18.7414	0.0294	0.8349	1.8178	2.0912	0.4356	1.6919	1.7651	0.0000	2,948.5749	2,948.5749	0.7110	0.0000	2,966.3494

Mitigated Construction

	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
Year	lb/day										lb/day					
2016	5.6445	27.6655	18.7414	0.0294	0.8349	1.8178	2.0912	0.4356	1.6919	1.7651	0.0000	2,948.5749	2,948.5749	0.7110	0.0000	2,966.3494
2017	5.3991	25.5656	18.3571	0.0293	0.2734	1.6481	1.9215	0.0731	1.5338	1.6069	0.0000	2,906.3322	2,906.3322	0.7060	0.0000	2,923.9809
Maximum	5.6445	27.6655	18.7414	0.0294	0.8349	1.8178	2.0912	0.4356	1.6919	1.7651	0.0000	2,948.5749	2,948.5749	0.7110	0.0000	2,966.3494

[illegible]

Borel Middle School Expansion Project - San Mateo County, Summer

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	lb/day										lb/day					
Area	0.6043	2.0000e-005	2.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.4500e-003	5.4500e-003	1.0000e-005		5.8200e-003
Energy	0.0122	0.1107	0.0930	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003		132.8268	132.8268	2.5500e-003	2.4400e-003	133.6161
Mobile	0.6285	1.7385	6.4386	0.0194	1.6383	0.0244	1.6627	0.4387	0.0230	0.4617		1,952.6226	1,952.6226	0.0746		1,954.4882
Total	1.2449	1.8492	6.5341	0.0201	1.6383	0.0328	1.6712	0.4387	0.0314	0.4701		2,085.4548	2,085.4548	0.0772	2.4400e-003	2,088.1101

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	lb/day										lb/day					
Area	0.6043	2.0000e-005	2.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.4500e-003	5.4500e-003	1.0000e-005		5.8200e-003
Energy	0.0122	0.1107	0.0930	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003		132.8268	132.8268	2.5500e-003	2.4400e-003	133.6161
Mobile	0.6285	1.7385	6.4386	0.0194	1.6383	0.0244	1.6627	0.4387	0.0230	0.4617		1,952.6226	1,952.6226	0.0746		1,954.4882
Total	1.2449	1.8492	6.5341	0.0201	1.6383	0.0328	1.6712	0.4387	0.0314	0.4701		2,085.4548	2,085.4548	0.0772	2.4400e-003	2,088.1101

Borel Middle School Expansion Project - San Mateo County, Summer

	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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/18/2016	11/18/2016	5	1	
2	Grading	Grading	11/19/2016	11/22/2016	5	2	
3	Building Construction	Building Construction	11/23/2016	4/11/2017	5	100	
4	Paving	Paving	11/23/2016	4/11/2017	5	100	
5	Architectural Coating	Architectural Coating	11/23/2016	4/11/2017	5	100	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 37,350; Non-Residential Outdoor: 12,450; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Borel Middle School Expansion Project - San Mateo County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Borel Middle School Expansion Project - San Mateo County, Summer

3.2 Site Preparation - 2016**Unmitigated Construction On-Site**

	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	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.8792	10.9125	4.3857	9.7700e-003		0.4994	0.4994		0.4594	0.4594		1,015.6064	1,015.6064	0.3063		1,023.2650
Total	0.8792	10.9125	4.3857	9.7700e-003	0.5303	0.4994	1.0296	0.0573	0.4594	0.5167		1,015.6064	1,015.6064	0.3063		1,023.2650

Unmitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	0.0212	0.0140	0.1648	4.4000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		43.3814	43.3814	1.2600e-003		43.4128
Total	0.0212	0.0140	0.1648	4.4000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		43.3814	43.3814	1.2600e-003		43.4128

Borel Middle School Expansion Project - San Mateo County, Summer

3.2 Site Preparation - 2016**Mitigated Construction On-Site**

	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	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.8792	10.9125	4.3857	9.7700e-003		0.4994	0.4994		0.4594	0.4594	0.0000	1,015.6064	1,015.6064	0.3063		1,023.2650
Total	0.8792	10.9125	4.3857	9.7700e-003	0.5303	0.4994	1.0296	0.0573	0.4594	0.5167	0.0000	1,015.6064	1,015.6064	0.3063		1,023.2650

Mitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	0.0212	0.0140	0.1648	4.4000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		43.3814	43.3814	1.2600e-003		43.4128
Total	0.0212	0.0140	0.1648	4.4000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		43.3814	43.3814	1.2600e-003		43.4128

Borel Middle School Expansion Project - San Mateo County, Summer

3.3 Grading - 2016**Unmitigated Construction On-Site**

	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	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	1.3177	11.2461	7.9887	0.0120	0.7528	0.8093	1.5621	0.4138	0.7723	1.1861		1,189.1508	1,189.1508	0.2373		1,195.0828

Unmitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	0.0423	0.0281	0.3296	8.7000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		86.7627	86.7627	2.5100e-003		86.8256
Total	0.0423	0.0281	0.3296	8.7000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		86.7627	86.7627	2.5100e-003		86.8256

Borel Middle School Expansion Project - San Mateo County, Summer

3.3 Grading - 2016**Mitigated Construction On-Site**

	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	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	1.3177	11.2461	7.9887	0.0120	0.7528	0.8093	1.5621	0.4138	0.7723	1.1861	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828

Mitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	0.0423	0.0281	0.3296	8.7000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		86.7627	86.7627	2.5100e-003		86.8256
Total	0.0423	0.0281	0.3296	8.7000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		86.7627	86.7627	2.5100e-003		86.8256

Borel Middle School Expansion Project - San Mateo County, Summer

3.4 Building Construction - 2016**Unmitigated Construction On-Site**

	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	lb/day										lb/day					
Off-Road	1.3895	13.8002	8.2452	0.0114		0.9441	0.9441		0.8686	0.8686		1,185.0398	1,185.0398	0.3575		1,193.9760
Total	1.3895	13.8002	8.2452	0.0114		0.9441	0.9441		0.8686	0.8686		1,185.0398	1,185.0398	0.3575		1,193.9760

Unmitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	0.0286	0.6227	0.2300	1.1200e-003	0.0270	7.0900e-003	0.0341	7.7700e-003	6.7800e-003	0.0146		121.7998	121.7998	0.0110		122.0744
Worker	0.0423	0.0281	0.3296	8.7000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		86.7627	86.7627	2.5100e-003		86.8256
Total	0.0709	0.6508	0.5596	1.9900e-003	0.1091	7.6100e-003	0.1168	0.0296	7.2600e-003	0.0368		208.5625	208.5625	0.0135		208.9000

Borel Middle School Expansion Project - San Mateo County, Summer

3.4 Building Construction - 2016**Mitigated Construction On-Site**

	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	lb/day										lb/day					
Off-Road	1.3895	13.8002	8.2452	0.0114		0.9441	0.9441		0.8686	0.8686	0.0000	1,185.0398	1,185.0398	0.3575		1,193.9760
Total	1.3895	13.8002	8.2452	0.0114		0.9441	0.9441		0.8686	0.8686	0.0000	1,185.0398	1,185.0398	0.3575		1,193.9760

Mitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	0.0286	0.6227	0.2300	1.1200e-003	0.0270	7.0900e-003	0.0341	7.7700e-003	6.7800e-003	0.0146		121.7998	121.7998	0.0110		122.0744
Worker	0.0423	0.0281	0.3296	8.7000e-004	0.0822	5.2000e-004	0.0827	0.0218	4.8000e-004	0.0223		86.7627	86.7627	2.5100e-003		86.8256
Total	0.0709	0.6508	0.5596	1.9900e-003	0.1091	7.6100e-003	0.1168	0.0296	7.2600e-003	0.0368		208.5625	208.5625	0.0135		208.9000

Borel Middle School Expansion Project - San Mateo County, Summer

3.4 Building Construction - 2017**Unmitigated Construction On-Site**

	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	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904		1,165.916 4	1,165.916 4	0.3572		1,174.847 3
Total	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904		1,165.916 4	1,165.916 4	0.3572		1,174.847 3

Unmitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	0.0242	0.5738	0.2133	1.1100e-003	0.0270	5.3300e-003	0.0323	7.7700e-003	5.0900e-003	0.0129		120.9737	120.9737	0.0107		121.2411
Worker	0.0371	0.0241	0.2877	8.5000e-004	0.0822	5.1000e-004	0.0827	0.0218	4.7000e-004	0.0223		84.2956	84.2956	2.1800e-003		84.3501
Total	0.0614	0.5980	0.5010	1.9600e-003	0.1091	5.8400e-003	0.1150	0.0296	5.5600e-003	0.0351		205.2693	205.2693	0.0129		205.5912

Borel Middle School Expansion Project - San Mateo County, Summer

3.4 Building Construction - 2017**Mitigated Construction On-Site**

	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	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904	0.0000	1,165.916 4	1,165.916 4	0.3572		1,174.847 3
Total	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904	0.0000	1,165.916 4	1,165.916 4	0.3572		1,174.847 3

Mitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	0.0242	0.5738	0.2133	1.1100e-003	0.0270	5.3300e-003	0.0323	7.7700e-003	5.0900e-003	0.0129		120.9737	120.9737	0.0107		121.2411
Worker	0.0371	0.0241	0.2877	8.5000e-004	0.0822	5.1000e-004	0.0827	0.0218	4.7000e-004	0.0223		84.2956	84.2956	2.1800e-003		84.3501
Total	0.0614	0.5980	0.5010	1.9600e-003	0.1091	5.8400e-003	0.1150	0.0296	5.5600e-003	0.0351		205.2693	205.2693	0.0129		205.5912

Borel Middle School Expansion Project - San Mateo County, Summer

3.5 Paving - 2016**Unmitigated Construction On-Site**

	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	lb/day										lb/day					
Off-Road	1.1343	10.7862	7.3934	0.0113		0.6685	0.6685		0.6185	0.6185		1,099.999 2	1,099.999 2	0.3018		1,107.544 7
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1343	10.7862	7.3934	0.0113		0.6685	0.6685		0.6185	0.6185		1,099.999 2	1,099.999 2	0.3018		1,107.544 7

Unmitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	0.0761	0.0505	0.5933	1.5700e-003	0.1479	9.4000e-004	0.1488	0.0392	8.7000e-004	0.0401		156.1729	156.1729	4.5300e-003		156.2861
Total	0.0761	0.0505	0.5933	1.5700e-003	0.1479	9.4000e-004	0.1488	0.0392	8.7000e-004	0.0401		156.1729	156.1729	4.5300e-003		156.2861

Borel Middle School Expansion Project - San Mateo County, Summer

3.5 Paving - 2016**Mitigated Construction On-Site**

	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	lb/day										lb/day					
Off-Road	1.1343	10.7862	7.3934	0.0113		0.6685	0.6685		0.6185	0.6185	0.0000	1,099.999 2	1,099.999 2	0.3018		1,107.544 7
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.1343	10.7862	7.3934	0.0113		0.6685	0.6685		0.6185	0.6185	0.0000	1,099.999 2	1,099.999 2	0.3018		1,107.544 7

Mitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	0.0761	0.0505	0.5933	1.5700e-003	0.1479	9.4000e-004	0.1488	0.0392	8.7000e-004	0.0401		156.1729	156.1729	4.5300e-003		156.2861
Total	0.0761	0.0505	0.5933	1.5700e-003	0.1479	9.4000e-004	0.1488	0.0392	8.7000e-004	0.0401		156.1729	156.1729	4.5300e-003		156.2861

Borel Middle School Expansion Project - San Mateo County, Summer

3.5 Paving - 2017**Unmitigated Construction On-Site**

	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	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636		1,085.107 1	1,085.107 1	0.3018		1,092.651 5
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636		1,085.107 1	1,085.107 1	0.3018		1,092.651 5

Unmitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	0.0668	0.0435	0.5179	1.5200e-003	0.1479	9.2000e-004	0.1488	0.0392	8.5000e-004	0.0401		151.7321	151.7321	3.9200e-003		151.8301
Total	0.0668	0.0435	0.5179	1.5200e-003	0.1479	9.2000e-004	0.1488	0.0392	8.5000e-004	0.0401		151.7321	151.7321	3.9200e-003		151.8301

Borel Middle School Expansion Project - San Mateo County, Summer

3.5 Paving - 2017**Mitigated Construction On-Site**

	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	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636	0.0000	1,085.107 1	1,085.107 1	0.3018		1,092.651 5
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636	0.0000	1,085.107 1	1,085.107 1	0.3018		1,092.651 5

Mitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	0.0668	0.0435	0.5179	1.5200e-003	0.1479	9.2000e-004	0.1488	0.0392	8.5000e-004	0.0401		151.7321	151.7321	3.9200e-003		151.8301
Total	0.0668	0.0435	0.5179	1.5200e-003	0.1479	9.2000e-004	0.1488	0.0392	8.5000e-004	0.0401		151.7321	151.7321	3.9200e-003		151.8301

Borel Middle School Expansion Project - San Mateo County, Summer

3.6 Architectural Coating - 2016**Unmitigated Construction On-Site**

	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	lb/day										lb/day					
Archit. Coating	2.5968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.2776
Total	2.9652	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.2776

Unmitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	8.4600e-003	5.6100e-003	0.0659	1.7000e-004	0.0164	1.0000e-004	0.0165	4.3600e-003	1.0000e-004	4.4500e-003		17.3526	17.3526	5.0000e-004		17.3651
Total	8.4600e-003	5.6100e-003	0.0659	1.7000e-004	0.0164	1.0000e-004	0.0165	4.3600e-003	1.0000e-004	4.4500e-003		17.3526	17.3526	5.0000e-004		17.3651

Borel Middle School Expansion Project - San Mateo County, Summer

3.6 Architectural Coating - 2016**Mitigated Construction On-Site**

	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	lb/day										lb/day					
Archit. Coating	2.5968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.2776
Total	2.9652	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.2776

Mitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	8.4600e-003	5.6100e-003	0.0659	1.7000e-004	0.0164	1.0000e-004	0.0165	4.3600e-003	1.0000e-004	4.4500e-003		17.3526	17.3526	5.0000e-004		17.3651
Total	8.4600e-003	5.6100e-003	0.0659	1.7000e-004	0.0164	1.0000e-004	0.0165	4.3600e-003	1.0000e-004	4.4500e-003		17.3526	17.3526	5.0000e-004		17.3651

Borel Middle School Expansion Project - San Mateo County, Summer

3.6 Architectural Coating - 2017**Unmitigated Construction On-Site**

	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	lb/day										lb/day					
Archit. Coating	2.5968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.1909
Total	2.9291	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.1909

Unmitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	7.4300e-003	4.8300e-003	0.0576	1.7000e-004	0.0164	1.0000e-004	0.0165	4.3600e-003	9.0000e-005	4.4500e-003		16.8591	16.8591	4.4000e-004		16.8700
Total	7.4300e-003	4.8300e-003	0.0576	1.7000e-004	0.0164	1.0000e-004	0.0165	4.3600e-003	9.0000e-005	4.4500e-003		16.8591	16.8591	4.4000e-004		16.8700

Borel Middle School Expansion Project - San Mateo County, Summer

3.6 Architectural Coating - 2017**Mitigated Construction On-Site**

	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	lb/day										lb/day					
Archit. Coating	2.5968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.1909
Total	2.9291	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.1909

Mitigated Construction Off-Site

	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	lb/day										lb/day					
Hauling	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
Vendor	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
Worker	7.4300e-003	4.8300e-003	0.0576	1.7000e-004	0.0164	1.0000e-004	0.0165	4.3600e-003	9.0000e-005	4.4500e-003		16.8591	16.8591	4.4000e-004		16.8700
Total	7.4300e-003	4.8300e-003	0.0576	1.7000e-004	0.0164	1.0000e-004	0.0165	4.3600e-003	9.0000e-005	4.4500e-003		16.8591	16.8591	4.4000e-004		16.8700

4.0 Operational Detail - Mobile

Borel Middle School Expansion Project - San Mateo County, Summer

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	lb/day										lb/day					
Mitigated	0.6285	1.7385	6.4386	0.0194	1.6383	0.0244	1.6627	0.4387	0.0230	0.4617		1,952.6226	1,952.6226	0.0746		1,954.4882
Unmitigated	0.6285	1.7385	6.4386	0.0194	1.6383	0.0244	1.6627	0.4387	0.0230	0.4617		1,952.6226	1,952.6226	0.0746		1,954.4882

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior High School	343.12	0.00	0.00	551,004	551,004
Total	343.12	0.00	0.00	551,004	551,004

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
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior High School	0.508680	0.049272	0.242166	0.132717	0.018469	0.006106	0.019850	0.006168	0.003703	0.003432	0.008335	0.000401	0.000701

Borel Middle School Expansion Project - San Mateo County, Summer

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	lb/day										lb/day					
NaturalGas Mitigated	0.0122	0.1107	0.0930	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003		132.8268	132.8268	2.5500e-003	2.4400e-003	133.6161
NaturalGas Unmitigated	0.0122	0.1107	0.0930	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003		132.8268	132.8268	2.5500e-003	2.4400e-003	133.6161

Borel Middle School Expansion Project - San Mateo County, Summer

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	lb/day										lb/day					
Junior High School	1129.03	0.0122	0.1107	0.0930	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003		132.8268	132.8268	2.5500e-003	2.4400e-003	133.6161
Total		0.0122	0.1107	0.0930	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003		132.8268	132.8268	2.5500e-003	2.4400e-003	133.6161

Mitigated

	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	lb/day										lb/day					
Junior High School	1.12903	0.0122	0.1107	0.0930	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003		132.8268	132.8268	2.5500e-003	2.4400e-003	133.6161
Total		0.0122	0.1107	0.0930	6.6000e-004		8.4100e-003	8.4100e-003		8.4100e-003	8.4100e-003		132.8268	132.8268	2.5500e-003	2.4400e-003	133.6161

6.0 Area Detail**6.1 Mitigation Measures Area**

Borel Middle School Expansion Project - San Mateo County, Summer

	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	lb/day										lb/day					
Mitigated	0.6043	2.0000e-005	2.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.4500e-003	5.4500e-003	1.0000e-005		5.8200e-003
Unmitigated	0.6043	2.0000e-005	2.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.4500e-003	5.4500e-003	1.0000e-005		5.8200e-003

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	lb/day										lb/day					
Architectural Coating	0.0711					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5329					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.5000e-004	2.0000e-005	2.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.4500e-003	5.4500e-003	1.0000e-005		5.8200e-003
Total	0.6043	2.0000e-005	2.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.4500e-003	5.4500e-003	1.0000e-005		5.8200e-003

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6.2 Area by SubCategory**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	lb/day										lb/day					
Architectural Coating	0.0711					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5329					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.5000e-004	2.0000e-005	2.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.4500e-003	5.4500e-003	1.0000e-005		5.8200e-003
Total	0.6043	2.0000e-005	2.5800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.4500e-003	5.4500e-003	1.0000e-005		5.8200e-003

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****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**

Borel Middle School Expansion Project - San Mateo County, Summer

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

Borel Middle School Expansion Project - San Mateo County, Annual

Borel Middle School Expansion Project

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Junior High School	24.90	1000sqft	0.57	24,900.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	70
Climate Zone	5			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Building construction, paving, & painting assumed to occur simultaneously

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Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	PhaseEndDate	4/25/2017	4/11/2017
tblConstructionPhase	PhaseEndDate	4/18/2017	4/11/2017
tblConstructionPhase	PhaseStartDate	4/19/2017	11/23/2016
tblConstructionPhase	PhaseStartDate	4/12/2017	11/23/2016

2.0 Emissions Summary

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2.1 Overall Construction

Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2016	0.0808	0.4044	0.2725	4.3000e-004	4.7900e-003	0.0265	0.0313	1.4500e-003	0.0247	0.0261	0.0000	38.8788	38.8788	9.3900e-003	0.0000	39.1134
2017	0.1944	0.9211	0.6597	1.0500e-003	9.4400e-003	0.0593	0.0688	2.5300e-003	0.0552	0.0578	0.0000	94.4099	94.4099	0.0231	0.0000	94.9862
Maximum	0.1944	0.9211	0.6597	1.0500e-003	9.4400e-003	0.0593	0.0688	2.5300e-003	0.0552	0.0578	0.0000	94.4099	94.4099	0.0231	0.0000	94.9862

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2016	0.0808	0.4044	0.2725	4.3000e-004	4.7900e-003	0.0265	0.0313	1.4500e-003	0.0247	0.0261	0.0000	38.8787	38.8787	9.3900e-003	0.0000	39.1134
2017	0.1944	0.9211	0.6597	1.0500e-003	9.4400e-003	0.0593	0.0688	2.5300e-003	0.0552	0.0578	0.0000	94.4098	94.4098	0.0231	0.0000	94.9861
Maximum	0.1944	0.9211	0.6597	1.0500e-003	9.4400e-003	0.0593	0.0688	2.5300e-003	0.0552	0.0578	0.0000	94.4098	94.4098	0.0231	0.0000	94.9861

[illegible]

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	11-4-2016	2-3-2017	0.8634	0.8634
2	2-4-2017	5-3-2017	0.7418	0.7418
		Highest	0.8634	0.8634

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	0.1103	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.8000e-004
Energy	2.2200e-003	0.0202	0.0170	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	54.8773	54.8773	1.9100e-003	7.1000e-004	55.1369
Mobile	0.0745	0.2383	0.8332	2.4000e-003	0.2043	3.1800e-003	0.2074	0.0549	3.0000e-003	0.0579	0.0000	219.0600	219.0600	8.7800e-003	0.0000	219.2796
Waste						0.0000	0.0000		0.0000	0.0000	6.5708	0.0000	6.5708	0.3883	0.0000	16.2789
Water						0.0000	0.0000		0.0000	0.0000	0.1629	2.1526	2.3155	0.0168	4.2000e-004	2.8599
Total	0.1870	0.2585	0.8504	2.5200e-003	0.2043	4.7200e-003	0.2090	0.0549	4.5400e-003	0.0594	6.7337	276.0904	282.8241	0.4158	1.1300e-003	293.5559

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2.2 Overall Operational**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	0.1103	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.8000e-004
Energy	2.2200e-003	0.0202	0.0170	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	54.8773	54.8773	1.9100e-003	7.1000e-004	55.1369
Mobile	0.0745	0.2383	0.8332	2.4000e-003	0.2043	3.1800e-003	0.2074	0.0549	3.0000e-003	0.0579	0.0000	219.0600	219.0600	8.7800e-003	0.0000	219.2796
Waste						0.0000	0.0000		0.0000	0.0000	6.5708	0.0000	6.5708	0.3883	0.0000	16.2789
Water						0.0000	0.0000		0.0000	0.0000	0.1629	2.1526	2.3155	0.0168	4.2000e-004	2.8599
Total	0.1870	0.2585	0.8504	2.5200e-003	0.2043	4.7200e-003	0.2090	0.0549	4.5400e-003	0.0594	6.7337	276.0904	282.8241	0.4158	1.1300e-003	293.5559

	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

3.0 Construction Detail**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/18/2016	11/18/2016	5	1	
2	Grading	Grading	11/19/2016	11/22/2016	5	2	
3	Building Construction	Building Construction	11/23/2016	4/11/2017	5	100	
4	Paving	Paving	11/23/2016	4/11/2017	5	100	
5	Architectural Coating	Architectural Coating	11/23/2016	4/11/2017	5	100	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 37,350; Non-Residential Outdoor: 12,450; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	10.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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3.2 Site Preparation - 2016**Unmitigated Construction On-Site**

	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					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4000e-004	5.4600e-003	2.1900e-003	0.0000		2.5000e-004	2.5000e-004		2.3000e-004	2.3000e-004	0.0000	0.4607	0.4607	1.4000e-004	0.0000	0.4642
Total	4.4000e-004	5.4600e-003	2.1900e-003	0.0000	2.7000e-004	2.5000e-004	5.2000e-004	3.0000e-005	2.3000e-004	2.6000e-004	0.0000	0.4607	0.4607	1.4000e-004	0.0000	0.4642

Unmitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0185	0.0185	0.0000	0.0000	0.0186
Total	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0185	0.0185	0.0000	0.0000	0.0186

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3.2 Site Preparation - 2016**Mitigated Construction On-Site**

	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					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4000e-004	5.4600e-003	2.1900e-003	0.0000		2.5000e-004	2.5000e-004		2.3000e-004	2.3000e-004	0.0000	0.4607	0.4607	1.4000e-004	0.0000	0.4641
Total	4.4000e-004	5.4600e-003	2.1900e-003	0.0000	2.7000e-004	2.5000e-004	5.2000e-004	3.0000e-005	2.3000e-004	2.6000e-004	0.0000	0.4607	0.4607	1.4000e-004	0.0000	0.4641

Mitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0185	0.0185	0.0000	0.0000	0.0186
Total	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0185	0.0185	0.0000	0.0000	0.0186

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3.3 Grading - 2016**Unmitigated Construction On-Site**

	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					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	0.0113	7.9900e-003	1.0000e-005		8.1000e-004	8.1000e-004		7.7000e-004	7.7000e-004	0.0000	1.0788	1.0788	2.2000e-004	0.0000	1.0842
Total	1.3200e-003	0.0113	7.9900e-003	1.0000e-005	7.5000e-004	8.1000e-004	1.5600e-003	4.1000e-004	7.7000e-004	1.1800e-003	0.0000	1.0788	1.0788	2.2000e-004	0.0000	1.0842

Unmitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.2000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0742	0.0742	0.0000	0.0000	0.0742
Total	4.0000e-005	3.0000e-005	3.2000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0742	0.0742	0.0000	0.0000	0.0742

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3.3 Grading - 2016**Mitigated Construction On-Site**

	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					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	0.0113	7.9900e-003	1.0000e-005		8.1000e-004	8.1000e-004		7.7000e-004	7.7000e-004	0.0000	1.0788	1.0788	2.2000e-004	0.0000	1.0842
Total	1.3200e-003	0.0113	7.9900e-003	1.0000e-005	7.5000e-004	8.1000e-004	1.5600e-003	4.1000e-004	7.7000e-004	1.1800e-003	0.0000	1.0788	1.0788	2.2000e-004	0.0000	1.0842

Mitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.2000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0742	0.0742	0.0000	0.0000	0.0742
Total	4.0000e-005	3.0000e-005	3.2000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0742	0.0742	0.0000	0.0000	0.0742

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3.4 Building Construction - 2016**Unmitigated Construction On-Site**

	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					
Off-Road	0.0195	0.1932	0.1154	1.6000e-004		0.0132	0.0132		0.0122	0.0122	0.0000	15.0507	15.0507	4.5400e-003	0.0000	15.1642
Total	0.0195	0.1932	0.1154	1.6000e-004		0.0132	0.0132		0.0122	0.0122	0.0000	15.0507	15.0507	4.5400e-003	0.0000	15.1642

Unmitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	4.1000e-004	8.8900e-003	3.3700e-003	2.0000e-005	3.6000e-004	1.0000e-004	4.6000e-004	1.1000e-004	1.0000e-004	2.0000e-004	0.0000	1.5366	1.5366	1.4000e-004	0.0000	1.5401
Worker	5.9000e-004	4.5000e-004	4.4200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0381	1.0381	3.0000e-005	0.0000	1.0388
Total	1.0000e-003	9.3400e-003	7.7900e-003	3.0000e-005	1.4600e-003	1.1000e-004	1.5700e-003	4.0000e-004	1.1000e-004	5.0000e-004	0.0000	2.5746	2.5746	1.7000e-004	0.0000	2.5789

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3.4 Building Construction - 2016**Mitigated Construction On-Site**

	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					
Off-Road	0.0195	0.1932	0.1154	1.6000e-004		0.0132	0.0132		0.0122	0.0122	0.0000	15.0507	15.0507	4.5400e-003	0.0000	15.1642
Total	0.0195	0.1932	0.1154	1.6000e-004		0.0132	0.0132		0.0122	0.0122	0.0000	15.0507	15.0507	4.5400e-003	0.0000	15.1642

Mitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	4.1000e-004	8.8900e-003	3.3700e-003	2.0000e-005	3.6000e-004	1.0000e-004	4.6000e-004	1.1000e-004	1.0000e-004	2.0000e-004	0.0000	1.5366	1.5366	1.4000e-004	0.0000	1.5401
Worker	5.9000e-004	4.5000e-004	4.4200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0381	1.0381	3.0000e-005	0.0000	1.0388
Total	1.0000e-003	9.3400e-003	7.7900e-003	3.0000e-005	1.4600e-003	1.1000e-004	1.5700e-003	4.0000e-004	1.1000e-004	5.0000e-004	0.0000	2.5746	2.5746	1.7000e-004	0.0000	2.5789

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3.4 Building Construction - 2017**Unmitigated Construction On-Site**

	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					
Off-Road	0.0461	0.4593	0.2905	4.1000e-004		0.0309	0.0309		0.0285	0.0285	0.0000	38.0773	38.0773	0.0117	0.0000	38.3689
Total	0.0461	0.4593	0.2905	4.1000e-004		0.0309	0.0309		0.0285	0.0285	0.0000	38.0773	38.0773	0.0117	0.0000	38.3689

Unmitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	8.9000e-004	0.0210	8.0400e-003	4.0000e-005	9.4000e-004	1.9000e-004	1.1300e-003	2.7000e-004	1.8000e-004	4.6000e-004	0.0000	3.9233	3.9233	3.5000e-004	0.0000	3.9322
Worker	1.3300e-003	9.9000e-004	9.8700e-003	3.0000e-005	2.8300e-003	2.0000e-005	2.8500e-003	7.5000e-004	2.0000e-005	7.7000e-004	0.0000	2.5932	2.5932	7.0000e-005	0.0000	2.5949
Total	2.2200e-003	0.0220	0.0179	7.0000e-005	3.7700e-003	2.1000e-004	3.9800e-003	1.0200e-003	2.0000e-004	1.2300e-003	0.0000	6.5165	6.5165	4.2000e-004	0.0000	6.5271

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3.4 Building Construction - 2017**Mitigated Construction On-Site**

	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					
Off-Road	0.0461	0.4593	0.2905	4.1000e-004		0.0309	0.0309		0.0285	0.0285	0.0000	38.0772	38.0772	0.0117	0.0000	38.3689
Total	0.0461	0.4593	0.2905	4.1000e-004		0.0309	0.0309		0.0285	0.0285	0.0000	38.0772	38.0772	0.0117	0.0000	38.3689

Mitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	8.9000e-004	0.0210	8.0400e-003	4.0000e-005	9.4000e-004	1.9000e-004	1.1300e-003	2.7000e-004	1.8000e-004	4.6000e-004	0.0000	3.9233	3.9233	3.5000e-004	0.0000	3.9322
Worker	1.3300e-003	9.9000e-004	9.8700e-003	3.0000e-005	2.8300e-003	2.0000e-005	2.8500e-003	7.5000e-004	2.0000e-005	7.7000e-004	0.0000	2.5932	2.5932	7.0000e-005	0.0000	2.5949
Total	2.2200e-003	0.0220	0.0179	7.0000e-005	3.7700e-003	2.1000e-004	3.9800e-003	1.0200e-003	2.0000e-004	1.2300e-003	0.0000	6.5165	6.5165	4.2000e-004	0.0000	6.5271

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3.5 Paving - 2016**Unmitigated Construction On-Site**

	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					
Off-Road	0.0159	0.1510	0.1035	1.6000e-004		9.3600e-003	9.3600e-003		8.6600e-003	8.6600e-003	0.0000	13.9706	13.9706	3.8300e-003	0.0000	14.0665
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0159	0.1510	0.1035	1.6000e-004		9.3600e-003	9.3600e-003		8.6600e-003	8.6600e-003	0.0000	13.9706	13.9706	3.8300e-003	0.0000	14.0665

Unmitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	1.0600e-003	8.0000e-004	7.9500e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.8685	1.8685	6.0000e-005	0.0000	1.8699
Total	1.0600e-003	8.0000e-004	7.9500e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.8685	1.8685	6.0000e-005	0.0000	1.8699

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3.5 Paving - 2016**Mitigated Construction On-Site**

	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					
Off-Road	0.0159	0.1510	0.1035	1.6000e-004		9.3600e-003	9.3600e-003		8.6600e-003	8.6600e-003	0.0000	13.9706	13.9706	3.8300e-003	0.0000	14.0665
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0159	0.1510	0.1035	1.6000e-004		9.3600e-003	9.3600e-003		8.6600e-003	8.6600e-003	0.0000	13.9706	13.9706	3.8300e-003	0.0000	14.0665

Mitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	1.0600e-003	8.0000e-004	7.9500e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.8685	1.8685	6.0000e-005	0.0000	1.8699
Total	1.0600e-003	8.0000e-004	7.9500e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.8685	1.8685	6.0000e-005	0.0000	1.8699

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3.5 Paving - 2017**Unmitigated Construction On-Site**

	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					
Off-Road	0.0379	0.3591	0.2643	4.1000e-004		0.0219	0.0219		0.0203	0.0203	0.0000	35.4381	35.4381	9.8600e-003	0.0000	35.6845
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0379	0.3591	0.2643	4.1000e-004		0.0219	0.0219		0.0203	0.0203	0.0000	35.4381	35.4381	9.8600e-003	0.0000	35.6845

Unmitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	2.3900e-003	1.7700e-003	0.0178	5.0000e-005	5.1000e-003	3.0000e-005	5.1300e-003	1.3600e-003	3.0000e-005	1.3900e-003	0.0000	4.6677	4.6677	1.2000e-004	0.0000	4.6707
Total	2.3900e-003	1.7700e-003	0.0178	5.0000e-005	5.1000e-003	3.0000e-005	5.1300e-003	1.3600e-003	3.0000e-005	1.3900e-003	0.0000	4.6677	4.6677	1.2000e-004	0.0000	4.6707

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3.5 Paving - 2017**Mitigated Construction On-Site**

	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					
Off-Road	0.0379	0.3591	0.2643	4.1000e-004		0.0219	0.0219		0.0203	0.0203	0.0000	35.4381	35.4381	9.8600e-003	0.0000	35.6845
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0379	0.3591	0.2643	4.1000e-004		0.0219	0.0219		0.0203	0.0203	0.0000	35.4381	35.4381	9.8600e-003	0.0000	35.6845

Mitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	2.3900e-003	1.7700e-003	0.0178	5.0000e-005	5.1000e-003	3.0000e-005	5.1300e-003	1.3600e-003	3.0000e-005	1.3900e-003	0.0000	4.6677	4.6677	1.2000e-004	0.0000	4.6707
Total	2.3900e-003	1.7700e-003	0.0178	5.0000e-005	5.1000e-003	3.0000e-005	5.1300e-003	1.3600e-003	3.0000e-005	1.3900e-003	0.0000	4.6677	4.6677	1.2000e-004	0.0000	4.6707

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3.6 Architectural Coating - 2016**Unmitigated Construction On-Site**

	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					
Archit. Coating	0.0364					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1600e-003	0.0332	0.0264	4.0000e-005		2.7500e-003	2.7500e-003		2.7500e-003	2.7500e-003	0.0000	3.5746	3.5746	4.2000e-004	0.0000	3.5851
Total	0.0415	0.0332	0.0264	4.0000e-005		2.7500e-003	2.7500e-003		2.7500e-003	2.7500e-003	0.0000	3.5746	3.5746	4.2000e-004	0.0000	3.5851

Unmitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	8.8000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2076	0.2076	1.0000e-005	0.0000	0.2078
Total	1.2000e-004	9.0000e-005	8.8000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2076	0.2076	1.0000e-005	0.0000	0.2078

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3.6 Architectural Coating - 2016**Mitigated Construction On-Site**

	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					
Archit. Coating	0.0364					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1600e-003	0.0332	0.0264	4.0000e-005		2.7500e-003	2.7500e-003		2.7500e-003	2.7500e-003	0.0000	3.5746	3.5746	4.2000e-004	0.0000	3.5851
Total	0.0415	0.0332	0.0264	4.0000e-005		2.7500e-003	2.7500e-003		2.7500e-003	2.7500e-003	0.0000	3.5746	3.5746	4.2000e-004	0.0000	3.5851

Mitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	8.8000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2076	0.2076	1.0000e-005	0.0000	0.2078
Total	1.2000e-004	9.0000e-005	8.8000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2076	0.2076	1.0000e-005	0.0000	0.2078

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3.6 Architectural Coating - 2017**Unmitigated Construction On-Site**

	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					
Archit. Coating	0.0935					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.0787	0.0673	1.1000e-004		6.2400e-003	6.2400e-003		6.2400e-003	6.2400e-003	0.0000	9.1917	9.1917	9.7000e-004	0.0000	9.2160
Total	0.1054	0.0787	0.0673	1.1000e-004		6.2400e-003	6.2400e-003		6.2400e-003	6.2400e-003	0.0000	9.1917	9.1917	9.7000e-004	0.0000	9.2160

Unmitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	2.7000e-004	2.0000e-004	1.9700e-003	1.0000e-005	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5186	0.5186	1.0000e-005	0.0000	0.5190
Total	2.7000e-004	2.0000e-004	1.9700e-003	1.0000e-005	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5186	0.5186	1.0000e-005	0.0000	0.5190

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3.6 Architectural Coating - 2017**Mitigated Construction On-Site**

	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					
Archit. Coating	0.0935					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.0787	0.0673	1.1000e-004		6.2400e-003	6.2400e-003		6.2400e-003	6.2400e-003	0.0000	9.1917	9.1917	9.7000e-004	0.0000	9.2160
Total	0.1054	0.0787	0.0673	1.1000e-004		6.2400e-003	6.2400e-003		6.2400e-003	6.2400e-003	0.0000	9.1917	9.1917	9.7000e-004	0.0000	9.2160

Mitigated Construction Off-Site

	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					
Hauling	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	0.0000	0.0000
Vendor	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	0.0000	0.0000
Worker	2.7000e-004	2.0000e-004	1.9700e-003	1.0000e-005	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5186	0.5186	1.0000e-005	0.0000	0.5190
Total	2.7000e-004	2.0000e-004	1.9700e-003	1.0000e-005	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5186	0.5186	1.0000e-005	0.0000	0.5190

4.0 Operational Detail - Mobile

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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	0.0745	0.2383	0.8332	2.4000e-003	0.2043	3.1800e-003	0.2074	0.0549	3.0000e-003	0.0579	0.0000	219.0600	219.0600	8.7800e-003	0.0000	219.2796
Unmitigated	0.0745	0.2383	0.8332	2.4000e-003	0.2043	3.1800e-003	0.2074	0.0549	3.0000e-003	0.0579	0.0000	219.0600	219.0600	8.7800e-003	0.0000	219.2796

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Junior High School	343.12	0.00	0.00	551,004	551,004
Total	343.12	0.00	0.00	551,004	551,004

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
Junior High School	9.50	7.30	7.30	72.80	22.20	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Junior High School	0.508680	0.049272	0.242166	0.132717	0.018469	0.006106	0.019850	0.006168	0.003703	0.003432	0.008335	0.000401	0.000701

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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	32.8864	32.8864	1.4900e-003	3.1000e-004	33.0152
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	32.8864	32.8864	1.4900e-003	3.1000e-004	33.0152
NaturalGas Mitigated	2.2200e-003	0.0202	0.0170	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	21.9910	21.9910	4.2000e-004	4.0000e-004	22.1216
NaturalGas Unmitigated	2.2200e-003	0.0202	0.0170	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	21.9910	21.9910	4.2000e-004	4.0000e-004	22.1216

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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					
Junior High School	412095	2.2200e-003	0.0202	0.0170	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	21.9910	21.9910	4.2000e-004	4.0000e-004	22.1216
Total		2.2200e-003	0.0202	0.0170	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	21.9910	21.9910	4.2000e-004	4.0000e-004	22.1216

Mitigated

	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					
Junior High School	412095	2.2200e-003	0.0202	0.0170	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	21.9910	21.9910	4.2000e-004	4.0000e-004	22.1216
Total		2.2200e-003	0.0202	0.0170	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	21.9910	21.9910	4.2000e-004	4.0000e-004	22.1216

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior High School	113046	32.8864	1.4900e-003	3.1000e-004	33.0152
Total		32.8864	1.4900e-003	3.1000e-004	33.0152

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Junior High School	113046	32.8864	1.4900e-003	3.1000e-004	33.0152
Total		32.8864	1.4900e-003	3.1000e-004	33.0152

6.0 Area Detail**6.1 Mitigation Measures Area**

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	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	0.1103	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.8000e-004
Unmitigated	0.1103	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.8000e-004

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	0.0130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0973					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.8000e-004
Total	0.1103	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.8000e-004

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6.2 Area by SubCategory**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	0.0130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0973					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.8000e-004
Total	0.1103	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.4000e-004	4.4000e-004	0.0000	0.0000	4.8000e-004

7.0 Water Detail**7.1 Mitigation Measures Water**

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.3155	0.0168	4.2000e-004	2.8599
Unmitigated	2.3155	0.0168	4.2000e-004	2.8599

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior High School	0.513463 / 1.32033	2.3155	0.0168	4.2000e-004	2.8599
Total		2.3155	0.0168	4.2000e-004	2.8599

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Junior High School	0.513463 / 1.32033	2.3155	0.0168	4.2000e-004	2.8599
Total		2.3155	0.0168	4.2000e-004	2.8599

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.5708	0.3883	0.0000	16.2789
Unmitigated	6.5708	0.3883	0.0000	16.2789

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8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior High School	32.37	6.5708	0.3883	0.0000	16.2789
Total		6.5708	0.3883	0.0000	16.2789

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Junior High School	32.37	6.5708	0.3883	0.0000	16.2789
Total		6.5708	0.3883	0.0000	16.2789

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

ATTACHMENT B:
TRANSPORTATION TECHNICAL MEMORANDUM

MEMORANDUM

To: Darcy Kremin **JN:** 155608
From: Tom Huang, TE
Aldrin Dorado, EIT
Date: November 8, 2016
Subject: Traffic Review for Borel Middle School in the City of San Mateo

The San Mateo-Foster City School District proposes to construct 10 new classrooms and a gymnasium at the existing Borel Middle School (BMS) campus at 425 Barneson Avenue in the City of San Mateo, California. The new buildings will be constructed on the southwest corner of the existing school site. BMS is a public middle school for students in grades 6 through 8. The current student population at BMS is approximately 950 students. Assuming an average class size consistent with the state average of 30 students, the project would increase the student capacity at BMS by 300 students, to a total of 1,250 students.

Construction activities are anticipated to begin in February 2018 and be completed by September 2019. Construction would occur Monday through Friday between 9:00 AM and 5:00 PM. Occasional work may occur on Saturdays, and would be limited to the hours between 12:00 PM and 4:00 PM. Construction equipment would include heavy equipment such as scrapers, loaders, compactors, rollers, and paving machines. Construction crews would vary in size and would comprise approximately 10 to 30 people, depending on the construction phase.

Construction Traffic

The construction traffic is estimated based on the maximum size of the crew which is 30 people. Table 1 shows the construction traffic estimate which would be approximately 100 daily trips with 35 AM peak hour trips and 35 PM peak hour trips. It is estimated that most of the construction traffic will utilize the signalized intersection of El Camino Real and Barneson Avenue, which is located less than half of a mile from the project site.

School Project Traffic Generation and Distribution

The additional project traffic volumes related to the 300-student enrollment increase are estimated based on the trip rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition*. Table 2 shows the ITE Trip Generation Rate used in the calculation. Table 3 shows the project trip generation calculations. As shown in Table 3, the new trips would be approximately 486 daily trips with 162 AM peak hour trips and 93 PM peak hour trips. From a traffic circulation standpoint, the traffic increase is considered small with approximately three additional trips per minute in the AM peak hour and two additional vehicle per minute in the PM peak hour. Since the students of BMS resides in neighboring areas in San Mateo and Foster City, it is anticipated that majority of the new school traffic will be travelling to

and from residential areas that are located north and east of the project site. It is estimated that approximately 65% of traffic will utilize the signalized intersection of El Camino Real and Barneson Avenue, which is located less than half of a mile from the project site.

Current and Future Traffic Volumes

Exhibit 1 shows the traffic volumes at the intersection of El Camino Real and Barneson Avenue for Existing 2016 Conditions, 2018 With Construction Traffic conditions and Opening Year 2019 With Project Conditions. The existing 2014 traffic count at the intersection of El Camino Real and Barneson Avenue were obtained from the *885 S. El Camino Real Development Project Traffic Study Report*, prepared by Hexagon Transportation Consultants, Inc. in January 2015. Attachment A contains the traffic count data sheets. A 1% growth rate for 2 years (a total of 2%) is applied to the 2014 counts to estimate the current 2016 conditions. A total of 4% growth rate is applied to the 2014 counts to estimate the Construction Year 2018 baseline conditions. A total of 5% growth rate is applied to the 2014 counts to estimate the Opening Year 2019 baseline conditions.

Traffic Operational Analysis

Table 4 summarizes the traffic operational analysis results for the Existing 2016 conditions, 2018 With Construction Traffic conditions and Opening Year 2019 With Project conditions. The traffic operational analysis is performed based on the Highway Capacity Manual (HCM) analysis method using the Synchro analysis software program. Attachment B contains the traffic operations analysis worksheets. As shown in Table 4, the intersection of El Camino Real and Barneson Avenue is projected to operate at Level of Service (LOS) A during the AM Peak Hour and PM Peak Hour for existing and future traffic conditions. Based on the intersection analysis, the construction activity and the proposed project will not significantly impact the traffic operations at the intersection of El Camino Real and Barneson Avenue.

Conclusion

The additional project traffic volumes related to the 300-student enrollment increase are considered small from a traffic circulation standpoint with approximately three additional trips per minute in the AM peak hour and two additional vehicle per minute in the PM peak hour. The project traffic increase would be approximately 486 daily trips with 162 AM peak hour trips and 93 PM peak hour trips.

The construction traffic is also considered small with approximately 100 daily trips with 35 AM peak hour trips and 35 PM peak hour trips.

Based on the intersection operational analysis, the construction activity and the proposed project will not significantly impact the traffic operations at the nearby intersection of El Camino Real and Barneson Avenue, as it is projected to continue to operate at LOS A during the AM Peak Hour and PM Peak Hour for existing and future traffic conditions.

If you have any questions regarding this memorandum, please contact me at 949.855.5754 or at tom.huang@mbakerintl.com

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Table 1
Construction Traffic Generation

<i>Trip Rates</i>										
Project				Daily	AM Peak			PM Peak		
No.	Land Use	Code	Unit*		Total	In%	Out%	Total	In%	Out%
1	Construction Traffic	-		100	35	30	5	35	5	30

Table 2
Trip Generation Rates

<i>Trip Rates</i>										
Project				Daily	AM Peak			PM Peak		
No.	Land Use	Code	Unit*		Total	In%	Out%	Total	In%	Out%
1	Middle School	ITE 522	STU	1.62	0.54	55%	45%	0.30	45%	55%

Note

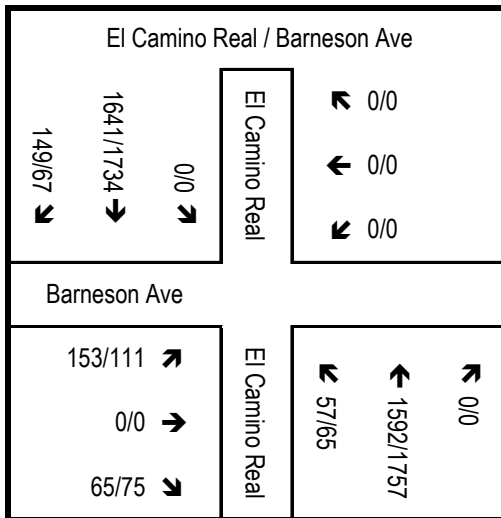
* STU = Students

Table 3
Project Traffic Generation Calculation

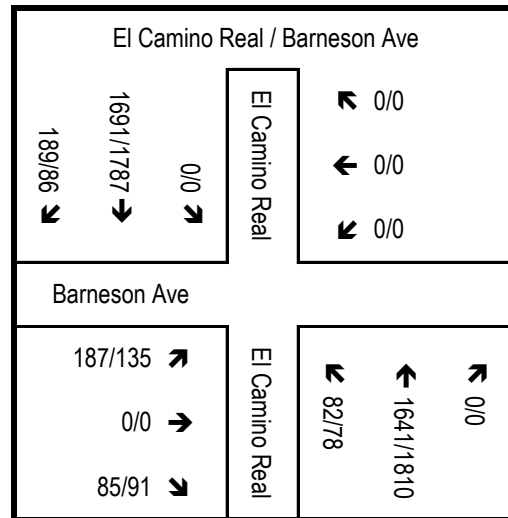
<i>Traffic Generation</i>									
Proj No.	Project		Daily	AM Peak			PM Peak		
	Land Use	Quantity*		Total	In	Out	Total	In	Out
1	Middle School	300 STU	486	162	90	72	93	42	51

Note

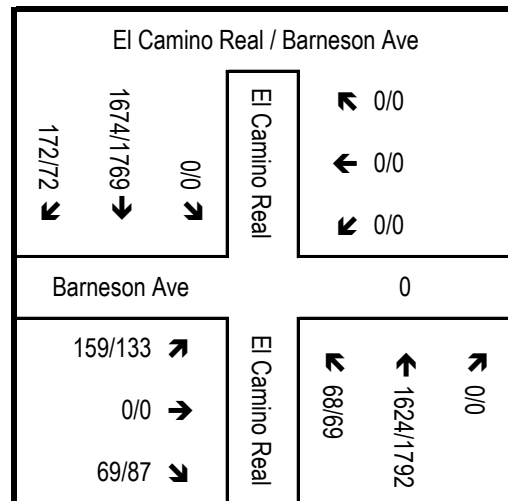
* STU = Students



Existing 2016 Volumes



Opening Year 2019 With Project Volumes



2018 With Construction Traffic Volumes

XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 1

Intersection Volumes

Table 4
Intersection Analysis Summary

Intersection			Existing 2016 Conditions				2018 With Construction Traffic Conditions				Opening Year 2019 With Project Conditions			
			AM		PM		AM		PM		AM		PM	
No.	Name	Type ¹	Delay ²	LOS	Delay ²	LOS	Delay ²	LOS	Delay ²	LOS	Delay ²	LOS	Delay ²	LOS
1	S El Camino Real / Barneson Ave	TS	7.8	A	7.8	A	8.4	A	8.9	A	9.9	A	9.6	A

Note

- ¹ Intersection Type: TS = Traffic Signal
- ² Highway Capacity Manual (HCM) Analysis Method, Average Delay (seconds per vehicle)

Attachment A
Traffic Count Data Sheets

All Traffic Data Services

2187 Kingsbury Cir
Santa Clara, CA, 95054
www.Alltrafficdata.net

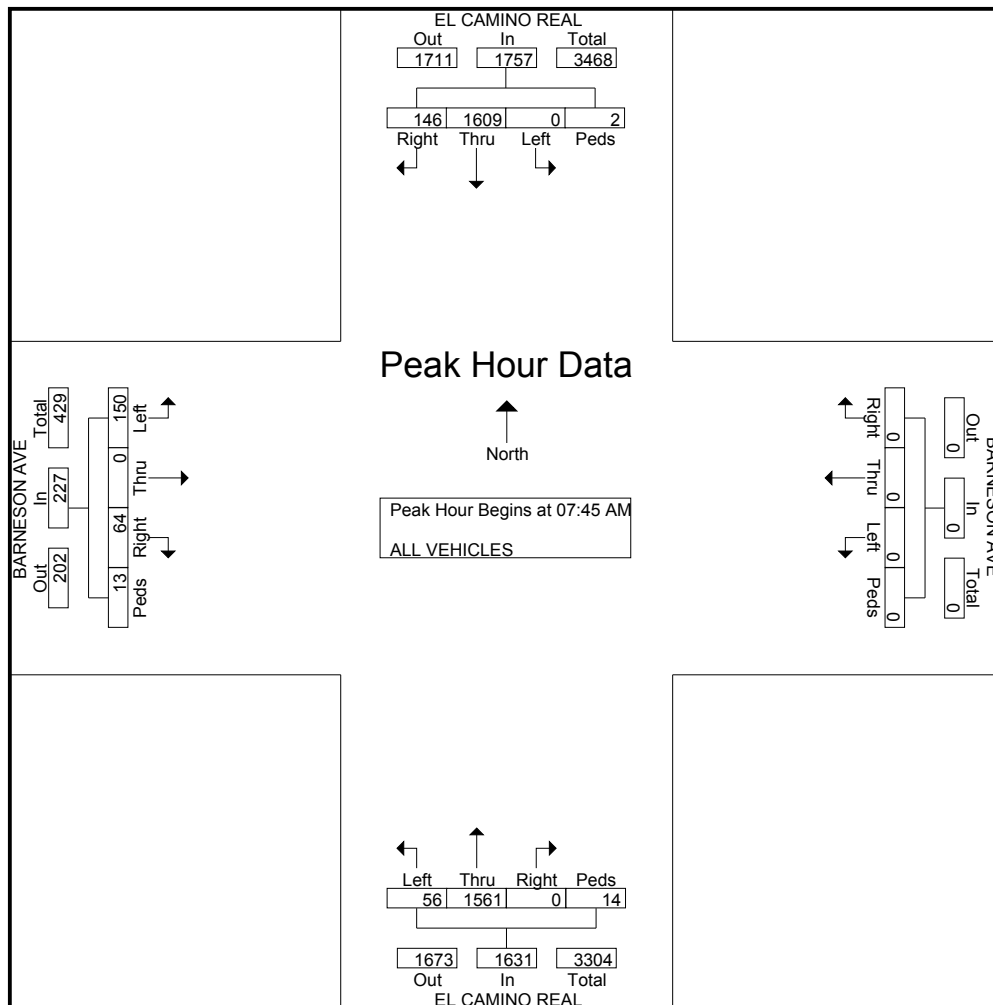
File Name : #3 ELCAMINOREAL&BARNESONAM

Site Code : 3

Start Date : 6/4/2014

Page No : 2

	EL CAMINO REAL Southbound					BARNESON AVE Westbound					EL CAMINO REAL Northbound					BARNESON AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	83	435	0	2	520	0	0	0	0	0	0	417	15	6	438	20	0	59	2	81	1039
08:00 AM	26	405	0	0	431	0	0	0	0	0	0	336	7	4	347	19	0	50	3	72	850
08:15 AM	20	373	0	0	393	0	0	0	0	0	0	394	18	4	416	12	0	21	4	37	846
08:30 AM	17	396	0	0	413	0	0	0	0	0	0	414	16	0	430	13	0	20	4	37	880
Total Volume	146	1609	0	2	1757	0	0	0	0	0	0	1561	56	14	1631	64	0	150	13	227	3615
% App. Total	8.3	91.6	0	0.1		0	0	0	0		0	95.7	3.4	0.9		28.2	0	66.1	5.7		
PHF	.440	.925	.000	.250	.845	.000	.000	.000	.000	.000	.000	.936	.778	.583	.931	.800	.000	.636	.813	.701	.870



File Name: C:\Users\Nathan\Desktop\ATD\PETRA\HEXAGON\8683 - EL CAMINO & 9TH 6-2014\2 HOUR\#3 ELCAMINOREAL&BARNESON\

Start Date: 6/4/2014

Start Time: 7:00:00 AM

Site Code: 3

Comment 1:

Comment 2:

Comment 3:

Comment 4:

Start Time	EL CAMINO REAL Southbound				BARNESON AVE Westbound				EL CAMINO REAL Northbound				BARNESON AVE Eastbound			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	11	252	0	0	0	0	0	0	0	194	12	0	5	0	8	1
07:15 AM	19	253	0	0	0	0	0	0	0	285	12	1	11	0	14	2
07:30 AM	44	364	0	0	0	0	0	0	0	360	17	17	11	0	25	4
07:45 AM	83	435	0	2	0	0	0	0	0	417	15	6	20	0	59	2
08:00 AM	26	405	0	0	0	0	0	0	0	336	7	4	19	0	50	3
08:15 AM	20	373	0	0	0	0	0	0	0	394	18	4	12	0	21	4
08:30 AM	17	396	0	0	0	0	0	0	0	414	16	0	13	0	20	4
08:45 AM	25	362	0	0	0	0	0	0	0	383	18	3	10	0	31	1

All Traffic Data Services

2187 Kingsbury Cir
Santa Clara, CA, 95054
www.Alltrafficdata.net

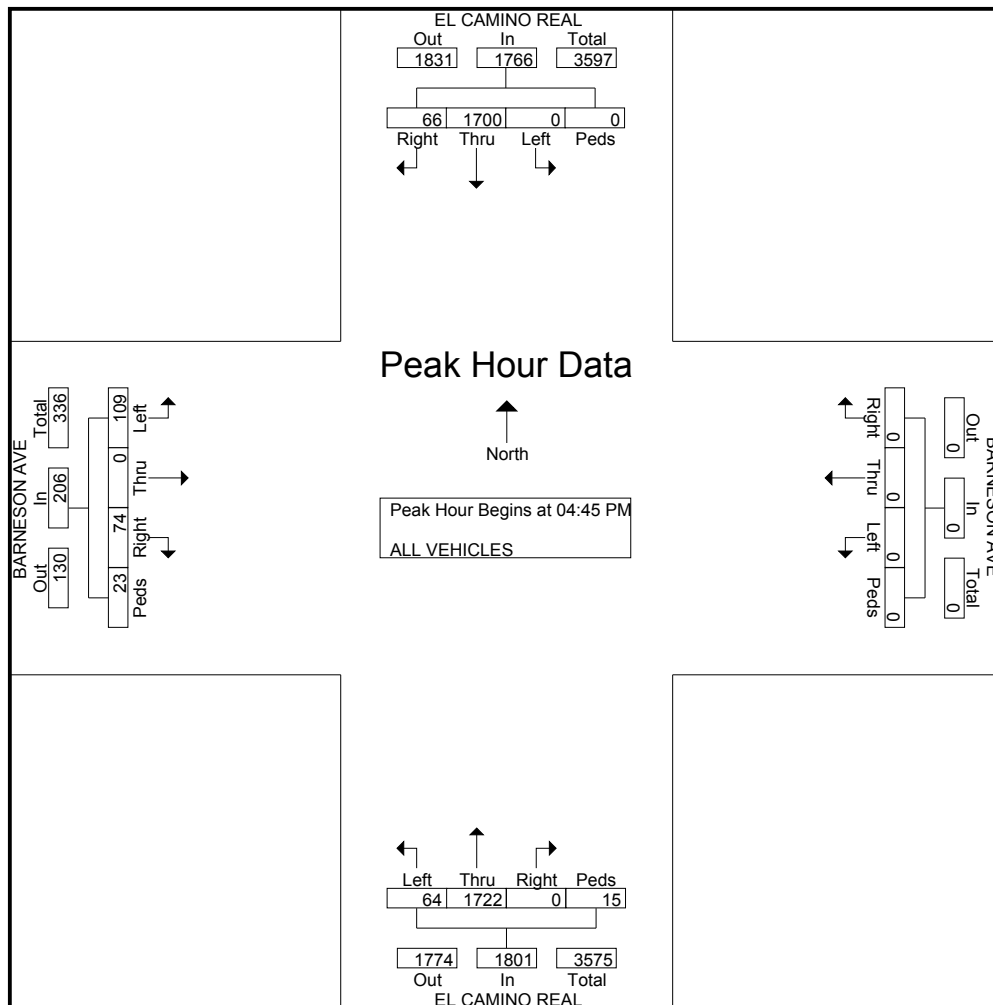
File Name : #3 ELCAMINOREAL&BARNESONPM

Site Code : 3

Start Date : 6/4/2014

Page No : 2

	EL CAMINO REAL Southbound					BARNESON AVE Westbound					EL CAMINO REAL Northbound					BARNESON AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	16	424	0	0	440	0	0	0	0	0	0	421	22	3	446	10	0	25	6	41	927
05:00 PM	9	428	0	0	437	0	0	0	0	0	0	411	12	2	425	23	0	30	5	58	920
05:15 PM	18	426	0	0	444	0	0	0	0	0	0	447	16	8	471	17	0	23	6	46	961
05:30 PM	23	422	0	0	445	0	0	0	0	0	0	443	14	2	459	24	0	31	6	61	965
Total Volume	66	1700	0	0	1766	0	0	0	0	0	0	1722	64	15	1801	74	0	109	23	206	3773
% App. Total	3.7	96.3	0	0		0	0	0	0		0	95.6	3.6	0.8		35.9	0	52.9	11.2		
PHF	.717	.993	.000	.000	.992	.000	.000	.000	.000	.000	.000	.963	.727	.469	.956	.771	.000	.879	.958	.844	.977



File Name: C:\Users\Nathan\Desktop\ATD\PETRA\HEXAGON\8683 - EL CAMINO & 9TH 6-2014\2 HOUR\#3 ELCAMINOREAL&BARNESONF

Start Date: 6/4/2014

Start Time: 4:00:00 PM

Site Code: 3

Comment 1:

Comment 2:

Comment 3:

Comment 4:










Start Time	EL CAMINO REAL Southbound				BARNESON AVE Westbound				EL CAMINO REAL Northbound				BARNESON AVE Eastbound			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	9	435	0	1	0	0	0	0	0	386	19	1	15	0	15	7
04:15 PM	12	386	0	0	0	0	0	0	0	354	17	6	14	0	18	6
04:30 PM	14	413	0	0	0	0	0	0	0	391	12	1	22	0	25	3
04:45 PM	16	424	0	0	0	0	0	0	0	421	22	3	10	0	25	6
05:00 PM	9	428	0	0	0	0	0	0	0	411	12	2	23	0	30	5
05:15 PM	18	426	0	0	0	0	0	0	0	447	16	8	17	0	23	6
05:30 PM	23	422	0	0	0	0	0	0	0	443	14	2	24	0	31	6
05:45 PM	13	363	0	0	0	0	0	0	0	456	13	2	20	0	24	4

Attachment B

Traffic Analysis Worksheets










Existing 2016 Conditions
1: El Camino Real & Barneson Ave

AM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	153	65	57	1592	1641	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			0.91	0.91	
Frt	0.96			1.00	0.99	
Flt Protected	0.97			1.00	1.00	
Satd. Flow (prot)	1727			5077	5022	
Flt Permitted	0.97			0.80	1.00	
Satd. Flow (perm)	1727			4053	5022	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	71	62	1730	1784	162
RTOR Reduction (vph)	15	0	0	0	17	0
Lane Group Flow (vph)	222	0	0	1792	1929	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	11.7			32.5	32.5	
Effective Green, g (s)	11.7			32.5	32.5	
Actuated g/C Ratio	0.22			0.62	0.62	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	387			2523	3126	
v/s Ratio Prot	c0.13				0.38	
v/s Ratio Perm				c0.44		
v/c Ratio	0.57			0.71	0.62	
Uniform Delay, d1	18.0			6.7	6.0	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	2.1			1.0	0.4	
Delay (s)	20.1			7.6	6.4	
Level of Service	C			A	A	
Approach Delay (s)	20.1			7.6	6.4	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			7.8		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			52.2		Sum of lost time (s)	8.0
Intersection Capacity Utilization			89.4%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						










Existing 2016 Conditions
1: El Camino Real & Barneson Ave

PM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	111	75	65	1757	1734	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			0.91	0.91	
Frt	0.95			1.00	0.99	
Flt Protected	0.97			1.00	1.00	
Satd. Flow (prot)	1710			5076	5057	
Flt Permitted	0.97			0.78	1.00	
Satd. Flow (perm)	1710			3985	5057	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	82	71	1910	1885	73
RTOR Reduction (vph)	12	0	0	0	6	0
Lane Group Flow (vph)	191	0	0	1981	1952	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	11.1			34.3	34.3	
Effective Green, g (s)	11.1			34.3	34.3	
Actuated g/C Ratio	0.21			0.64	0.64	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	355			2559	3248	
v/s Ratio Prot	c0.11				0.39	
v/s Ratio Perm				c0.50		
v/c Ratio	0.54			0.77	0.60	
Uniform Delay, d1	18.9			6.8	5.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	1.6			1.5	0.3	
Delay (s)	20.4			8.3	5.9	
Level of Service	C			A	A	
Approach Delay (s)	20.4			8.3	5.9	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			7.8		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.72			
Actuated Cycle Length (s)			53.4		Sum of lost time (s)	8.0
Intersection Capacity Utilization			91.0%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						










2018 With Construction Traffic Conditions
1: El Camino Real & Barneson Ave

AM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	159	69	68	1624	1674	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			0.91	0.91	
Frt	0.96			1.00	0.99	
Flt Protected	0.97			1.00	1.00	
Satd. Flow (prot)	1726			5075	5014	
Flt Permitted	0.97			0.77	1.00	
Satd. Flow (perm)	1726			3901	5014	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	173	75	74	1765	1820	187
RTOR Reduction (vph)	13	0	0	0	19	0
Lane Group Flow (vph)	235	0	0	1839	1988	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	12.1			33.4	33.4	
Effective Green, g (s)	12.1			33.4	33.4	
Actuated g/C Ratio	0.23			0.62	0.62	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	390			2435	3130	
v/s Ratio Prot	c0.14				0.40	
v/s Ratio Perm				c0.47		
v/c Ratio	0.60			0.76	0.64	
Uniform Delay, d1	18.5			7.1	6.3	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	2.6			1.4	0.4	
Delay (s)	21.2			8.5	6.7	
Level of Service	C			A	A	
Approach Delay (s)	21.2			8.5	6.7	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			8.4	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.71			
Actuated Cycle Length (s)			53.5	Sum of lost time (s)		8.0
Intersection Capacity Utilization			92.0%	ICU Level of Service		F
Analysis Period (min)			15			
c Critical Lane Group						












2018 With Construction Traffic Conditions
1: El Camino Real & Barneson Ave

PM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	133	87	69	1792	1769	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			0.91	0.91	
Frt	0.95			1.00	0.99	
Flt Protected	0.97			1.00	1.00	
Satd. Flow (prot)	1712			5076	5056	
Flt Permitted	0.97			0.77	1.00	
Satd. Flow (perm)	1712			3918	5056	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	95	75	1948	1923	78
RTOR Reduction (vph)	11	0	0	0	7	0
Lane Group Flow (vph)	229	0	0	2023	1994	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	12.1			34.9	34.9	
Effective Green, g (s)	12.1			34.9	34.9	
Actuated g/C Ratio	0.22			0.63	0.63	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	376			2486	3208	
v/s Ratio Prot	c0.13				0.39	
v/s Ratio Perm				c0.52		
v/c Ratio	0.61			0.81	0.62	
Uniform Delay, d1	19.3			7.6	6.1	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	2.8			2.1	0.4	
Delay (s)	22.1			9.7	6.4	
Level of Service	C			A	A	
Approach Delay (s)	22.1			9.7	6.4	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			8.9		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.76			
Actuated Cycle Length (s)			55.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			94.5%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						










Opening Year 2019 With Project Conditions
1: El Camino Real & Barneson Ave

AM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Volume (vph)	187	85	82	1641	1691	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			0.91	0.91	
Frt	0.96			1.00	0.98	
Flt Protected	0.97			1.00	1.00	
Satd. Flow (prot)	1725			5073	5009	
Flt Permitted	0.97			0.73	1.00	
Satd. Flow (perm)	1725			3719	5009	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	203	92	89	1784	1838	205
RTOR Reduction (vph)	13	0	0	0	22	0
Lane Group Flow (vph)	282	0	0	1873	2021	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	13.2			34.4	34.4	
Effective Green, g (s)	13.2			34.4	34.4	
Actuated g/C Ratio	0.24			0.62	0.62	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	409			2300	3099	
v/s Ratio Prot	c0.16				0.40	
v/s Ratio Perm				c0.50		
v/c Ratio	0.69			0.81	0.65	
Uniform Delay, d1	19.3			8.1	6.8	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	4.8			2.3	0.5	
Delay (s)	24.1			10.5	7.3	
Level of Service	C			B	A	
Approach Delay (s)	24.1			10.5	7.3	
Approach LOS	C			B	A	
Intersection Summary						
HCM 2000 Control Delay			9.9		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.78			
Actuated Cycle Length (s)			55.6		Sum of lost time (s)	8.0
Intersection Capacity Utilization			95.8%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

Opening Year 2019 With Project Conditions
1: El Camino Real & Barneson Ave

PM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	135	91	78	1810	1787	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			0.91	0.91	
Frt	0.95			1.00	0.99	
Flt Protected	0.97			1.00	1.00	
Satd. Flow (prot)	1710			5075	5050	
Flt Permitted	0.97			0.75	1.00	
Satd. Flow (perm)	1710			3796	5050	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	99	85	1967	1942	93
RTOR Reduction (vph)	10	0	0	0	8	0
Lane Group Flow (vph)	236	0	0	2052	2027	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	12.3			35.5	35.5	
Effective Green, g (s)	12.3			35.5	35.5	
Actuated g/C Ratio	0.22			0.64	0.64	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	376			2415	3212	
v/s Ratio Prot	c0.14				0.40	
v/s Ratio Perm				c0.54		
v/c Ratio	0.63			0.85	0.63	
Uniform Delay, d1	19.7			8.0	6.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	3.3			3.0	0.4	
Delay (s)	22.9			11.0	6.6	
Level of Service	C			B	A	
Approach Delay (s)	22.9			11.0	6.6	
Approach LOS	C			B	A	
Intersection Summary						
HCM 2000 Control Delay			9.6	HCM 2000 Level of Service		A
HCM 2000 Volume to Capacity ratio			0.79			
Actuated Cycle Length (s)			55.8	Sum of lost time (s)		8.0
Intersection Capacity Utilization			96.0%	ICU Level of Service		F
Analysis Period (min)			15			
c Critical Lane Group						