

INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

DAVIDSON MIDDLE SCHOOL AND LAUREL DELL ELEMENTARY SCHOOL IMPROVEMENTS



Prepared for

San Rafael City Schools

May 2018

Prepared by

Amy O. Skewes-Cox, AICP
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TABLE OF CONTENTS

CHAPTER I	PROJECT DESCRIPTION	1
CHAPTER II	ENVIRONMENTAL CHECKLIST	25
I.	AESTHETICS.....	25
II.	AGRICULTURAL AND FORESTRY RESOURCES	31
III.	AIR QUALITY	33
IV.	BIOLOGICAL RESOURCES	46
V.	CULTURAL RESOURCES.....	58
VI.	ENERGY	67
VII.	GEOLOGY AND SOILS	72
VIII.	GREENHOUSE GAS EMISSIONS	81
IX.	HAZARDS AND HAZARDOUS MATERIALS	85
X.	HYDROLOGY AND WATER QUALITY	93
XI.	LAND USE AND PLANNING	101
XII.	MINERAL RESOURCES.....	103
XIII.	NOISE	104
XIV.	POPULATION AND HOUSING	128
XV.	PUBLIC SERVICES	129
XVI.	RECREATION.....	132
XVIII.	TRANSPORTATION/TRAFFIC	133
XVII.	TRIBAL CULTURAL RESOURCES	152
XVIII.	UTILITIES AND SERVICE SYSTEMS	154
XIX.	MANDATORY FINDINGS OF SIGNIFICANCE	164

APPENDICES

- APPENDIX A: SUMMARY OF MITIGATION MEASURES
APPENDIX B: SUMMARY OF COMMENTS FROM SCOPING MEETING

LIST OF FIGURES

Figure 1	Regional and Project Location	3
Figure 2	Proposed Site Plan for Davidson Middle School.....	4
Figure 3	Proposed Site Plan for Laurel Dell Elementary School.....	5
Figure 4	Elevation for New STEM Center at Davidson Middle School (No. 1)	8
Figure 5	Elevation for New STEM Center at Davidson Middle School (No. 2)	9
Figure 6	Perspective View of New STEM Center at Davidson Middle School	10
Figure 7	Elevation for Laurel Dell Elementary School Building A.....	11
Figure 8	Elevation for Laurel Dell Elementary School Building B.....	12
Figure 9	Elevations for Laurel Dell Elementary School Building C.....	13
Figure 10	Elevations for Laurel Dell Elementary School Buildings D and E.....	14
Figure 11	Construction Phasing for Davidson Middle School	21
Figure 12	Photos of the Davidson Middle School Site from Surrounding Streets	26
Figure 13	Photos of the Laurel Dell Elementary School Site from Surrounding Streets.....	28
Figure 14	Special-Status Plants and Sensitive Natural Communities	49
Figure 15	Special-Status Animal Species and Critical Habitat	50
Figure 16	Tree Map for Davidson Middle School	55
Figure 17	Tree Map for Laurel Dell Elementary School	56
Figure 18	Construction Vibration Contour Levels.....	118
Figure 19	Construction Noise Contour Levels.....	123
Figure 20	Project Study Intersection Locations.....	137
Figure 21	Study Intersection Volumes – Existing Conditions.....	139
Figure 22	Study Intersection Volumes – Existing Plus Project Conditions.....	140
Figure 23	Study Intersections Volumes – Cumulative (Year 2030) Conditions	141
Figure 24	Study Intersections Volumes – Cumulative Plus Project Conditions.....	147

LIST OF TABLES

Table 1	Summary of Proposed Davidson Middle School and Laurel Dell Elementary School Improvements.....	6
Table 2	Existing and Projected Enrollment and Staffing and Projected Capacity at Davidson Middle School and Laurel Dell Elementary School	15
Table 3	Bay Area Air Quality Management District (BAAQMD) Project-Level Thresholds of Significance	34
Table 4	Project Consistency with Bay Area Air Quality Management District (BAAQMD) 2017 Clean Air Plan (CAP)	36
Table 5	Summary of Land Use Input Parameters for CalEEMod Estimate of Existing and Project Air Emissions	37
Table 6	Summary of Construction Input Parameters for CalEEMod Estimate of Project Air Emissions	38
Table 7	Estimated Project Construction Emissions (Pounds per Day)	39
Table 8	Estimated Project Operation Emissions	40
Table 9	Annual Average TAC Concentrations during Project Construction.....	42
Table 10	Health Risks and Hazards During Project Construction	43
Table 11	Summary of Cumulative Health Risks at Maximally Exposed Individual Student.....	45
Table 12	Existing and Projected Energy Consumption	68
Table 13	Existing and Future Energy Consumption by Vehicles.....	70
Table 14	Summary of Land Use Input Parameters for CalEEMod Estimate of Existing and Project Greenhouse Gas Emissions.....	83
Table 15	Summary of Project-Specific Assumptions for CalEEMod Estimate of Project Greenhouse Gas Emissions.....	83
Table 16	Summary of Average Greenhouse Gas Emissions from Project Operation	84
Table 17	Definition of Acoustical Terms	105
Table 18	Estimated Traffic Noise Levels on Project Site (dBA L _{dn})	107
Table 19	Land Use Compatibility Standards for New Development.....	110
Table 20	General Noise Limits Established by San Rafael Municipal Code.....	112
Table 21	Standard Exceptions to General Noise Limits Established by San Rafael Municipal Code.....	112
Table 22	Vibration Criteria to Prevent Disturbance – Root Mean Square (RMS) (Vibration Decibels [VdB])	114
Table 23	Vibration Criteria to Prevent Damage to Structures.....	114
Table 24	Vibration Source Levels for Construction Equipment	116
Table 25	Potential Vibration Disturbance Impact to On-Site and Off-Site Receptors	117
Table 26	Potential Vibration Damage Impact on Off-Site Buildings	119
Table 27	Noise Levels from Construction Equipment (dBA)	124
Table 28	Potential Noise Impact on On-Site and Off-Site Receptors	125
Table 29	Vehicle Trip Generation – Davidson Middle School	138
Table 30	Vehicle Trip Generation – Laurel Dell Elementary School.....	138
Table 31	Level of Service Definitions for Signalized Intersections	142
Table 32	Level of Service Definitions for Unsignalized Intersections	142

Table 33	Intersection Level of Service – Existing plus Project Conditions, AM Peak Hour	144
Table 34	Intersection Level of Service – Existing plus Project Conditions, PM Peak Hour	144
Table 35	Intersection Level of Service – Cumulative plus Project Conditions, AM Peak Hour	146
Table 36	Intersection Level of Service – Cumulative plus Project Conditions, PM Peak Hour	146

CHAPTER I PROJECT DESCRIPTION

1. **Project Title:** Davidson Middle School & Laurel Dell Elementary School Improvements
2. **Lead Agency Name and Address:**
San Rafael City Schools
310 Nova Albion, San Rafael, CA 94903
Attn: Dr. Dan Zaich, Senior Director – Capital Improvements
3. **Contact Person and Phone Number:** Dr. Dan Zaich, Senior Director – Capital Improvements, San Rafael City Schools (415-492-3285)
4. **Project Location:** Davidson Middle School is located at 280 Woodland Avenue in San Rafael and Laurel Dell Elementary School is located at 225 Woodland Avenue in San Rafael
5. **Project Sponsor's Name and Address:**
San Rafael City Schools
310 Nova Albion
San Rafael, CA 94903
6. **General Plan Designation:** Residential-Low Density for Davidson Middle School and Residential-Medium Density for Laurel Dell Elementary School
7. **Zoning:** R5 (Single Family Residential) for Davidson Middle School and MR2.5 (Multifamily Residential) for Laurel Dell Elementary School
8. **Description of Project:**

INTRODUCTION

The proposed improvements to Davidson Middle School and Laurel Dell Elementary School are funded by a bond program approved by the voters of San Rafael in November 2015. This bond, comprised of \$108 million to fund updates to elementary and middle schools (separate from \$161 million for high schools), is intended to provide much-needed capital improvements to facilities as well as to create safe, innovative learning environmental and instructional technology to support 21st-century learning. New classrooms, labs, and equipment are proposed to reduce overcrowding and to meet the needs for hands-on classes in science, technology, engineering, arts, and math, commonly referred to as “STEAM” (San Rafael City Schools, 2018).

PROJECT CHARACTERISTICS

Project Overview

The San Rafael City Schools District (referred to hereafter as “San Rafael City Schools” or “the District”) proposes building renovations and new construction for Davidson Middle School and Laurel Dell Elementary School, which are in close proximity to one another. The Davidson Middle School Annex site, which is also in the neighborhood, would be used to temporarily house students during reconstruction of Laurel Dell Elementary School. The regional and project locations are shown in **Figure 1**. Davidson Middle School serves students in Grades 6 through 8, and Laurel Dell Elementary School serves students in Kindergarten through Grade 5. Both schools are located adjacent to Woodland Avenue in the western portion of the City of San Rafael.

Most of the 18.05-acre Davidson Middle School campus would have some level of construction or renovation (see **Figure 2**). New learning spaces and environments would be constructed, while existing campus spaces would be converted from traditional classrooms into 21st-century learning spaces.¹ A new Science, Technology, Engineering, and Math (STEM) Center (15,560 gross square feet [gsf]) would be added adjacent to Woodland Avenue. Physical Education (PE) classrooms and offices would be added at the center of the campus near new locker rooms, and existing space for gym lockers would be increased (6,014 gsf). A total of 15 portable classroom buildings (15,809 gsf) would be removed. A new Multi-Purpose Building (8,400 gsf) and a new Music Building (3,500 gsf) would be added. The campus site area would remain the same, and the campus building area would see a net gain of 17,665 square feet. The project would also include utility improvements and site work, including installation of three new bioretention areas, construction of a new emergency access driveway off Woodland Avenue, and landscaping.

Laurel Dell Elementary School’s 1.76-acre campus would have major reconstruction including 14,034 square feet of replacement and new construction, 6,131 square feet of existing building modernization, and site work. The campus site area would remain the same, and the campus building area would see a net gain of 6,250 square feet. New construction would include replacement classroom buildings, a multi-purpose building, and a restrooms/storage building. The modernization portion of the work would include remodeling the existing classroom wing and school library and converting the existing multi-purpose building into two new kindergarten classrooms (see **Figure 3**). Site work would include reconfigurations of parking, landscaping, utility work, and new bioretention areas. A potential new dedicated drop-off lane on Woodland Avenue is also considered.

While the Laurel Dell reconstruction is taking place, all students would be relocated temporarily to the nearby existing school site, Davidson Annex, which would temporarily house the 177 students from Laurel Dell. Access to Davidson Annex would be from Lovell Avenue near its intersection with Woodland Avenue. A total of 16 existing parking spaces would continue to be provided at Davidson Annex. No improvements would be needed for the Davidson Annex site.

¹ New learning environments would focus on creating flexible learning spaces that can accommodate various types of learning, from large groups to small teams to individual projects. Other elements of 21st-century learning environments include fewer walls, embracing the outdoors and bringing the outside classroom inside, flexible furniture and space, hands-on learning, and project-based learning.

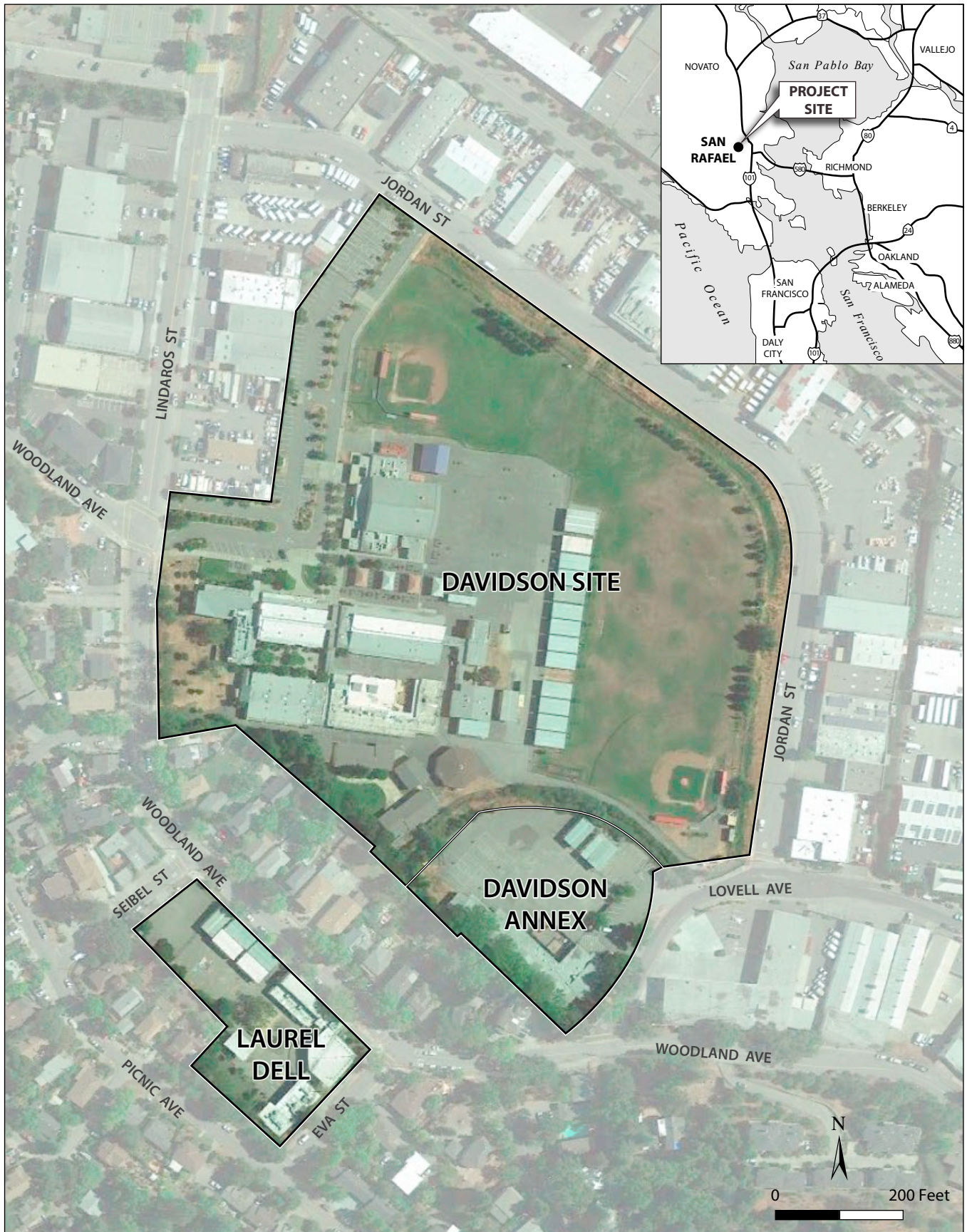


Figure 1

SOURCE: Google Earth, 2018

REGIONAL AND PROJECT LOCATION



Figure 2

PROPOSED SITE PLAN FOR DAVIDSON MIDDLE SCHOOL

SOURCE: Quattrocchi Kwok Architects, 2018

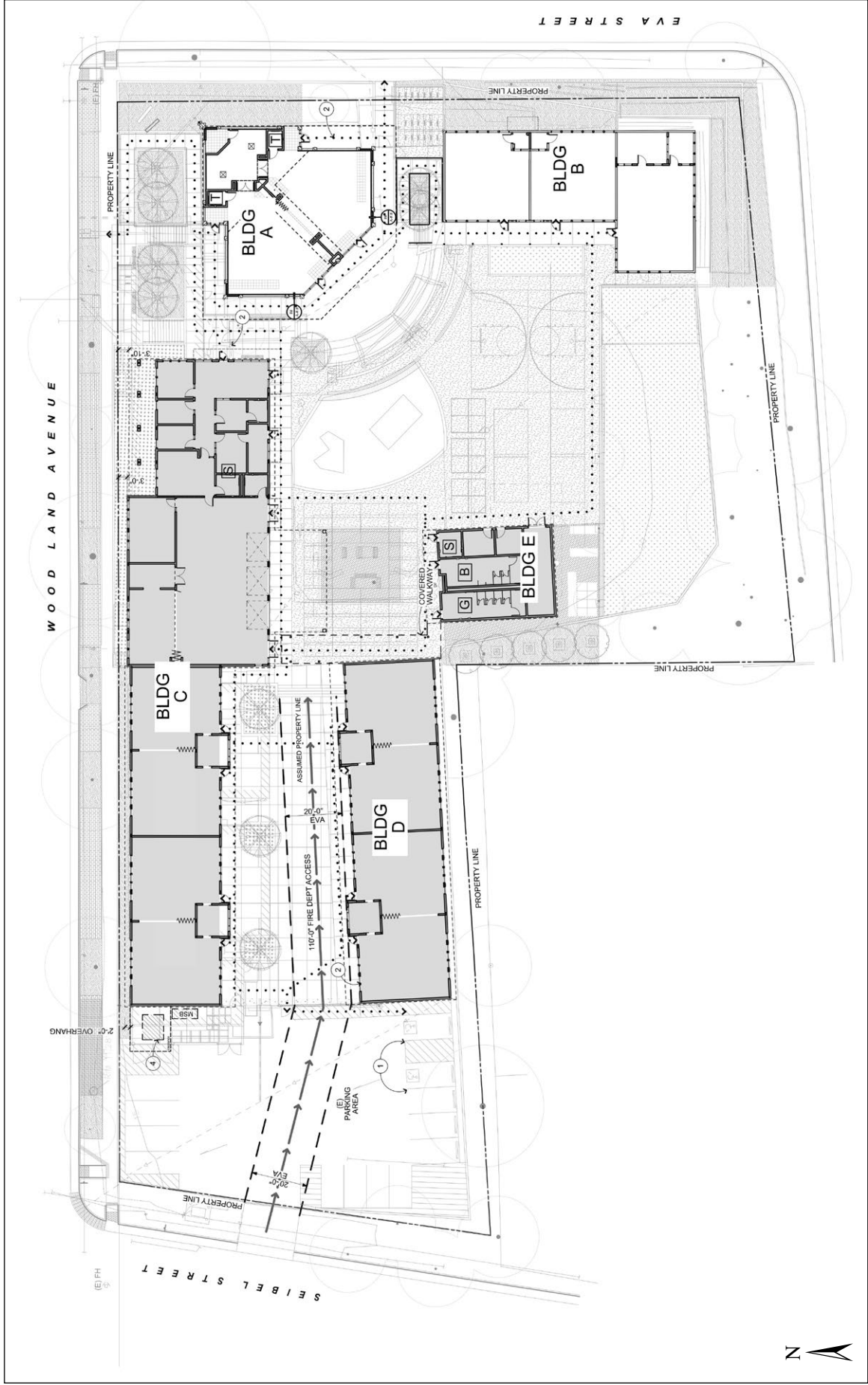


Figure 3

PROPOSED SITE PLAN FOR LAUREL DELL ELEMENTARY SCHOOL

SOURCE: Quattrocchi Kwok Architects, 2018

Access for both Davidson Middle School and Laurel Dell Elementary School would remain primarily from Woodland Avenue. For Davidson Middle School, a driveway connects to an internal parking area where the existing 95 parking spaces would remain unchanged. Access to Laurel Dell Elementary School would be from drop-off areas on Woodland Avenue and from a driveway on Seibel Street at the western edge of the campus.

Renovations and New Construction

As shown in **Table 1**, the Davidson campus currently contains approximately 94,852 gsf of building area, including 15 portables (to be removed) that provide 15,809 gsf of building area. The project would result in a net gain of 17,665 gsf of building area on the campus.

TABLE 1 SUMMARY OF PROPOSED DAVIDSON MIDDLE SCHOOL AND LAUREL DELL ELEMENTARY SCHOOL IMPROVEMENTS

Area	Existing	Proposed	Net Gain/Loss
Campus Site Area			
Davidson	18.05 acres	18.05 acres	Unchanged
Laurel Dell	1.76 acres	1.76 acres	Unchanged
Davidson Annex	3.5 acres	3.5 acres	Unchanged
Impervious Surface Area			
Davidson	5.30 acres	5.84 acres	+0.54 acre
Laurel Dell	1.6 acres	1.6 acres	Unchanged
Davidson Annex	3.5 acres	3.5 acres	Unchanged
Campus Building Area			
Davidson	94,852 gsf	112,517 gsf	+17,665 gsf
Laurel Dell	13,915 gsf	20,165 gsf	+6,250 gsf
Davidson Annex	14,955 gsf	14,955 gsf	Unchanged

Notes: gsf = gross square feet
Source: San Rafael City Schools, 2018.

The Laurel Dell campus currently contains approximately 13,915 gsf of building area, including five portable buildings and administration/kindergarten/classroom buildings (to be demolished) that provide 7,784 gsf of building area. Renovations of 6,131 gsf of existing building area is also part of the project. The project would result in a new total 20,165 gsf of building area on the campus, which equals a net gain of 6,250 gsf of building area on the campus.

Davidson Annex, which would only be used temporarily while Laurel Dell is under construction, would have its existing portables and existing one-story structure providing approximately 14,955 gsf of

building area. At the completion of construction, Davidson Annex would revert to its current use as a San Rafael City Schools building.²

Table 1 provides a summary of the proposed building additions, and the subsections below describe specific improvements proposed for the two schools.

Davidson Middle School

The major new buildings at the Davidson campus would be the following:

- New two-story, 10-classroom STEM Center (15,560 gsf) at the western portion of the campus;
- New Physical Education (PE) classrooms and offices added to existing gym locker rooms in addition to increasing the space for new lockers (6,014 gsf);
- New Multi-Purpose Building (8,400 gsf); and
- New Music Building (3,500 gsf).

A total of 15 portables that now provide 15,809 gsf would be removed. Thus, the net addition of square footage at Davidson Middle School would be 17,665 gsf.

Elevations for the proposed new STEM Center are shown in **Figures 4 and 5**. A perspective for the proposed STEM Center is shown in **Figure 6**. Exterior materials would include stucco finish. Glazing would be dual glazed, non-reflective glazing. Roofing would be a mix of SBS Modified Bitumen Protected Membrane Roofing.

Laurel Dell Elementary School

At Laurel Dell Elementary School, the new construction would include the following:

- New Building C (8,832 gsf) with multi-purpose space and four new classrooms;
- New Building D (3,912 gsf) with four new classrooms; and
- New Building E (Bathroom/Storage Building) (1,290 gsf).

Renovations and modernization of Building A (2,984 gsf) and Building B (3,147 gsf) would occur. New building square footage would be 14,034 gsf and modernized space would be 6,131 gsf. The proposed project would result in a net addition to the campus of 6,250 gsf. All buildings would be one-story with a height of 23 feet.

Elevations for Laurel Dell Buildings A and B are shown in **Figures 7 and 8**. Elevations for new Building C are shown in **Figure 9**, and Elevations for new Buildings D and E are shown in **Figure 10**.

² Davidson Annex was previously leased to a special needs program that vacated at the end of their lease in 2017. Davidson Annex is currently being used by one Davidson Middle School class (24 students), which will return to the Davidson Middle School campus in the fall of 2018.

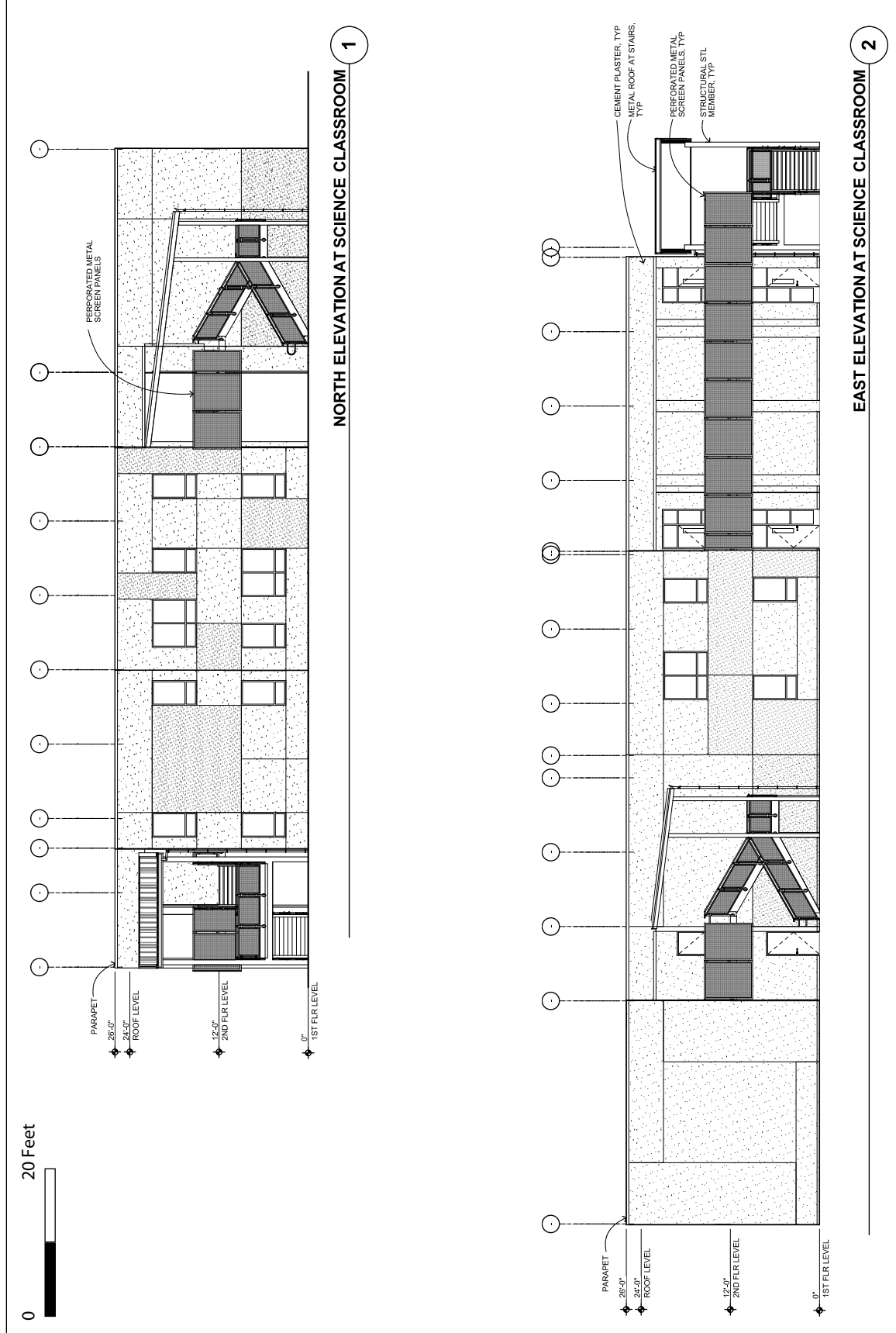


Figure 4

ELEVATION FOR NEW STEM CENTER AT DAVIDSON MIDDLE SCHOOL (NO. 1)

SOURCE: Quattrocchi Kwok Architects, 2018

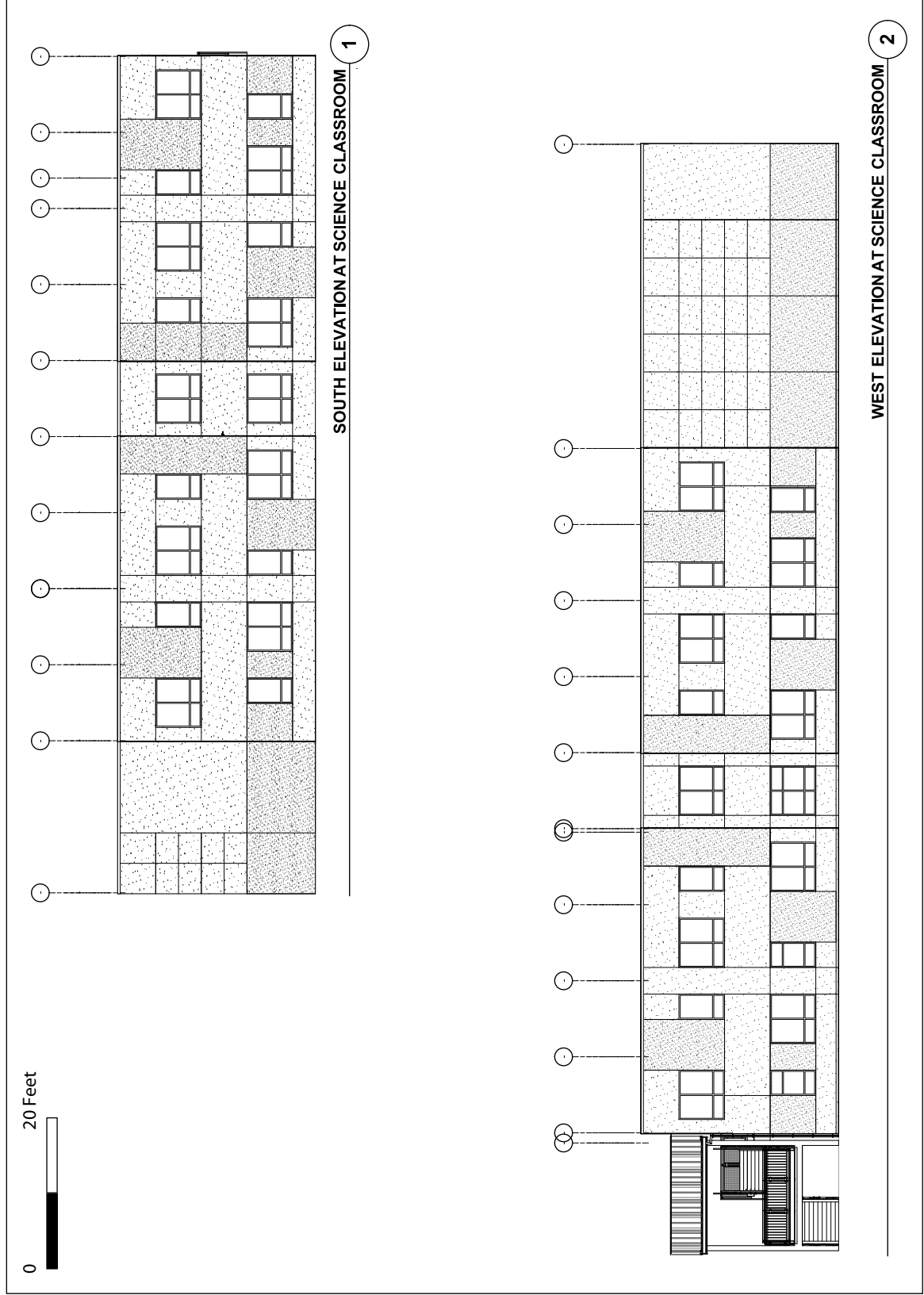


Figure 5

ELEVATION FOR NEW STEM CENTER AT DAVIDSON MIDDLE SCHOOL (NO. 2)

SOURCE: Quattrocchi Kwok Architects, 2018



View looking south along Woodland Avenue

Figure 6

PERSPECTIVE VIEW OF NEW STEM CENTER AT DAVIDSON MIDDLE SCHOOL

SOURCE: Quattrocchi Kwok Architects, 2017

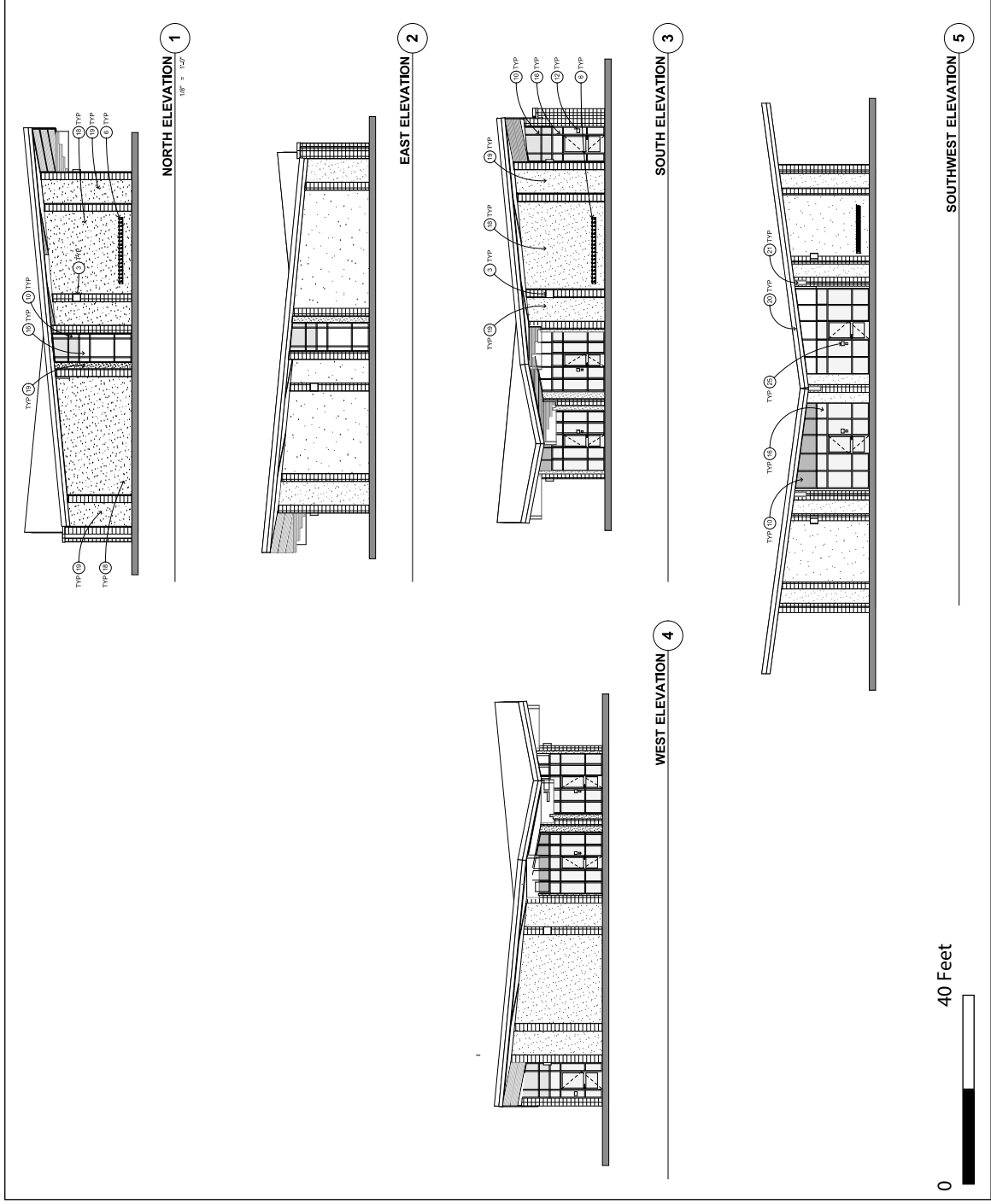


Figure 7

ELEVATION FOR LAUREL DELL ELEMENTARY SCHOOL BUILDING A

SOURCE: Quattrocchi Kwok Architects, 2018

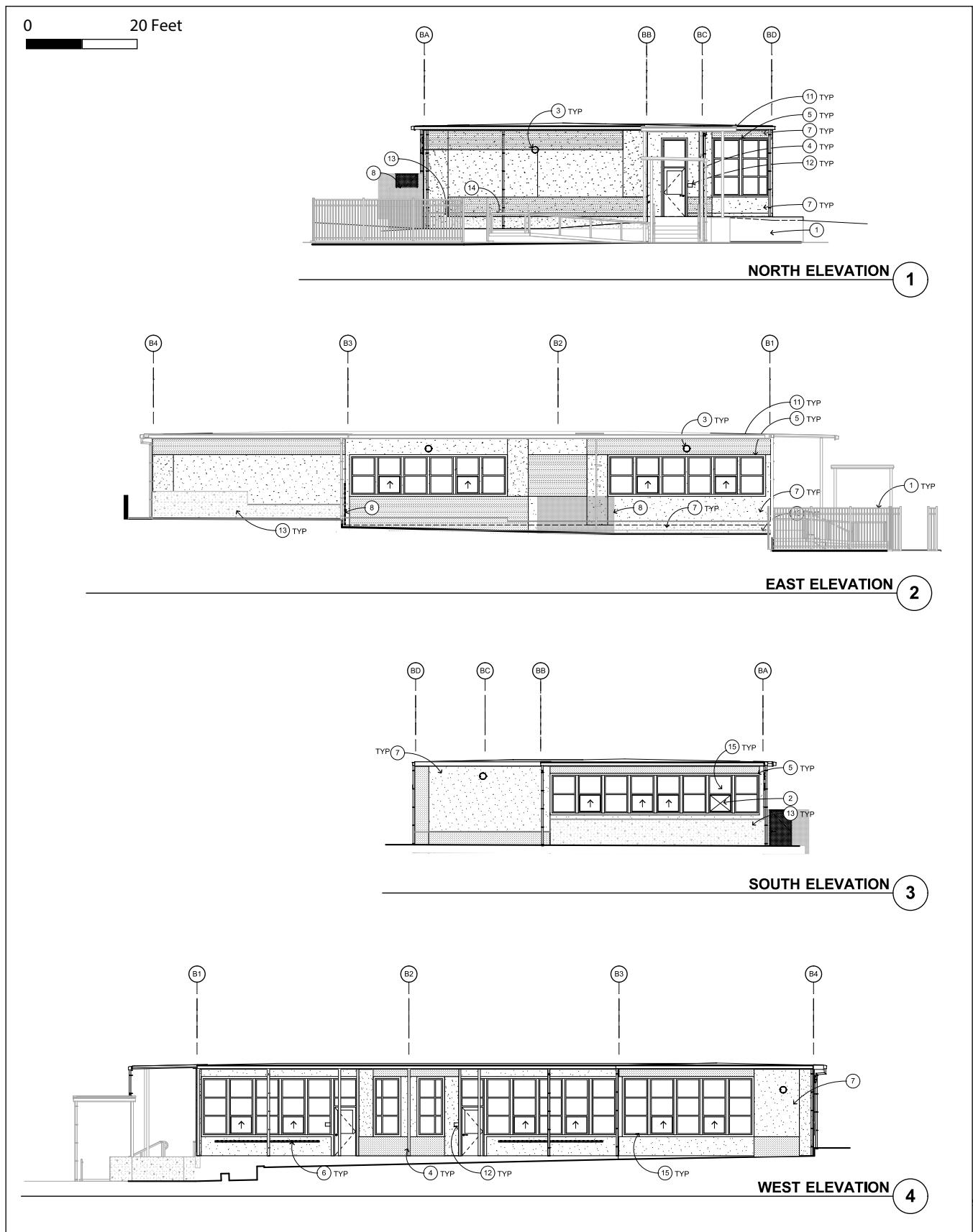


Figure 8

ELEVATION FOR LAUREL DELL ELEMENTARY SCHOOL BUILDING B

SOURCE: Quattrocchi Kwok Architects, 2018

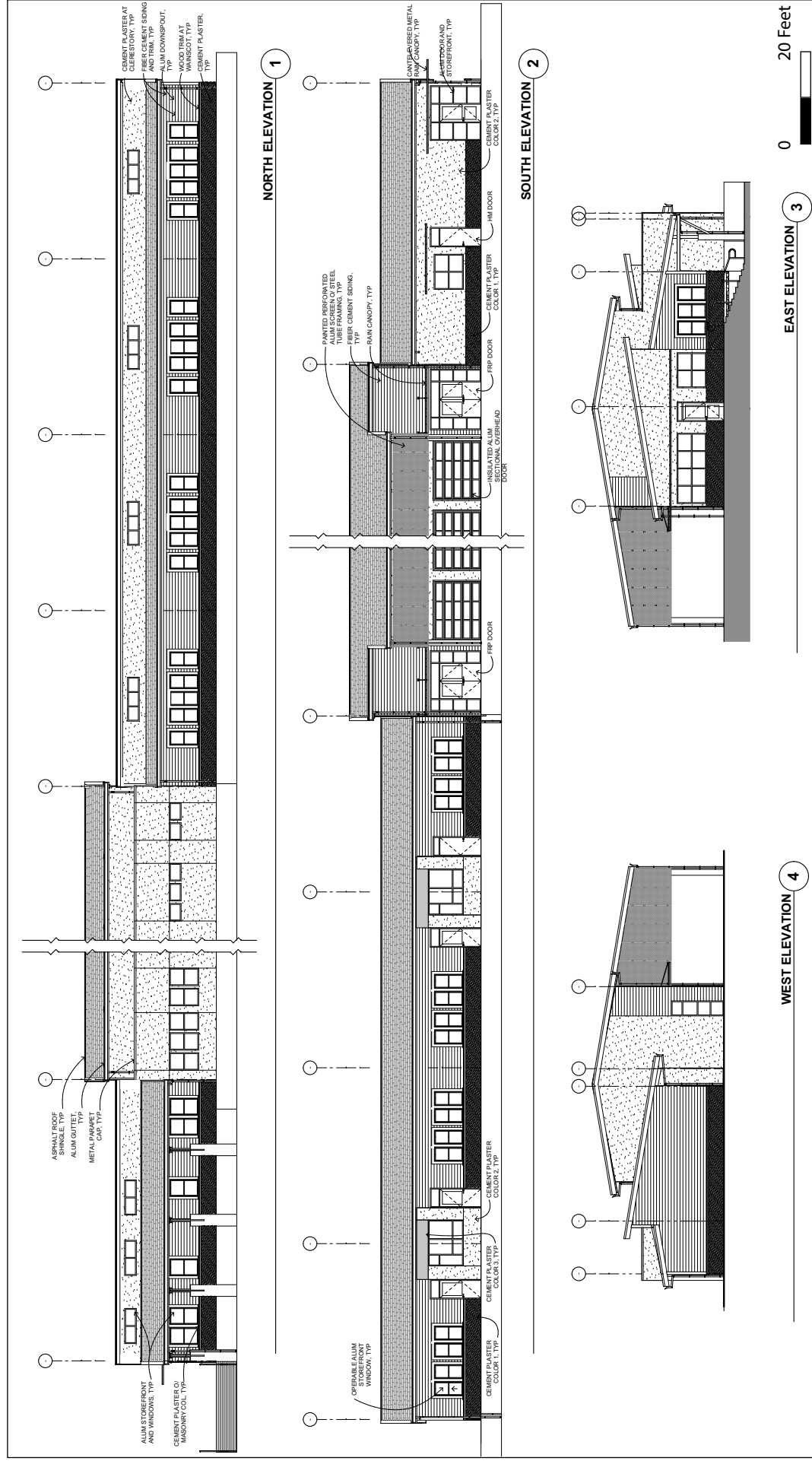


Figure 9

—DING C

SOURCE: Quattrocchi Kwok Architects, 2018

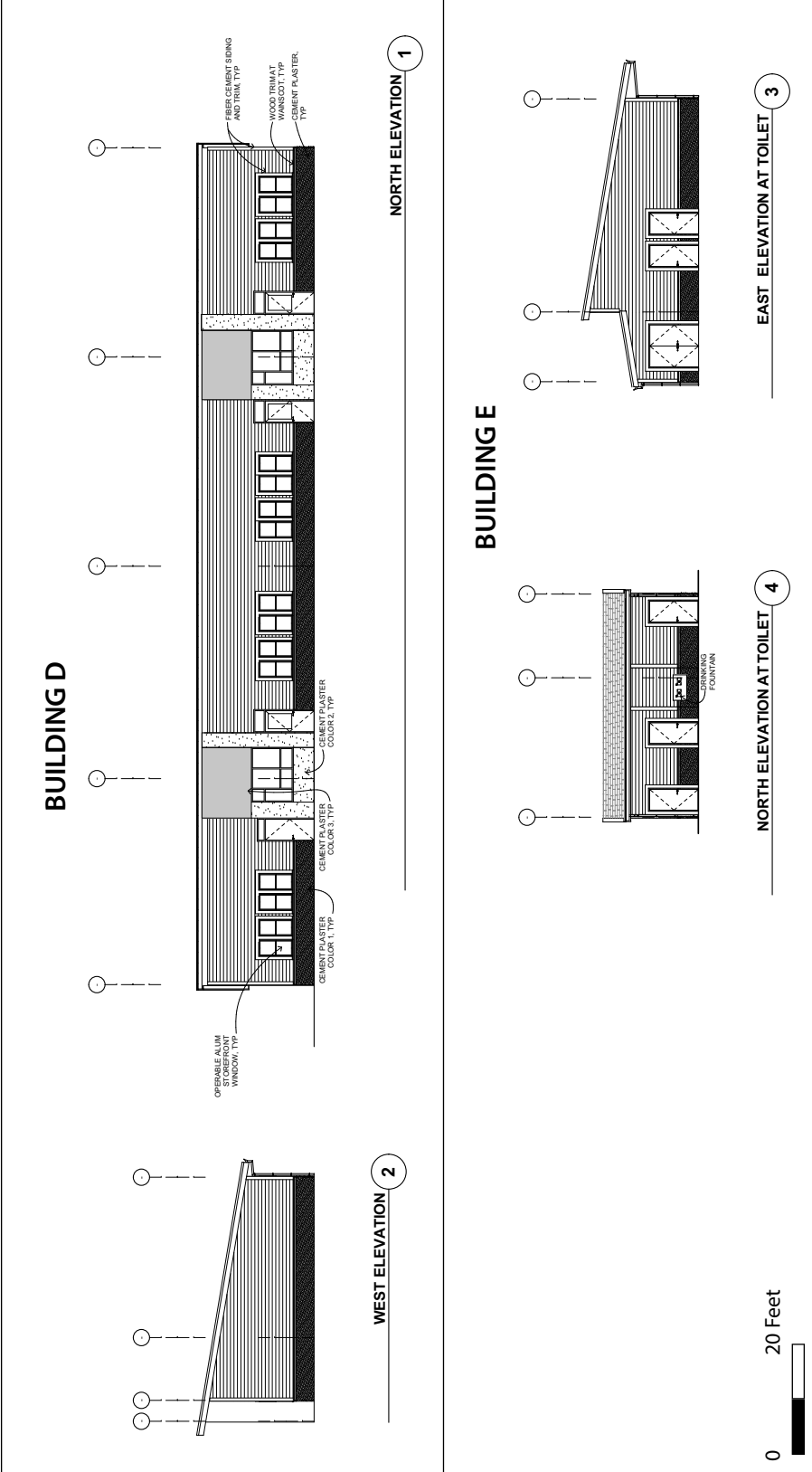


Figure 10

ELEVATIONS FOR BUILDINGS D AND E

SOURCE: Quattrocchi Kwok Architects, 2018

Changes in School Enrollment and Occupancy

Enrollment and Student Capacity

At Davidson Middle School, total student enrollment would increase from approximately 1,190 students to approximately 1,212 students by 2019-20. Total capacity of 1,300 students would remain unchanged.

At Laurel Dell Elementary School, enrollment would decrease from 201 students (2017) to 177 students.³ The project would add a net increase of three classrooms to the Laurel Dell campus; therefore, Laurel Dell's existing capacity of 207 students would increase to a total capacity of 276 students.

Table 2 shows the existing and projected enrollment, along with projected capacity, for both schools. For the CEQA analysis contained herein, a total increase of 197 persons on the project site (both schools) is assumed (comparing existing enrollment and staffing with future capacity).

**TABLE 2 EXISTING AND PROJECTED ENROLLMENT AND STAFFING AND PROJECTED CAPACITY AT
DAVIDSON MIDDLE SCHOOL AND LAUREL DELL ELEMENTARY SCHOOL**

Number of Students	Existing Enrollment	Projected Enrollment	Existing Capacity	Projected Capacity	Net Change from Existing Enrollment to Projected Capacity
Davidson Middle School (Grades 6-8)	1,190	1,212	1,300	1,300	+110
Laurel Dell Elementary School (Grades K-5)	201	177	207	276	+75
Total	1,391	1,389	1,507	1,576	+185

Number of Staff	Existing Staffing	Projected Staffing	Existing Capacity	Projected Capacity	Net Change from Existing Staffing to Projected Capacity
Davidson Middle School	61	62	70	70	+9
Laurel Dell Elementary School	14	13	14	17	+3
Total	75	75	84	87	+12

Source: San Rafael City Schools, 2018.

³ Currently, one existing transitional kindergarten (TK) class operates at the Laurel Dell campus. It was previously decided that this transitional kindergarten program would be removed from the Laurel Dell campus at the end of the current school year. As this decision was unrelated to the proposed project, the relocation of the TK program to another San Rafael City Schools site is permanent rather than temporary. Accordingly, a decrease in projected enrollment is anticipated at Laurel Dell.

Staffing

Projected staffing at Davidson Middle School is anticipated to increase by one teacher to accommodate the projected enrollment growth of 22 students. Total staffing capacity at Davidson Middle School would remain unchanged, as shown in Table 2; however, with future capacity, up to nine new staff could be on the Davidson campus, compared to existing staffing.

Total staffing at Laurel Dell Elementary School could increase by three classes, and thus three additional teachers at full capacity, as shown in Table 2. However, there are currently no plans to do so as projected student enrollment is projected to decline, instead of grow, in the near future.

School Activities and Hours of Operation

Davidson Middle School—Existing Hours and Activities

At Davidson Middle School, the normal school year currently consists of 180 days of instruction, typically starting at the end of August/early September and extending through to early June. A typical school day is 7:55 AM to 2:15 PM, Monday, Tuesday, Wednesday, and Friday. Thursday is typically 7:55 AM to 12:57 PM. Lunch period is from 11:47 AM to 12:19 PM, Monday, Tuesday, Wednesday, and Friday. Staff arrive by 7:30 AM and are on campus until at least 4:00 PM each day. Staff often arrive earlier and leave late.

In addition to the normal school day, there are after-school programs, including extended instructional programs and sports programs. The sports program, size of teams, and indoor (e.g., basketball) or outdoor (e.g., soccer) venue vary by sport. Some sports programs extend into the early evening hours, typically 8:00 PM.

Community activities that occur at Davidson Middle School include after-school classes, and the gym is rented out to various organizations. During the summer months while instruction is not being offered, the school remains the site for a number of ongoing programs, including summer camps, sport camps, and other activities. Sports fields are used on weekends and are open year-round. Occasional weeknight and weekend activities take place on the campus, generally in the area of the gym. The gym is often used for school sporting events as well as community programming such as volleyball and basketball. After-hours programs go until 8:00 PM.

Laurel Dell Elementary School—Existing Hours and Activities

At Laurel Dell Elementary School, the normal school year currently consists of 180 days of instruction, typically starting at the end of August/early September and extending through to early June. A typical school day is 8:45 AM to 3:30 PM, Monday, Tuesday, Thursday, and Friday. Wednesday is typically minimum day for students from 8:45 AM to 1:25 PM to provide staff development. The school lunch period is from 12:25 PM to 1:05 PM, Monday, Tuesday, Thursday, and Friday. Staff arrive by 8:00 AM and are on campus until at least 4:30 PM each day. Staff often arrive earlier and leave late.

In addition to the normal school day, the only after-school program at Laurel Dell every day is from 3:30 PM to 6:30 PM.

Post-Project Hours and Activities

Post-project hours and activities at Davidson Middle School and Laurel Dell Elementary School are not expected to increase, and expanded community use of school facilities is not anticipated. This is because the types of spaces proposed by the project at both campuses are predominately classroom and multi-purpose spaces, which are not the types of school facilities within the District that are typically in high demand by the community, as is the case with gyms or athletic fields. Similarly, because the renovations and new construction proposed at the Davidson Middle School existing gym locker rooms consist of expanded locker room space, new PE classrooms, and new office space, increased demand for these facilities is likewise not anticipated.

Transportation, Parking, and Site Security

Both campuses would have access primarily from Woodland Avenue. At Davidson Middle School, the existing parking area would be accessible from a driveway that connects directly to Woodland Avenue (see Figure 2).

At Laurel Dell Elementary School, drop-offs are currently, and would continue to be, located along Woodland Avenue and parking for staff and visitors would be accessible from Seibel Street, which connects to Woodland Avenue (see Figure 3). Subject to future discussions with the City of San Rafael, a new and improved dedicated drop-off lane may be provided on Woodland Avenue, with the existing curbside landscaped area replaced with new concrete to increase the width of passenger loading zones. Separate dedicated spaces would be provided for buses and cars.

Bus Service

Bus service to Davidson Middle School serves approximately 447 students. For Laurel Dell Elementary School, buses provide transport to the campus for approximately 61 students. These numbers would change slightly as a result of the project.

Pedestrian and Bicycle Access

At Davidson Middle School, sidewalks along Woodland Avenue would continue to provide pedestrian access. Bicycle access is currently provided at several campus locations including Woodland Avenue, Jordan Street, and from Davidson Annex off Lovell Avenue. The school currently has six existing bike racks at the main driveway near the drop-off area. The project would provide another bicycle point of access at the new driveway off Woodland Avenue.

At Laurel Dell Elementary School, pedestrian access would continue to be provided from Woodland Avenue and Seibel Street. The main pedestrian entrance point would remain at Seibel Street. Bicycles would enter off Seibel Street as well, and would be served by six existing bike racks at the southeastern side of campus.

Parking

A total of 95 parking spaces are currently available on the Davidson campus. These parking spaces are located at the western edge of the campus. With the proposed project, the 95 parking spaces would remain unchanged, with access from Woodland Avenue.

At the Laurel Dell campus, there are currently 14 existing parking spaces, including one handicap spot, that have access from Seibel Street. The parking lot would be restriped, and the number of parking spaces would be reduced to 13, including two Americans with Disabilities Act (ADA) spaces at the western edge of the campus with access from Seibel Street. The loss of one parking space would be due to installation of a new, quieter trash compactor in the parking lot.

Emergency Access and Site Security

At Davidson Middle School, a new emergency driveway access point would be provided along Woodland Avenue at the west side of campus as shown in Figure 2. Site security would include building and fence design such that central courtyards and principal building entries would be separated from exterior streets by closable fencing and gates.

At Laurel Dell Elementary School, emergency access would be provided from Seibel Street through the parking area to the center of campus as shown in the site plan (Figure 3). Similarly, site security would include building and fence design such that central courtyards and principal building entries would be separated from exterior streets by closable fencing and gates.

Landscaping

Davidson Middle School

Some trees are expected to be removed for new construction and renovations, and new trees and shrubs would be planted in landscaped areas adjacent to new buildings. Final landscape plans have not yet been completed, but preliminary landscaping plans for Davidson Middle School show predominately concrete paving. The project would remove 18 trees located in the southeast corner of the site. The types of trees include silk oak, European ash, and red mulberry. The sizes of the tree trunks range from 6 to 30 inches in diameter. It is expected that new trees and shrubs would be added to campus entrances, outdoor sitting areas, parking lots, and edges of playing fields.

Laurel Dell Elementary School

At Laurel Dell Elementary School, new landscaping would be added in the center portion of the campus and along Woodland Avenue. Preliminary landscaping plans show predominately concrete paving, with new trees and shrubs added to campus entrances, outdoor sitting areas, parking lots, and edges of playing fields.

The arborist recommends removal of eight of the trees along Woodland Avenue and Eva Street—six silver maple, one Chinese pistache, and one privet—because of declining condition and risks. One of

the silver maples along the Picnic Avenue frontage (Tree #15 in Figure 17), with a trunk diameter of 14 inches diameter breast height (dbh), has already been removed. Other trees occur on the campus, including numerous native coast live oaks along the Picnic Avenue frontage on the slopes above existing buildings and the playground are not expected to be removed or impacted. Replacement trees would presumably be installed as part of new landscaping along the Woodland Avenue and Eva Street frontages of the campus. However, detailed landscaping plans have not yet been prepared.

Utilities

Davidson Middle School

A number of on-site utility improvements would be made at Davidson Middle School for water, natural gas, wastewater, electrical, and telecommunications (phone, fiber optics, and other signal systems). Installation of on-site utility connections/extensions to serve the proposed new buildings would occur.

Existing water supply to the campus is from the Marin Municipal Water District. Existing piping and fire hydrants would be replaced if necessary in a phased manner as construction proceeds. Sanitary sewer service is provided by the San Rafael Sanitation District. Existing on-site sewer lines would be replaced as necessary. Natural gas lines would be upgraded as necessary to feed proposed buildings.

Laurel Dell Elementary School

A number of on-site utility improvements would be made at Laurel Dell Elementary School for water, natural gas, wastewater, electrical, and telecommunications (phone, fiber optics, and other signal systems). Installation of on-site utility connections/extensions to serve the proposed new buildings would occur.

Existing water supply to the campus is from the Marin Municipal Water District. Existing piping and fire hydrants would be replaced if necessary in a phased manner as construction proceeds. Sanitary sewer service is provided by the San Rafael Sanitation District. Existing on-site sewer lines would be replaced as necessary. Natural gas lines would be upgraded as necessary to feed proposed buildings, which would likely require additional gas to support increased capacity.

Construction Phases and Staging

Davidson Middle School

The Davidson Middle School construction would occur in three phases. Phase 1 would be construction of a new two-story, 10-classroom school building (STEM Center) (15,560 gsf) built in the western portion of the campus fronting on Woodland Avenue. This area is currently undeveloped. Phase 1, construction of the STEM Center, is expected to begin in late summer 2018 and to conclude by late 2019. Phase 2 would include the renovation and addition to the existing gym locker rooms, which would also include new PE classrooms, offices, and space for new lockers. Phase 2 is expected to begin in spring 2021 and to conclude in summer 2022. The last phase, Phase 3, would include the demolition of 15 portable classrooms and the construction of a new Multi-Purpose Building (8,400 gsf)

and new Music Building (3,500 gsf) for the steel drums orchestra. Necessary site and utility work would occur in each phase. During construction, existing classrooms located at the east side of the campus would remain occupied. See **Figure 11** for a map showing the work areas for each phase and construction staging areas.

Laurel Dell Elementary School

The renovations and new construction at Laurel Dell Elementary School are expected to occur in one phase, with construction starting in winter 2018. Construction is planned to be completed by fall 2019. Building A (Kindergarten), comprising 2,984 gsf, and Building B, comprising 3,147 gsf, would be modernized. New construction of Building C, Building D, and Building E (Bathroom/Storage Building) would also occur (14,034 gsf). Necessary site and utility work would be performed as well.

Site Grading and Drainage

Davidson Middle School

At Davidson Middle School, the new construction proposed as part of the project would require negligible grading work. No new soil would be imported and no off-haul would be required. In addition to the new buildings, the site work would increase impervious pavement area, resulting in a net increase of impervious surface area of 0.54 acre. In addition, three new bioretention areas totaling 2,500 square feet would be installed.

Laurel Dell Elementary School

At Laurel Dell Elementary School, site grading would be negligible as the new buildings would either be placed on existing impervious surface area or would replace existing buildings. Accordingly, the impervious surface area would remain unchanged. The campus would be served by three new bioretention areas (approximately 100 square feet each) planned to be installed in the middle of the site.

Site work would include demolition of deteriorated structures, including the removal of five existing portable classrooms (4,325 square feet), and the demolition of the existing 3,459-square-foot administration/kindergarten/classroom buildings; demolition of existing site work and utilities connected to demolished structures (cut and cap); site preparation, grading, and other site work on campus; emergency access improvements, including construction of new emergency access route from Seibel Street through the existing entrance and installation of an access gate; installation of three new bioretention areas and other Storm Water Pollution Prevention Plan (SWPPP)-related improvements; minimal reconfiguration and alterations to site layout; ADA upgrades and other site improvements to meet current standards of public health and safety; upgrades, extensions, relocation, and/or replacement of existing utilities, as necessary, including gas, electrical, water, sewer, telecommunication, and other utilities; and other improvements appurtenant thereto.

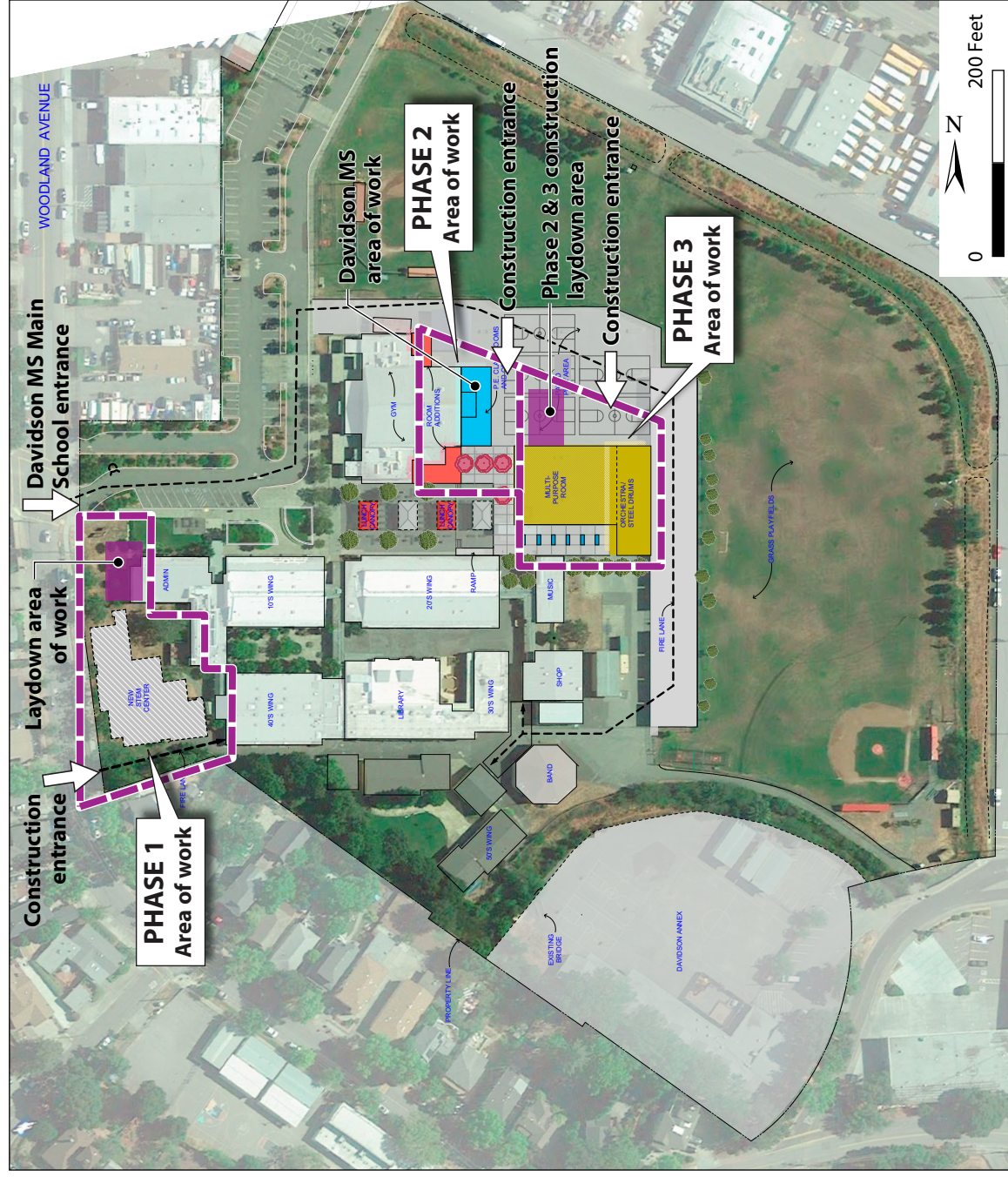


Figure 11

CONSTRUCTION PHASING FOR DAVIDSON MIDDLE SCHOOL

SOURCE: San Rafael City Schools, 2018



Energy Conservation and LEED Certification

San Rafael City Schools is proposing to use guidelines established by the Collaborative for High Performance Schools (CHPS) in the design, construction, and operation of the new buildings. The CHPS design guidelines are intended to result in more sustainable and energy-efficient buildings. The CHPS initiative aims to financially reward school districts that achieve sustainable and energy-efficient school facilities. The project would use a CHPS-designed score card. San Rafael City Schools would abide by all State of California mandates for energy conservation. The final project designs would be approved by the Division of the State Architect (DSA).

San Rafael City Schools is currently not seeking any Leadership in Energy and Environmental Design (LEED) certification for the project. The LEED system allots points for various energy-saving and environmentally preferable features such as efficient lighting and use of daylighting, water conservation features, reduction in impervious surface areas, and use of on-site renewable energy sources (e.g., solar). There are various levels of LEED certification based on the features incorporated into a project. Maintaining LEED certification requires ongoing recertification, however.

9. Surrounding Land Uses and Setting:

Davidson Middle School is surrounded by industrial/commercial uses to the northwest, Woodland Avenue and residential uses to the west, residential uses to the southwest and south, and Jordan Street and manufacturing uses to the north and east. Laurel Dell Elementary School is surrounded by four streets—Woodland Avenue, Siebel Street, Eva Street, and Picnic Avenue—along with residential uses adjoining the southwest boundary of the campus. Residential uses abut all four streets in the vicinity of the school.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

San Rafael City Schools is the lead agency for the project. The project would be subject to review and approval by the following agencies:

- **The DSA** reviews school project designs to determine compliance with the California Building Code (including accessibility Chapter 11B), and fire safety.
- **The Local Fire Marshal's Office** has been delegated fire code regulatory responsibilities for access to the site and number and location of fire hydrants only. All other fire code review is done by the DSA.
- **The Regional Water Quality Control Board (RWQCB)** oversees the permitting for projects that could affect water quality. The project would be covered under the State National Pollutant Discharge Elimination System (NPDES) General Construction Permit, which is accomplished by filing a Notice of Intent (NOI) with the RWQCB. A SWPPP may be required for the project.
- **The City of San Rafael** reviews and approves any improvements to the public roads and utilities surrounding the campuses.

REFERENCES

City of San Rafael, 2018. Website for General Plan and Zoning Maps. Website:
<https://www.cityofsanrafael.org/departments/planning/>, viewed on March 15.

San Rafael City Schools, 2018. Website: <https://www.srcsbondprogram.org>, viewed on January 23.

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Aesthetics | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Agriculture & Forestry Resources | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Air Quality | <input type="checkbox"/> Hydrology & Water Quality | <input checked="" type="checkbox"/> Transportation/Traffic |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Land Use & Planning | <input type="checkbox"/> Tribal Cultural Resources |
| <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Utilities & Service Systems |
| <input type="checkbox"/> Energy | <input checked="" type="checkbox"/> Noise | <input checked="" type="checkbox"/> Mandatory Findings of Significance |
| <input type="checkbox"/> Geology & Soils | <input type="checkbox"/> Population & Housing | |

Determination. (To be completed by the Lead Agency.)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

Printed Name

For

CHAPTER II ENVIRONMENTAL CHECKLIST

INTRODUCTION

The Checklist below addresses 19 environmental topics. Whenever a potentially significant impact is identified, a mitigation measure is proposed. A summary of the identified mitigation measures is included as **Appendix A**. At the end of each numbered impact statement and mitigation measure, the level of significance of the impact before and after mitigation is shown as “Less than Significant” (LTS) or “Potentially Significant” (PS).⁴

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IMPACT EVALUATION

a) *Would the project have a substantial adverse effect on a scenic vista?*

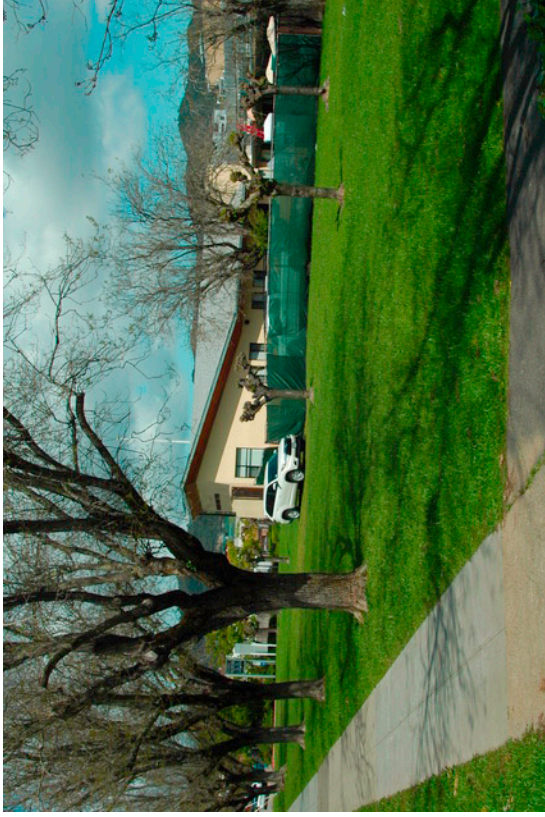
No Impact

The Davidson and Laurel Dell campuses are existing schools located in an urbanized portion of southern San Rafael (see Figure 1). Views toward the Davidson campus from nearby streets are shown in **Figure 12**. The Davidson campus, as seen from Woodland Avenue, includes existing buildings that have recently been renovated, the paved entrance and parking areas, and the landscaped area where the new STEM Center would be constructed. From Jordan Street, the back

⁴ This Mitigated Negative Declaration (MND) includes a discussion of impacts of the environment on the project, which, pursuant to recent California Supreme Court authority, are not California Environmental Quality Act (CEQA) impacts. San Rafael City Schools has included this discussion based on traditional checklist questions in order to be more thorough in the overall analyses.



a) View looking south toward site of new STEM Center from corner of Lindaro Street and Woodland Avenue.



b) STEM Center site, as viewed from Woodland Avenue sidewalk. Existing classroom building visible in the background.



c) Davidson campus from Jordan Street. This view takes in existing playing fields and portable classrooms in the background. These portables would be removed in a later phase.



d) Playing fields, existing gym (large building) and classrooms, as seen from Jordan Street. Portable classrooms that would be removed in a later phase are visible on the left side of image.

Figure 12

PHOTOS OF THE DAVIDSON MIDDLE SCHOOL SITE FROM SURROUNDING STREETS

SOURCE: Amy Skewes-Cox Environmental Planning

side of the Davidson campus can be seen across existing campus playing fields (see Photos c and d in Figure 12).

The Laurel Dell campus, as seen from Woodland Avenue, is dominated by existing permanent structures (near Eva Street) and portables, as shown in **Figure 13**. From Picnic Avenue, the campus is partially screened by existing trees (see Photo c in Figure 13). From Eva Street, one can view the existing buildings of the campus (see Photo d in Figure 13). From Siebel Street, the existing parking lot is visible in the foreground of campus buildings at Laurel Dell (see Photo b in Figure 13).

No major scenic vistas exist within the vicinity, which is dominated by the school buildings, adjacent roads (e.g., Woodland Avenue), low- and medium-density residential development, and some industrial buildings (e.g., north of Davidson campus). Street trees are planted along many portions of Woodland Avenue and the smaller streets that surround the Laurel Dell campus.

The new buildings proposed at the Davidson Middle School would be located within the developed portion of the campus. However, the new STEM Center would be constructed adjacent to Woodland Avenue in an area of the campus that is now landscaped with grass and mature trees. This area is visible from Woodland Avenue but would not be considered a scenic vista since it is fairly small in size and is only visible from the immediate environs. Other new additions for later phases (e.g., removal of portables and new PE classrooms and Multi-Purpose Building) would be located at the rear (east side) of the campus, near existing playing fields that front on Jordan Street, a narrow two-lane road that serves nearby industrial uses. Again, these new buildings would not affect a scenic vista.

The new and reconstructed buildings on the Laurel Dell Elementary School campus would occur entirely within the developed portion of the existing campus. This campus is dominated primarily by existing buildings (both portable and permanent) and paved areas, with very little area of landscaping. The new buildings, reconstructed buildings, and new landscaping in interior portions of the campus would not adversely impact a scenic vista.

- b) *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*

No Impact

The two campuses are not located in the vicinity of a State scenic highway. Therefore, no impact related to such resources within a scenic highway area would occur.

- c) *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?*

Potentially Significant Unless Mitigation Incorporated

For the Davidson campus, the new STEM Center would complement the existing campus buildings and expand the campus footprint closer to Woodland Avenue (see Figure 6). As shown in the site plan (Figure 2), the location of the STEM Center would fit into the east/west linear arrangement of campus



a) View northwest towards Laurel Dell site from corner of Woodland Avenue and Eva Street. This building in the foreground would be retained and remodeled.



b) View of north side of Laurel Dell site from Seibel Street, across parking area to classroom buildings that would be removed.



c) View northeast to Laurel Dell site from Picnic Avenue through existing trees.



d) View across rooftops of Laurel Dell site, as seen from corner of Eva Street and Picnic Avenue, looking north. Buildings in foreground would be renovated and not removed.

Figure 13

PHOTOS OF THE LAUREL DELL ELEMENTARY SCHOOL SITE FROM SURROUNDING STREETS

SOURCE: Amy Skewes-Cox Environmental Planning



AMY SKEWES-COX
ENVIRONMENTAL PLANNING

buildings, with intervening space for open courtyards, a fire lane, and pedestrian connections. From Woodland Avenue, the scale of the STEM Center would be in line with existing campus buildings; however, it would bring the campus buildings closer to this heavily traveled corridor that adjoins residences to the west. Final landscape plans have not yet been developed. However, as shown in Figures 16 and 17(see Section IV, Biological Resources, of this Initial Study), a number of trees near Woodland Avenue would be removed from the Davidson site and the Laurel Dell site. Three trees would also be removed along Eva Street. For this reason, the project could substantially degrade the existing visual quality of the sites, and Mitigation Measure AESTHETICS-1a and 1b below are recommended.

At the Davidson campus, six large-diameter trees that have been identified as diseased or damaged would be removed along the Woodland Avenue frontage. An additional nine trees (two large diameter and seven smaller diameter) would be removed from the center of the site of the new STEM Center. Three additional trees would be removed on the south property line. Landscape plans for the Davidson campus include six large-diameter trees on the Woodland Avenue frontage and three new trees in the center of the site.

Five large trees and one smaller-diameter tree along the Woodland Avenue frontage by the Laurel Dell campus are damaged or diseased according to the arborist's report and would be removed. Three trees along Woodland Avenue by Laurel Dell would be protected, and one tree along Eva Street would be protected. One of the large-diameter trees to be removed along Eva Street is damaged or diseased and three trees along Eva Street would be removed. The landscape plans for the Woodland Avenue frontage include five new trees. The landscape plans for the Eva Street frontage include one new tree (Savidge, 2018).

Impact AESTHETICS-1: Development of the proposed Science, Technology, Engineering, and Math (STEM) Center at Davidson Middle School would result in a new two-story building adjacent to Woodland Avenue and would remove an existing landscaped area visible from nearby residents to the west. Trees along Woodland Avenue and Eva Street adjacent to Laurel Dell Elementary School and visible from nearby residences would also be removed. The removal of mature trees would degrade the existing visual quality of the site unless replacement trees are planted along Woodland Avenue. (PS)

Mitigation Measure AESTHETICS-1a: A minimum of six new trees shall be planted along Woodland Avenue to the west of the new STEM Center. These trees shall be either evergreen or deciduous, drought-tolerant, and shall be at least 25 to 30 feet at maturity. Any trees within the sidewalk area shall be approved by the City of San Rafael Department of Public Works. At the time of planting, the trees shall be in 24-inch boxes, adequately protected with staking and fencing as needed for early growth, and shall be planted within 6 months of completion of the STEM Center. In addition, shrubbery landscaping that is drought-tolerant shall be planted in the vicinity of the new building, especially in areas visible from Woodland Avenue.

Mitigation Measure AESTHETICS-1b: A minimum of five new trees shall be planted along Woodland Avenue to the north/northeast of the new Laurel Dell buildings. An additional three

new trees shall be planted on the south side of the campus on Eva Street. These trees shall be either evergreen or deciduous, drought-tolerant, and shall be at least 25 to 30 feet at maturity. Any trees within the sidewalk area shall be approved by the City of San Rafael Public Works Department. At the time of planting, the trees shall be in 24-inch boxes, adequately protected with staking and fencing as needed for early growth, and shall be planted within 6 months of completion of the Laurel Dell project. In addition, shrubbery landscaping that is drought-tolerant shall be planted in the vicinity of the new buildings, especially in areas visible from Woodland Avenue.

The combination of the two mitigation measures above would reduce this impact to less than significant. (LTS)

For later-phase buildings on the Davidson campus, schematic designs have not yet been developed. The later phases would include the new Multi-Purpose Room, new PE classrooms, new locker rooms, and a Music Building (see Figures 2 and 11). The existing portables in the eastern portion of the campus would be removed. Designs have not been finalized for these later-phase projects. However, this portion of the campus is not visible from nearby residences or heavily traveled streets. Jacoby Street is the main street from which this portion of the campus is visible and this street primarily serves the nearby industrial area (see Figure 2 and Photos c and d in Figure 13). No mitigation measures would be needed for later phases of the project at Davidson Middle School, given the location and likely visual impacts of these later phases of development, and the fact that existing conditions as seen from Jacoby Street would remain largely unchanged.

- d) *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Potentially Significant Unless Mitigation Incorporated

Lighting plans have not been finalized for the Davidson or Laurel Dell campuses. However, given the proximity of residences to the western edge of the Davidson campus, and the proximity of residences to all four sides of the Laurel Dell campus, new lighting on the campus could result in light and glare for nearby residences. It is anticipated that, for security and functional purposes, new lighting would be added within the parking areas at the Laurel Dell site, at the edges of buildings, at campus entry points, and along internal pathways and corridors. In addition, all new classroom and administrative spaces would be lit.

Impact AESTHETICS-2: The project would result in increased lighting that could be visible to nearby residents. Such lighting could result in glare if not properly shielded. (PS)

Mitigation Measure AESTHETICS-2: All new lighting shall be shielded to reduce off-site light and glare. Pedestrian pathway lighting shall be of a uniform style and quality of illumination that aids in navigation without overlighting the surroundings. Signage lighting shall be minimized to provide context for pedestrians and drivers. Parking lot lighting shall be shielded and cast

downward to minimize "light spillage" to off-site locations and shall be placed on timers so that minimal lighting occurs after 11:00 PM. (LTS)

REFERENCES

QKA, 2017. Plans prepared for both Davidson Middle School and Laurel Dell Elementary School.

Savidge, William, District Project Management Consultant, 2018. E-mail to A. Skewes-Cox, May 16.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURAL AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland of Statewide Importance to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IMPACT EVALUATION

- a) *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?*

No Impact

No farmland exists on the project site as mapped in the Farmland Mapping and Monitoring Program of the California Resources Agency. The Davidson site is an existing middle school campus in an urbanized area of the City of San Rafael and the Laurel Dell site is an existing elementary school campus, also in an urbanized portion of the City of San Rafael.

- b) *Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?*

No Impact

No Williamson Act contracts pertain to the project site, and the site is not zoned for agricultural use (City of San Rafael, 2018).

- c) *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*

No Impact

The site is not zoned as forest land or timberland.

- d) *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

No Impact

No forest land exists at the project site.

- e) *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*

No Impact

Refer to Items (a) through (d) above.

REFERENCES

City of San Rafael, 2018. Website for General Plan and Zoning Maps. Website:
<https://www.cityofsanrafael.org/departments/planning/>, viewed on March 15.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

BACKGROUND

The project site is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). In the SFBAAB, the primary criteria air pollutants of concern are carbon monoxide (CO), ground level ozone formed through reactions of nitrogen oxides (NO_x) and reactive organic gases (ROG), and suspended particulate matter (i.e., respirable particulate matter [PM₁₀] and fine particulate matter [PM_{2.5}]). In June 2010, the BAAQMD adopted thresholds of significance to assist lead agencies in the evaluation and mitigation of air quality impacts under the California Environmental Quality Act (CEQA). The BAAQMD's thresholds, which were incorporated into the 2017 *CEQA Air Quality Guidelines*, established levels at which emissions of ROG, NO_x, PM₁₀, PM_{2.5}, local CO, and toxic air contaminants (TACs) would cause significant air quality impacts. The BAAQMD's thresholds that relate to the analysis of the project's impacts on the environment are used in this CEQA analysis in conjunction with the BAAQMD's current *CEQA Air Quality Guidelines* (BAAQMD, 2017a). The thresholds of significance used in this CEQA analysis are summarized in **Table 3**.

TABLE 3 BAY AREA AIR QUALITY MANAGEMENT DISTRICT (BAAQMD) PROJECT-LEVEL THRESHOLDS OF SIGNIFICANCE

Impact Analysis	Pollutant	Threshold of Significance
Regional Air Quality (Construction)	ROG	54 pounds/day (average daily emission)
	NO _x	54 pounds/day (average daily emission)
	Exhaust PM ₁₀	82 pounds/day (average daily emission)
	Exhaust PM _{2.5}	54 pounds/day (average daily emission)
	Fugitive Dust (PM ₁₀ and PM _{2.5})	Best management practices
Regional Air Quality (Operation)	ROG	54 pounds/day (average daily emission) 10 tons/year (maximum annual emission)
	NO _x	54 pounds/day (average daily emission) 10 tons/year (maximum annual emission)
	Exhaust PM ₁₀	82 pounds/day (average daily emission) 15 tons/year (maximum annual emission)
	Exhaust PM _{2.5}	54 pounds/day (average daily emission) 10 tons/year (maximum annual emission)
Local Community Risks and Hazards (Operation and/or Construction)	CO	9.0 ppm (8-hour average) 20.0 ppm (1-hour average)
	Exhaust PM _{2.5} (project)	0.3 µg/m ³ (annual average)
	Exhaust PM _{2.5} (cumulative)	0.8 µg/m ³ (annual average)
	TACs (project)	Cancer risk increase > 10 in 1 million Chronic hazard index > 1.0
	TACs (cumulative)	Cancer risk > 100 in 1 million Chronic hazard index > 10.0

Note: ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; CO = carbon monoxide; TACs = toxic air contaminants; ppm = part per million; µg/m³ = micrograms per cubic meter
Source: BAAQMD, 2017a.

IMPACT EVALUATION

a) *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

Less Than Significant Impact

In accordance with the federal Clean Air Act and California Clean Air Act, the BAAQMD is required to prepare and update an air quality plan that outlines measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve federal and state ambient air quality standards. In April 2017, the BAAQMD adopted the *2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 CAP), which includes 85 control measures to reduce ROG, NO_x, PM₁₀, PM_{2.5}, TACs, and greenhouse gases (GHGs). The 2017 CAP was developed based on a multi-pollutant evaluation method that incorporates well-established studies and methods on quantifying the health benefits of air quality regulations, computer modeling and analysis of existing air quality monitoring data and emission inventories, and growth projections prepared by the Metropolitan Transportation Commission and the Association of Bay Area Governments (ABAG) (BAAQMD, 2017b).

Based on the BAAQMD's current *CEQA Air Quality Guidelines* (BAAQMD, 2017a), the following criteria should be considered to determine if a project would conflict with or obstruct implementation of the 2017 CAP:

- Does the project include applicable control measures from the air quality plan?
- Does the project disrupt or hinder implementation of any air quality plan control measures?
- Does the project support the primary goals of the air quality plan?

The 2017 CAP includes control measures that aim to reduce air pollution and GHGs from stationary, area, and mobile sources. The control measures are organized into nine categories: stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants (e.g., methane, black carbon, and fluorinated gases).

As described in **Table 4**, the project would be consistent with applicable control measures from the 2017 CAP. Because the project would not result in any significant and unavoidable air quality impacts related to emissions, ambient concentrations, or public exposures (see Items (b) through (d) below and Section VIII, Greenhouse Gas Emissions, of this Initial Study), the project would support the primary goals of the 2017 CAP. Therefore, based on the BAAQMD's *CEQA Air Quality Guidelines* (BAAQMD, 2017a), the project would not conflict with or obstruct implementation of the applicable air quality plan, and the impact would be less than significant.

- b) *Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Potentially Significant Unless Mitigation Incorporated

Construction Emissions

Construction of the project would generate criteria pollutant emissions that could potentially affect regional air quality. The primary pollutant emissions of concern would be ROG, NO_x, PM₁₀, and PM_{2.5} from the exhaust of off-road construction equipment and on-road construction vehicles (worker vehicles, vendor trucks, and haul trucks). In addition, fugitive dust emissions of PM₁₀ and PM_{2.5} would be generated by soil disturbance activities, and fugitive ROG emissions would result from the application of architectural coatings and paving during construction.

The BAAQMD currently recommends using the most recent version of the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 to estimate construction and operational emissions of pollutants for a proposed project. CalEEMod uses widely accepted models for emission estimates combined with appropriate default data for a variety of land use projects that can be used if site-specific information is not available. The default data (e.g., type and power of construction equipment) are supported by substantial evidence provided by regulatory agencies and a combination of statewide and regional surveys of existing land uses. The primary input data used to estimate emissions associated with construction and operation of the proposed project are summarized in **Table 5**. A copy of the CalEEMod report for the proposed project, which summarizes the input parameters, assumptions, and findings, is available for review at the District's offices at 310 Nova Albion, San Rafael, California. To determine if project construction and operation emissions could

TABLE 4 PROJECT CONSISTENCY WITH BAY AREA AIR QUALITY MANAGEMENT DISTRICT (BAAQMD) 2017 CLEAN AIR PLAN (CAP)

Control Measures	Proposed Project Consistency
Stationary Sources	The stationary source measures are enforced by the BAAQMD pursuant to its authority to control emissions from permitted facilities. The project would not include any new stationary sources, such as an emergency diesel generator. Therefore, the stationary sources control measures of the 2017 CAP are not applicable to the project.
Transportation	The transportation control measures are designed to reduce vehicle trips, use, miles traveled, idling, or traffic congestion for the purpose of reducing vehicle emissions. The project would result in an increase in enrollment at Davidson Middle School and Laurel Dell Elementary School. According to Section XVIII, Transportation/Traffic, of this Initial Study, the project would not generate a significant net increase in vehicle trips. Therefore, the project would be consistent with the transportation control measures of the 2017 CAP.
Energy	The energy control measures are designed to reduce emissions of criteria air pollutants, toxic air contaminants (TACs), and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the energy control measures of the 2017 CAP are not applicable to the project. However, power provided to the proposed project would be generated by Pacific Gas and Electric (PG&E), whose electricity portfolio contains about 70 percent renewable and GHG-free sources (PG&E, 2018).
Buildings	The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the building control measures focus on working with local governments that have authority over local building codes to facilitate adoption of best GHG control practices and policies. The proposed project would follow guidelines established by the Collaborative for High Performance Schools (CHPS), which are intended to result in more sustainable and energy-efficient buildings. Therefore, the proposed project would not conflict with the building control measures of the 2017 CAP.
Agriculture	The agriculture control measures are designed primarily to reduce emissions of methane. Since the project does not include any agricultural activities, the agriculture control measures of the 2017 CAP are not applicable to the project.
Natural and Working Lands	The control measures for the natural and working lands sector focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban tree plantings. Since the project does not include the disturbance of any rangelands or wetlands, the natural and working lands control measures of the 2017 CAP are not applicable to the project.
Waste Management	The waste management measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the project would be consistent with the waste management control measures of the 2017 CAP.
Water	The water control measures to reduce emissions from the water sector will reduce emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies (and not individual projects), the water control measures of the 2017 CAP are not applicable to the project.
Super GHGs	The super-GHG control measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the super-GHG control measures of the 2017 CAP are not applicable to the project.

Source: BAAQMD, 2017b.

TABLE 5 SUMMARY OF LAND USE INPUT PARAMETERS FOR CALHEMOD ESTIMATE OF EXISTING AND PROJECT AIR EMISSIONS

Scenario	Land Use Type	CalHEMOD Land Use Type	Units	Unit Amount
Existing Conditions	Educational	Elementary School	Square Feet	13,915
	Educational	Junior High School	Square Feet	94,852
Proposed Project	Educational	Elementary School	Square Feet	20,165
	Educational	Junior High School	Square Feet	112,517

Note: The project footprint would be about 1.76 acres for Laurel Dell Elementary School and 18.05 acres for Davidson Middle School.
Source: CalHEMOD.

substantially contribute to existing violations of federal and/or state ambient air quality standards in the SFBAAB, the project's emissions are compared to the BAAQMD's thresholds of significance, below.

Construction Fugitive Dust Emissions

Impact AIR-1: Fugitive dust emissions during project construction could violate an air quality standard or contribute substantially to an existing or projected air quality violation. (PS)

Project excavation, grading, and material hauling activities during construction could generate fugitive dust PM₁₀ and PM_{2.5} emissions that could result in a potentially significant impact in relation to ambient air quality standards. The BAAQMD does not have a quantitative threshold of significance for fugitive dust PM₁₀ and PM_{2.5} emissions; however, the BAAQMD considers implementation of dust control measures during construction sufficient to reduce air quality impacts from fugitive dust to a less-than-significant level. More specifically, the BAAQMD recommends that all construction projects implement the Basic Construction Mitigation Measures from the BAAQMD's *CEQA Air Quality Guidelines* (BAAQMD, 2017a) to reduce emissions of fugitive dust (regardless of the estimated emissions). The dust control measures described in Mitigation Measure AIR-1 would meet or exceed the minimum requirements based on the BAAQMD's Basic Construction Mitigation Measures.

Mitigation Measure AIR-1: During project construction, the contractor shall implement a dust control program that includes the following measures recommended by the Bay Area Air Quality Management District (BAAQMD):

- *All exposed surfaces (e.g., parking areas, staging areas, graded areas, and unpaved access roads) shall be watered two times per day. Soil piles shall be covered.*
- *All haul trucks transporting soil, sand, or other loose material off-site shall be covered.*
- *All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.*
- *All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.*

- *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.*
- *A publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD phone number shall also be visible to ensure compliance with applicable regulations.*

In addition, an independent construction monitor shall conduct periodic site inspections, but in no event fewer than four total inspections, during the course of construction to ensure these mitigation measures are implemented and shall issue a letter report to San Rafael City Schools documenting the inspection results. Reports indicating non-compliance with construction mitigation measures shall be cause to issue a stop-work order until such time as compliance is achieved. (LTS)

Construction ROG, NO_x, and Exhaust PM₁₀ and PM_{2.5} Emissions

Based on the proposed project design, construction activities would include site preparation, grading, drilling of piles, building construction, paving, and architectural coating. Emissions of ROG, NO_x, and exhaust PM₁₀ and PM_{2.5} during project construction were estimated using the CalEEMod input parameters summarized in **Table 6**.

TABLE 6 SUMMARY OF CONSTRUCTION INPUT PARAMETERS FOR CALEEMOD ESTIMATE OF PROJECT AIR EMISSIONS

CalEEMod Input Category	Construction Assumptions and Changes to Default Data
Construction Phase	The default construction duration was modified to 1,049 work days (approximately the duration of all three phases for construction on Davidson Middle School) with work scheduled to begin in July 2018.
On-Site Construction Equipment	The default on-site construction equipment list and total operation hours were modified according to site-specific construction information provided by the project applicant.
Material Movement	1,460 cubic yards of debris export is anticipated during grading.
Demolition	23,593 square feet of existing buildings would be demolished.
Haul Trips	The default haul trips for debris removal were modified to a total 37 haul trips assuming 40 cubic yards of debris export per truck load.
Worker and Vendor Trips	The default worker and vendor trips were modified according to the construction schedule provided by San Rafael City Schools.

Note: Default CalEEMod data used for all other parameters not described.
Source: CalEEMod.

Estimates of construction emissions were averaged over the total working days and compared to the BAAQMD's thresholds of significance in **Table 7**. The project's estimated emissions for ROG, NO_x, and exhaust PM₁₀ and PM_{2.5} were below the applicable thresholds, and therefore emissions of ROG, NO_x,

and exhaust PM₁₀ and PM_{2.5} during project construction would have a less-than-significant impact related to ambient air quality standards.

TABLE 7 ESTIMATED PROJECT CONSTRUCTION EMISSIONS (POUNDS PER DAY)

	ROG	NO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Unmitigated Construction Emissions	1.1	10.6	0.43	0.30
BAAQMD's Thresholds of Significance	54	54	82	54
Exceed Threshold?	No	No	No	No

Note: BAAQMD = Bay Area Air Quality Management District; ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter
Source: CalEEMod.

Operational Emissions

The primary pollutant emissions of concern during project operation would be ROG, NO_x, and exhaust PM₁₀ and PM_{2.5} from energy use, area sources (e.g., consumer products, architectural coatings, and landscape maintenance equipment), and mobile sources. Based on the project construction schedule, operation was assumed to begin as early as 2019. Because statewide vehicle emission standards are required to improve over time in accordance with the Pavley (Assembly Bill [AB] 1493) regulations and Low-Emission Vehicle regulations (Title 13, California Code of Regulations, Section 1961.2), estimating emissions for the earliest year of operation provides the maximum annual emissions. CalEEMod default data for trip generation rates were changed to project-specific trip generation rates that are consistent with Section XVIII, Transportation/Traffic, of this Initial Study.

The estimated maximum annual emissions and average daily emissions under the existing conditions and during the operational phase of the proposed project are compared to the BAAQMD's thresholds of significance in **Table 8**. The estimated emissions for ROG, NO_x, and exhaust PM₁₀ and PM_{2.5} were below the BAAQMD's thresholds of significance and, therefore, emissions during project operation would have a less-than-significant impact related to ambient air quality standards.

- c) *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

Potentially Significant Unless Mitigation Incorporated

Air pollution in the SFBAAB is generally a cumulative impact and, therefore, future development projects contribute to the region's adverse air quality impacts on a cumulative basis. In developing the thresholds of significance, the BAAQMD considered the emission levels for which an individual project's emissions would be cumulatively considerable, including the emissions of criteria air pollutants already exceeding federal or state ambient air quality standards. The SFBAAB is currently designated as a non-attainment area under the federal and/or state ambient air quality standards for ozone, PM₁₀, and PM_{2.5} and therefore a cumulative air quality impact is occurring. As discussed under Item (b)

TABLE 8 ESTIMATED PROJECT OPERATION EMISSIONS

Emissions Scenario	Maximum Annual Emissions (Tons)				Average Daily Emissions (Pounds)			
	ROG	NO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}	ROG	NO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Existing Conditions								
Total Emissions	0.89	1.43	0.02	0.02	4.90	7.82	0.13	0.12
Proposed Project								
Area	0.59	<0.01	<0.01	<0.01	3.22	<0.01	<0.01	<0.01
Energy	0.01	0.11	0.01	0.01	0.06	0.59	0.04	0.04
Mobile	0.46	1.54	0.02	0.02	2.54	8.46	0.10	0.10
Total Emissions	1.1	1.7	<0.1	<0.1	5.8	9.0	0.1	0.1
Net Project Emissions	0.2	0.2	<0.1	<0.1	0.9	1.2	<0.1	<0.1
Thresholds of Significance	10	10	15	10	54	54	82	54
Exceed Threshold?	No	No	No	No	No	No	No	No

Note: ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter
Source: CalEEMod.

above, exhaust emissions of ozone precursors (ROG and NO_x), PM₁₀, and PM_{2.5} during project construction and operation would not exceed the BAAQMD's thresholds of significance and therefore would not result in a cumulatively considerable net increase in criteria air pollutant emissions. However, project construction could generate fugitive dust emissions that could be considered cumulatively considerable and result in a potentially significant impact related to ambient air quality standards.

Impact AIR-2: Fugitive dust emissions during project construction could result in a cumulatively considerable net increase of criteria pollutants for which the region is non-attainment under an applicable federal or state air quality standard. (PS)

Mitigation Measure AIR-2: Mitigation Measure AIR-1 shall be implemented. (LTS)

d) *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Potentially Significant Unless Mitigation Incorporated

The term "sensitive receptor" refers to a location where individuals are more susceptible to poor air quality. Sensitive receptors include schools, convalescent homes, and hospitals because the very young, the old, and the infirm are more susceptible than the rest of the public to air quality-related health problems. Residential areas are also considered sensitive to poor air quality because people are often at home for extended periods, thereby increasing the duration of exposure to potential air contaminants. The BAAQMD recommends evaluating the potential impacts on sensitive receptors

located within 1,000 feet of a project. The project's potential impacts on sensitive receptors from emissions of CO and TACs are discussed below.

Localized Carbon Monoxide Concentrations

The occurrence of localized CO concentrations, also known as "hotspots," can affect sensitive receptors in local communities. The source of local CO emissions is often associated with heavy traffic congestion, which most frequently occurs at signalized intersections of high-volume roadways. The BAAQMD's threshold of significance for local CO concentrations is equivalent to the 1- and 8-hour California Ambient Air Quality Standards (CAAQS) of 20.0 and 9.0 parts per million, respectively, because these represent levels that are protective of public health. According to the BAAQMD CEQA Guidelines (BAAQMD, 2017a), since the proposed project would not conflict with the local congestion management plan (see Section XVIII, Transportation/Traffic, of this Initial Study) and would not generate more than 44,000 vehicles per hour at the affected intersections, the project would not be expected to contribute a significant increase in local CO levels above the CAAQS. Therefore, the project would have a less-than-significant impact on nearby sensitive receptors related to local CO concentrations.

Toxic Air Contaminants from Construction

Project construction would generate diesel particulate matter (DPM) and PM_{2.5} emissions from off-road diesel construction equipment and on-road vehicles traveling to and from the project site, and these emissions could affect nearby sensitive receptors. The annual average concentrations of DPM and PM_{2.5} concentrations were estimated within 1,000 feet of the proposed project using the U.S. Environmental Protection Agency's (USEPA) Industrial Source Complex Short Term (ISCST3) air dispersion model. For this analysis, emissions of exhaust PM₁₀ were used as a surrogate for DPM. The input parameters and assumptions used for estimating emission rates of DPM and PM_{2.5} from off-road diesel construction equipment and on-road vehicles (worker, vendor, and haul trucks) traveling to and from the project site are included in the CalEEMod report available for review at the District's offices at 310 Nova Albion, San Rafael, California.

Daily emissions from off-road construction equipment and on-road vehicles were assumed to occur over a typical 8-hour period between 9:00 AM and 5:00 PM Monday through Friday. The exhaust from off-road equipment was represented in the ISCST3 model as a series of volume sources with a release height of 5 meters to represent the mid-range of the expected plume rise from frequently used construction equipment.

A uniform grid of receptors spaced 10 meters apart with receptor heights of 1.8 meters was encompassed around the project site as a means of developing isopleths (i.e., concentration contours) that illustrate the air dispersion pattern from the various emission sources. The ISCST3 model input parameters included 5 years of BAAQMD meteorological data at the Point San Pablo weather station located about 5.5 miles east of the project site.

Based on the results of the air dispersion model (see the CalEEMod report available for review at the District's offices at 310 Nova Albion, San Rafael, California), potential health risks were evaluated for the maximally exposed individual student (MEIS) at the Davidson Middle School 20's Wing building and the maximally exposed individual resident (MEIR) located in a private house on Woodland Avenue about 75 feet northeast of the Laurel Dell Elementary School. These exposure scenarios represent the most sensitive individuals on and near the project site who could be exposed to the most adverse air quality condition. It was assumed that the MEIS and MEIR would be exposed to the average DPM concentrations over the entire estimated duration of construction. Therefore, this analysis is conservative. The input parameters and results of the health risk assessments are included in the CalEEMod report available for review at the District's offices at 310 Nova Albion, San Rafael, California. The annual average concentrations of DPM and PM_{2.5} at the MEIS and MEIR are summarized in **Table 9**.

TABLE 9 ANNUAL AVERAGE TAC CONCENTRATIONS DURING PROJECT CONSTRUCTION

Receptor	Pollutant	Annual Average Concentration (Unmitigated / Mitigated)
Maximally Exposed Individual Student (MEIS)	DPM (µg/m ³)	0.061 / 0.002
	PM _{2.5} (µg/m ³)	0.057 / 0.002
Maximally Exposed Individual Resident (MEIR)	DPM (µg/m ³)	0.057 / 0.002
	PM _{2.5} (µg/m ³)	0.053 / 0.002

Note: DPM = diesel particulate matter; PM_{2.5} = fine particulate matter; µg/m³ = micrograms per cubic meter
Source: CalEEMod.

In accordance with guidance from the BAAQMD (2012) and the Office of Environmental Health Hazard Assessment (OEHHA, 2015), a health risk assessment was conducted to calculate the incremental increase in cancer risk and chronic hazard index (HI) to sensitive receptors from DPM emissions during construction. The acute HI for DPM was not calculated because an acute reference exposure level has not been approved by the OEHHA and the California Air Resources Board (CARB), and the BAAQMD does not recommend analysis of acute non-cancer health hazards from construction activity.

It was conservatively assumed that the MEIS and MEIR would be exposed to an annual average DPM concentration over the entire estimated duration of construction, which is about 4 years. At the MEIS location, the incremental increase in cancer risk from on-site DPM emissions during construction was assessed for a student between the ages of 2 and 16 years old. At the MEIR location, the incremental increase in cancer risk from on-site DPM emissions during construction was assessed for a young child starting from infancy in the third trimester of pregnancy. These exposure scenarios represent the most sensitive individual on-site and off-site who could be exposed to the most adverse air quality condition in the vicinity of the proposed project.

Estimated health risks at the MEIS and MEIR from DPM and PM_{2.5} concentrations during construction of the proposed project are summarized and compared to the BAAQMD's thresholds of significance in **Table 10**. Under the unmitigated construction scenario, the chronic hazard index and the PM_{2.5}

annual average concentrations were below the BAAQMD's thresholds of significance for both the MEIS and MEIR. However, the estimated excess cancer risks were above the BAAQMD's thresholds of significance for both the MEIS and MEIR. Therefore, the unmitigated emissions of DPM during project construction could result in a potentially significant impact. The use of construction equipment with Tier 4 engines would reduce DPM emissions by about 96 percent, which would lower the excess cancer risks at the MEIS and MEIR below the BAAQMD's thresholds of significance.

TABLE 10 HEALTH RISKS AND HAZARDS DURING PROJECT CONSTRUCTION

Emission Scenario	Diesel Particulate Matter (DPM)		Exhaust PM _{2.5}
	Cancer Risk (per million)	Chronic Hazard Index	Annual Average Concentration (µg/m ³)
Unmitigated Construction Emissions			
Maximally Exposed Individual Student (MEIS)	12.4	0.01	0.06
Maximally Exposed Individual Resident (MEIR)	19.5	<0.01	0.06
Mitigated Construction Emissions			
Maximally Exposed Individual Student (MEIS)	0.4	<0.01	<0.01
Maximally Exposed Individual Resident (MEIR)	0.6	<0.01	<0.01
Thresholds of Significance	10	1	0.3

Notes: PM_{2.5} = fine particulate matter; µg/m³ = micrograms per cubic meter

Bold and shaded font indicates exceedance of threshold.

As described in Mitigation Measure AIR-3, the mitigated construction emissions account for the use of off-road equipment equipped with Tier 4 engines.

Source: See the CalEEMod report available for review at the District's offices at 310 Nova Albion, San Rafael, California.

Impact AIR-3: Project construction could expose sensitive receptors to substantial pollutant concentrations (diesel particulate matter [DPM] emissions). (PS)

Mitigation Measure AIR-3: During project construction, the contractor shall use off-road equipment equipped with Tier 4 engines as certified by the California Air Resources Board (CARB). Contract specifications shall include this requirement prior to the start of construction. (LTS)

Toxic Air Contaminants from Operation

Project operations would not introduce a new stationary source of TAC emissions. Therefore, project operations would have no impact on nearby sensitive receptors related to substantial pollutant concentrations.

Cumulative TAC Emissions

In addition to a project's individual TAC emissions during construction and operation, the BAAQMD recommends evaluating the potential cumulative health risks to sensitive receptors from the proposed project, reasonably foreseeable future projects, and existing sources of TACs. Based on the proximity to existing sources of TACs, cumulative health risks were estimated at the MEIS to represent the worst-case-exposure scenario for sensitive receptors in the project vicinity. The BAAQMD's online screening tools were used to provide conservative estimates of how much existing and foreseeable future TAC sources would contribute to cancer risk, HI, and PM_{2.5} concentrations. The individual health risks associated with each source were summed to find the cumulative health risk at the MEIS.

Based on source-specific information provided by the BAAQMD (2018), there are seven existing stationary sources of TAC emissions within 1,000 feet of the MEIS (**Table 11** and the CalEEMod report available for review at the District's offices at 310 Nova Albion, San Rafael, California). According to the BAAQMD, the Kitchen Works, Inc. facility (BAAQMD Plant 6389) has been closed and does not pose potential health risks or hazards to nearby sensitive receptors. In addition, the Alex's Drycleaning Valet facility (BAAQMD Plant 12189) has phased out the use of perchloroethylene solvents in accordance with BAAQMD Regulation 11-16 and does not pose potential health risks or hazards to nearby sensitive receptors. The BAAQMD's *Gasoline Dispensing Facility Distance Multiplier Tool* was used to refine the screening values associated with one of the existing stationary sources to represent the attenuated health risks that can be expected with increasing distance from a gas station.

There are no highways within 1,000 feet of the MEIS. There is one major roadway with an annual average daily traffic (AADT) greater than 10,000 vehicles per day within 1,000 feet of the project site (City of San Rafael, 2017). The maximum potential health risks at the MEIS from mobile emissions along the major roadways were estimated using the BAAQMD's *Roadway Screening Analysis Calculator* (BAAQMD, 2015). Based on information provided by the City of San Rafael Community Development Department, there are no reasonably foreseeable developments proposed within 1,000 feet of the MEIS that would include a new stationary source of TAC and/or PM_{2.5} emissions.

As shown in Table 11, the unmitigated cumulative health risks and hazards at the MEIS would be less than the BAAQMD's cumulative thresholds; therefore, the cumulative impact on nearby sensitive receptors from TAC and PM_{2.5} emissions during construction of the proposed project would be less than significant.

TABLE 11 SUMMARY OF CUMULATIVE HEALTH RISKS AT MAXIMALLY EXPOSED INDIVIDUAL STUDENT

Source	Source Type	Cancer Risk (10 ⁻⁶)	Chronic Hazard Index	PM _{2.5} (µg/m ³)
Proposed Project				
Unmitigated Construction Emissions	Construction	12.45	0.01	0.06
Existing Stationary Sources				
Alex's Drycleaning Valet (BAAQMD Plant 12189)	Dry Cleaner	NA	NA	NA
Kitchen Works, Inc. (BAAQMD Plant 6389)	Not Reported	NA	NA	NA
Pacific Supply (BAAQMD Plant G538)	Gas Dispensing Facility	<0.01	<0.01	<0.01
Equator Estate Coffees and Teas (BAAQMD Plant 15081)	2 Afterburners, 3 Coffee Roasters	0.15	<0.01	0.08
Shaws Wheel Restoration (BAAQMD Plant 21973)	Spray Booth	NA	<0.01	<0.01
JB Piano Company (BAAQMD Plant 17519)	Spray Booth	NA	<0.01	<0.01
Northern California Auto Body (BAAQMD Plant 16017)	Paint Spray Booth	NA	<0.01	<0.01
Existing Mobile Sources				
Andersen Drive (AADT 12,602)	Major Roadway	1.16	NA	0.02
Cumulative Health Risks		13.76	<0.1	0.2
BAAQMD's Cumulative Thresholds of Significance		100	10.0	0.8
Threshold Exceedance?		No	No	No

Notes: BAAQMD = Bay Area Air Quality Management District; PM_{2.5} = fine particulate matter; µg/m³ = micrograms per cubic meter; NA = not applicable
Source: BAAQMD, 2018.

e) *Would the project create objectionable odors affecting a substantial number of people?*

Less Than Significant Impact

Project construction and operation would not be expected to generate significant odors because the project would not include handling or generation of noxious materials. Therefore, project impacts related to odors would be less than significant.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Information regarding biological and wetland resources for the project site is based on the review of available information, including project designs and the occurrence records of the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Wildlife (CDFW). Field reconnaissance surveys were conducted by the Initial Study biologist on March 7 and April 14, 2018, to inspect existing conditions and assess the potential impacts of the proposed project.

IMPACT EVALUATION

- a) *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Potentially Significant Unless Mitigation Incorporated

A record search conducted by the CNDDB and the other relevant information sources indicate that numerous plant and animal species with special status have either been recorded from or are suspected to occur in the San Rafael vicinity and eastern Marin County area. Special-status species⁵

⁵ Special-status species include:

- Officially designated (rare, threatened, or endangered) and candidate species for listing identified by the CDFW;
- Officially designated (threatened or endangered) and candidate species for listing identified by the U.S. Fish and Wildlife Service (USFWS);
- Species considered to be rare or endangered under the conditions of Section 15380 of the CEQA Guidelines, such as those with a rank of 1 or 2 in the *Inventory of Rare and Endangered Plants of California* maintained by the California Native Plant Society (CNPS); and

are plants and animals that are legally protected under the State of California and/or federal Endangered Species Acts⁶ or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Species protected by the California Endangered Species Act (CESA) and Federal Endangered Species Act (FESA) often represent major constraints to development, particularly when the species are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take"⁷ of these species.

Figures 14 and 15 show the distribution of special-status plant and animal species, respectively, as reported by the CNDDDB within approximately 5 miles of the project site. According to CNDDDB records, no special-status plant or animal species have been reported from the project site, but general occurrences of white-rayed pentachaeta (*Pentachaeta bellidiflora*), Napa false indigo (*Amorpha californica* var. *napensis*), pallid bat (*Antrozous pallidus*), and western bumble bee (*Bombus caliginosus*) extend over the San Rafael vicinity based on vague records reported to the CNDDDB.

White-rayed pentachaeta is a state- and federally listed endangered species with a rank of 1B (rare and endangered in California and elsewhere) according to the CNPS *Inventory*, and is known from serpentine grasslands not found on the project site. Napa false indigo has no formal listing under the Endangered Species Acts but has a rank of 1B in the CNPS *Inventory*. It is known from woodland and forest habitat not found on the project site. Pallid bat is one of several native bat species recognized as "Species of Special Concern" (SSC) by the CDFW. It is known to establish day roosts in rock outcrops, mines, caves, building, bridges, and tree cavities. Inspection of the exterior of the existing buildings on the campuses during the field reconnaissance surveys did not indicate any openings that would allow for access by pallid or other special-status bat species, which typically avoid areas of human activity. Western bumblebee, which has been reported from the San Rafael vicinity, is found in a variety of habitat types. It technically has no legal protective status under the CESA or FESA, but records on its distribution in the western United States are now being monitored by the CNDDDB and other data bases because of a dramatic decline in numbers and distribution over the past two decades. Its presence on the project site, either foraging or nesting, would not be considered a significant constraint.

-
- Possibly other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those with a rank of 3 and 4 in the CNPS *Inventory* or identified as animal "Species of Special Concern" (SSC) by the CDFW. Species of Special Concern have no legal protective status under the California Endangered Species Act (CESA) but are of concern to the CDFW because of severe decline in breeding populations in California.

⁶ The federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of the FESA and pertains to native California species.

⁷ "Take" as defined by the FESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" a threatened or endangered species. "Harm" is further defined by the United States Fish and Wildlife Service (USFWS) to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modification or degradation. The California Department of Fish and Wildlife (CDFW) also considers the loss of listed species habitat as take, although this policy lacks statutory authority and case law support under the CESA.

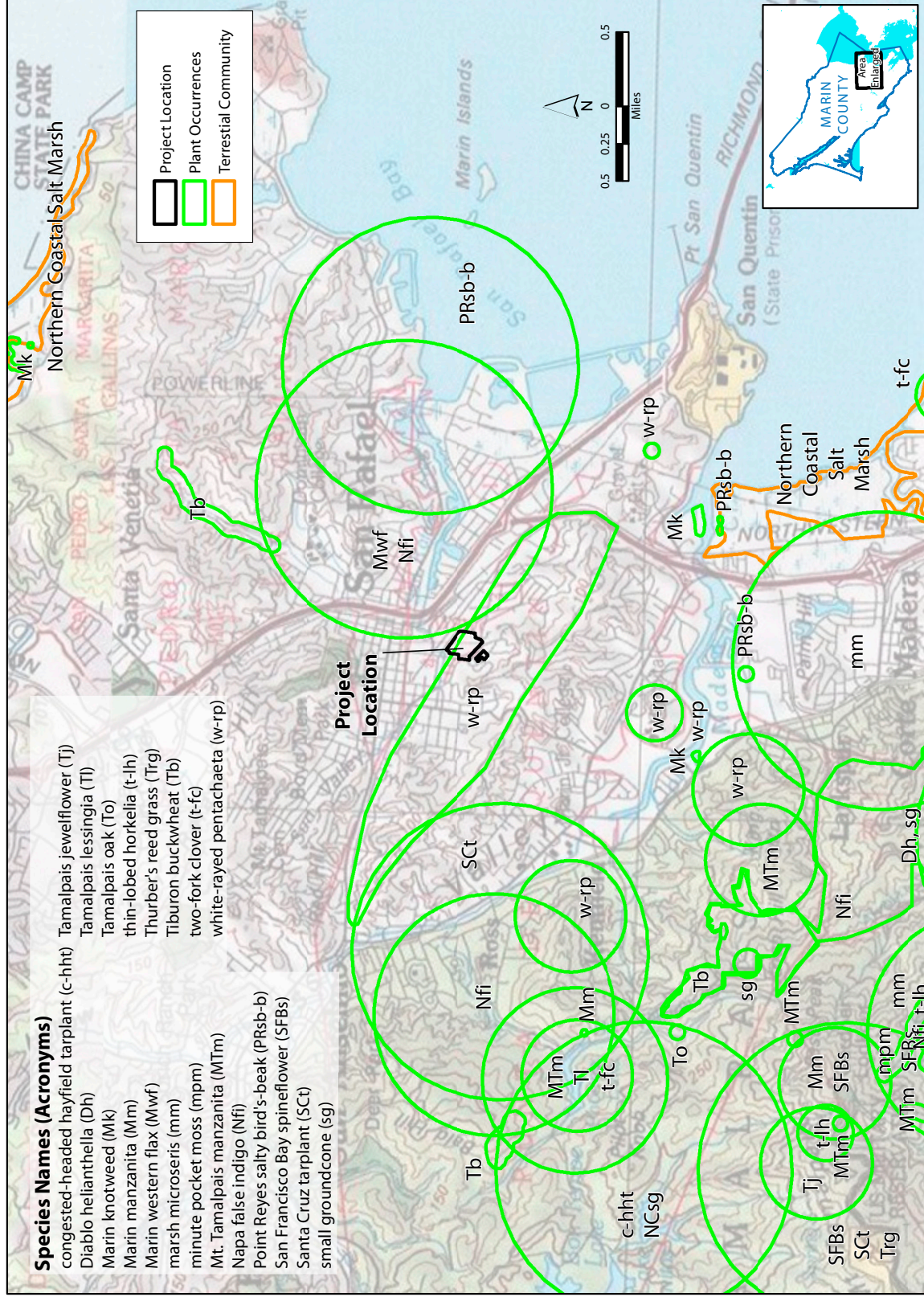


Figure 14

SOURCE: California Natural Diversity Database accessed on Feb 27th, 2018;
Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed.

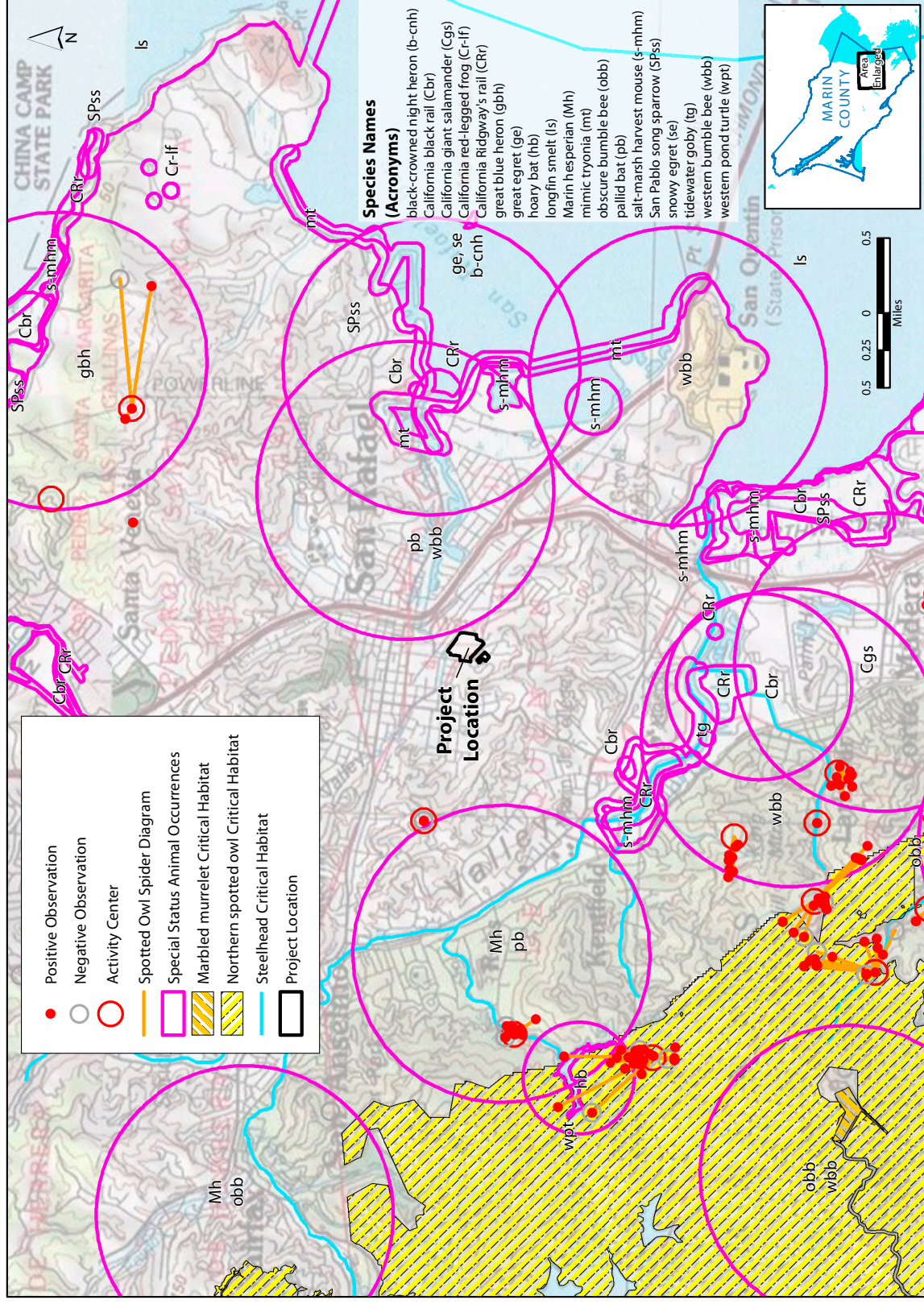


Figure 15
 SOURCE: California Natural Diversity Database accessed on Feb 27th, 2018;
 USFWS Critical Habitat database access on Feb 27th, 2018; Service Layer Credits:
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Most of the special-status species reported from the San Rafael vicinity occur in natural habitats such as coastal salt marsh, riparian woodlands, and forest habitats, all of which are absent from the project site. Suitable habitat for special-status species is absent from the largely developed campuses, based on a habitat suitability analysis conducted during the field reconnaissance surveys. With the exception of possible presence of nesting birds that would be protected under state and federal regulations when the nests are in active use, no special-status species are suspected to occur on the project site.

Nests of most bird species are protected under the Migratory Bird Treaty Act (MBTA) when the nests are in active use, and nests of raptors (birds-of-prey) are also protected under the California Fish and Game Code when the nests are in active use. No nesting or roosting locations have been identified by the CNDDDB for the project site or immediate vicinity, or were observed during the field reconnaissance surveys. However, mature trees on the project site contain suitable nesting substrate for some bird species recognized as SSC by the CDFW, as well as more common species, and new nests could be established in the future. The MBTA prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior; this prohibition includes whole birds, parts of birds, and bird nests and eggs. Tree removal, building demolition, and other construction activities during the breeding season could result in the incidental loss of fertile eggs or nestlings or nest abandonment. This would be considered a potentially significant impact.

A standard method to address the potential for nesting birds is either to initiate construction during the non-nesting season, which in Marin County is typically from September 1 to January 31, or to conduct a nesting survey within 14 days prior to initial tree removal, building demolition, and construction to determine whether any active nests are present that must be protected until any young have fledged and are no longer dependent on the nest. Protection of the nests, if present, would require that construction setbacks be provided during the nesting and fledging period, with the setback depending on the type of bird species, degree to which the individuals have already acclimated to other ongoing disturbance, and other factors. Without these controls, tree removal and construction activities could have a potentially significant impact on nesting birds. The following measure is recommended to fully mitigate the potentially significant impact of the project on special-status species.

Impact BIOLOGY-1: Removal of trees, building demolition, and other activities during project construction may result in the inadvertent loss of bird nests in active use unless appropriate precautions are followed. (PS)

Mitigation Measure BIOLOGY-1: Adequate measures shall be taken to avoid inadvertent take of raptor nests and other nesting birds protected under the Migratory Bird Treaty Act when in active use. This shall be accomplished by taking the following steps:

- *If construction is proposed during the nesting season (February through August), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 14 days prior to the onset of tree removal or construction, in order to identify any active nests on the project site and in the vicinity of proposed construction.*

- *If no active nests are identified during the survey period, or if development is initiated during the non-breeding season (September through February), construction may proceed with no restrictions.*
- *If bird nests are found, an adequate setback shall be established around the nest location and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the California Department of Fish and Wildlife (CDFW) and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the construction area.*
- *A report of findings shall be prepared by the qualified biologist and submitted to San Rafael City Schools for review and approval prior to initiation of construction within the no-disturbance zone during the nesting season (February through August). The report either shall confirm absence of any active nests or shall confirm that any young within a designated no-disturbance zone have fledged and construction can proceed.*

Implementation of Mitigation Measure BIOLOGY-1 would reduce the potentially significant impact on nesting birds to a less-than-significant level. (LTS)

- b) *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

No Impact

Sensitive natural communities are community types recognized by the CDFW and other agencies because of their rarity. In the San Rafael vicinity, sensitive natural community types include coastal salt marsh, brackish water, and freshwater marshlands. However, sensitive natural community types are absent from the project site and vicinity of proposed construction, and no adverse impacts are anticipated. No significant impacts are anticipated and no mitigation is required.

- c) *Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

No Impact

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions.

The CDFW, U.S. Army Corps of Engineers (Corps), and California Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to wetlands and other "waters of the United States." Jurisdiction of the Corps is established through provisions of Section 404 of the Clean Water Act (CWA), which prohibits the discharge of dredged or fill material without a permit. The RWQCB jurisdiction is established through Section 401 of the CWA, which requires certification or waiver to control discharges in water quality, and the State Porter-Cologne Act. Jurisdictional authority of the CDFW over wetland areas is established under Sections 1600-1607 of the State Fish and Game Code, which pertain to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream.

A preliminary wetland assessment was conducted during the field reconnaissance surveys. No indications of any jurisdictional waters were observed on the Laurel Dell Elementary School campus. A drainage channel follows the southern, eastern, and northeastern edges of the Davidson Middle School campus, but the channel is separated from the improved campus by fencing. The channel contains wetland indicator species such as cattail (*Typha latifolia*), bordered by upland native and non-native grasses, shrubs, and trees. Highly invasive species such as English ivy (*Hedera helix*), Himalayan blackberry (*Rubus armeniacus*), and French broom (*Genista monspessulana*) have colonized much of the fenced drainage corridor to the south of the Davidson Middle School campus, which limits its current habitat value. All construction on the Davidson Middle School campus would be restricted outside of the existing fence in improved portions of the project site, and standard Best Management Practices (BMPs) would be used to prevent any sedimentation or erosion, preventing any potential for water quality degradation of the drainage. No direct or indirect impacts on the jurisdictional waters associated with the drainage are anticipated, and therefore no adverse impacts are anticipated and no mitigation is required.

- d) *Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Less Than Significant Impact

The proposed project would not have any significant adverse impacts on wildlife movement opportunities or adversely affect native wildlife nursery sites. The project site is largely developed with existing institutional uses, with only limited habitat value to wildlife species common in urbanized areas. Wildlife in the vicinity of the project site are already acclimated to human activity, and construction-related disturbance would not cause any significant impacts on common wildlife species found in the area. Some common species could be eliminated or displaced from the project site during construction, but these are not special-status species and their loss or displacement would not be considered a significant impact. Pre-construction surveys recommended in Mitigation Measure BIOLOGY-1 would ensure avoidance of any nesting birds if new nests become established before construction is initiated. Wildlife species commonly associated with urban habitat would eventually frequent the project site again following construction, using the remaining trees, new ornamental landscaping, and even structures for foraging, roosting, and other activities. No substantial disruption of movement corridors or

access to native wildlife nursery sites is anticipated. Potential impacts on wildlife movement opportunities would be less than significant and no mitigation is required.

- e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Less Than Significant Impact

In general, the proposed project would not conflict with the few relevant policies in the Conservation Element of the San Rafael General Plan. Most of these relate to the protection of wetlands, drainages, and other sensitive biological resources not found on the project site, and no conflicts would occur. No construction is proposed along the fenced drainage corridor at the edge of the Davidson Middle School campus, as described above under Item (c).

There are a number of trees on the project site that would be removed or could be damaged as a result of construction during implementation. Arborist reports were prepared for both the Davidson Middle School campus (Arborscience, 2018a) and the Laurel Dell campus (Arborscience, 2018b), showing the location of trees in the vicinity of construction with recommendations for preservation and removal.

Figures 16 and 17 show the location of trees to be removed on the Davidson Middle School and Laurel Dell campuses, respectively. The following provides a summary of each of these reports, and review of conformance with relevant provisions of the City of San Rafael Municipal Code.

Trees on Davidson Middle School Campus

The arborist report for Davidson Middle School focuses on the Woodland Avenue frontage of the campus and provides an inventory of 22 trees. These have trunk diameters ranging from 6 to 30 inches diameter at breast height (dbh) and are composed of three species—silk oak (*Grevillea robusta*), European ash (*Fraxinus excelsior*), and red mulberry (*Morus rubra*). These trees are in moderate to poor health, and many show signs of decay and present a risk of possible limb drop or toppling. The arborist recommends removal of 13 of these trees—three silk oaks, eight European ash, and two red mulberry—because of declining condition and risks. An additional five red mulberry trees would be removed to accommodate the proposed new STEM Center on the campus. Thus, as indicated in Figure 16, a total of 18 trees would be removed due to poor condition and to accommodate proposed construction. However, numerous other trees around the campus, including along the drainage, perimeter of the ball fields, and parking area, would be retained, and replacement trees would be installed as part of new landscaping around the STEM Center and elsewhere on the campus. Final landscape plans have not yet been developed.

Trees on Laurel Dell Elementary School Campus

The arborist report for Laurel Dell Elementary School provides an inventory of 15 trees along the Woodland Avenue and Eva Street frontages of the campus. These trees have trunk diameters ranging from 4 to 30 inches dbh and are composed of five species: Chinese pistache (*Pistacia chinensis*), silver maple (*Acer saccharinum*), coast live oak (*Quercus agrifolia*), trident maple (*Acer buergerianum*), and privet (*Ligustrum* sp.). These trees range from healthy to diseased and declining. As indicated in

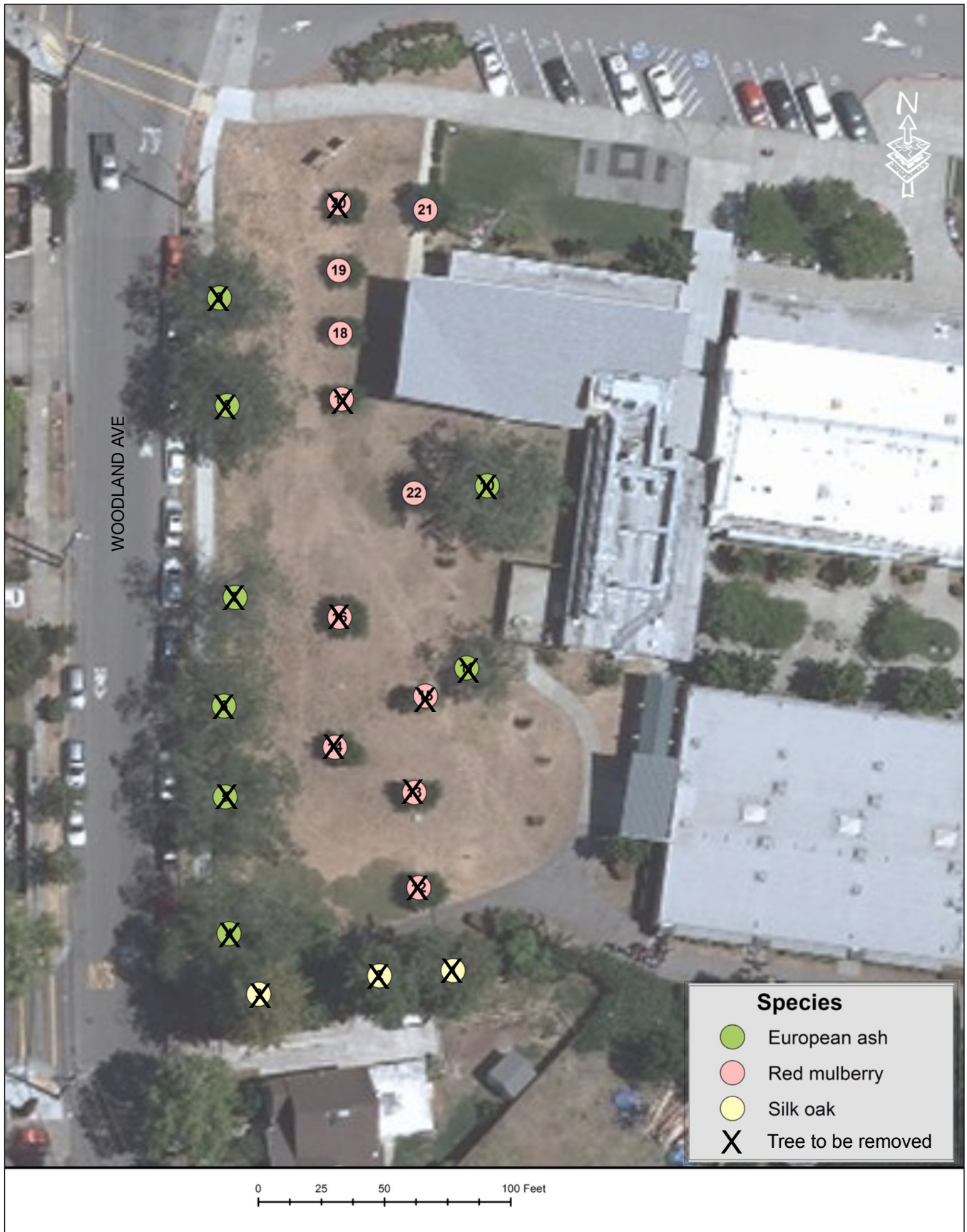


Figure 16

SOURCE: Arborscience, 2018a

TREE MAP FOR DAVIDSON MIDDLE SCHOOL



Figure 17

SOURCE: Arborscience, 2018b

TREE MAP FOR LAUREL DELL ELEMENTARY

Figure 17, the arborist recommends removal of eight of these trees—six silver maple, one Chinese pistache, and one privet—because of declining condition and risks. One of the silver maples along the Picnic Avenue frontage (Tree #15 in Figure 17), with a trunk diameter of 14 dbh, has already been removed. Other trees occur on the campus that would not be impacted, including numerous native coast live oaks along the Picnic Avenue frontage on the slopes above existing buildings and the playground. Replacement trees would presumably be installed as part of new landscaping along the Woodland Avenue and Eva Street frontages of the campus, although detailed landscaping plans have not yet been prepared.

Project Consistency with City of San Rafael Provisions Related to Tree Removal

The City of San Rafael has no specific policies related to tree protection, other than the provisions in the Municipal Code pertaining to street trees. However, Chapter 14.25 of the City's Municipal Code (Environmental and Design Review Permits) requires applications to include information on "natural features" including existing trees and other vegetation, and calls for providing information on the impact of proposed development on the existing site conditions.

Detailed landscape plans would be prepared for both campuses, and would provide for trees, shrubs, and groundcover species. Appropriate controls would be implemented to ensure adequate protection for street trees and other landscape trees that are to be retained in the vicinity of construction on the project site. The replacement landscaping provided as part of the project would serve to replace any trees and other landscaping removed to accommodate new structures and other improvements, and would serve to ensure that there are no major conflicts with the General Plan or Municipal Code. Therefore, the project would be considered to have a less-than-significant impact, and no mitigation measures are necessary.

- f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?*

No Impact

There are currently no adopted Habitat Conservation Plans or Natural Community Conservation Plans for the project site or surrounding areas. No adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other conservation plan applies to the project site, no impacts regarding possible conflicts with an adopted plan are anticipated, and no mitigation would be required.

REFERENCES

Arborscience, 2018a. Arborist Report, Tree Assessment, James B. Davidson Middle School. Prepared for San Rafael City Schools by Dr. Kent Julin, ISA Certified Arborist, California Professional Forester, May 4.

Arborscience, 2018b. Arborist Report, Tree Assessment, Laurel Dell Elementary School. Prepared for San Rafael City Schools by Dr. Kent Julin, ISA Certified Arborist, California Professional Forester, May 5.

California Department of Fish and Wildlife (CDFW), Biogeographic Information Services, 2018. California Natural Diversity Data Base (CNDDB) GIS data used to prepare Figures 14 and 15 viewed on February 27, 2018.

City of San Rafael, 2013. The City of San Rafael, General Plan 2020, amended and reprinted on January 18.

U.S. Fish and Wildlife Service (USFWS), Sacramento Endangered Species Division, 2018. Critical Habitat database. Website used to prepare Figures 14 and 15 viewed on February 27, 2018.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IMPACT EVALUATION

- a) *Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?*

Potentially Significant Unless Mitigation Incorporated

For a cultural resource to be considered a historical resource (i.e., eligible for listing in the California Register of Historical Resources), it generally must be 50 years or older. Under the California Environmental Act (CEQA), historical resources can include pre-contact (i.e., Native American) archaeological deposits, historic-period archaeological deposits, historic buildings, and historic districts.

Based on the significance criterion identified above, the project would have a significant impact on the environment if ground-disturbing activities or removal of a historically significant building(s) would cause a substantial adverse change in the significance of a historical resource. A substantial adverse change in the significance of a historical resource would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)).

The proposed project would have no impact on architectural historical resources and would have a potentially significant impact on archaeological historical resources unless mitigation is incorporated. The project's potential impacts on architectural and archaeological historical resources are discussed below.

Methods

To identify historical resources at the project site, the following tasks were completed for this Initial Study: (1) an architectural historian surveyed both campuses and all buildings 50 years old or older were recorded and evaluated for their historical significance, consistent with CEQA Guidelines Section 15064.5(a)(3); (2) a records search was conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System, and appropriate background literature was reviewed to assess the potential for archaeological deposits;⁸ and (3) an archaeologist surveyed the Davidson Middle School and Laurel Dell Elementary school campuses and vicinity to confirm the baseline conditions of the project site and to assess the potential for archaeological deposits. The results of these tasks are summarized below.

Historical Evaluation of Built-Environment Cultural Resources

A historical inventory of the Davidson Middle School and Laurel Dell Elementary School campuses identified buildings that, due to their age, required an evaluation to determine their eligibility for listing in the California Register of Historical Resources (CRHR) and to determine their status as historical resources under CEQA Guidelines Section 15064.5(a). Davidson Middle School buildings were constructed between 1954 and 2007. Laurel Dell Elementary School buildings were constructed between 1948 and 2009.

A summary of this historical evaluation is presented below for each campus under the appropriate criteria for listing in the CRHR and National Register of Historic Places (NRHP). The CRHR/NRHP eligibility criteria can be summarized as Criterion 1/A (association with significant events), Criterion 2/B (associated with important persons), Criterion 3/C (embodies distinctive architectural characteristics, work of a master), and Criterion 4/D (has yielded, or has the potential to yield, important information). Note that Criterion 4/D is typically only applicable to archaeological resources, and as such, is not relevant to the campus evaluations discussed below.

The historical evaluations—including a historical context and building descriptions—are documented in detail on California Department of Parks and Recreation 523 (DPR 523) series forms (Brewster 2018a, 2018b). The evaluation concluded that neither school would meet any of the other eligibility criteria required for listing on the CRHR or NRHP. As neither school would meet the criteria for listing on the CRHR, they would not be considered historical resources for CEQA purposes. As no historic resources as defined in CEQA Guidelines Section 15064.5 exist at either campus, the proposed project would have no impact.

⁸ The NWIC is an affiliate of the State of California Office of Historic Preservation (OHP) and is the official state repository of cultural resources records and reports for Marin County.

CRHR/NRHP Evaluation for Davidson Middle School

Criterion 1/A (Significant Events). Although public school education began in San Rafael as early as 1861, Davidson Middle School was constructed nearly 100 years later during a post-World War II population boom of middle school-age students. Built in phases between 1954 and 2007, the majority of the buildings at Davidson Middle School were completed by the late 1960s. Later additions included a music room in the early 1970s, portable and/or modular classrooms in the mid-1990s and early 2000s, and an addition to the administration building completed by 2007. Research revealed no significant historic events that occurred at the campus. The need to accommodate a growing student body, as well as changing educational and life/safety requirements, is reflected in a campus that has physically expanded and changed over time. These changes represent a more typical, rather than significant, event in the evolution of a school that has operated in a single location for nearly 65 years. Similarly, the urgent need for a new middle school to accommodate a growing student body during the post-World War II population boom occurred not only in San Rafael, but throughout the Bay Area, the state, and the country between 1945 and 1970. For these reasons, Davidson Middle School does not appear to be historically significant under Criterion 1/A.

Criterion 2/B (Historic Persons). Although the school is named after James B. Davidson, a revered Marin County educator who served as a county school superintendent for 32 years, the fact that the building is named in honor of this man does not indicate that it is significantly associated with the life and work of this important local individual. Research revealed no significant associations with important persons at Davidson Middle School. As such, the school does not appear to be historically significant under Criterion 2/B.

Criterion 3/C (Architecture/Work of a Master). The buildings that currently comprise the campus exhibit a range of construction styles and dates. The buildings that date to the initial period of construction, between 1954 and 1966, including the four classroom wings and portions of the gymnasium that were primarily designed in the restrained Mid-Century Modern style of architecture that was prevalent during the post-World War II period.

Although these buildings exhibit varying degrees of the elements that comprise the style, such as the straightforward use of modern materials, a minimum of architectural embellishment, rectilinear forms and volumes, continuous window-walls and clerestories, and a limited degree of structural expressionism, neither the campus as a whole nor any of its individual buildings would be considered the embodiment of the style. The buildings represent a more standard or typical approach to the style, rather than a “high-style” application that would meet the requirements of Criterion 3/C. The earliest school buildings completed between 1954 and 1966 are similar in style to many of the K-8 school buildings built throughout the state during the post-World War II period, and do not appear to distinguish themselves among them. New buildings or additions to the campus after 1968 significantly departed from the Mid-Century Modern style of architecture prevalent during its initial years. Research has not revealed the presence of a unified campus master plan guiding the development and architectural style of campus buildings, but rather shows a somewhat ad-hoc approach to the planning and construction of new buildings at Davidson Middle School as extra room on the southern and eastern edges of the campus was available.

The San Francisco-based architects involved in the initial phases of campus construction were Donald B. Kirby, Thomas B. Mulvin, Carl Gromme, and Ralph Priestly. Research did not reveal an abundance of information about the lives or work of any of these architects. For this reason, none of the architects associated with the initial buildings at Davidson Middle School would be considered “master architects” as defined under Criterion 3/C. Thus, neither the school campus as a whole nor any of its individual buildings appears to be historically significant under Criterion 3/C.

CRHR/NRHP Evaluation for Laurel Dell Elementary School

Criterion 1/A (Significant Events). Laurel Dell Elementary School was initially constructed between 1930 and 1933 as a two-room school to accommodate an increase in families who had moved to Picnic Valley during the residential building boom of the prior decade. While this original building no longer exists, extant buildings on the school property were built in phases between 1948 and 2009, with the majority of buildings completed by 1971 to accommodate a growing post-World War II population in San Rafael. Portable/relocatable classrooms were added to the campus between 2002 and 2009. Research revealed no significant historic events that occurred at the campus. The need to accommodate a growing student body, as well as changing educational and life/safety requirements, is reflected in a campus that has physically expanded and changed over time.

These changes represent a more typical, rather than significant, event in the evolution of a school that has operated in a single location for many years. Similarly, the urgent need for an expanded elementary school to accommodate a growing student body during the 1920s building boom and the post-World War II era between 1945 and 1970 occurred not only in San Rafael but throughout the Bay Area, the state, and the country during these periods of significant population growth. For these reasons, Laurel Dell Elementary School does not appear to be historically significant under Criterion 1/A.

Criterion 2/B (Historic Persons). Research revealed no significant associations with important persons at Laurel Dell Elementary School. As such, the school does not appear to be historically significant under Criterion 2/B.

Criterion 3/C (Architecture/Work of a Master). The permanent buildings that comprise the campus were constructed during the post-World War II period (1945-1970), with later buildings constructed within the last 15 years, including a number of portable/relocatable classrooms. As such, the buildings that currently comprise the campus exhibit a range of construction styles and dates. The original 1930s two-room school building was replaced with the current library/classroom and administration wing between 1970 and 1971. This building, as well the earlier classroom additions built between 1948 and 1954, were primarily designed in restrained Mid-Century Modern style of architecture that was prevalent during the post-World War II period. Although these buildings exhibit varying degrees of the elements that comprise the style, none of the individual buildings nor the campus as a whole would be considered the embodiment of the style. The buildings represent a more standard or typical approach to the style, rather than a “high-style” application that would meet the requirements of Criterion 3/C. The earliest school buildings completed between 1948 and 1954 are similar in style to many of the K-8 school buildings built throughout the state during the post-World War II period and do not appear to

distinguish themselves among them. New buildings added to the campus after 1971 significantly departed from the Mid-Century Modern style of architecture prevalent during its initial years. Research has not revealed the presence of a unified campus master plan guiding the development and architectural style of campus buildings. New buildings at Laurel Dell Elementary School were generally located where extra room was available on the northeastern and western edges of the campus.

The San Francisco-based architects involved in the 1948 and 1954 classroom additions to the school were the same as those involved in the design of Davidson Middle School, including Donald B. Kirby, Thomas B. Mulvin, Carl Gromme, and Ralph Priestly. Architects who designed the 1970-1971 library/classroom and administration wing were Richard C. Marshall and Chester Bowles. Research did not reveal an abundance of information about the lives or work of any of these architects. For this reason, none of the architects associated with the initial buildings at Laurel Dell Elementary School would be considered “master architects” as defined under Criterion 3/C. Thus, neither the school campus as a whole nor any of its individual buildings appears to be historically significant under Criterion 3/C.

Adjacent Built-Environment Resources

While archival research conducted at the NWIC did not identify any recorded historic resources at either campus, the research did identify one historic resource in the vicinity of Laurel Dell Elementary School; a single-family residence at 172 Picnic Avenue that is listed on the City of San Rafael Historical/Architectural Survey. This Italianate-style cottage built circa 1880 may be eligible for local listing based upon future evaluations and is presumed to be a historical resource for purposes of this evaluation. The home is located about 50 feet west and up-slope from the western boundary of the playground at Laurel Dell Elementary School. Due to the physical separation between this home and the school property, including the steep slope and intervening vegetation, no direct or indirect impacts on this potentially historic property are anticipated. Public views of this property from Picnic Avenue would be unaltered as a result of the proposed project, as Laurel Dell Elementary School is situated well below the home.

Archaeological Records Search, Literature Review, and Field Survey

The records search at the NWIC was conducted on January 31, 2018, to review archaeological site location information, previous archaeological studies, and the State of California Office of Historic Preservation (OHP) *Directory of Properties in the Historic Property Data File* (California Office of Historic Preservation, 2012). The *Directory of Properties* includes listings for the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest. The NWIC records search did not identify recorded historical resources at the project site. No previous cultural resource studies are on file at the NWIC for either campus.

A review of historical maps, including Sanborn Fire Insurance and United States Geological Survey (USGS) maps, was completed to assess the potential for subsurface, historic-period archaeological deposits at the campuses. The earliest Sanborn Fire Insurance map coverage of the project site and

vicinity dates from 1924. This 1924 map depicts the present-day Davidson Middle School site as “Low Land,” with no development or improvements depicted. This description is consistent with the 1897 USGS Tamalpais topographic map, which depicts the present-day location of Davidson Middle School within tidal marshland. The 1924 map shows two dwellings and an outbuilding along Woodland Avenue at what is now Laurel Dell Elementary School. This map also shows several residential buildings in the vicinity, including 172 and 225 Picnic Avenue, which were constructed circa 1880 and 1890, respectively (Simons 1978a, 1978b).

A review of regional geologic maps and information was completed to determine the potential for subsurface, pre-contact archaeological deposits at the project site. Surface geology at the project site is mapped as “artificial fill over estuarine mud” (Witter et al., 2006). Estuarine mud was deposited as a result of sea level rise beginning in the Late Pleistocene and Early Holocene. Intact pre-contact archaeological sites would not be situated in artificial fill and are not likely to be situated in estuarine mud. Estuarine mud, however, may overlie stable, Holocene-age landforms that have a potential to contain pre-contact archaeological deposits. These buried surfaces predate the formation of tidal estuaries that were formed during the Middle and Late Holocene and have been identified at a depth of 11.5 to 13.1 feet below surface during recent geoarchaeological testing along Highway 101 in nearby Corte Madera (Kaijankoski and Meyer, 2011).

A qualified archaeologist surveyed the project site and vicinity on March 2, 2018. The majority of the Davidson Middle School campus (approximately 60 percent) and Laurel Dell Elementary School campus (approximately 90 percent) consists of asphalt surfaces and buildings. Areas of exposed ground subject to inspection during the survey consisted of unpaved athletic fields and landscaped areas covered in sod and fill. Although a trowel was used to periodically expose underlying soils, overall visibility of exposed native soils which may contain archaeological materials was limited under the existing conditions. No archaeological cultural resources were observed during the survey.

Impact on Archaeological Historical Resources

Based on the results of the geologic and historical map review, there is a potential for intact subsurface pre-contact and historic-period archaeological deposits at the project site. Pre-contact archaeological deposits may exist beneath the fill and Holocene-age estuarine mud that underlies the project site. Historic-period archaeological deposits could underlie the Laurel Dell campus, based on the presence of buildings on historical maps at the present-day location of this campus.

Previous developments of these campuses have reduced the potential for intact archaeological deposits, and the proposed project would involve negligible site grading and trenching for utility upgrades. Nevertheless, the potential for encountering archaeological historical resources during ground disturbance cannot be discounted. Should archaeological deposits be encountered during project ground disturbance, these would need to be evaluated by an archaeologist to determine if they qualify as historical resources under CEQA.

Impact CULTURAL-1: Project construction could unearth pre-contact or historic-period archaeological deposits, thereby causing a potential substantial adverse change in the

significance of a historical resource as defined in California Environmental Quality Act (CEQA) Guidelines Section 15064.5. (PS)

Mitigation Measure CULTURAL-1: Should an archaeological deposit be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology contacted to assess the situation, determine if the deposit qualifies as a historical resource, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. If the deposit is found to be significant (i.e., eligible for listing in the California Register of Historical Resources), San Rafael City Schools shall be responsible for funding and implementing appropriate mitigation measures. Mitigation measures may include recordation of the archaeological deposit, data recovery and analysis, and public outreach regarding the scientific and cultural importance of the discovery. Upon completion of the selected mitigations, a report documenting methods, findings, and results shall be prepared and submitted to San Rafael City Schools for review, and the final report shall be submitted to the Northwest Information Center at Sonoma State University. Significant archaeological materials shall be submitted to an appropriate local curation facility and used for future research and public interpretive displays, as appropriate.

With implementation of the above mitigation measure, the potential impact on historical and archaeological resources would be reduced to a less-than-significant level. (LTS)

- b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Potentially Significant Unless Mitigation Incorporated

In accordance with CEQA Guidelines Section 15064.5(c)), if the project would affect an archaeological deposit, the lead agency must first determine whether the deposit is a "historical resource" (see CEQA Guidelines Section 15064.5(a)). If the deposit is not a historical resource, the lead agency must determine if the deposit is a "unique archaeological resource."

As described under Item (a) above, background research was done to identify archaeological deposits—and the potential for encountering such deposits—including those that qualify as archaeological resources under CEQA. This background research determined that there are no recorded archaeological resources on the project site, although there is a potential for encountering subsurface pre-contact and historic-period archaeological deposits during construction.

Based on the significance criteria identified above, the project would have a significant impact on the environment if ground-disturbing activities would cause a substantial adverse change in the significance of a historical or archaeological resource. A substantial adverse change in the significance of an archaeological resource would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)). For the project, the significance of a historical resource would be materially impaired if

ground disturbance would alter in an adverse manner those physical characteristics of the resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources.

Impact CULTURAL-2: Project construction could affect pre-contact or historic-period archaeological deposits, thereby causing a substantial adverse change in the significance of an archaeological resource as defined in California Environmental Quality Act (CEQA) Guidelines Section 15064.5. (PS)

Mitigation Measure CULTURAL-2: Mitigation Measure CULTURAL-1 shall be implemented. (LTS)

- c) *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Potentially Significant Unless Mitigation Incorporated

A review of regional geologic maps and information was completed to determine the potential for unique paleontological resources (fossils) underlying the project site. Surface geology at the project site is mapped as “artificial fill over estuarine mud” (Witter et al., 2006). The Holocene estuarine mud that underlies the project site is too recent to contain fossils of paleontological significance. Older, Late Cretaceous Franciscan Formation bedrock underlies the Holocene sediments at the project site at an unknown depth. The Franciscan Formation has the potential to contain significant fossils.

Geologic deposits with the potential to contain fossils would likely occur well below project ground disturbance, which would likely be limited to modern and Holocene-age sediments. Although it is not anticipated, the potential for encountering fossils during ground disturbance cannot be discounted.

Impact CULTURAL-3: Project construction could directly or indirectly destroy a unique paleontological resource or site by unearthing or otherwise displacing fossils that may occur below Holocene landforms underlying the project site. (PS)

Mitigation Measure CULTURAL-3: Should paleontological resources be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. For purposes of this mitigation, a “qualified paleontologist” shall be an individual with the following qualifications: 1) a graduate degree in paleontology or geology and/or a person with a demonstrated publication record in peer-reviewed paleontological journals; 2) at least two years of professional experience related to paleontology; 3) proficiency in recognizing fossils in the field and determining their significance; 4) expertise in local geology, stratigraphy, and biostratigraphy; and 5) experience collecting vertebrate fossils in the field. If the paleontological resources are found to be significant and project activities cannot avoid them, measures shall be implemented to ensure that the project does not cause a substantial adverse change in the significance of the paleontological resource. Measures may include monitoring, recording of the fossil locality, data

recovery and analysis, a final report, and accessioning of the fossil material and technical report to a paleontological repository. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to San Rafael City Schools for review. If paleontological materials are recovered, this report also shall be submitted to a paleontological repository such as the University of California Museum of Paleontology, along with significant paleontological materials. Public educational outreach may also be appropriate.

With implementation of the above mitigation measure, the potential impact on paleontological resources would be reduced to a less-than-significant level. (LTS)

d) *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

No Impact

There are no known historic-period human burials at the project site. Background research conducted for this Initial Study at the NWIC (see discussion under Item (a) above) did not identify recorded Native American skeletal or cremated remains at or adjacent to the project site.

In the event that human remains are identified during project construction, these remains would be treated in accordance with Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the Public Resources Code, as appropriate. With these regulations in place, no impact on human remains is anticipated, and no mitigation is necessary.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:				
a) Result in a substantial increase in overall per capita energy consumption?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in wasteful, inefficient, or unnecessary consumption of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Conflict with applicable energy efficiency policies or standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

IMPACT EVALUATION

a) *Would the project result in a substantial increase in overall per capita energy consumption?*

Less Than Significant Impact

While the project would increase energy use at the project site, it would not result in a substantial increase in overall per capita energy consumption because energy efficiency measures would be included in the project. The following discussion reviews energy facilities in the project site vicinity and existing and projected energy use at the project site.

Existing Energy Facilities in Project Site Vicinity

PG&E provides electricity and natural gas to San Rafael, including the Davidson and Laurel Dell campuses. PG&E is a fee-for-service provider. Electrical power conduits and natural gas lines are typically placed underground with street improvements and in new developments. PG&E is responsible for maintaining the physical infrastructure for gas and electrical distribution (San Rafael City Schools, 2016b). Existing facilities on the Davidson and Laurel Dell campuses include a network of natural gas and electrical lines.

Existing Energy Use on Project Site

It is estimated that the buildings on the two campuses may use up to a total of approximately 1,791,390 kilo-British thermal units (kBTU) of natural gas and 482,906 kilowatt hours (kWh) of electricity each year. **Table 12** below shows the breakdown of energy use between the two campuses.

TABLE 12 EXISTING AND PROJECTED ENERGY CONSUMPTION

	Existing Conditions	Project Conditions	Net Change	Percent Net Change
Electricity Use				
Davidson Middle School	421,123 kWh/year	499,575 kWh/year	+78,452 kWh/year	+18.6%
Laurel Dell Elementary School	61,783 kWh/year	89,533 kWh/year	+27,750 kWh/year	+44.9%
<i>Total</i>	<i>482,906 kWh/year</i>	<i>589,108 kWh/year</i>	<i>+106,202 kWh/year</i>	<i>+22.0%</i>
Natural Gas Use				
Davidson Middle School	1,562,210 kBTU/year	1,853,150 kBTU/year	+290,940 kBTU/year	+18.6%
Laurel Dell Elementary School	229,180 kBTU/year	332,118 kBTU/year	+102,938 kBTU/year	+44.9%
<i>Total</i>	<i>1,791,390 kBTU/year</i>	<i>2,185,268 kBTU/year</i>	<i>+393,878 kBTU/year</i>	<i>+22.0%</i>

Notes: kBTU = kilo-British thermal units; kWh = kilowatt hours
Estimates are based on existing and proposed building square footages.
Source: California Emissions Estimator Model (CalEEMod).

Potential Energy Use by Proposed Project

The project would involve building demolition and construction on the project site. Energy would be consumed during both the construction and operational phases of the project. The construction phase would require energy for the manufacture and transportation of building materials, preparation of the project site, and construction of buildings and infrastructure. Once in operation, the new buildings and other development would consume energy for multiple purposes, including but not limited to building heating and cooling, lighting, appliances, and electronics. In addition, vehicle trips associated with both construction and operation would consume gasoline.

As discussed in Chapter I, Project Description, of this Initial Study, San Rafael City Schools is proposing to use guidelines established by the Collaborative for High Performance Schools (CHPS) in the design, construction, and operation of the new buildings. The CHPS design guidelines are intended to result in more sustainable and energy-efficient buildings. The CHPS initiative aims to financially reward school districts that achieve sustainable and energy-efficient school facilities. The project would use a CHPS-designed score card. San Rafael City Schools would abide by all State of California mandates for energy conservation. The final project designs would be approved by the Division of the State Architect (DSA). In addition, new interior and exterior lighting fixtures would use energy-efficient light-emitting diode (LED) lamp sources and would be designed in accordance with State of California energy conservation regulations (Energy Efficiency Standards for Residential and Nonresidential

Buildings, Title 24, Part 6, of the California Code of Regulations) and the recommendations of the Illuminating Engineering Society of North America (IESNA) (Colenbrander, 2018). These provisions would help reduce project energy use.⁹

The following discussion reviews potential energy use during construction and operation of the project. The discussion is based on an analysis conducted by BASELINE Environmental Consulting, the Initial Study air quality/greenhouse gas consultant.

Energy Use During Construction

The project would be constructed over a period of approximately 4 years (2018-2022). Since construction activities would be temporary, they would not result in a long-term increase in energy consumption. The construction contractor would have a financial disincentive to waste fuel used by the construction equipment (i.e., excess fuel usage reduces profits). Therefore, it is generally assumed that fuel used during construction would be conserved to the maximum extent feasible. Furthermore, regulations enforced by the California Air Resources Board (Title 13, Section 2485 of California Code of Regulations) limit the idling time of diesel construction equipment to 5 minutes. It is anticipated that energy consumption during the construction period would be minimized to the maximum extent practical. This qualitative review therefore finds that the energy intensiveness of project construction equipment and construction operations would not be inefficient and would not substantially increase overall per capita energy use.

Energy Use During Operation

The most current version of the California Emissions Estimator Model (CalEEMod) was used to evaluate energy consumed during operation of the Davidson and Laurel Dell schools under existing conditions and with the project. Based on a combination of statewide and regional surveys, CalEEMod can be used to conservatively estimate annual electricity and natural gas consumption during operation of a school based on the gross square footage. The following two scenarios were evaluated in CalEEMod for the two campuses: (1) "Existing Conditions" (without the project), and (2) "Project Conditions" (with implementation of the project). For "Project Conditions," the analysis conservatively assumes no energy savings from energy efficiency measures such as the CHPS design guidelines, since detailed information about potential energy reductions from these measures is not currently available.

Energy Consumption by Buildings. Based on the CalEEMod results, electricity and natural gas consumption from buildings on the two campuses is summarized in Table 12. With the project, the two campuses would be expected to use a total of approximately 589,108 kWh of electricity and 2,185,268

⁹ As discussed in Chapter I, Project Description, San Rafael City Schools is currently not seeking any Leadership in Energy and Environmental Design (LEED) certification for the project. The LEED system allots points for various energy-saving and environmentally preferable features such as efficient lighting and use of daylighting, water conservation features, reduction in impervious surface areas, and use of on-site renewable energy sources (e.g., solar). There are various levels of LEED certification based on the features incorporated into a project. Maintaining LEED certification requires ongoing recertification, however.

kBTU of natural gas per year. Compared to the existing demand, these estimates would represent about a 22 percent increase in both electricity use and natural gas use.

Energy Consumption by Vehicles. CalEEMod and the California Mobile Source Emission FACTor (EMFAC) 2014 model were used to estimate mobile energy consumption. Information on vehicle trips, trip lengths, and vehicle mix was obtained from CalEEMod, and information on fuel economy and type and amount of fuel used for each vehicle category was obtained from EMFAC. Total fuel consumption was calculated by summing the fuel consumption for each vehicle category. The estimated daily rates of gasoline, diesel, and electricity consumption by vehicles are summarized in **Table 13**. With the expected increase in on-site population from the project, the rate of increase in fuel consumption would be approximately 15 percent.

TABLE 13 EXISTING AND FUTURE ENERGY CONSUMPTION BY VEHICLES

Fuel Type	Existing Conditions	Project Conditions	Net Increase	Percent Net Increase
Gasoline (gallons/day)	658	758	100	15.2
Diesel (gallons/day)	80	92	12	15.0
Electricity (kWh/day)	63	73	10	15.9

Notes: kWh/day = kilowatt hours per day.

Source: California Emissions Estimator Model (CalEEMod).

Conclusion

While the project would lead to increases in energy use, the net increase in overall per capita consumption would not be considered substantial given the proposed energy efficiency improvements on the Davidson and Laurel Dell campuses. The energy consumption estimates for the project conservatively assume that no energy-saving strategies would be incorporated into the development; therefore, actual energy consumption would likely be less than the estimates, since energy-saving strategies would be included. The roofs are being designed so that they can be used for solar panels in the future, and San Rafael City Schools is pursuing specific funding for solar energy projects at the two campuses. In addition, the two campuses would continue to be subject to the San Rafael City Schools energy and water management policy (Board Policy [BP] 3511), which requires the Superintendent or designee to develop a resource management program that includes strategies for implementing effective and sustainable resource practices, exploring renewable and clean energy technologies, and reducing energy consumption. For these reasons, the impact would be less than significant and no mitigation is necessary.

While not required as mitigation, San Rafael City Schools may wish to consider participating in the Savings By Design Program (www.savingsbydesign.com) administered by PG&E. This energy efficiency program offers incentives for non-residential building design and construction projects that exceed building code requirements.

- b) *Would the project result in wasteful, inefficient, or unnecessary consumption of energy?*

Less Than Significant Impact

See discussion under Item (a) above. The project would incorporate energy-saving strategies from the CHPS design guidelines and would be required to comply with State of California energy efficiency standards. For these reasons, the project would not result in wasteful or unnecessary consumption of energy.

- c) *Would the project require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity the construction of which could cause significant environmental effects?*

Less Than Significant Impact

The Davidson and Laurel Dell campuses are already served by PG&E electricity and natural gas facilities. It is generally expected that development would connect to existing PG&E utility lines serving the campuses. As noted in Chapter I, Project Description, of this Initial Study, natural gas lines would be upgraded as necessary to serve proposed buildings, which would likely require additional gas to support increased capacity.

In addition, new on-site electrical facilities are expected to be needed. On the Davidson campus, the new facilities would consist of (1) a 400-Amp, 277/480-Volt sub-feed breaker in the existing main switchboard at the north side of the school, at the west side of the parking lot across from the gymnasium building; and (2) a 400-Amp underground feeder extending from the main switchboard around the west side of the campus to the southwest corner of the new building main electrical room. On the Laurel Dell campus, a new 1,200-Amp, 120/280-Volt PG&E main electric service would be provided at the northwest corner of the campus; it would include a new pad-mounted utility company transformer, with new primary underground service conduit to the nearest adjacent utility pole on the street. In addition, the existing overhead electric service would be removed (Colenbrander, 2018).

The necessary connections to existing PG&E service are not expected to require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity. Connections to PG&E utility lines are expected to be located on the campuses or at the property line. Details on extending service to on-campus development would be reviewed by PG&E's Building & Renovation Services team when an "Application for Service" is submitted. PG&E typically identifies actual energy loads and required connections at a later stage in the development process, when specifications for features such as heaters and other equipment are known.

- d) *Would the project conflict with applicable energy efficiency policies or standards?*

Less Than Significant Impact

As discussed under Item (a) above, San Rafael City Schools is proposing that facilities on both campuses be designed in accordance with CHPS design guidelines. San Rafael City Schools would abide by all State of California mandates for energy conservation, and final designs would be approved

by the DSA. New interior and exterior lighting fixtures would be designed in accordance with State of California energy conservation regulations (Energy Efficiency Standards for Residential and Nonresidential Buildings, Title 24, Part 6, of the California Code of Regulations) and the recommendations of the IESNA. The project therefore would not conflict with applicable energy efficiency policies or standards. The impact would be less than significant.

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San Rafael City Schools, 2016b. *San Rafael High School Master Facilities Long-Range Plan and Stadium Project Draft Environmental Impact Report, State Clearinghouse Number 2016082017*, December. Section 4.14, Energy.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The information presented in this section is based on data and findings provided in the Geotechnical Investigation for Davidson Middle School Science Building (Miller Pacific Engineering Group, 2017a) and the Geotechnical Investigation for Laurel Dell Elementary School (Miller Pacific Engineering Group, 2017b). The two components of the proposed project—the Davidson Middle School improvements and the Laurel Dell Elementary School improvements—are in close proximity to each other. Unless specified, analysis presented in this section is applicable to both schools.

The project is located within the Coast Ranges geomorphic province of California, which includes numerous active faults identified by the California Geological Survey (CGS) under the Alquist-Priolo Earthquake Fault Zoning Act. CGS defines an active fault as one that has ruptured during the Holocene Epoch (i.e., the last 11,000 years). The probability of one or more large earthquakes (magnitude 6.7 or greater) occurring in the Bay Area between 2014 and 2044 is about 72 percent (Field, E.H. and the 2014 Working Group on California Earthquake Probabilities, 2015). The closest active faults to the project site are the San Andreas Fault (approximately 9 miles to the southwest) and Hayward Fault (approximately 9 miles to the east). Potential impacts associated with seismic activity, including fault rupture, ground shaking, ground failure, liquefaction, and landslides, are discussed below.

CGS has mapped Seismic Hazard Zones that delineate areas susceptible to liquefaction and/or landslides that require additional investigation to determine the extent and magnitude of potential ground failure. The project site is located within an area where CGS has not performed mapping of liquefaction or landslide seismic hazards (CGS, 2017).

Construction plans for new buildings at California schools must be submitted to the DSA for review. The DSA ensures that construction plans are, at a minimum, in compliance with the 2016 California Building Code (Title 24, California Code of Regulations), which provides for stringent construction requirements on projects in areas of high seismic risk. The project design and construction are required to conform with, or exceed, current best standards for earthquake-resistant construction in accordance with the 2016 California Building Code and with the generally accepted standards of geotechnical practice for seismic design in Northern California. The 2016 California Building Code also requires that a site-specific geotechnical investigation report be prepared by a licensed professional to evaluate geologic and seismic hazards for proposed developments of one or more buildings greater than 4,000 square feet, such as the proposed project. The purpose of a site-specific geotechnical investigation is to identify seismic and geologic conditions and potential geohazards, such as surface fault rupture, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability, that need to be addressed with specific design approaches and elements. Requirements for the geotechnical investigation are presented in Chapter 16 “Structural Design” and Chapter 18 “Soils

and Foundation” of the 2016 California Building Code. In addition, the California Building Code and California Education Code, Section 17212.5, requires school districts to submit geohazard reports for new structures on existing school sites and additions and alterations to existing buildings. A geohazard report is required to analyze any geologic condition that is a potential danger to life and property, including, but not limited to, ground shaking, surface rupture, liquefaction, tsunami, and landslides. Geohazard reports for new buildings at California schools must be submitted to CGS for review and acceptance, and, subsequently, to the DSA for review (DSA, 2016).

The Field Act, contained in Education Code Sections 17280-17317 and 80030-81149, adds additional seismic safety requirements for California schools. The Field Act includes requirements for seismic design standards, plan review, construction inspections, and testing, which are overseen by the DSA through plan review, permitting, and inspection of schools under construction.

IMPACT EVALUATION

- a) *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*
 - i) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

Less Than Significant Impact

Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. Surface rupture generally occurs along an existing (usually active) fault trace. Areas susceptible to surface fault rupture are delineated by the CGS Alquist-Priolo Earthquake Fault Zones mapping, and certain types of projects require specific geological investigations prior to development to reduce the threat to public health and safety and to minimize the loss of life and property posed by earthquake-induced ground failure. Both of the geotechnical investigations for the project conclude that the project site is not located within an Alquist-Priolo Earthquake Fault Zone (Miller Pacific Engineering Group, 2017a, 2017b); therefore, the risk of the project exposing people or structures to fault rupture would represent a less-than-significant impact.

- ii) *Strong seismic ground shaking?*

Less Than Significant Impact

Seismic ground shaking generally refers to all aspects of motion of the earth’s surface resulting from an earthquake and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The magnitude of a seismic event is a measure of the energy released by an earthquake; it is assessed by seismographs that measure the amplitude of seismic waves. The intensity of an earthquake is a subjective measure of the perceptible effects of a seismic event at a

given point. The Modified Mercalli Intensity scale is the most commonly used scale to measure the subjective effects of earthquake intensity. It uses values ranging from I to XII (USGS, 2017).

ABAG and United States Geological Survey (USGS) have mapped the likely shaking intensities in the Bay Area that would have a 10 percent chance of occurring in any 50-year period (ABAG and USGS, 2013). Based on the ABAG and USGS mapping, the project site is in an area susceptible to very strong ground shaking (VIII on the Modified Mercalli Intensity scale), which would result in negligible damage to well-designed and constructed buildings.

Davidson Middle School

A Geotechnical Investigation was prepared for the proposed Davidson Middle School STEM Center; however, the Geotechnical Investigation did not analyze the portions of the site where a new Multi-Purpose Building and a new Music Building would be constructed, and where classrooms and offices would be added to the existing gym locker rooms. Under the 2016 California Building Code and the Education Code, San Rafael City Schools is required to submit a geohazard report for all of the proposed new buildings and the addition to CGS for review and approval, and, subsequently, to the DSA for review (DSA, 2016). Therefore, additional geotechnical investigation would be required for the proposed new construction and building addition at the Davidson Middle School campus that are not covered by the existing Geotechnical Investigation. The risk of ground shaking impacts is reduced through adherence to plans and specifications approved by the DSA that meet the design and materials standards set forth in the 2016 California Building Code and the Field Act and incorporate recommendations from site-specific geotechnical investigation reports. With the project's adherence to these existing regulations, the risks to people and structures due to strong seismic ground shaking would represent a less-than-significant impact.

Laurel Dell Elementary School

The Geotechnical Investigation for Laurel Dell Elementary School concluded that the potential for strong seismic shaking at the site is high, and that Site Class D design is appropriate for the proposed new construction on the Laurel Dell campus. Conformance to the 2016 California Building Code and the Field Act and incorporation of recommendations from the Geotechnical Investigation into the project design would ensure that the risks to people and structures due to strong seismic ground shaking on the Laurel Dell Elementary School campus would represent a less-than-significant impact.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact

The potential for different types of ground failure to occur at the project site during a seismic event is discussed below.

Liquefaction

Soil liquefaction is a phenomenon primarily associated with saturated soil layers located close to the ground surface. During ground shaking, these soils lose strength and acquire a “mobility” sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, poorly graded, saturated, fine-grained sands that lie relatively close to the ground surface. However, loose sands that contain a significant amount of fines (silt and clay) may also liquefy. Liquefaction potentials for the project components are analyzed below.

Davidson Middle School

Based on regional liquefaction mapping compiled by ABAG, the proposed STEM Center for Davidson Middle School would be located within an area of moderate to high susceptibility to liquefaction (ABAG, 2018). Further analysis based on site-specific boring log data from the Geotechnical Investigation found that the subsurface granular layers beneath the proposed STEM Center site would not liquefy under a strong seismic event. The Geotechnical Investigation concluded that the risk of damage due to liquefaction for the proposed STEM Center on the Davidson Middle School campus is low.

As discussed above, an additional geotechnical investigation would be required for the proposed new construction and building addition at the Davidson Middle School campus that are not covered by the existing Geotechnical Investigation. The additional geotechnical investigation would include recommendations to address the potential for liquefaction. The risk of liquefaction-related impacts is reduced through adherence to plans and specifications approved by the DSA that meet the design and materials standards set forth in the 2016 California Building Code and the Field Act and incorporate recommendations from site-specific geotechnical investigation reports. The project’s adherence to these existing regulations would reduce potential impacts related to liquefaction to a less-than-significant level for Davidson Middle School.

Laurel Dell Elementary School

Similar to Davidson Middle School, Laurel Dell Elementary School is also mapped in an area of moderate to high susceptibility to liquefaction (ABAG, 2018). The Geotechnical Investigation indicates that the subsurface clayey sands beneath the site would not liquefy during a strong seismic event and the loose sandy fills beneath the site are not susceptible to liquefaction based on the anticipated maximum groundwater elevations. Therefore, impacts related to liquefaction on the Laurel Dell Elementary School campus would be less than significant.

Lateral Spreading

Lateral spreading is a phenomenon in which surficial soil displaces along a gently sloping ground surface as the result of liquefaction in a subsurface layer. Upon reaching mobilization, the surficial soils are transported downslope or in the direction of a free face by earthquake and gravitational forces.

Davidson Middle School

According to the Geotechnical Investigation for the proposed Davidson Middle School STEM Center, the potential for liquefaction on this portion of the project site is low (Miller Pacific Engineering Group, 2017a). In addition, the area of the proposed STEM Center at the Davidson Middle School campus is relatively flat and has no significant free faces. Therefore, the risks of lateral spreading for the proposed STEM Center would be less than significant.

The other portions of the Davidson Middle School campus are also relatively flat; however, the potential for liquefaction has not been evaluated for areas of the Davidson Middle School campus beyond the STEM Center, and the bank of the drainage ditch along the southwestern boundary of the site is a free face; therefore lateral spreading could affect areas of the Davidson Middle School campus beyond the STEM Center site. The additional geotechnical investigation would include recommendations to address the potential for liquefaction and lateral spreading in areas of the Davidson Middle School campus proposed for development in the later phases of the project. The risk of lateral spreading-related impacts would be reduced through adherence to plans and specifications approved by the DSA that meet the design and materials standards set forth in the 2016 California Building Code and the Field Act and incorporate recommendations from site-specific geotechnical investigation reports. Therefore, with the project's adherence to the existing regulations, potential impacts related to lateral spreading on the Davidson Middle School campus would be less than significant.

Laurel Dell Elementary School

Based on the Geotechnical Investigation, the conditions for liquefaction do not exist on the Laurel Dell Elementary School campus (Miller Pacific Engineering Group, 2017b). Therefore, potential impacts related to lateral spreading would be less than significant.

Surface Settlement

Settlement can occur when non-saturated, cohesionless soil is densified by earthquake vibrations. The potential for seismically induced ground settlement for the project components is analyzed below.

Davidson Middle School

The Geotechnical Investigation for the proposed Davidson Middle School STEM Center found that the soils are sufficiently dense to resist densification beneath the STEM Center site. As discussed above, final grading, foundation, and building plans for all buildings and additions must be designed and constructed in accordance with the 2016 California Building Code, the Field Act, and site-specific recommendations from a geotechnical investigation report approved by CGS and the DSA. Recommendations from the additional geotechnical investigation would include measures that would address, as necessary, the potential for earthquake-induced surface settlement associated with non-saturated cohesionless soil. Therefore, with the project's adherence to the existing regulations, the risk of surface settlement due to seismic events would be less than significant for the proposed buildings on the Davidson Middle School campus.

Laurel Dell Elementary School

The Geotechnical Investigation for Laurel Dell Elementary School found that less than 0.25 inch of seismically induced settlement may be expected for the site. The Geotechnical Investigation provided the following qualitative recommendations regarding mitigation of seismically induced ground settlement: 1) new construction in areas underlain by loose sandy fills should be able to withstand up to 0.25 inch of total and differential settlement over a 30-foot span, or 2) fill soils can be removed and replaced with compacted fill. The Geotechnical Investigation also provided recommendations regarding site preparation and grading, selection of engineered fill material, and foundation design that account for the potential for seismically induced settlement. These site-specific recommendations would be incorporated into the proposed project's final grading and foundation plans that require approval by the DSA. Therefore, the project would have a less-than-significant impact related to seismically induced settlement.

iv) Landslides?

Less Than Significant Impact

Seismically induced landslides occur as the rapid movement of large masses of soil on unstable slopes during an earthquake. Landslide potentials for the project components are analyzed below.

Davidson Middle School

The Seismic Hazard Zones mapped by CGS delineate areas susceptible to seismically induced landslides that require additional investigation to determine the extent and magnitude of potential ground failure. As discussed above, the project site is located in an area where Seismic Hazard Zone maps for earthquake-induced landslide hazards have not been prepared by CGS. Furthermore, the Geotechnical Investigation found that the site for the proposed STEM Center is relatively flat and is not located adjacent to sloping topography (Miller Pacific Engineering Group, 2017a). The rest of the Davidson Middle School campus has similar topography. Therefore, impacts related to slope instability at the Davidson Middle School campus would be less than significant.

Laurel Dell Elementary School

As discussed above, Laurel Dell Elementary School is not located within an area mapped by CGS for landslide hazards. There are steep slopes along the southwestern boundary of the campus that have retaining walls that are failing due to age and root intrusion; however, evidence of significant existing or incipient slope instability was not observed during the geotechnical site reconnaissance, and the Geotechnical Investigation concluded that the risk of damage due to slope instability is considered generally low. It is not anticipated that retaining walls would be required to construct the proposed structures; however, the design team may decide to construct new retaining walls to replace the existing failing walls. The Geotechnical Investigation provided recommendations for construction of temporary and permanent slopes and retaining walls that would be incorporated into the design plans, as necessary (Miller Pacific Engineering Group, 2017b). Therefore, impacts related to slope instability at the Laurel Dell Elementary School campus would be less than significant.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Soil erosion, which is discussed in detail in Section X, Hydrology and Water Quality, of this Initial Study, could occur during project grading and construction. As described in Section X, compliance with the Construction General Permit, including the preparation and implementation of a SWPPP, would reduce the potential impacts related to erosion of topsoil to a less-than-significant level.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less Than Significant Impact

Potential impacts related to unstable soil, including landslides, liquefaction, and lateral spreading, are discussed under Item (a) above and were found to be less than significant. Subsidence or collapse can result from the removal of subsurface water, resulting in either catastrophic or gradual depression of the surface elevation of the project site. The proposed project would not involve significant dewatering activities; only short-term and localized dewatering may be required during construction activities involving excavation. Therefore, potential impacts related to subsidence or collapse due to dewatering would be less than significant. Potential impacts related to settlement/subsidence of compressible soil for the project components are analyzed below.

Davidson Middle School

The site for the proposed STEM Center on the Davidson Middle School campus is underlain with up to 13 feet of soft, compressible Bay Mud (Miller Pacific Engineering Group, 2017a). The Geotechnical Investigation determined that the Bay Mud beneath the site is “normally consolidated,” meaning that new loads from the addition of fill and buildings would cause significant settlement and the risk of long-term settlement to the proposed structures at the site is high. The Geotechnical Investigation recommends additional estimation of settlement based on preliminary grading plans and foundation loads. The Geotechnical Investigation also provides a range of options for eliminating settlement/subsidence due to the underlying Bay Mud, including removal of existing soil and replacement with lightweight fill, or design of a deep foundation system for new structures. The final grading and foundation plans for the project must incorporate these site-specific recommendations from the Geotechnical Investigation for the STEM Center site as well as recommendations from the future geotechnical investigation, which would include measures that would address the potential for settlement associated with compressible soil for other areas of the site. Therefore, with the project's adherence to existing regulations and preliminary geotechnical recommendations, potential impacts related to settlement/subsidence of compressible soil would be less than significant for the Davidson Middle School campus.

Laurel Dell Elementary School

The Geotechnical Investigation did not observe soft compressible soils during the subsurface exploration and concluded that the risk of damage due to settlement is low (Miller Pacific Engineering

Group, 2017b). Therefore, potential impacts related to settlement/subsidence of compressible soil on the Laurel Dell Elementary School campus would be less than significant.

- d) *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

Less Than Significant Impact

Expansive soils are characterized by the potential for shrinking and swelling as the moisture content of the soil decreases and increases, respectively. Shrink-swell potential is influenced by the amount and type of clay minerals present and can be measured by the percent change of the soil volume.

Davidson Middle School

According to the Geotechnical Investigation for the proposed STEM Center site, no indication of expansive soils was observed within the upper 3 feet of the STEM Center site (Miller Pacific Engineering Group, 2017a). For other portions of the Davidson Middle School campus, San Rafael City Schools is required to prepare additional geohazard studies that would include measures to address expansive soils, as necessary, and obtain approval from the DSA for site improvement plans and specifications. Therefore, with the project's adherence to existing regulations, potential impacts related to expansive soil would be less than significant for the Davidson Middle School campus.

Laurel Dell Elementary School

No expansive soils or evidence indicative of distress due to expansive soils were observed on the Laurel Dell Elementary School campus (Miller Pacific Engineering Group, 2017b). Therefore, potential impacts due to expansive soil would be less than significant.

- e) *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

No Impact

The sewage collection, treatment, and disposal facilities that serve the project site are owned and operated by the San Rafael Sanitation District and Central Marin Sanitation Agency. Development of the proposed project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, the proposed project would have no impact related to septic tanks or alternative waste water disposal systems.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

BACKGROUND

Climate change refers to change in the Earth's weather patterns, including the rise in temperature due to an increase in heat-trapping GHGs in the atmosphere. According to the BAAQMD (2017), some of the potential effects of increased GHG emissions and the associated climate change may include loss in snow pack (affecting water supply), sea level rise, more frequent extreme weather events, more large forest fires, and more drought years. In addition, climate change may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health.

In 2006, the California State Legislature passed the California Global Warming Solutions Act (Assembly Bill [AB] 32), which requires the California Air Resources Board (CARB) to develop and implement regulatory and market mechanisms that will reduce GHG emissions to 1990 levels by 2020. In 2016, the State Legislature adopted Senate Bill (SB) 32, which requires further reduction of GHG emissions to 40 percent below the 1990 level by 2030. In addition, Executive Order S-3-05 set a GHG reduction goal of 80 percent below 1990 levels by 2050. In 2009, the City of San Rafael adopted the Climate Change Action Plan (CCAP) in response to AB 32, the California Global Warming Solutions Act. The CCAP includes strategies for transportation, waste reduction, land use, energy conservation, and sequestration that aim to reduce GHG emissions 25 percent by 2020 and 80 percent by 2050 relative to GHG emission levels in 2005. The CCAP was updated in 2011 to allow the City to use the CCAP as a quantified GHG Reduction Strategy and streamline the analysis of future projects under CEQA.

The primary GHG emissions of concern are carbon dioxide, methane, and nitrous oxide. Other GHGs of concern include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, but their contribution to climate change is less than 1 percent of the total GHGs that are well mixed (i.e., that have atmospheric lifetimes long enough to be homogeneously mixed in the troposphere) (Intergovernmental Panel on Climate Change, 2013). Each GHG has a different global warming potential. For instance, methane traps about 21 times more heat per molecule than carbon dioxide. As a result, emissions of GHGs are reported in metric tons of carbon dioxide equivalents (CO₂e), where each GHG is weighted by its global warming potential relative to carbon dioxide. Carbon dioxide emissions dominate the GHG inventory in the San Francisco Bay Area Air Basin (SFBAAB), accounting for more than 90 percent of the total CO₂e emissions reported.

In 2010, the BAAQMD developed and adopted GHG thresholds of significance that were incorporated into the BAAQMD's 2017 *CEQA Air Quality Guidelines*. The GHG thresholds are designed to help lead agencies in the SFBAAB evaluate potential environmental impacts from GHG emissions for new projects and meet GHG emission reduction goals, such as those contained in AB 32. Therefore, the BAAQMD's thresholds of significance were used in this CEQA analysis.

IMPACT EVALUATION

- a) *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less Than Significant Impact

The BAAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod versions 2016.3.2) to estimate construction and operation emissions of GHGs for a proposed project. CalEEMod uses widely accepted models for emission estimates combined with appropriate default data for a variety of land use projects that can be used if site-specific information is not available. The default data (e.g., emission factors) are supported by substantial evidence provided by regulatory agencies and a combination of statewide and regional surveys of existing land uses and resources. The primary input data used to estimate GHG emissions associated with the proposed

project and the existing conditions are summarized in **Table 14**. A copy of the CalEEMod report for the proposed project, which summarizes the input parameters, assumptions, and findings, is available for review at the District's offices at 310 Nova Albion, San Rafael, California.

TABLE 14 SUMMARY OF LAND USE INPUT PARAMETERS FOR CALEEMOD ESTIMATE OF EXISTING AND PROJECT GREENHOUSE GAS EMISSIONS

Scenario	Land Use Type	CalEEMod Land Use Type	Units	Unit Amount
Existing Conditions	Educational	Elementary School	Square Feet	13,915
	Educational	Junior High School	Square Feet	94,852
Proposed Project	Educational	Elementary School	Square Feet	20,165
	Educational	Junior High School	Square Feet	112,517

Note: The project footprint would be about 1.76 acres for Laurel Dell Elementary School and 18.05 acres for Davidson Middle School.
Source: CalEEMod.

Project construction is scheduled to begin in summer 2018. The construction would be in three phases, each lasting approximately 16 months. Based on the construction schedule, project operation was assumed to begin as early as 2019. Additional project-specific information used to calculate GHG emissions in CalEEMod, including changes to default data, is summarized in **Table 15**.

TABLE 15 SUMMARY OF PROJECT-SPECIFIC ASSUMPTIONS FOR CALEEMOD ESTIMATE OF PROJECT GREENHOUSE GAS EMISSIONS

CalEEMod Input Category	Assumptions and Changes to Default Data
Construction Phase	The default construction duration was modified to 1,049 work days (approximately the duration of all three phases for construction on Davidson Middle School) with work scheduled to begin in July 2018.
On-Site Construction Equipment	The default on-site construction equipment list and total operation hours were modified according to site-specific construction information provided by the project applicant.
Material Movement	1,460 cubic yards of debris export is anticipated during grading.
Haul Trips	The default haul trips for debris removal were modified to a total 37 haul trips assuming 40 cubic yards of debris export per truck load.
Worker and Vendor Trips	The default worker and vendor trips were modified according to the construction schedule provided by San Rafael City Schools.
Utility Provider	Based on review of Pacific Gas & Electric Company's <i>Greenhouse Gas Emission Factors: Guidance for PG&E Customers</i> (PG&E, 2015), the default carbon dioxide (CO ₂) intensity factor reported for 2008 was updated to the most recent CO ₂ intensity factor verified by a third party in 2013.
Vehicle Trips	CalEEMod default trip rates were modified to be consistent with Section XVIII, Transportation/Traffic.

Note: Default CalEEMod data used for all other parameters not described.
Source: CalEEMod.

The BAAQMD does not recommend a threshold of significance for GHG emissions during construction because there is not sufficient evidence to determine a level at which temporary construction emissions are significant (BAAQMD, 2009). A construction contractor has no incentive to waste fuel during construction and, therefore, it is generally assumed that GHG emissions during construction would be minimized to the maximum extent feasible.

Furthermore, the idling times for off-road construction equipment would be limited to a maximum idling time to 5 minutes, as required by the CARB's Airborne Toxic Control Measure to reduce emissions from diesel-fueled vehicles (Title 13, Section 2485 of California Code of Regulations). Therefore, GHG emissions during project construction would have a less-than-significant impact on the environment.

The total net increases in average annual CO₂e emissions for project operation are compared to the BAAQMD's thresholds of significance in **Table 16**. The estimated net increase CO₂e emissions were below the BAAQMD's thresholds of significance for total CO₂e emissions. Therefore, GHG emissions from operation of the proposed project would have a less-than-significant impact on the environment.

TABLE 16 SUMMARY OF AVERAGE GREENHOUSE GAS EMISSIONS FROM PROJECT OPERATION

Emission Source	CO ₂ e (MT/year)
Existing Conditions	
Total Emissions	1,429.2
Proposed Project	
Area	<0.1
Energy	232.1
Mobile	1,336.6
Waste	86.7
Water	9.9
Total Emissions	1,665
Net Project Emissions	236
BAAQMD Threshold of Significance	1,100
Threshold Exceedance?	No

Note: BAAQMD = Bay Area Air Quality Management District; CO₂e = carbon dioxide equivalents; MT = metric tons
Source: CalEEMod.

- b) *Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Less Than Significant Impact

The BAAQMD's threshold of significance was designed to ensure compliance with the state's AB 32 GHG reduction goals, as set forth in the CARB's Climate Change Scoping Plan. Since the GHG emissions from the proposed project would be below the BAAQMD's threshold of significance (see Table 16), it can be assumed that the project would be consistent, and not in fundamental conflict, with the AB 32 Scoping Plan. Furthermore, the project would provide energy-saving measures associated with the 2016 Building Energy Efficiency Standards, which reduce electricity consumption by about 29 percent and natural gas consumption by about 25 percent for new non-residential buildings on average compared to the 2005 Building Energy Efficiency Standards (California Energy Commission, 2007, 2013, 2015). Since the project would replace older and less-energy efficient buildings, the proposed project is expected to result in energy savings that would reduce GHG emissions. The project would not conflict with the GHG reduction initiatives identified in the City of San Rafael's CCAP. For example, the project would use guidelines established by the Collaborative for High Performance Schools (CHPS), which are intended to result in more sustainable and energy-efficient buildings. The remaining CCAP programs, which relate to lifestyles, environment, economy, and community outreach and

empowerment, are city-wide initiatives that do not apply to individual projects. Therefore, the proposed project would not conflict with applicable plans, policies, or regulations related to GHG emission reductions in the SFBAAB, and the impact would be less than significant.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

IMPACT EVALUATION

- a) *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less Than Significant Impact

Project construction activities at both Davidson Middle School and Laurel Dell Elementary School are expected to involve the routine transport, use, and disposal of hazardous materials (e.g., motor fuels, paints, oils, and grease) that could pose a significant threat to human health or the environment if not properly managed. Although small amounts of these materials would be transported, used, and disposed of during project construction, these materials are typically used in construction projects and are not considered acutely hazardous. Workers who handle hazardous materials are required to adhere to health and safety requirements enforced by the federal Occupational Health and Safety

Administration (OSHA) and California Division of Occupational Safety and Health (Cal/OSHA). Hazardous materials must be transported to and from the project site in accordance with Resource Conservation and Recovery Act (RCRA) and U.S. Department of Transportation regulations, and also disposed of in accordance with RCRA regulations at a facility that is permitted to accept the waste. Because compliance with existing regulations is mandatory, project construction is not expected to create a significant hazard to public health or the environment through the routine transport, use, or disposal of hazardous materials.

During the operation of Davidson Middle School and Laurel Dell Elementary School, it is anticipated hazardous materials that are typical of school facilities (e.g., cleaning products, paints, landscaping materials) would be used in small and localized amounts, in quantities and types similar to those currently used at the both campuses. As described above, the routine transport, use, and disposal of hazardous materials are subject to federal and state regulations. On the local level, the Marin County Department of Public Works is the Certified Unified Program Agency (CUPA) that implements regulatory programs for sites that routinely use relatively large quantities of hazardous materials to ensure the safe storage, management, and disposal of such materials in accordance with the Unified Program. While the project is not expected to handle large quantities of hazardous materials, compliance with existing regulations and CUPA programs, as applicable, would be mandatory, should the handling of large quantities of hazardous materials need to occur during the life of the project. Therefore, project operations are not expected to create a significant hazard to public health or the environment through the routine transport, use, or disposal of hazardous materials.

For these reasons, impacts related to the routine transport, use, or disposal of hazardous materials during project construction and operation would be less than significant.

- b) *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Potentially Significant Unless Mitigation Incorporated

Potential accident and upset conditions resulting in the release of hazardous materials used or encountered during general project construction and operation activities are discussed below.

Accidental Release of Hazardous Materials used during Project Construction and Operation

The accidental release of hazardous materials used during project construction and operation activities could pose a significant threat to human health or the environment. As discussed under Item (a) above, the use of hazardous materials would be subject to existing hazardous materials laws, regulations, and CUPA programs. In addition, a SWPPP must be prepared and implemented during project construction for coverage under the Construction General Permit, in accordance with the requirements of the State Water Resources Control Board. The SWPPP would require implementation of BMPs for hazardous materials storage and soil stockpiles, inspections, maintenance, training of employees, and containment of releases to prevent runoff into existing stormwater collection systems or waterways. Adherence to these standards would also reduce the potential for an accidental release of hazardous

materials used during project construction and operation. Therefore, the project would create a less-than-significant impact related to accidental releases of hazardous materials during construction and operation.

Potential Site Contamination

Past releases of hazardous materials on a site can also pose a hazard to the public and/or the environment. Ground-disturbing activities, including demolition, removal of existing buildings, site preparation, including tree removal and grading, installation of bioretention basins, and utility improvements would be required on both campuses. Ground-disturbing activities on a site where past releases of hazardous materials have occurred can expose the environment, building occupants, and/or the public to potentially contaminated soil, soil vapor, and/or groundwater during construction and/or operation of the project.

Phase I Environmental Site Assessments (ESA) were completed for both Davidson Middle School and Laurel Dell Elementary School in January 2018 by Millennium Consulting Associates (2018a and 2018b). The Phase I ESAs found no evidence of potential hazardous materials releases at either campus or adjacent properties. The review of historical records could not identify the land uses on the Davidson Middle School site prior to 1952; from 1952 to the present, the site has been used as a school campus (Millennium Consulting Associates, 2018a). The review of historical records found that from 1924 and 1930, the Laurel Dell Elementary School site contained residences, and from 1930 to the present the site has been used as a school campus (Millennium Consulting Associates, 2018b).

The Phase I ESA for Davidson Middle School noted a dry cleaning business is located near Davidson Middle School (Millennium Consulting Associates, 2018a). As early as the 1940s, dry cleaners have used chlorinated solvents such as perchloroethylene (PCE), which are toxic and can persist in the environment for many decades. However, there was no indication of liquid waste being disposed improperly by the dry cleaner, and a review of CUPA files did not find any records of violations in relation to hazardous materials for this business (Millennium Consulting Associates, 2018a). The geotechnical investigation reports for both Davidson Middle School and Laurel Dell Elementary School indicate that both sites are covered by shallow fill (Miller Pacific Engineering Group, 2017a and 2017b). However, the fill is characterized primarily as clayey sand at the Laurel Dell Elementary School site and as sandy gravel and/or sandy clay at Davidson Middle School (Miller Pacific Engineering Group, 2017a and 2017b). No materials were observed in the fill that would indicate that trash, rubble, or other materials that would likely contain hazardous materials were used as fill on these sites. Therefore, the fill on these sites would not be expected to be a source of soil or groundwater contamination.

Based on the Phase I Site Assessments, geotechnical investigation reports, and available information on the dry cleaning facility, impacts from releases of hazardous materials in soils related to historic land uses would be less than significant.

Accidental Hazardous Materials Release during Building Renovation

Davidson Middle School has been a school campus since 1952 (Millennium Consulting Associates, 2018a) and Laurel Dell Elementary School has been used a school campus since 1930 (Millennium Consulting Associates, 2018b). Hazardous materials survey reports completed for Davidson Middle School (Millennium Consulting Associates, 2017) and for Laurel Dell Elementary School (Sensible Environmental Solutions, 2017) found that buildings on the campuses contain asbestos-containing materials, lead-based-paint, and other regulated materials (e.g., fluorescent light bulbs, refrigerant) (Millennium Consulting Associates, 2017). Light ballasts that may contain polychlorinated biphenyls (PCBs) were identified on the Laurel Dell Elementary School campus (Sensible Environmental Solutions, 2017); no potential PCB-containing materials were identified on the Davidson Middle School campus (Millennium Consulting Associates, 2017). Asbestos is a known human carcinogen that was commonly used in building materials until the early 1980s. Lead is a suspected human carcinogen, a known teratogen, and a reproductive toxin, and was widely used as an additive in paints prior to 1978. PCBs are known to cause cancer as well as other adverse health effects, and were used as additives to building materials (e.g., caulking, light ballasts, electrical equipment) prior to 1979.

As described in Chapter I, Project Description, of this Initial Study, the proposed improvements to Davidson Middle School and Laurel Dell Elementary School are funded by a bond program approved by the voters of San Rafael in November 2015. Should state funding be requested by San Rafael City Schools, the project may be subject to California Department of Toxic Substances Control (DTSC) oversight. San Rafael City Schools would be notified of whether or not DTSC oversight is required upon submitting a request for state funding to the California Department of Education. In California, DTSC is authorized by the USEPA to enforce and implement federal hazardous materials laws and regulations. State of California regulations pertaining to hazardous materials are equal to or exceed the federal regulation requirements. Most state hazardous materials regulations are contained in Title 22 of the California Code of Regulations (CCR). As required by Education Code Section 17213.1, DTSC's School Property Evaluation and Cleanup Division is responsible for oversight of hazardous materials investigation and remediation for proposed new school sites and school redevelopment projects.

DTSC review of a project, where applicable, begins with the evaluation of the Phase I ESA to determine if hazardous materials at the school site could potentially present a risk to human health or the environment. If so, DTSC will require a Preliminary Environmental Assessment (PEA) be performed, potentially including testing of soil, soil vapor, and/or groundwater, to evaluate the potential hazardous materials issues

Impact HAZARDS-1: Project demolition, construction, renovation, and modernization activities at both Davidson Middle School and Laurel Dell Elementary School could release asbestos-containing materials, lead-based paint, polychlorinated biphenyls (PCBs), and/or other hazardous materials into the environment. (PS)

Demolition, construction, renovation, and modernization activities at both Davidson Middle School and Laurel Dell Elementary School could potentially release hazardous building materials into the environment. The removal of hazardous building materials is governed by federal and state laws and

regulations. Workers who conduct hazardous materials abatement and demolition activities must be trained in accordance with OSHA and Cal/OSHA requirements. Hazardous building materials removed during construction must be transported in accordance with U.S. Department of Transportation regulations and disposed of in accordance with RCRA, the California Code of Regulations, and/or the California Universal Waste Rule at a facility permitted to accept the wastes. Asbestos-containing materials are highly regulated and must be abated prior to building demolition in accordance with BAAQMD District Rule 11-2. Implementation of Mitigation Measure HAZARDS-1, which requires that San Rafael City Schools implement the recommendations in the hazardous building materials surveys completed for the campuses, would ensure that potential hazardous building materials are properly identified and removed in accordance with applicable regulations prior to renovation and that the impact would be less than significant after mitigation.

***Mitigation Measure HAZARDS-1:** As applicable, San Rafael City Schools shall implement the recommendations of the report completed in 2017 by Millennium Consulting Associates for Davidson Middle School entitled “Limited Hazardous Material Survey Report, Davidson Middle School”, and the report completed in 2017 by Sensible Environmental Solutions Inc., for Laurel Dell Elementary School entitled “Hazardous Materials Inspection Report, Laurel Dell Elementary School”. These recommendations include, but are not limited to:*

- *The inspection and testing for the presences of hazardous materials of spaces (including buildings, asphalt hardscape areas, and soils) outside of those that were already inspected and tested as part of the hazardous materials inspection reports.*
- *The development and implementation of a comprehensive set of Hazardous Materials Abatement Plans and Specification for incorporation into the Contract Documents. This includes identifying the scope of work and responsibility for compliance with Occupational Safety and Health Administration (OSHA), U.S. Environmental Protection Agency (USEPA), Bay Area Air Quality Management District (BAAQMD), and California Department of Public Health (CDPH) requirements as well as defining submittal, control, and set-up procedures, training requirements, and disposal requirements. (LTS)*

- c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Potentially Significant Unless Mitigation Incorporated

The project site consists of two existing school campuses, and the project would allow continued school use on these sites. No other schools are located within one-quarter mile of the project site. As discussed under Item (a) above, hazardous materials use during project construction and operation would be managed in accordance with applicable laws and regulations. Potential emissions of air quality contaminants, such as diesel particulate matter, are addressed in Section III, Air Quality, of this Initial Study.

Impact HAZARDS-2: Project demolition, renovation, construction, and modernization activities could emit hazardous building materials within ¼ mile of an existing school. (PS)

A potential health risk as a result of the release of hazardous building materials could occur, as discussed under Impact HAZARDS-1 above. Implementation of Mitigation Measure HAZARDS-2 would ensure that this potential impact is mitigated to a less-than-significant level.

Mitigation Measure HAZARDS-2: Mitigation Measure HAZARDS-1 shall be implemented. (LTS)

- d) *Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

No Impact

The provisions of Government Code Section 65962.5 require the State Water Resources Control Board, Department of Toxic Substances Control, California Department of Health Services, and California Department of Resources Recycling and Recovery to submit information to the California Environmental Protection Agency pertaining to sites that were associated with solid waste disposal, hazardous waste disposal, and/or hazardous materials releases. The compilation of hazardous materials release sites that meet criteria specified in Section 65962.5 of the California Government Code is known as the Cortese List. The Phase I Environmental Site Assessments completed for Davidson Middle School and Laurel Dell Elementary School did not identify any hazardous materials release sites on the project site that meet the criteria for inclusion on the Cortese List (Millennium Consulting Associates, 2018a and 2018b). Therefore, the project would have no impact related to development on a hazardous materials release site included on the Cortese List.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*

No Impact

The nearest public use airport to the project site is the Marin County Airport at Gness Field in Novato, approximately 12 miles to the north. The project site is not located in a land use plan for Marin County Airport at Gness Field (Marin County Planning Department, 1991). The nearest general aviation airport is the San Rafael Airport in San Rafael, for which no airport land use plan has been adopted, but which is located approximately 3.5 miles to the north. At this distance, the San Rafael Airport would not pose a safety hazard for students, teachers, or staff at either campus. No other sources of aviation hazards are present at the project site. Therefore, the proposed project would have no impact on the navigable airspace of public use airports.

- f) *For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*

Less Than Significant Impact

The project site is not located within the vicinity of a private airstrip (Federal Aviation Administration, 2018). The project would therefore have no impact in relation to this criterion.

- g) *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant Impact

The proposed project includes development within the existing Davidson Middle School and Laurel Dell Elementary School campuses. Project construction would not require blocking lanes or sidewalks on surrounding roadways. Construction staging areas would not block emergency access at Davidson Middle School but would block the emergency access at Laurel Dell Elementary School. However, students, teachers, and staff at Laurel Dell Elementary School would be located at the Davidson Annex during construction, and therefore would not be affected. During project operation, the proposed project components would not restrict external vehicular or pedestrian traffic. Emergency access within the Davidson Middle School campus would be improved through the addition of a new emergency driveway access point along Woodland Avenue at the west side of campus (see Figure 2). Emergency access at the Laurel Dell campus would continue to be provided from Seibel Street through the parking area to the center of campus (see Figure 3). Therefore, potential impairment of or interference with emergency response or evacuation plans would be less than significant.

- h) *Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

Less Than Significant Impact

The project site is surrounded by urban land uses and is not located in an area mapped as a Very High Fire Hazard Severity Zone by California Department of Forestry and Fire Protection (CAL FIRE, 2008). Davidson Middle School and Laurel Dell Elementary School are located in close proximity to a wildland-urban interface area (an area where structures are built near lands prone to wildland fire) but are not within a wildland-urban interface area identified by the City of San Rafael (City of San Rafael, 2007). Therefore, the project would have a less-than-significant impact related to wildland fire hazards.

REFERENCES

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Marin County Planning Department, 1991. Airport Land Use Plan, Marin County Airport Gross Field. June 10.

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State Coalition for Remediation of Drycleaners, 2010. Conducting Contamination Assessment Work at Drycleaning Sites, October.

U.S. Environmental Protection Agency (USEPA), 2015. Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air, June.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding of as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

IMPACT EVALUATION

a) *Would the project violate any water quality standards or waste discharge requirements?*

Less Than Significant Impact

A drainage ditch is located along the southwestern boundary of the Davidson Middle School. Stormwater runoff from the project site is collected in the drainage ditch or directly in the City of San Rafael's stormwater drainage system and conveyed to San Rafael Creek, which discharges to San Pablo Bay. Pursuant to Section 303(d) of the CWA, the State Water Resources Control Board (State Water Board) has listed San Rafael Creek and San Pablo Bay as impaired water bodies (State Water Board, 2012a and 2012b). Impaired water bodies refer to those that do not meet one or more of the water quality standards established by the state. San Rafael Creek is listed due to releases of diazinon from unknown sources, while San Pablo Bay is listed due to releases of chlordane, dichlorodiphenyl-trichloroethane (DDT), dieldrin, dioxin compounds, furan compounds, invasive species, mercury, non-dioxin-like and dioxin-like polychlorinated biphenyls (PCBs), and selenium from unknown sources. The quality of water discharged from the project site into the drainage ditch, the City's stormwater drainage system, San Rafael Creek, and San Pablo Bay is subject to regulation under the NPDES program with local oversight from the San Francisco Bay Regional Water Quality Control Board (RWQCB). Under the NPDES program, the quality of stormwater runoff from the project site is regulated by stormwater permits that include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives for receiving waters. The potential for project-related stormwater discharges and construction dewatering to adversely affect water quality is discussed below.

Stormwater Discharges

During construction of the proposed project, soils exposed during grading and excavation and any construction-related chemicals (e.g., oil, fuel, paint, solvents) spilled or leaked onto the ground may be entrained in stormwater runoff. During operation of the proposed project, urban pollutants such as landscaping chemicals and spilled or leaked maintenance chemicals could also be entrained in stormwater runoff.

Construction activities (e.g., grading) in California that result in the disturbance of one or more acres of land are required to comply with the State Water Board's NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (as amended by Order No. 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit). Because construction of the proposed project would disturb more than one acre of land, the proposed project would be subject to the requirements of the Construction General Permit. The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the established risk level of the project (Risk Level 1, 2, or 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The

discharger would determine the project risk level when filing the Notice of Intent to the Regional Water Board.

Under the Construction General Permit, the proposed project must have a SWPPP prepared by a Qualified SWPPP Developer. The purpose of the SWPPP is to (1) identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges, and (2) describe and ensure the implementation of BMPs to reduce or eliminate discharges of sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. Common BMPs on construction sites include the placement of vegetation (e.g., hydroseeding), straw, fiber, stabilizing emulsion, protective blankets, or other materials on areas of disturbed soils to reduce erosion. A Qualified SWPPP Practitioner must oversee the operation of BMPs that meet the requirements outlined in the permit.

Any projects in the City of San Rafael that create or replace more than 5,000 square feet of impervious surface are subject to the State Water Board's (2013) NPDES General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems, Order No. 2013-0001-DWQ (Small MS4 General Permit). Because the proposed project would replace more than 5,000 square feet of impervious surface, the proposed project must comply with the post-construction stormwater management measures described in the Small MS4 General Permit, such as Low Impact Development (LID) design standards. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treats stormwater as a resource, rather than as a waste product. Common practices used to adhere to the LID principles may include, but are not limited to, the use of permeable pavement and bioretention swales. The project would include the installation of three new bioretention areas at Davidson Middle School and three new bioretention areas at Laurel Dell Elementary School.

Because compliance with the NPDES permits is mandatory under existing laws and regulations, stormwater discharges during project construction and operation would have a less-than-significant impact on water quality.

Construction Dewatering

The highest historic groundwater level at Davidson Middle School may be as shallow as 2 feet below the ground surface (Miller Pacific Engineering Group, 2017a), while the highest historic groundwater level at Laurel Dell Elementary School may be at 6 to 8 feet below the ground surface (Miller Pacific Engineering Group, 2017b). The depth to groundwater may fluctuate in response to seasonal changes, prolonged rainfall, changes in surface topography, and other factors. Depending on the depths of excavations performed during construction activities, temporary dewatering of excavations is likely to be required. The improper management and discharge of dewatering effluent into the storm drainage system could adversely affect water quality in the receiving waters as contaminants and sediment may be present in the dewatering effluent. The Construction General Permit allows non-stormwater discharge of dewatering effluent to the stormwater system (i.e., receiving waters) provide the effluent is not contaminated and is properly filtered or treated, using appropriate technologies such as clarifier tanks or sand filters. As discussed in Section IX, Hazards and Hazardous Materials, there is no

available evidence that groundwater beneath the proposed project is contaminated. Because compliance with the Construction General Permit is mandatory, non-stormwater discharges during project construction dewatering (if any) would have a less-than-significant impact on water quality.

- b) *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

Less Than Significant Impact

The project site is located within the San Rafael Valley Groundwater Basin. This groundwater basin has been designated as one of the very low priority groundwater basins in California, under rankings conducted in accordance with the Sustainable Groundwater Management Act (DWR, 2014). The ranking is based on overlying population, projected growth of overlying population, number of public supply wells total wells, overlying irrigated acreage, reliance on groundwater as the primary source of water, impacts on the groundwater, and other information determined to be relevant by the Department of Water Resources. The very low priority status of the groundwater basin indicates that the basin is not currently being overdrilled (i.e., groundwater is not being pumped to the surface through wells in an unsustainable manner).

The proposed project does not include the use of groundwater and the water supply for the proposed project would be provided by the Marin Municipal Water District. Dewatering may be required during construction depending on the depths of excavations performed. However, dewatering would be temporary and would have only a localized and short-term effect on uppermost groundwater levels. The proposed project would result in a net increase of impervious surface area of 0.54 acre at Davidson Middle School. Bioretention basins as proposed at both Davidson Middle School and Laurel Dell Elementary School would be expected to allow additional infiltration of precipitation and recharge of groundwater, reducing potential recharge impacts from the increase impervious surface area. Therefore, the proposed project is not expected to substantially interfere with groundwater recharge. As a result, the proposed project would have a less-than-significant impact related to the depletion of groundwater supplies.

- c) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

Less Than Significant Impact

The proposed project would not significantly alter drainage patterns on the project site and would not alter the course of a stream or river. Because the proposed project would replace more than one acre of impervious surface and increase the impervious surface area compared to the existing condition, the

proposed project must comply with hydromodification¹⁰ management requirements of the Small MS4 General Permit, which would ensure that the volume and rate of stormwater runoff would not exceed the existing condition. Compliance with hydromodification management requirements would ensure that stormwater runoff from the project would not increase the potential for erosion and siltation in the unlined drainage ditch on the Davidson Middle School campus or in San Rafael Creek. Therefore, the proposed project would have a less-than-significant impact related to substantial erosion or siltation on- or off-site associated with changing the drainage pattern of the project site.

- d) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

Less Than Significant Impact

The proposed project would not significantly change drainage patterns on the project site and would not alter the course of a stream or river. As discussed above, the proposed project must comply with hydromodification management requirements of the Small MS4 General Permit, which would ensure that the volume and rate of stormwater runoff would not exceed the existing condition. In addition, bioretention basins as proposed at both Davidson Middle School and Laurel Dell Elementary School would be expected to allow additional infiltration of precipitation. Compliance with the requirements of the Small MS4 General Permit would ensure that potential flooding impacts associated with the proposed minor changes in drainage patterns would be less than significant.

- e) *Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

Less Than Significant Impact

Compliance with stormwater design requirements of the Small MS4 General Permit would require that stormwater improvements to be designed so that surface runoff rates during storm events do not exceed pre-project levels. Other provisions of the Small MS4 General Permit and Construction General Permit would mitigate potential sources of runoff pollutants. This would reduce potential impacts on stormwater drainage systems from increased runoff volumes and polluted runoff to a less-than-significant level.

¹⁰ Hydromodification or hydrograph modification causes streambank erosion, channelization, increased flood flows, and other physical modifications that can adversely affect aquatic ecosystems due to increased sedimentation and reduced water quality (e.g., higher water temperatures, lower dissolved oxygen concentrations).

- f) *Would the project otherwise substantially degrade water quality?*

Less Than Significant Impact

No additional potential impacts on water quality are expected to result from the proposed project, beyond those discussed above. Therefore, the potential impact for the proposed project to otherwise degrade water quality would be less than significant.

- g) *Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

No Impact

The project does not include housing, and therefore no impact would occur.

- h) *Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

Less Than Significant Impact

Laurel Dell Elementary School is not located within the mapped 100-year flood hazard zone; however, the majority of the Davidson Middle School campus, including the locations of all of the proposed buildings, is located within the mapped 100-year flood hazard zone (FEMA, 2016). The base flood elevation on the Davidson Middle School campus is 10 feet NAVD 88 datum (FEMA, 2016). A significant impact would occur if construction of the proposed new buildings would redirect flood waters to other flood-prone areas. The Division of State Architect (DSA) design procedures for school construction design include requirements for construction in flood hazard zones. DSA PR 14-01 requires that flood hazards to be addressed, through compliance with local jurisdiction requirements or through equivalent DSA review. Section 18.10.040(C) of the San Rafael Municipal Code requires that development within the 100-year flood zone not adversely alter natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters and Section 18.10.040(E) forbids the construction of flood barriers that would unnaturally divert flood waters or that may increase flood hazards in other areas. The Municipal Code requires a development permit verifying adherence to these flood hazard zone design requirements to be submitted and approved prior to any construction within the 100-year flood hazard zone. Therefore, under existing regulations, the District will be required to design the project (and drainage features) so that off-site flooding problems are not exacerbated. This can be accomplished by implementing a “no net fill” approach to grading and foundation construction and/or strategic placement of flood flow paths. These design features will need to be demonstrated through hydraulic calculation and documentation submitted to the City floodplain administrator. Adherence to these existing flood hazard area construction requirements would reduce the potential of the proposed project to impede or redirect flood flows to a less-than-significant level.

- i) *Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding of as a result of the failure of a levee or dam?*

No Impact

The project site is not located in a mapped dam inundation area (Clearwater Hydrology, 2005). Additionally, the project site is not in an area protected by a levee (FEMA, 2016). Therefore, the project site vicinity is not exposed to hazards from levee or dam failure. No impact would occur.

- j) *Would the project expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow?*

Less Than Significant Impact

No enclosed surface water bodies, which might be subject to potential impacts from seiches, are located near the project site. The project site is not located in a tsunami inundation area (CalEMA, 2009). Please refer to Section VII, Geology and Soils, above for further information regarding mudflows, a type of landslide. The project would have a less-than-significant impact related to the risk of loss, injury, or death involving inundation by seiches, tsunami, or mudflow.

REFERENCES

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State Water Resources Control Board (State Water Board), 2012b. *Final 2012 Integrated Report (Clean Water Act Section 303(d) list/305(b) Report)*. Category 5, 2012 California 303(d) List of Water Quality Limited Segments.

State Water Resources Control Board (State Water Board), 2013. Phase II Small MS4 General Permit Order No. 2013-0001-DWQ, NPDES General Permit No. CAS000004, February 5.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IMPACT EVALUATION

a) *Would the project physically divide an established community?*

No Impact

The proposed construction would occur on two existing school sites and would not divide an established community. During construction at Laurel Dell, students from Laurel Dell Elementary School would be temporarily housed in classrooms at the Davidson Annex site which is one block northeast of the Laurel Dell site, but this would not result in any division of an established community.

b) *Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

Less Than Significant Impact

The project would conform with Policy LU-11 of the San Rafael General Plan as it would entail continued educational uses on existing school sites. As stated on page 6 of the City's General Plan, school districts are not legally obligated to comply with the General Plan; however, mutual cooperation benefits residents and businesses of the community (City of San Rafael, 2018). The Board of Trustees of San Rafael City Schools proposes to adopt a resolution in 2018, pursuant to Government Code

Section 53094, exempting the proposed project from local zoning and land use ordinances and regulations. However, the District strives to comply with such local ordinances and regulations to the extent feasible.

The projects would conform with the existing General Plan and zoning designations at the project sites as school uses are allowed in these zones. The General Plan designation for the Davidson Middle School campus is Residential-Low Density, and the General Plan designation for the Laurel Dell Elementary School campus is Residential-Medium Density. Zoning for the Davidson site is R5 (Single Family Residential) and for the Laurel Dell site, the zoning designation is MR2.5 (Multifamily Residential (City of San Rafael, 2018b)).

Policy NH-11 of the City's General Plan addresses the importance of schools as neighborhood-serving uses. Policy NH-12 addresses the need to work with school districts to use active school sites as neighborhood gathering places and recreational amenities (City of San Rafael, 2018). Policy G-15 of the General Plan also addresses collaboration between the City and schools to provide greater access to school facilities for neighborhood and community activities. The value of schools for providing local recreational facilities is also addressed in various parts of the General Plan. Both Davidson Middle School and Laurel Dell Elementary School have served these purposes for many years and, with the proposed project, would be expected to continue to serve the surrounding neighborhoods. Both schools are located in the Picnic Valley area of San Rafael.

Policy NH-64 of the General Plan addresses the need for the City to support efforts of the school district to provide adequate space for increasing student enrollment. The proposed project is, for both schools, an example of the need to serve the existing and future students of San Rafael.

The General Plan has a number of policies aimed at reducing school-related trips and encouraging the Safe Routes to School program. Transportation issues are addressed in Section XVIII, Transportation/Traffic, of this Initial Study.

Policy S-11 of the General Plan addresses restrictions on businesses that have a potential for significant hazardous materials release within one-quarter mile of schools. This issue is addressed in Section IX, Hazards and Hazardous Materials, of this Initial Study.

The proposed project would not conflict with adopted policies, and thus the impact would be less than significant and no mitigation measures would be required.

c) *Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?*

No Impact

No habitat conservation plan or natural community conservation plan applies to either school site. They are both currently developed as schools.

REFERENCES

City of San Rafael, 2018. The City of San Rafael General Plan 2020. Website:
<http://docs.cityofsanrafael.org/CommDev/Planning/general-plan-2020/general-plan-2020-complete.pdf>, viewed on March 15.

City of San Rafael, 2018b. The City of San Rafael Zoning Ordinance. Website:
https://library.municode.com/ca/san_rafael/codes/code_of_ordinances?nodeId=TIT14ZO_DIVII BADIRE_CH14.04REDIRDRMRHR, viewed on April 24.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IMPACT EVALUATION

a) *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?*

No Impact

Neither the Davidson Middle School nor the Laurel Dell Elementary School are identified in the San Rafael General Plan as a site of known mineral resources (City of San Rafael, 2018).

b) *Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?*

No Impact

Refer to Item (a) above.

REFERENCES

City of San Rafael, 2018. The City of San Rafael General Plan 2020. Website:
<http://docs.cityofsanrafael.org/CommDev/Planning/general-plan-2020/general-plan-2020-complete.pdf>, viewed on March 20, 2018.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

BACKGROUND

Noise Concepts and Terminology

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure, but they cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. For this reason, a frequency-dependent weighting system is used and monitoring results are reported in A-weighted decibels (dBA). Technical terms used to describe noise are defined in **Table 17**.

It should be noted that because decibels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. For instance, if one noise source emits a sound level of 90 dBA, and a second source is placed beside the first and also emits a sound level of 90 dBA, the combined sound level is 93 dBA, not 180 dBA. When the difference between two co-located sources of noise is 10 dBA or more, the higher noise source dominates and the lower noise source makes no

TABLE 17 DEFINITION OF ACOUSTICAL TERMS

Term	Definition
Decibel (dB)	A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise "level." This unit is not used in this analysis because it includes frequencies that the human ear cannot detect.
Vibration Decibel (VdB)	A unit describing the amplitude of vibration on a logarithmic scale.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Equivalent Noise Level (L_{eq})	The average A-weighted noise level during the measurement period. For this CEQA evaluation, L_{eq} refers to a one-hour period unless otherwise stated.
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 PM to 10:00 PM and after addition of 10 decibels to sound levels during the night between 10:00 PM and 7:00 AM.
Day/Night Noise Level (L_{dn})	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured during the night between 10:00 PM and 7:00 AM.
Maximum Sound Level (L_{max})	The maximum A-weighted sound level measured by the sound level meter over a given period of time.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Peak Particle Velocity (PPV)	The maximum instantaneous peak of a vibration signal.
Root Mean Square (RMS) Velocity	The average of the squared amplitude of a vibration signal.

Sources: Charles M. Salter Associates Inc., 1998. FTA, 2006.

perceptible difference in what people can hear or measure. For example, if the noise level is 95 dBA, and another noise source is added that produces 80 dBA noise, the noise level will still be 95 dBA.

In an unconfined space, such as outdoors, noise attenuates with distance according to the inverse square law. Noise levels at a known distance from point sources are reduced by 6 dBA for every doubling of that distance for hard surfaces such as cement or asphalt surfaces, and 7.5 dBA for every doubling of distance for soft surfaces such as undeveloped or vegetative surfaces (Caltrans, 1998). Noise levels at a known distance from line sources (e.g., roads, highways, and railroads) are reduced by 3 dBA for every doubling of the distance for hard surfaces and 4.5 dBA for every doubling of distance for soft surfaces (Caltrans, 1998). A greater decrease in noise levels can result from the presence of intervening structures or buffers.

A typical method for determining a person's subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people (Charles M. Salter Associates Inc., 1998):

- A change of 1 dBA cannot typically be perceived, except in carefully controlled laboratory experiments;
- A 3-dBA change is considered a just-perceivable difference;
- A minimum of a 5-dBA change is required before any noticeable change in community response is expected; and
- A 10-dBA change is subjectively perceived as approximately a doubling (or halving) in loudness.

Groundborne Vibration Concepts and Terminology

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment. Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration. The RMS of a signal is the average of the squared amplitude of the signal and is more appropriate for evaluating human response to vibration. PPV and RMS are normally described in units of inches per second (in/sec), and RMS is also often described in vibration decibels (VdB).

Noise-Sensitive Receptors in Project Site Vicinity

Noise-sensitive receptors are defined as land uses where noise-sensitive people may be present or where noise-sensitive activities may occur. Examples of noise-sensitive receptors include residences, schools, hospitals, and retirement homes. There are potential noise-sensitive receptors located both on and off the project site. On-site noise-sensitive receptors include classrooms at Davidson Middle School, Laurel Dell Elementary School, and Davidson Annex (where classrooms would be located temporarily during reconstruction of Laurel Dell Elementary School). Nearby off-site noise-sensitive receptors include residences located on Woodland Avenue to the west and southwest of Davidson Middle School, residences located on Woodland Avenue between Davidson Middle School and Laurel Dell Elementary School, and residences to the west, south, and east of Laurel Dell Elementary School.

Ambient Noise Environment

The primary sources of noise at the project site and vicinity are traffic on highways and local roadways and the Sonoma-Marín Area Rail Transit (SMART) corridor. Traffic is a source of noise on the following highways and local roadways: 1) Woodland Avenue, which runs southeast to northwest and is located between Davidson Middle School and Laurel Dell Elementary School; 2) Andersen Drive, which runs southeast to northwest and is located approximately 250 feet northeast of Davidson Middle School and approximately 1,200 feet northeast of Laurel Dell Elementary School; and 3) Highway 101, which runs

north to south and is located approximately 1,200 feet northeast of Davidson Middle School and approximately 2,200 feet northeast of Laurel Dell Elementary School.

Table 18 presents estimated traffic noise levels at different locations on the project site where proposed school buildings would be located, based on the estimated 2020 traffic noise level contours presented in Appendix H of the San Rafael General Plan (City of San Rafael, 2017). Jordan Street, Lovell Avenue, and Lindero Street border Davidson Middle School to the northeast, southeast, and west, respectively. Seibel Street, Picnic Avenue, and Eva Street border Laurel Dell Elementary School to the northwest, southwest, and southeast, respectively. These roads are not considered major roadways, and therefore noise contours are not provided for them in the San Rafael General Plan and they are not expected to generate a perceptible increase in ambient noise levels.

TABLE 18 ESTIMATED TRAFFIC NOISE LEVELS ON PROJECT SITE (dBA L_{DN})

Road Segment	Davidson Middle School			Laurel Dell Elementary School – Location of Proposed Buildings C, D, and E
	Location of Proposed STEM Center	Location of Proposed PE Classrooms and Offices	Location of Proposed Multi-Purpose Building and Music Building	
Woodland Avenue	65-70	<60	<60	65-70
Andersen Drive	<60	<60	<60	<60
Highway 101	60-65	60-65	60-65	60-65
Highest Traffic Noise Exposure	70	65	65	70

Source: City of San Rafael, 2017.

The SMART train runs from the Sonoma County Airport Station to the San Rafael Station. The San Rafael Station is currently the most southern station of the corridor, which is located approximately 0.3 mile northeast of Davidson Middle School and 0.5 mile northeast of Laurel Dell Elementary School. The speed of each train is reduced at the San Rafael Station when compared with that of a train pass-by, and therefore less noise is generated. Station noise from the San Rafael Station includes train idling. With reference source noise levels provided in Federal Transit Administration (FTA) assessment guidance (FTA, 2006), train idling would generate noise levels of approximately 32 dBA L_{max} at Davidson Middle School and 28 dBA L_{max} at Laurel Dell Elementary School.¹¹ These are well below the ambient noise levels, which are dominated by the surrounding automobile traffic-related noise. In addition, the SMART corridor is separated from Davidson Middle School and Laurel Dell Elementary School by multiple rows of buildings. Therefore, noise from the SMART train, including a train

¹¹ Based on the reference noise levels of 70 dBA L_{max} for rail transit idling at 50 feet, the following propagation adjustment was applied to estimate noise levels from train idling at Davidson Middle School and Laurel Dell Elementary School assuming:

$$dBA2 = dBA1 + 10 \log_{10}(D1/D2)^{2.5}$$

Where:

dBA1 is the reference noise level at a specified distance (in this case 50 feet).

dBA2 is the calculated noise level.

D1 is the reference distance (in this case 50 feet).

D2 is the distance from the equipment to the receiver.

approaching the station and train idling, is shielded and does not make a substantial contribution to the noise environment, particularly relative to the surrounding automobile traffic-related noise levels.

Regulatory Setting

Federal Regulations

No federal noise regulations apply to the proposed project.

State Regulations

California Noise Control Act

Sections 46000 to 46080 of the California Health and Safety Code codify the California Noise Control Act (CNCA) of 1973. The CNCA established the Office of Noise Control under the California Department of Health Services. The CNCA requires that the Office of Noise Control adopt, in coordination with the State of California Governor's Office of Planning and Research (OPR), CEQA guidelines for cities and counties to prepare noise elements of their general plans. The most recently adopted guidelines are contained in the General Plan Guidelines published by OPR in 2017 (OPR, 2017). The document includes land use compatibility guidelines for cities and counties to use in their general plans in order to reduce land use conflicts related to noise.

California Building Standards Code

The 2016 California Building Standards Code specifies that buildings containing non-residential uses that are exposed to exterior noise levels at or above 65 dBA L_{eq} or CNEL must maintain interior noise level below 50 dBA L_{eq} in occupied areas during any hour of operation (California Code of Regulations, Title 24, Part 11, Section 5.507). An acoustical analysis documenting compliance with this interior sound level is required. The 2016 California Building Standards Code also specifies that interior noise levels attributable to exterior sources shall not exceed 45 dBA L_{dn} or CNEL in any habitable room.¹² The noise metric used (either L_{dn} or CNEL) must be consistent with the noise element of the local general plan (California Code of Regulations, Title 24, Part 2, Vol. 1, Section 1207.4)

California Occupational Safety and Health Administration (Cal/OSHA)

The exposure of construction workers to noise is regulated by the Cal/OSHA through Title 8, Subchapter 7, Group 15, Article 105 of the California Code of Regulations (Control of Noise Exposure). This regulation sets noise exposure limits for workers and requires employers who have workers who may be exposed to noise levels above these limits to establish a hearing conservation program, make hearing protectors available, and keep records of employee noise exposure measurements. The Cal/OSHA also requires backup warning alarms that activate immediately upon reverse movement on all vehicles that have a haulage capacity of 2.5 cubic yards or more (Title 8, California Code of

¹² Habitable space is a space in a building for living, sleeping, eating, or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces, and similar areas are not considered habitable spaces.

Regulations). The backup alarms must be audible above the surrounding ambient noise level at a distance of 200 feet. In order to meet this requirement, backup alarms are often designed to generate sound as loud as 82 to 107 dBA L_{max} at 4 feet (NCHRP, 1999).

Local Regulations and Policies

Applicability of Local Regulations and Policies

Pursuant to California Government Code Section 53091, a school district when acting under the State Contract Act is not required to comply with the building ordinances of a city or county. In accordance with California Government Code Section 53094, a school district is not required to comply with the zoning ordinances of a county or city when the required resolution has been adopted by the Board of Trustees. The Board of Trustees of San Rafael City Schools proposes to adopt this resolution in 2018. Although the proposed project is not subject to the policies, programs, or code requirements promulgated by the City of San Rafael, this analysis makes use of the San Rafael General Plan and Municipal Code to establish thresholds against which the potential noise impacts generated by the project may be evaluated.

San Rafael General Plan

The following relevant policies and programs are contained within the San Rafael General Plan Noise Element (City of San Rafael, 2017):

- | | |
|--------------|---|
| Policy N-1 | Noise Impacts on New Development. Protect people in new development from excessive noise by applying noise standards in land use decisions. Apply the Land Use Compatibility Standards (see Table 19 to the siting of new uses in existing noise environments. These standards identify the acceptability of a project based on noise exposure. If a project exceeds the standards in Table 19 an acoustical analysis shall be required to identify noise impacts and potential noise mitigations. Mitigation should include the research and use of state-of-the-art abating materials and technology. |
| Policy N-3 | Planning and Design of New Development. Encourage new development to be planned and designed to minimize noise impacts from outside noise sources. |
| Program N-3a | Noise Mitigation. Require, where appropriate, the following mitigation measures to minimize noise impacts on proposed development projects: <ol style="list-style-type: none">1. Site Planning. Proper site planning is the first mitigation measure that should be investigated to reduce noise impacts. By taking advantage of the natural shape and terrain of the site, it often is possible to arrange the buildings and other uses in a manner that will reduce and possibly eliminate noise impacts. Specific site planning techniques include:<ol style="list-style-type: none">a. Increasing the distance between the noise source and the receiver;b. Placing non-noise sensitive land uses such as parking lots, maintenance facilities, and utility areas between the source and the receiver; |

TABLE 19 LAND USE COMPATIBILITY STANDARDS FOR NEW DEVELOPMENT

Land Use	Exterior Noise Exposure to the Site						
	L _{dn} (Db)						
	50-55	55-60	60-65	65-70	70-75	75-80	80+
Residential, Hotels, Motels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Other Outdoor Recreation and Cemeteries							
Office and Other Commercial Uses							
Industrial, Manufacturing, Utilities, Agriculture							

	Interior Noise Exposure to the Site						
	L _{dn} (Db)						
	35-40	40-45	45-50	50-55	55-60	60-65	65+
Bedrooms in Residential units not in Downtown							
Other Rooms in Residential Units not in Downtown							
Bedrooms in Residential units in Downtown							
Hotels, Motels, Downtown Multifamily							

Key:

Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable – Specific land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features included in the design.

Clearly Unacceptable – New construction of development clearly should not be undertaken.

Source: City of San Rafael, 2017.

- c. Using non-noise sensitive structures such as garages to shield noise-sensitive areas; and
 - d. Orienting buildings to shield outdoor spaces from a noise source.
2. Architectural layout of buildings. In many cases, noise reduction can be attained by careful layout of noise-sensitive spaces. Bedrooms, for example, should be placed away from freeways. Quiet outdoor spaces can be provided next to a noisy highway by creating a U-shaped development, which faces away from the highway.

3. Noise Barriers. Absorptive types of noise barriers or walls should be used to reduce noise levels from ground transportation noise sources and industrial sources. A barrier must interrupt the line of sight between the noise source and the receiver in order to reduce noise level both outdoors and indoors. A barrier should provide at least L_{dn} 5 dB of noise reduction to achieve a noticeable change in noise levels.
4. Construction Modifications. If site planning, architectural layout, noise barriers, or a combination of these measures does not achieve the required noise reduction, then mitigation should be facilitated through construction modification to walls, roofs, ceilings, doors, windows.
5. Alternatives to Sound Walls. Encourage new development to identify alternatives to the use of sound walls to ease noise impacts.

- Policy N-4 Noise from New Nonresidential Development. Design nonresidential development to minimize noise impacts on neighboring uses.
- a. Performance Standards for Uses Affecting Residential Districts. New nonresidential development shall not increase noise levels in a residential district by more than 3 dB L_{dn} , or create noise impacts that would increase noise levels to more than 60 dB L_{dn} at the property line of the noise receiving use, whichever is the more restrictive standard.
 - b. Performance Standards for Uses Affecting Nonresidential and Mixed Use Districts. New nonresidential projects shall not increase noise levels in a nonresidential or mixed-use district by more than 5 dB L_{dn} , or create noise impacts that would increase noise levels to more than 65 dB L_{dn} (Office, Retail) or 70 dB L_{dn} (Industrial), at the property line of the noise receiving use, whichever is the more restrictive standard.
 - c. Waiver. These standards may be waived if, as determined by an acoustical study, there are mitigating circumstances (such as higher existing noise levels), and no uses would be adversely affected.
- Program N-4a Require Acoustical Study. Identify through an acoustical study noise mitigation measures to be designed and built into new nonresidential and mixed-use development, and encourage absorptive types of mitigation measures between noise sources and residential districts.
- Policy N-5 Traffic Noise from New Development. Minimize noise impacts of increased off-site traffic caused by new development. Where the exterior L_{dn} is 65 dB or greater at a residential building or outdoor use area, and a plan, program, or project increases traffic noise levels by more than L_{dn} 3 dB, reasonable noise mitigation measures shall be included in the plan, program or project.
- Program N-5a Traffic Noise Studies. Require acoustical studies to evaluate potential off-site noise impacts resulting from traffic generated by new development.
- Policy N-9 Nuisance Noise. Minimize impacts from noise levels that exceed community sound levels.

Program N-9b Mitigation for Construction Activity Noise. Through environmental review, identify mitigation measures to minimize the exposure of neighboring properties to excessive noise levels from construction-related activity.

San Rafael Municipal Code

The San Rafael Municipal Code contains the following relevant requirements:

Chapter 8.13 – Noise

Section 8.13.040 – General noise limits. Subject to the exceptions and exemptions set forth in Sections 8.13.050 and 8.13.060, the general noise limits set forth in this section shall apply. A summary of the general noise limits not to be exceeded at the property plane of the receiving property types or zones is presented in **Table 20**.

TABLE 20 GENERAL NOISE LIMITS ESTABLISHED BY SAN RAFAEL MUNICIPAL CODE

Property Type or Zone	Daytime Limits	Nighttime Limits
Residential	60 dBA Intermittent 50 dBA Constant	50 dBA Intermittent 40 dBA Constant
Mixed-use	65 dBA Intermittent 55 dBA Constant	55 dBA Intermittent 45 dBA Constant
Multifamily residential (interior sound source)	40 dBA Intermittent 35 dBA Constant	35 dBA Intermittent 30 dBA Constant
Commercial	65 dBA Intermittent 55 dBA Constant	65 dBA Intermittent 55 dBA Constant
Public Property	Most restrictive noise limit applicable to adjoining private property	Most restrictive noise limit applicable to adjoining private property

Note: "Daytime" means the period between 7:00 AM and 9:00 PM Sunday through Thursday and between 7:00 AM and 10:00 PM on Friday and Saturday. "Nighttime" means the period between 9:00 PM and 7:00 AM Sunday through Thursday and between 10:00 PM and 7:00 AM on Friday and Saturday. Intermittent sound is defined as L_{max} and constant sound is defined as L_{eq} .
Source: San Rafael Municipal Code Section 8.13.040.

Section 8.13.050 – Standard exceptions to general noise limits. A summary of the standard exceptions applicable to the proposed project provided in this section is set forth in **Table 21**.

TABLE 21 STANDARD EXCEPTIONS TO GENERAL NOISE LIMITS ESTABLISHED BY SAN RAFAEL MUNICIPAL CODE

Type of Activity	Maximum Noise Level	Days/Hours Permitted
Construction	90 dBA (at any point outside of the construction property plane) ^a	Monday-Friday 7:00 AM-6:00 PM Saturday 9:00 AM-6:00 PM Sunday, Holiday—prohibited or as otherwise set by city approval

^a Property plane means a vertical plane including the property line that determines the property boundaries in space.
Source: San Rafael Municipal Code Section 8.13.050.

Section 8.13.060 – Exceptions allowed with permit. In addition to the standard exceptions permitted pursuant to Section 8.13.050, the director of community development or his designee may grant a permit allowing an exception from any or all provisions of this chapter where the applicant can show that a diligent investigation of available noise abatement techniques indicates that immediate compliance with the requirements of this chapter would be impractical or unreasonable, or that no public detriment will result from the proposed exception.

Section 8.13.070 – Exemptions. Among the uses that this section exempts from the provisions of Chapter 8.13 are uses established through any applicable discretionary review process containing specific noise conditions of approval and/or mitigation measures.

Chapter 14.16 – Site and Use Regulations

Section 14.16.260 – Noise standards. Any new development located in a “conditionally acceptable” or “normally unacceptable” noise exposure area, based on the land use compatibility chart standards in the general plan, shall require an acoustical analysis. Noise mitigation features shall be incorporated where needed to assure consistency with general plan standards. New construction is prohibited in noise exposure areas where the land use compatibility chart indicates the noise exposure is “clearly unacceptable.”

(Note: Section 14.16.260 also provides performance standards for noise from new nonresidential development consistent with General Plan Policy N-4, and traffic noise standards consistent with General Plan Policy N-5, which requires projects that are located in residential areas where ambient noise levels are 65 dBA L_{dn} or greater, and that have the potential to increase traffic noise levels by more than 3 dBA L_{dn} , to implement reasonable noise mitigation measures.)

Significance Criteria

Construction Noise Thresholds

A significant noise impact would be identified if exterior noise levels exceed 70 dBA L_{eq} at on-site receptors or nearby residences.¹³

Operational Noise Thresholds

Consistent with San Rafael Municipal Code Section 8.13.040, permanent noise impacts from project operations (e.g., mechanical equipment) would be considered potentially significant if exterior noise levels could exceed 60 dBA L_{max} /50 dBA L_{eq} during daytime or 50 dBA L_{max} /40 dBA L_{eq} during nighttime at the nearest residential receptors.

¹³ In this analysis, interior noise levels of 45 dBA L_{eq} are considered normally acceptable for school buildings and residential rooms. A typical building façade with windows closed provides a noise level reduction of approximately 25 dBA (Charles M. Salter Associates, 1998). Therefore, exterior construction-generated noise levels of 70 dBA L_{eq} are considered normally acceptable for school buildings and residential rooms.

Consistent with San Rafael General Plan Policy N-5, a significant noise impact would be identified if the proposed project would increase traffic noise levels by more than 3 dBA.

Land Use Compatibility Thresholds

Consistent with San Rafael General Plan Land Use Compatibility Standards (Table 19), exposure of schools to exterior noise levels of 80 dBA L_{dn} or above is considered clearly unacceptable, which means new construction of development clearly should not be undertaken. In this analysis, a significant land use compatibility impact would be identified if exterior noise would exceed 80 dBA L_{dn} at the project site where proposed school buildings would be located.

Vibration Thresholds

Consistent with FTA guidance, vibration impacts from the proposed project would be considered potentially significant if they would exceed the FTA's recommended vibration thresholds to prevent disturbance to people from "Infrequent Events" (see **Table 22**) or damage to buildings (see **Table 23**) (FTA, 2006). Specifically, the 80-VdB threshold is used for off-site receptors where people normally sleep, and the 83-VdB threshold is used for on-site receptors where institutional land uses are primarily for daytime use. The potential vibration damage threshold of 0.3 in/sec PPV is used for both on-site and off-site buildings.

TABLE 22 VIBRATION CRITERIA TO PREVENT DISTURBANCE – ROOT MEAN SQUARE (RMS) (VIBRATION DECIBELS [VdB])

Land Use Category	Frequent Events ^a	Occasional Events ^b	Infrequent Events ^c
Buildings where vibration would interfere with interior operations	65	65	65
Residences and buildings where people normally sleep	72	75	80
Institutional land uses with primarily daytime use	75	78	83

^a More than 70 vibration events of the same kind per day or vibration generated by a long freight train.

^b Between 30 and 70 vibration events of the same kind per day.

^c Fewer than 30 vibration events of the same kind per day.

Source: FTA, 2006.

TABLE 23 VIBRATION CRITERIA TO PREVENT DAMAGE TO STRUCTURES

Building Category	Peak Particle Velocity (PPV) (In/Sec)	Root Mean Square (RMS) (Vibration Decibels [VdB])
Reinforced-concrete, steel or timber (no plaster)	0.5	102
Engineered concrete and masonry (no plaster)	0.3	98
Non-engineered timber and masonry buildings	0.2	94
Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA, 2006.

IMPACT EVALUATION

- a) *Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less Than Significant Impact

During construction, construction workers could be exposed to noise in excess of Cal/OSHA standards. However, the construction contractor for the proposed project would be subject to Cal/OSHA regulations, and compliance with these regulations would ensure that construction workers are not exposed to harmful levels of noise (i.e., if elevated construction noise is generated, workers would be required to wear hearing protection).

Traffic noise could expose the proposed new PE classrooms and offices, the new Multi-Purpose Building, and the new Music Building at Davidson Middle School to up to 65 dBA L_{dn} . Traffic noise could expose the proposed STEM Center at Davidson Middle School and the new Buildings C, D, and E at Laurel Dell Elementary School to up to 70 dBA L_{dn} . During the peak traffic hour under normal traffic conditions, L_{dn} is within plus or minus 2 dBA of the L_{eq} (Caltrans, 1998). Therefore, the existing peak hour traffic noise levels are approximately 63-67 dBA L_{eq} at the proposed new PE classrooms and offices, the new Multi-Purpose Building, and the new Music Building at Davidson Middle School, and approximately 68-72 dBA L_{eq} at the proposed STEM Center at Davidson Middle School and the new Buildings C, D, and E at Laurel Dell Elementary School. A typical building façade with windows closed provides a noise level reduction of approximately 25 dBA (Charles M. Salter Associates Inc., 1998). Therefore, traffic noise would not cause the noise levels inside the project buildings to exceed the 50 dBA L_{eq} interior noise standard for non-residential uses specified in the California Building Standards. Furthermore, ambient noise levels at the proposed school buildings are below 80 dBA L_{dn} and would not result in a significant land use compatibility impact. There are no other state or federal noise or vibration standards that would apply to the proposed project with regards to generation of noise levels.

As described under “Applicability of Local Regulations and Policies” above, the proposed project is not subject to local ordinances and general plan requirements. Therefore, the potential of the proposed project to expose people to or generate noise levels in excess of standards is less than significant.

- b) *Would the project result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?*

Potentially Significant Unless Mitigation Incorporated

Construction activities associated with the proposed project would result in varying degrees of groundborne vibration, depending on the equipment, activity, and relative proximity to sensitive receptors. Once constructed, the operation of the proposed project would not cause any vibration or result in excessive vibration impacts because no vibration-generating activities or land uses would occur on the project site.

Project construction at Davidson Middle School would occur in three phases. Phase 1 construction is expected to begin in late summer 2018 and be completed in late 2019. The other two phases are expected to occur after Phase 1 construction. Project construction at Laurel Dell Elementary School is expected to occur in one phase with construction starting in winter 2018 and finishing by fall 2019. Construction activities would require the use of vibratory rollers, jackhammers, or other high-power or vibratory tools, and the use of mobile construction equipment, such as bulldozers, which can generate vibration in the immediate vicinity of the work area. Construction at Davidson Middle School and Laurel Dell Elementary School would not involve impact pile driving. However, drilled piers could be used at Davidson Middle School in all three phases (Miller Pacific Engineering Group, 2017a; Miller Pacific Engineering Group, 2017b; Savidge, William, 2018). Vibration levels would vary depending on soil conditions, construction methods, and equipment used. **Table 24** presents published reference vibration levels at 25 feet from the types of construction equipment that could be used during construction of the proposed project. Table 24 also presents the buffer distance that would be required to reduce vibration levels to below the 80-VdB threshold for off-site residences, the 83-VdB threshold for on-site receptors, and the 0.3-in/sec PPV threshold for both on-site and off-site buildings. The impacts associated with vibration disturbance and vibration damage are discussed in detail below.

TABLE 24 VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 Feet ^a (In/Sec)	RMS at 25 Feet ^b (VdB)	Buffer Distances for Vibration Disturbance (Feet)		Buffer Distances for Vibration Damage (Feet)
			On-Site Receptors (83 VdB Threshold)	Off-Site Receptors (80 VdB Threshold)	On- and Off-Site Receptors (0.3 In/Sec PPV Threshold)
Vibratory Roller	0.210	94	58	73	18
Large Bulldozer	0.089	87	34	43	8
Caisson Drilling	0.089	87	34	43	8
Loaded Trucks	0.076	86	31	40	7
Jackhammer	0.035	79	18	23	4
Small Bulldozer	0.003	58	4	5	1

Notes: Receptors within the buffer distance could be affected by construction-generated vibration. Consistent with guidance from the Federal Transit Administration (FTA), the 80-VdB threshold is used for off-site receptors where people normally sleep, and the 83-VdB threshold is used for on-site receptors where institutional land uses are primarily for daytime use.

^a PPV = peak particle velocity, in/sec = inches per second,

^b RMS = root mean square, VdB = vibration decibel

$$PPV2 = PPV1 \times (D1/D2)^{1.1}$$

Where:

PPV1 is the reference vibration level at a specified distance, and PPV2 is the calculated vibration level.

D1 is the reference distance (in this case 25 feet), and D2 is the distance from the equipment to the receiver.

Source of Equation: Caltrans, 2013.

$$RMS2 = RMS1 - 30 \log_{10} (D2/D1)$$

Where:

RMS1 is the reference vibration level at a specified distance, and RMS2 is the calculated vibration level.

D1 is the reference distance (in this case 25 feet, and D2 is the distance from the equipment to the receiver.

Source of Equation: FTA, 2006. Chapter 12.

Source: Caltrans, 2013. FTA, 2006.

Vibration Disturbance

Construction of the proposed project has the potential to generate vibration that could disturb on-site and off-site receptors. Table 24 indicates that vibration levels during construction would be above 83-VdB threshold within approximately 58 feet of construction activities and could disturb on-site receptors, and would be above 80-VdB threshold within approximately 73 feet and disturb off-site receptors. Construction vibration is not anticipated to exceed 83-VdB threshold at locations farther than 58 feet away from the construction activities and exceed 80-VdB threshold at locations farther than 73 feet away from the construction activities. Based on the buffer distances presented in Table 24 and as shown in **Figure 18**, on-site and off-site receptors that could be disturbed by construction vibration are summarized in **Table 25**. This analysis assumes construction activities would occur within the area of work indicated in Figure 11 for Davidson Middle School and within the property boundary of Laurel Dell Elementary School.

TABLE 25 POTENTIAL VIBRATION DISTURBANCE IMPACT TO ON-SITE AND OFF-SITE RECEPTORS

Construction Location		On-Site School Buildings	Off-Site Residences
Davidson Middle School	Phase 1	east of construction work	west and south of construction work
	Phase 2	south of construction work	no affected receptors
	Phase 3	south of construction work	no affected receptors
Laurel Dell Elementary School		no affected receptors ^a	west of construction work

^a During reconstruction of Laurel Dell Elementary School, students would be relocated to the Davidson Middle School Annex site. As shown in Figure 18, Davidson Middle School Annex site would be located outside of 58 feet of construction activities and would not be disturbed by construction vibration. Source: Figure 18.

It should be noted that the 58-foot and 73-foot buffer distances are conservatively calculated based on the construction equipment that would generate the highest level of vibration (i.e., vibratory roller) being operated at the construction zone boundary; however, the locations of construction equipment would vary over time, and the equipment with the potential to generate the highest vibration levels would not be in use every day. Therefore, the construction vibration impact at any given receptor would generally be limited in both frequency and duration. The implementation of the Mitigation Measures NOISE-1a through NOISE-1d would reduce the vibration impacts to a less-than-significant level.

Vibration Damage

Construction of the proposed project has the potential to generate vibration that could damage off-site buildings. Table 25 indicates that vibration levels during construction would be above 0.3-in/sec PPV threshold within approximately 18 feet of construction activities and could damage off-site buildings. Construction vibration is not anticipated to damage off-site buildings at locations farther than 18 feet away from the construction activities. Based on the buffer distances presented in Table 25 and as



Base: Google Earth Pro, 2018.

- Approximate Boundary of Construction Vibration Generating Activities
- Construction Vibration Level Contour of 0.3 in/sec (18 feet from construction activities)
- Construction Vibration Level Contour of 83 VdB (58 feet from construction activities)
- Construction Vibration Level Contour of 80 VdB (73 feet from construction activities)



Figure 18

SOURCE: Baseline, 2018

CONSTRUCTION VIBRATION CONTOUR LEVELS

shown in Figure 18, off-site buildings that could be damaged by construction vibration are summarized in **Table 26**.

TABLE 26 POTENTIAL VIBRATION DAMAGE IMPACT ON OFF-SITE BUILDINGS

Project Location		Off-Site Buildings
Davidson Middle School	Phase 1	no affected receptors
	Phase 2	no affected receptors
	Phase 3	no affected receptors
Laurel Dell Elementary School		west of Laurel Dell Elementary School

Source: Figure 18.

The implementation of Mitigation Measure NOISE-1e below would reduce the impact of potential damage to off-site buildings to a less-than-significant level.

As shown in Figure 18, on-site buildings would be located adjacent to the area of work for all three construction phases at Davidson Middle School and within the property boundary of Laurel Dell Elementary School. Therefore, on-site buildings could be subject to potentially damaging levels of vibration during construction of the proposed project. However, consideration of damage to buildings on the developer's own property is a standard part of the design and review process for a development. This process would ensure that existing buildings remain in good condition both during and after construction of the proposed project and any post-construction repairs that are necessary would be made. Therefore, the potential impact on on-site buildings from vibratory damage during project construction would be less than significant.

Conclusion

Construction of the proposed project has the potential to generate vibration that could disturb on-site and off-site receptors and could damage off-site buildings.

Impact NOISE-1: Project construction could expose persons to or generate excessive groundborne vibration levels. (PS)

Mitigation Measure NOISE-1a: Construction equipment operation shall be limited to the hours of Monday through Friday from 7:00 AM to 6:00 PM and Saturday from 9:00 AM to 6:00 PM. Construction on Sundays and holidays shall be prohibited.

Mitigation Measure NOISE-1b: San Rafael City Schools shall not allow the use of heavy construction equipment during established testing periods (e.g., finals week).

Mitigation Measure NOISE-1c: San Rafael City Schools and/or the construction contractor shall develop a set of procedures for tracking and responding to complaints received pertaining to

construction vibration and noise, and shall implement the procedures during construction. At a minimum, the procedures shall include:

1. Designation of an on-site construction complaint and enforcement manager for the project;
2. Protocols specific to on-site and off-site receptors for receiving, responding to, and tracking received complaints; and
3. Maintenance of a complaint log that records received complaints and how complaints were addressed.

Mitigation Measure NOISE-1d: Nearby residents, students, and staff at Davidson Middle School and Laurel Dell Elementary School shall be informed by posting informational notices on the fence line of the construction site, nearby buildings, and classrooms. The notice shall state the date of planned construction activity and include the contact information of the construction complaint and disturbance coordinator identified in Mitigation Measure NOISE-1c.

Mitigation Measure NOISE-1e: To address the potential for building damage from vibration, San Rafael City Schools and/or the construction contractor shall develop a set of procedures for ensuring that vibration-generating construction equipment is operated at least 18 feet away from the off-site residences during construction. If it is not feasible to avoid operating vibration-generating construction equipment within 18 feet from the off-site residences, San Rafael City Schools shall retain a structural engineer or other qualified professional to evaluate the potential for vibration generated by the use of the construction equipment to damage off-site buildings. The evaluation shall take into account project specific information such as the composition of the structures and the soil characteristics in the project area, to determine whether construction equipment may cause damage to nearby structures. If the evaluation finds that the operation of the construction equipment may cause damage to a structure, the structural engineer or other qualified professional shall recommend design means and methods of construction to avoid the potential damage.

If there are no feasible design means and methods to eliminate the potential for damage, the structural engineer or other qualified professional shall undertake an existing conditions study of any buildings that may experience damage. The study shall establish the baseline condition of adjoining buildings including, but not limited to, the location and extent of any visible cracks or spalls on the buildings. The study shall include written descriptions and photographs of the building. Upon completion of the project, the building shall be resurveyed, and any new cracks or other changes in the building shall be compared to pre-construction conditions and a determination shall be made as to whether the proposed project caused the damage. If it is determined that project construction has resulted in damage to the building, the damage shall be repaired to the pre-existing condition by San Rafael City Schools (working with consultants), provided that the property owner approves of the repair.

The combination of the above mitigation measures would reduce the impact to a less-than-significant level. (LTS)

- c) *Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

Potentially Significant Unless Mitigation Incorporated

Noise from Increased Activities

The proposed project could increase on-site population by about 197 persons, which could result in an increase outdoor noise related to playground activities. However, outdoor activities that do not require the use of the Public Address system or draw large crowds, such as students moving between buildings and students participating in sports practices, are dominated by people talking, with some yelling and the use of whistles. These are not sources of noise that would make a substantial contribution to the ambient noise environment particularly relative to the surrounding traffic-generated noise levels.

Noise from Project-Related Traffic

The proposed project could increase vehicle trip generation during operation. In this analysis, a significant noise impact would be identified if the proposed project would increase traffic noise levels by more than 3 dBA. Due to the additive properties of noise, traffic volumes must nearly double for an increase of 3 dBA in traffic-generated noise levels to occur. The proposed project would generate up to 152 new daily vehicle trips from the development at Davidson Middle School and up to 82 new daily vehicle trips from the development at Laurel Dell Elementary School. The 234 new daily vehicle trips in the project vicinity would represent a 12.6 percent increase compared to the existing 1,860 daily vehicle trips from both Davidson Middle School and Laurel Dell Elementary School (see Section XVIII, Transportation/Traffic, of this Initial Study). A 12.6 percent increase is far below a doubling of traffic volumes which could increase noise levels by more than 3 dBA. Consequently, the proposed project would not have the potential to generate a 3-dBA increase in traffic noise.

Noise from Project Mechanical Equipment

The operation of the new buildings would include the use of new and/or modified mechanical equipment on the roof. Design and construction parameters were still in development when this analysis was conducted. Although information regarding the noise-generating characteristics and locations of the equipment was not available, the District is installing an Energy Management System that will minimize equipment use and avoid use of mechanical equipment at nighttime in almost all conditions. Without Energy Management System controls in place, noise from mechanical equipment could potentially exceed 60 dBA L_{max} /50 dBA L_{eq} during daytime or 50 dBA L_{max} /40 dBA L_{eq} during nighttime at the nearest residential receptors. If not controlled, these increases would exceed the Operational Noise Thresholds discussed above and are therefore considered a potentially significant impact. Mitigation Measure NOISE-2 would ensure that appropriate noise controls on mechanical equipment are applied and would reduce this potential impact to a less-than-significant level.

Impact NOISE-2: The project's mechanical equipment could generate a substantial permanent increase in ambient noise levels in the project vicinity. (PS)

Mitigation Measure NOISE-2: San Rafael City Schools shall use mechanical equipment selection and acoustical shielding to ensure that noise levels from the installation of mechanical equipment do not exceed the exterior noise standards of 60 dBA L_{max} /50 dBA L_{eq} during daytime or 50 dBA L_{max} /40 dBA L_{eq} during nighttime at the nearest residential land uses. Controls that would typically be incorporated to attain this outcome include locating equipment in less noise-sensitive areas, when feasible; selecting quiet equipment; and providing sound attenuators on fans, sound attenuator packages for cooling towers and emergency generators, acoustical screen walls, and equipment enclosures. (LTS)

- d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

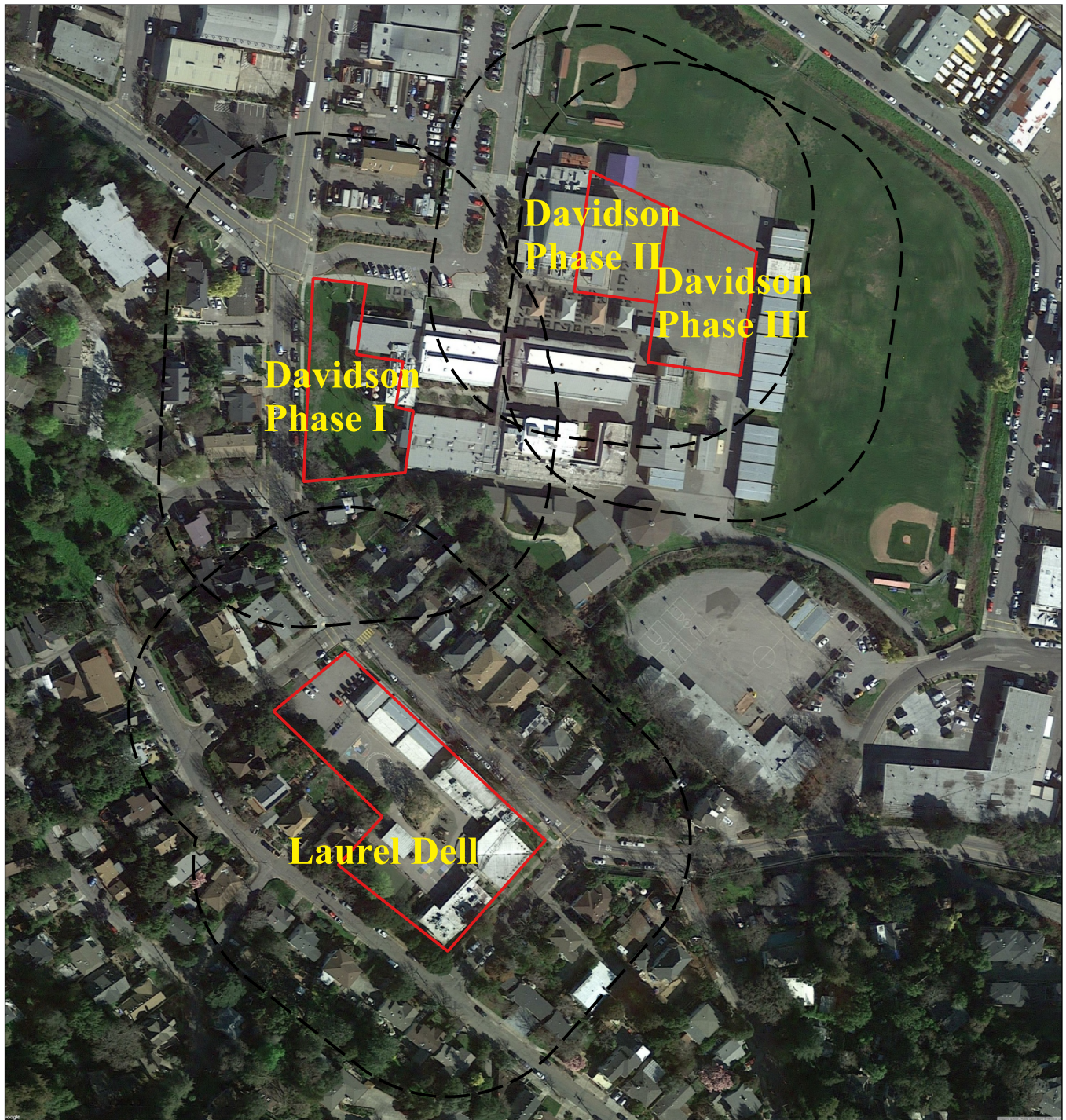
Potentially Significant Unless Mitigation Incorporated

Construction of the proposed project would involve the use of heavy construction equipment. Construction noise levels would vary from day to day, depending on the number and condition of the pieces of equipment being used, the types and duration of activity being performed, the distance between the noise source and the receptor, and the presence or absence of barriers, if any, between a noise source and a receptor.

Typical noise levels associated with various types of construction equipment that may be used during construction work at Davidson Middle School (for all three construction phases) and Laurel Dell Elementary School are summarized in **Table 27**. In accordance with FTA guidance (FTA, 2006), the combined noise levels of the two noisiest pieces of equipment with backup alarms in use were calculated to represent the potential noise levels.¹⁴ Table 27 also presents the buffer distance that would be required to reduce noise levels to below the 70 dBA L_{eq} threshold for on-site and off-site receptors.

Construction for the proposed project has the potential to generate construction noise that could disturb on-site and off-site receptors. Table 27 indicates that noise levels during construction would be above 70 dBA L_{eq} threshold within approximately 200 feet of construction activities and could disturb on-site and off-site receptors. Based on the buffer distances presented in Table 27 and as shown in **Figure 19**, on-site and off-site receptors that could be disturbed by construction noise are summarized in **Table 28**.

¹⁴ Noise levels are calculated based on the following equation: $(L = 10 \log_{10} (\sum_{i=1}^n 10^{(\frac{L_i}{10})})$



Base: Google Earth Pro, 2018.



Approximate Boundary of Construction Noise Generating Activities



Construction Noise Level Contour of 70 dBA Leq (200 feet from boundary of construction noise generating activities)

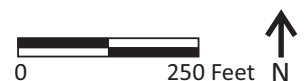


Figure 19

SOURCE: Parisi Transportation Consulting, 2018

CONSTRUCTION NOISE CONTOUR LEVELS

TABLE 27 NOISE LEVELS FROM CONSTRUCTION EQUIPMENT (dBA)

Construction Location	Equipment	Noise Level at 50 Feet (dBA L _{eq}) ^a	Addition of Two Noisiest Pieces of Equipment and Backup Alarms at 50 Feet (dBA L _{eq})	Required Buffer Distance for Noise Levels to Decrease to 70 dBA L _{eq} ^b
Davidson Middle School (for all three phases)	Bobcat	76	85	200
	Portable Restroom Vacuum Truck	79		
	Street Sweeper	79		
	Light Duty Work Truck	72		
	Standard Backhoe Loader	78		
	Medium Duty Delivery Truck	70		
	Concrete Truck	75		
	Truck Mounted Boom Pump	81		
	6000 lb Reach Lift	72		
	Dump Truck	76		
	Crane Truck	81		
	Compactor	83		
	Backup Alarm	54		
	Auger Drill Rig	77		
Laurel Dell Elementary School	Backhoe Loader	78	85	200
	Large Excavator	81		
	Roll Off Truck	81		
	Bobcat	76		
	Portable Restroom Vacuum Truck	79		
	Street Sweeper	79		
	Light Duty Work Truck	72		
	Standard Backhoe Loader	78		
	Medium Duty Delivery Truck	70		
	Concrete Truck	75		
	Truck Mounted Boom Pump	81		
	6000 lb Reach Lift	72		
	Dump Truck	76		
	Crane Truck	81		
	Compactor	83		
	Backup Alarm	54		

TABLE 27 NOISE LEVELS FROM CONSTRUCTION EQUIPMENT (dBA)

^a Reference noise levels at 50 feet expressed in L_{eq} were calculated based on the reference noise levels expressed in L_{max} from FHWA Highway Construction Noise Handbook (U.S. DOT, 2006), taking into account the usage factors assuming an eight-hour working day.

^b Receptors within the buffer distance could be exposed to construction noise levels above 70 dBA L_{eq} . The following propagation adjustment was applied to estimate buffer distances.

$$dBA2 = dBA1 + 10 \log_{10}(D1/D2)^{2.5}$$

Where:

dBA1 is the reference noise level at a specified distance (in this case 50 feet).

dBA2 is 70 dBA L_{eq} .

D1 is the reference distance (in this case 50 feet).

D2 is the buffer distance.

Source of Equation: Caltrans, 1998

Source: The types of construction equipment are provided by the project applicant. Because drilled piers could be used at Davidson Middle School, an auger drill rig has been included in the assessment. Because the proposed project would occur on a school site, backup alarms have been conservatively included in the assessment.

TABLE 28 POTENTIAL NOISE IMPACT ON ON-SITE AND OFF-SITE RECEPTORS

Construction Location	On-Site School Buildings	Off-Site Residences
Davidson Middle School	Phase 1	east of construction work
	Phase 2	west and south of construction work
	Phase 3	no affected receptors
Laurel Dell Elementary School	no affected receptors ^a	all sides of construction work

^a During reconstruction of Laurel Dell Elementary School, because students would be relocated to the Davidson Middle School Annex site. As shown in Figure 19, Davidson Middle School Annex site would be located outside of 200 feet of construction activities and would not be exposed to construction noise levels of above 70 dBA L_{eq} .

Source: Figure 19.

It should be noted that the 200-foot buffer distance shown in Table 27 conservatively assumes the two noisiest pieces of construction equipment operating simultaneously at the construction zone boundary; however, the locations of construction equipment would vary over time, and the noisiest equipment would not be in use every day. Therefore, the construction noise impact at any given receptor would often be lower than the levels presented in Figure 19. In addition, the buffer distance is calculated without considering the shielding effect of buildings. Generally, the first row of homes provides about 5 dBA of reduction and each subsequent row provides an additional 3 dBA of reduction, with an upper limit for reduction of 20 dBA (Charles M. Salter Associates, Inc., 1998). Therefore, the construction noise impact would be further lessened at receptors with buildings located between them and the construction zone. The implementation of the following mitigation measures would further lessen the construction noise impact.

Impact NOISE-3: Construction of the proposed project could generate a temporary increase in ambient noise levels in the project vicinity. (PS)

Mitigation Measure NOISE-3a: Mitigation Measures NOISE-1a through NOISE-1d shall be implemented.

Mitigation Measure NOISE-3b: *San Rafael City Schools shall require use of noise-reducing measures that may, as applicable and feasible, include the following and that shall be addressed in applicable contract specifications:*

- *Equip internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and are appropriate for the equipment.*
- *Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from noise-sensitive land uses, as feasible. Muffle the stationary equipment, and enclose within temporary sheds or surround by insulation barriers, if feasible.*
- *To the extent feasible, establish construction staging areas at locations that would create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.*
- *Construct or use temporary noise barriers, as needed, to shield on-site construction and demolition noise from noise-sensitive areas to the extent feasible. To be most effective, the barrier should be placed as close as possible to the noise source or the sensitive receptor.*
- *Control noise levels from workers' amplified music so that sounds are not audible to sensitive receptors in the vicinity.*
- *Prohibit all unnecessary idling of internal combustion engines.*

The combination of the above measures would reduce this potential impact to a less-than-significant level. (LTS)

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact

The nearest public use airport to the project site is the Marin County Airport (also known as Gness Field) in Novato, approximately 12 miles to the north. The project site is not located in a land use plan for the Marin County Airport (Marin County Planning Department, 1991). Therefore, the proposed project would not expose people in the project area to excessive noise levels from any public use airports.

- f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact

The nearest private airstrip to the project site is the San Rafael Airport, approximately 3.5 miles to the north. A heliport is located approximately 2 miles southeast of the project site. The project site is located outside of the 60 dBA L_{dn} contour line of both the San Rafael Airport and the heliport (City of

San Rafael, 2017). The project site is not located within the vicinity of any other private airstrip (FAA, 2018). Therefore, the proposed project would not expose people in the project area to excessive noise levels from any private airstrips.

REFERENCES

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- Miller Pacific Engineering Group, 2017b. Geotechnical Investigation Laurel Dell Elementary School, 225 Woodland Avenue, San Rafael, California, November 16.
- National Cooperative Highway Research Program (NCHRP), 1999. *Mitigation of Nighttime Construction Noise, Vibrations, and Other Nuisances*. NCHRP Synthesis 218.

Savidge, William, 2018. Personal communication with Amy Skewes-Cox, April 9.

U.S. Department of Transportation (U.S. DOT), 2006. *FHWA Highway Construction Noise Handbook*, August.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IMPACT EVALUATION

a) *Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

No Impact

The project is expected to result in minor increases in student enrollment and staffing capacities at Davidson Middle School and Laurel Dell Elementary School, as shown in Table 2 in Chapter I, Project Description, of this Initial Study. There would be no substantial growth and thus there would be no direct or indirect impacts related to such growth such as a demand for new housing or commercial services. The two sites are currently occupied by schools and no major infrastructure changes would occur.

b) *Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

No Impact

No housing would be displaced by the project, either at Davidson Middle School or Laurel Dell Elementary School.

- c) *Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

No Impact

No people would be displaced by the project.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

IMPACT EVALUATION

- a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: Fire protection, police protection, schools, parks, other public facilities?*

Less Than Significant Impact

No new or altered fire, police, school, park, library, or other public facilities would be needed to serve the project, and no related environmental impacts of constructing such facilities would occur, for the reasons explained below.

Fire Protection Services

The project would have a less-than-significant impact on fire protection services. The following discussion reviews existing facilities and project impacts.

Existing Fire Protection Facilities and Services

The San Rafael Fire Department (Fire Department) provides fire protection and emergency services within the San Rafael city limits. The Fire Department operates seven fire stations. The closest fire stations to the Davidson and Laurel Dell campuses are Station 51, temporarily located at 1151 C Street about 1 mile northwest of the campuses; and Station 52, temporarily located at 519 4th Street about 1 mile northeast of the campuses. Station 52 has been temporarily located here during rebuilding of the station's permanent facilities at 210 3rd Street, also about 1 mile northeast of the campuses. In addition, a new Public Safety Center is currently under construction at 1313 5th Avenue, about 1 mile northwest of the campuses. The new Public Safety Center will house Fire Department and Police Department operations, including the Fire Department's main station (San Rafael Fire Department, 2018a and 2018b; San Rafael City Schools, 2016).

Project Impact on Fire Protection Facilities

The project may slightly increase the demand for fire protection services, but not to the extent that new or physically altered fire stations would be needed. The impact would be less than significant, and no mitigation is necessary.

Compared to existing conditions, the project has the potential to increase the total population on the two campuses by about 197 people (185 students and 12 staff—see Table 2 in Chapter I, Project Description, of this Initial Study). This potential increase in on-site population may slightly increase demand for fire protection services, but it would not be large enough to create the need for new or physically altered fire protection facilities. The project would be required to comply with standard fire life safety and access requirements of the Division of the State Architect (DSA). The San Rafael Fire Department or the State of California Fire Marshal's Office have the authority to review and approve the project site plans for emergency vehicle access and location and number of fire hydrants.

Police Services

The project would have a less-than-significant impact on police services. The following discussion reviews existing facilities and project impacts.

Existing Police Facilities and Services

The San Rafael Police Department (Police Department) provides crime prevention and law enforcement services within the San Rafael city limits. The Police Department operates one police station, located at 1400 5th Avenue in San Rafael approximately about 1 mile northwest of the Davidson and Laurel Dell campuses. As noted under "Fire Protection Services" above, a new Public Safety Center is currently under construction at 1313 5th Avenue, about 1 mile northwest of the campuses. The new Public Safety Center will house Police Department and Fire Department operations (San Rafael Police Department, 2018; San Rafael City Schools, 2016).

Project Impact on Police Facilities

The project may slightly increase the demand for police services, but not to the extent that new or physically altered police stations would be needed. The impact would be less than significant, and no mitigation is necessary.

As explained under “Fire Protection Services” above, compared to existing conditions, the project has the potential to increase the total population on the two campuses by about 197 people. This potential increase in on-site population may slightly increase demand for police services, but it would not be large enough to create the need for new or physically altered police facilities.

Schools

The project is not expected to create a need for new or altered public school facilities, since the project itself is intended to replace outdated public school facilities on existing public school district campuses.

Parks

Impacts on parks and recreational services are addressed in Section XVI, Recreation, of this Initial Study.

Other Public Facilities

The project would have a less-than-significant impact on other public facilities, such as libraries. Compared to existing conditions, the project has the potential to increase the total population on the two campuses by about 197 people (see discussion under “Fire Protection Services” above), but this increase would not be large enough to create the need for new or physically altered public facilities such as libraries.

REFERENCES

San Rafael City Schools, 2016. *San Rafael High School Master Facilities Long-Range Plan and Stadium Project Draft Environmental Impact Report, State Clearinghouse Number 2016082017*. December 2016. Section 4.11, Public Services.

San Rafael Fire Department, 2018a. “Essential Facilities.” Website: <https://www.cityofsanrafael.org/departments/facilities/>, viewed on February 26, 2018.

San Rafael Fire Department, 2018b. “Temporary Fire Station Relocations.” Website: <https://www.cityofsanrafael.org/temporary-fire-station-relocations/>, viewed on February 26, 2018.

San Rafael Police Department, 2018. “About the Police Department.” Website: <https://www.srpd.org/faq#Other>, viewed on February 26, 2018.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IMPACT EVALUATION

- a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

Less Than Significant Impact

The City of San Rafael provides local parks and recreational facilities within San Rafael, including 19 neighborhood parks and six community parks. The closest City parks to the Davidson and Laurel Dell campuses are two community parks: 11.5-acre Albert Park about 0.5 mile to the north and 6-acre Gerstle Park about 1 mile to the west. The County of Marin also provides eight parks in the San Rafael vicinity. In addition, other San Rafael City Schools campuses, including San Rafael High School about 1.5 miles northeast of the Davidson and Laurel Dell campuses, provide recreational facilities that are available to the community (City of San Rafael, 2013).

The project would not increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Compared to existing conditions, the project has the potential to increase the total population on the Davidson and Laurel Dell campuses by about 197 people (185 students and 12 staff—see Table 2 in Chapter I, Project Description, of this Initial Study). However, the two campuses would continue to have their own recreational facilities and would not rely on neighborhood or regional parks for recreational purposes. On the Davidson campus, no recreational facilities would be removed as part of the project, and the project would provide additional PE classrooms and offices, an increase in gym locker space, a new Multi-Purpose Building, and a new Music Building (see Chapter I, Project Description, of this Initial Study). On the Laurel Dell campus, existing basketball courts would be removed for construction of proposed Building D, but these courts would be replaced in the reconfigured playground east of Building D (Eppard, 2018). The project's impact would therefore be less than significant, and no mitigation is necessary.

- b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Potentially Significant Unless Mitigation Incorporated

Impact RECREATION-1: The project would include recreational facilities that might have an adverse physical effect on the environment. (PS)

As described in Chapter I, Project Description, of this Initial Study, the project includes the following proposed recreational facilities on the Davidson Middle School campus: additional PE classrooms and offices, an increase in gym locker space, a new Multi-Purpose Building, and a new Music Building. The project also includes a reconfigured playground on the Laurel Dell Elementary School campus, as discussed under Item (a) above. The environmental impacts of these proposed recreational facilities are discussed throughout this Initial Study.

As discussed under Item (a) above, the project has the potential to increase the total population on the Davidson and Laurel Dell campuses by about 197 people compared to existing conditions, but the two campuses would continue to have their own recreational facilities; therefore, the project would not create the need for new or expanded recreational facilities.

Mitigation Measure RECREATION-1: San Rafael City Schools shall comply with all mitigation measures identified in this Initial Study/Mitigated Negative Declaration. Compliance with these measures would ensure that the impact of recreational facilities included in the project would be reduced to a less-than-significant level. (LTS)

REFERENCES

City of San Rafael, 2013. *The City of San Rafael General Plan 2020*, reprinted April 28, 2017, pages 252 and 253.

Eppard, Eve, Senior Project Architect, Quattrocchi Kwok Architects, 2018. E-mail to Amy Skewes-Cox re. "Clarifications for Davidson and Laurel Dell," February 28, 2018.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

BACKGROUND

This section assesses future transportation and traffic conditions near the Davidson Middle School and Laurel Dell Elementary School campuses. It summarizes applicable jurisdictional laws and regulations associated with transportation and traffic and presents the significance criteria for potential transportation-related environmental impacts. The transportation evaluation includes estimations of vehicle trip generation and distribution and an assessment of potential traffic impacts related to the project, under existing and cumulative conditions. Potential effects on pedestrians, bicycles, and public transit and the effects of project construction are also evaluated. Measures to mitigate potential transportation impacts are recommended, as appropriate.

Key Roadways in Project Site Vicinity

Davidson Middle School encompasses about two thirds of the city block bounded by Jordan Street to the north, Woodland Avenue to the south, Jordan Street and Lovell Avenue to the east, and Lindaro Street to the west. Laurel Dell Elementary School encompasses the city block bounded by Woodland Avenue to the north, Seibel Street to the west, Eva Street to the east, and Picnic Avenue to the south.

Several key roadways provide access to the schools. These roadways are as follows:

Andersen Drive is a two-lane arterial roadway, oriented in the general north-south direction extending from A Street in downtown San Rafael to Sir Francis Drake Boulevard. It has one vehicle travel lane and a bicycle route provided on each side. Pedestrian access is facilitated by a sidewalk that runs

along the south side of Andersen Drive. Andersen Drive is classified as a Class II bikeway in the 2011 *City of San Rafael Bicycle and Pedestrian Master Plan*.

Lindaro Street is a minor arterial that runs in the east-west direction from 3rd Street in downtown San Rafael to the intersection of Woodland Avenue and the Davidson Middle School driveway. Lindaro Street has one travel lane in each direction. On-street parking is provided on both sides of the street. Pedestrian access is facilitated by sidewalks along both sides of the street.

Woodland Avenue is a major collector street that runs in the general north-south direction from Bayview Street to Auburn Street. Woodland Avenue consists of two vehicle travel lanes in each direction and is classified as a Class III bicycle facility. Parking is provided along both sides of the streets. Pedestrian access is facilitated by sidewalks along both sides of the street.

Irwin Street is classified as a minor arterial between Andersen Drive and Lovell Avenue. It generally runs in the north-south direction from Francisco Boulevard to Tiburon Boulevard. In the project site vicinity, Irwin Street consists of two lanes (one lane in each direction) with parking provided on both sides of the street. It is classified as a Class III bikeway.

Picnic Avenue is a minor arterial that runs between Woodland Avenue and Bungalow Avenue. Picnic Avenue consists of one lane in each direction with parking provided intermittently along the south side of the street. Pedestrian access is provided via sidewalks located intermittently along both sides of the streets. A narrow paved sidewalk is provided along both sides of Picnic between Stangland Avenue and Seibel Street, along the north side of Picnic Avenue between Seibel Street and Glen Avenue, and along both sides of the street between Glen Avenue and Bungalow Avenue.

Study Approach

To identify potential transportation impacts related to the project, this study developed student trip generation estimates for the identified peak hours (consisting of the highest traffic volumes during four consecutive 15-minute intervals). Peak hour volumes were defined during the morning (highest-volume 1 hour between 7:00 AM and 9:00 AM) and after school (highest-volume 1 hour between 2:00 PM and 4:00 PM). Within the vicinity of the schools, the intersection peak hours for vehicular traffic generally correspond with drop-off and pick-up trips made to or from the Davidson and Laurel Dell campuses.

Roadway intersections are generally the focus of traffic assessments since intersections, rather than the roadway segments between them, typically control the operation and capacity of street networks. Existing traffic conditions were evaluated by assessing traffic operations at the following 10 intersections providing access to and from the two campuses:

1. Lindaro Street / Andersen Drive (signalized)
2. Lindaro Street / Albert Park Lane / Jordan Street (stop-controlled)
3. Lindaro Street / Woodland Avenue / Davidson Middle School (stop-controlled)
4. Woodland Avenue / Picnic Avenue (stop-controlled)
5. Woodland Avenue / Seibel Street (stop-controlled)
6. Woodland Avenue / Eva Street (stop-controlled)

7. Woodland Avenue / Bungalow Avenue (stop-controlled)
8. Woodland Avenue / Lovell Avenue (stop-controlled)
9. Woodland Avenue / Irwin Street (stop-controlled)
10. Andersen Drive / Irwin Street (signalized)

Vehicular turning movement counts during the morning and afternoon peak periods were collected at the 10 study intersections and are depicted in **Figure 20**. The counts were collected on fair-weather mid-week days in March 2018 when both Davidson and Laurel Dell classes were in session.

Vehicle Trip Generation

As stated in the Chapter I, Project Description, of this Initial Study, the project would result in expansion of the overall campus building area by 17,665 gross square feet (gsf) at Davidson Middle School and 6,250 gsf at Laurel Dell Elementary School. The student and faculty populations are expected to increase by 110 students and nine faculty at Davidson Middle School and 75 students and three faculty at Laurel Dell Elementary School.

To estimate existing and future student-generated vehicle trips, this study reviewed trip generation estimates provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* 9th Edition and existing vehicle traffic counts at the school driveways. A 15 percent reduction was applied to the ITE estimates to account for students traveling to and from school by walking, bicycling, and public transit and to account for existing vehicular trip generation at the school driveways. This factor is in line with student travel mode shares based on a review of existing student travel mode shares as collected by the Marin County Safe Routes to Schools program. Results of this assessment were used to estimate the share of students that travel to or from school by private vehicle, including both single-student trips and carpool trips (i.e., multiple students per vehicle).

Vehicle trip generation estimates were developed for each school based on the current student enrollment and the proposed student capacity. Daily, morning peak, and afternoon peak hour estimates are provided for each school. The same methodology was used to estimate vehicle trip generation based on the project-proposed student enrollment at each school. These estimates are summarized in **Table 29** and **Table 30**.

As shown, under existing conditions, Davidson Middle School generates approximately 1,640 daily, 547 morning, and 303 afternoon peak hour trips. Laurel Dell Elementary School generates approximately 220 daily, 77 morning, and 26 afternoon peak hour trips. Under existing conditions, both Davidson Middle School and Laurel Dell Elementary School are operating below their identified capacity.

As shown, project-generated vehicle trip generation at Davidson Middle School would result in an additional 152 daily, 51 morning, and 28 afternoon peak hour trips. At Laurel Dell Elementary School, the project would result in an additional 82 daily, 29 morning, and nine afternoon peak hour trips.

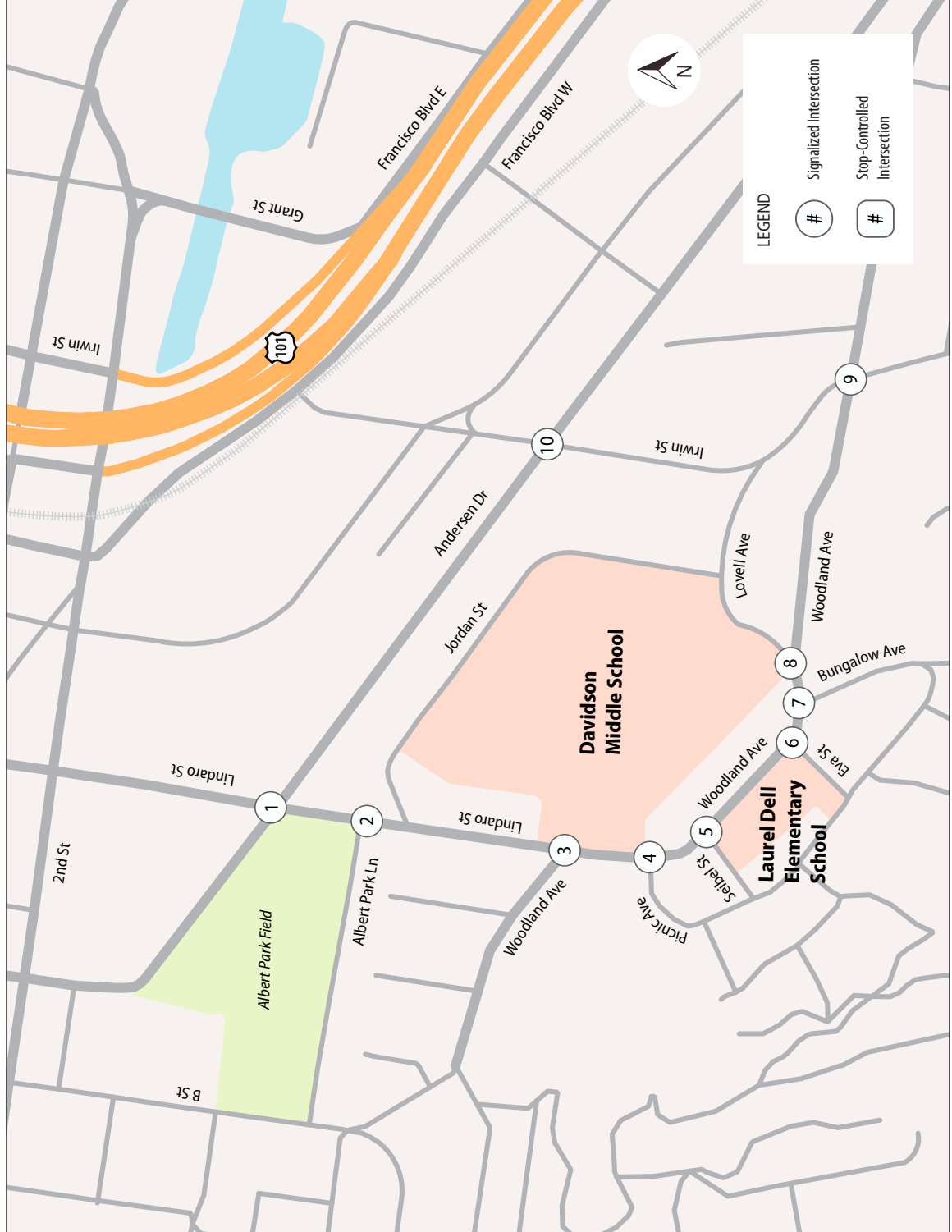


Figure 20

PROJECT STUDY INTERSECTION LOCATIONS

SOURCE: Parisi Transportation Consulting, 2018

TABLE 29 VEHICLE TRIP GENERATION – DAVIDSON MIDDLE SCHOOL

School Enrollment	Daily			Morning Peak Hour			Afternoon Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing 1,190 Students	820	820	1,640	301	246	547	136	167	303
Project (Net Increase) 110 Students	76	76	152	28	23	51	13	15	28
Existing plus Project 1,300 Students	895	895	1,790	328	269	597	149	183	332

Source: Parisi Transportation Consulting, 2018.

TABLE 30 VEHICLE TRIP GENERATION – LAUREL DELL ELEMENTARY SCHOOL

School Enrollment	Daily			Morning Peak Hour			Afternoon Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing 201 Students	110	110	220	42	35	77	12	14	26
Project (net increase) 75 Students	41	41	82	16	13	29	4	5	9
Existing plus Project 276 Students	152	152	304	58	47	105	16	19	35

Source: Parisi Transportation Consulting, 2018.

The vehicle trip generation estimates presented above were distributed along neighboring streets based on a review of traffic volumes at the school driveways and along surrounding neighborhood streets, at which student drop-offs and pick-ups occur. The resulting intersection turning movement volumes at the 10 study intersections are presented in **Figure 21**.

The project's impact evaluation was based on the project-generated vehicle trips presented in the tables and figures above.

Cumulative year (2040) projections were developed to assess the project's potential impact on future year transportation conditions. A review of traffic projections provided in the City of San Rafael's 2020 General Plan was conducted. However, the City's traffic projections represent anticipated Year 2020 development projects that were under consideration when the plan was first developed in 2002 and later revised in 2013. To better reflect potential Year 2040 traffic conditions, this study also considered projects on the City's development "watchlist," which includes projects in the downtown San Rafael vicinity. Based on this assessment, a review of existing traffic vehicle generation patterns, and existing neighborhood density, the study assumed background traffic growth of one-half percent per year at the Andersen Drive / Lindero Street and Andersen Drive / Irwin Street intersections. A lower growth rate of one-quarter percent per year was assumed for the other neighborhood street study intersections.

The project-generated trips presented in Tables 29 and 30 were added to the estimated Year 2040 volumes to analyze the project's potential traffic impacts under a future year condition. The estimated intersection traffic volumes are summarized in **Figure 22** and **Figure 23**.

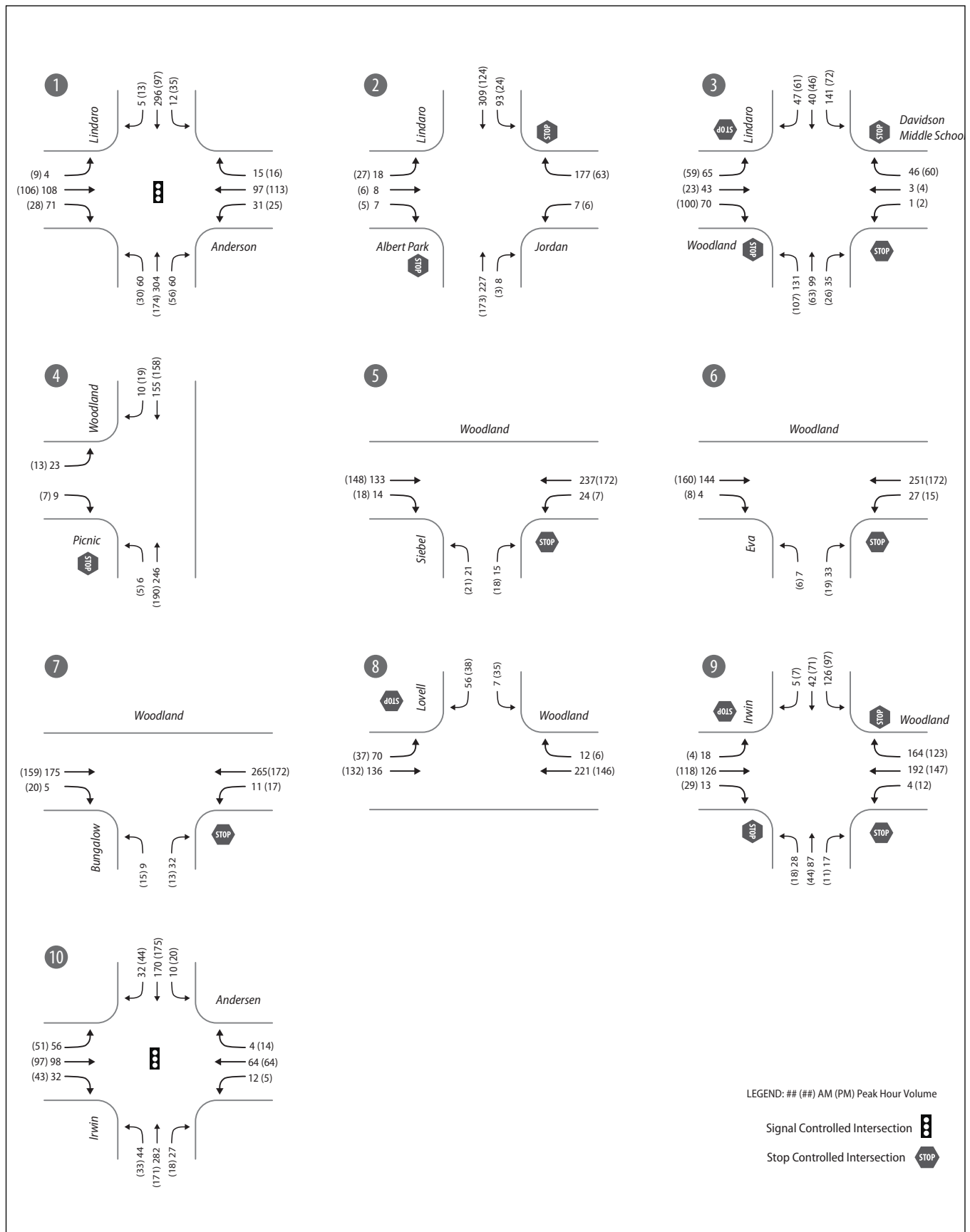


Figure 21

SOURCE: Parisi Transportation Consulting, 2018

STUDY INTERSECTIONS VOLUMES - EXISTING CONDITIONS

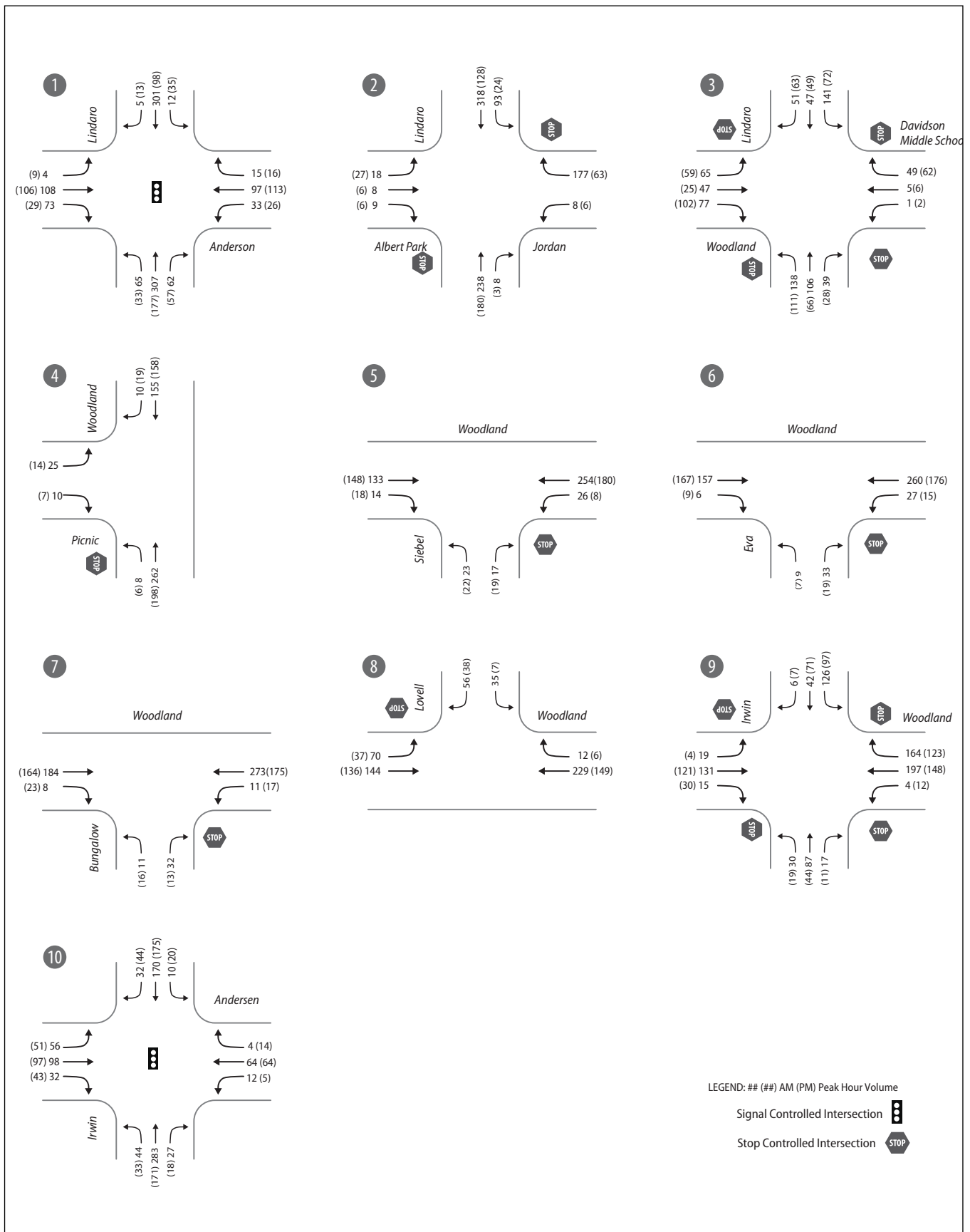


Figure 22

STUDY INTERSECTIONS VOLUMES - EXISTING PLUS PROJECT CONDITIONS

SOURCE: Parisi Transportation Consulting, 2018

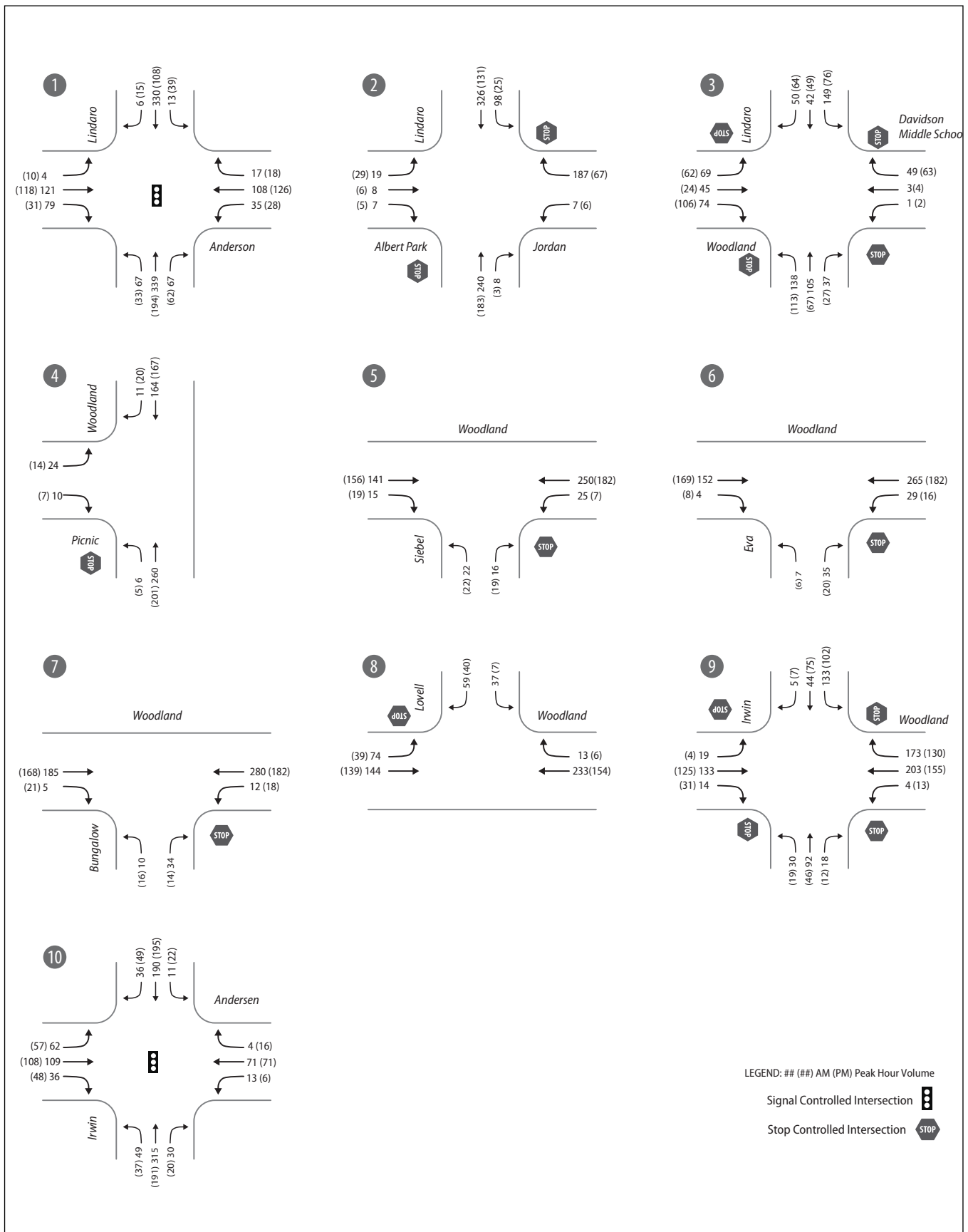


Figure 23

STUDY INTERSECTIONS VOLUMES - CUMMULATIVE (YEAR 2030) CONDITIONS

SOURCE: Parisi Transportation Consulting, 2018

Level of Service Analysis

A level of service analysis was conducted to analyze project impacts on the surrounding roadway network.

Signalized intersection level of service is defined in terms of the average total vehicle delay of all movements through an intersection. Vehicle delay is a method of quantifying several intangible factors, including driver discomfort, frustration, and lost travel time. Specifically, level of service criteria are stated in terms of average delay per vehicle during a specified period. Vehicle delay is based on many variables, including signal phasing (i.e., the order of movements through the intersection), signal cycle length, and traffic volumes with respect to intersection capacity. **Table 31** shows level of service criteria for signalized intersections, which apply to the two signalized intersections listed above.

TABLE 31 LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service	Average Control Delay Per Vehicle (Seconds)	Description
A	≤ 10	Free flow
B	> 10 – 20	Stable flow (slight delays)
C	> 20 – 35	Stable flow (slight delays)
D	> 35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	> 55 – 80	Unstable flow (intolerable delay)
F	> 80	Forced flow (jammed)

Source: Transportation Research Board, 2000.

Unsignalized intersection level of service criteria can be further defined based on three intersection types: all-way stop sign-controlled, two-way stop sign-controlled, and one-way stop sign-controlled. All-way stop sign-controlled intersection level of service is expressed in terms of the average vehicle delay of all the movements, much like that of a signalized intersection.

Two-way and one-way stop-sign controlled intersection level of service is defined in terms of the average vehicle delay for an individual movement(s). This is because the performance of the stop-controlled approach is more closely reflected in terms of its specific movements, rather than its performance overall. With this in mind, intersection average vehicle delay (i.e., average delay of all movements) for a one-way and two-way stop sign-controlled intersection should be viewed with discretion. **Table 32** shows level of service criteria for unsignalized intersections (all-way, two-way, and one-way stop sign-controlled), which apply to the unsignalized intersections identified in Table 32.

TABLE 32 LEVEL OF SERVICE DEFINITIONS FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Average Control Delay Per Vehicle (Seconds)
A	≤ 10
B	> 10 – 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50

Source: Transportation Research Board, 2000.

Level of Service-Based Significance Criteria

The City of San Rafael has established significance criteria that determine what would constitute a significant impact on intersection operations.¹⁵ A description of intersection level of service methodology is provided later in this section.

According to the City, and as related to criterion “a” of the CEQA Guidelines above, impacts at signalized intersections would be significant if they satisfy either of the following criteria:

- If a signalized intersection with baseline traffic volumes is operating at an acceptable level of service and the project would cause it to deteriorate to an unacceptable operation (Level of Service [LOS] E or LOS F), this impact would be significant.
- If a signalized intersection with baseline traffic volumes is operating at an unacceptable level of service or already operating at level of service and the project would cause an increase in the delay of 5 seconds or more, this impact would be significant.

Impacts at an unsignalized intersection would be significant if they satisfy either of the following criteria:

- If an unsignalized intersection with baseline traffic volumes is operating at an acceptable level of service and deteriorates to an unacceptable operation (LOS F) with the addition of project traffic, this impact would be significant.
- If an unsignalized intersection with baseline traffic volumes is already operating at LOS F and project traffic would cause an increase in delay of 5 seconds or more, this impact would be significant.

Analysis Results

Existing Plus Project Conditions

Using the methodology described above, this study assessed the project’s impact on intersection operating conditions under existing conditions. The results of this assessment are shown in **Table 33** for the morning peak hour and **Table 34** for the afternoon peak hour.

Under existing conditions, the 10 study intersections operate at acceptable levels of service (LOS D) or better during the morning and afternoon peak hour. It should be noted that the LOS presented represents an average of traffic operations during each peak hour. Within each hour there are likely shorter intervals during which level of service is worse or better than the average LOS for the peak hour.

¹⁵ The intersection level of service significance thresholds for San Rafael were referenced in the *San Rafael High School Master Facilities Long-Range Plan and Stadium Project Draft Environmental Impact Report*, SCH No. 2016082017 (December 2016).

TABLE 33 INTERSECTION LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS, AM PEAK HOUR

		Existing			Existing plus Project		
Intersection	Control	Movement	LOS	Delay (s/veh)	Movement	LOS	Delay (s/veh)
1 Lindaro / Andersen	Signal	N/A	C	29	N/A	C	29
2 Lindaro / Albert Park / Jordan	TWSC	WB	C	17	WB	C	18
3 Lindaro / Woodland / Davidson	AWSC	NB	B	13	NB	B	13
4 Woodland / Picnic	OWSC	EB	B	12	EB	B	12
5 Woodland / Seibel	OWSC	EB	B	12	EB	B	13
6 Woodland / Eva	AWSC	NB	A	9	NB	A	10
7 Woodland / Bungalow	OWSC	EB	B	11	EB	B	11
8 Woodland / Lovell	OWSC	WB	B	12	WB	B	12
9 Woodland / Irwin	OWSC	WB	B	15	NB	C	15
10 Andersen / Irwin	Signal	N/A	C	24	N/A	C	24

Notes: s = seconds; veh = vehicle; LOS = Level of Service; TWSC = two-way stop-controlled; AWSC = all-way stop-controlled; OWSC = one-way stop-controlled; NB = northbound; SB = southbound; WB = westbound; EB = eastbound; N/A = not applicable. For consistency in this study, Woodland Avenue and Lindaro Street are considered to run in the north-south direction.
Source: Parisi Transportation Consulting, 2018.

TABLE 34 INTERSECTION LEVEL OF SERVICE – EXISTING PLUS PROJECT CONDITIONS, PM PEAK HOUR

		Existing			Existing plus Project		
Intersection	Control	Movement	LOS	Delay (s/veh)	Movement	LOS	Delay (s/veh)
1 Lindaro / Andersen	Signal	N/A	C	29	N/A	C	29
2 Lindaro / Albert Park / Jordan	TWSC	WB	B	10	WB	B	10
3 Lindaro / Woodland / Davidson	AWSC	NB	B	10	NB	B	10
4 Woodland / Picnic	OWSC	EB	B	11	EB	B	11
5 Woodland / Seibel	OWSC	EB	B	11	EB	B	11
6 Woodland / Eva	AWSC	NB	A	9	NB	A	9
7 Woodland / Bungalow	OWSC	EB	B	12	EB	B	12
8 Woodland / Lovell	OWSC	WB	B	12	WB	B	12
9 Woodland / Irwin	OWSC	WB	B	11	NB	B	11
10 Andersen / Irwin	Signal	N/A	C	23	N/A	C	23

Note: s = seconds; veh = vehicle; LOS = Level of Service; TWSC = two-way stop-controlled; AWSC = all-way stop-controlled; OWSC = one-way stop-controlled; NB = northbound; SB = southbound; WB = westbound; EB = eastbound; N/A = not applicable. For consistency in this study, Woodland Avenue and Lindaro Street are considered to run in the north-south direction.
Source: Parisi Transportation Consulting, 2018.

The addition of project-generated trips to the roadway network would slightly increase delay at the study intersections. The increase is equivalent to no more than one or two seconds at select intersections. However, all intersections would continue to operate at the same level of service as under existing conditions and the project would not significantly degrade intersection operating conditions.

Cumulative Conditions

A level of service analysis was conducted on the 10 study intersections under cumulative conditions. The results of this analysis are shown in **Tables 35 and 36** and **Figure 24**.

Under baseline cumulative conditions, the background traffic growth along the study intersections results in an increase in motorist delay at the study intersections. The addition of project-generated trips to the baseline year roadway network would slightly increase delay at the study intersections. However, the increase in delay would be minimal (no more than 1 or 2 seconds) and all intersections would continue to operate at the same level of service as under baseline cumulative conditions. The project would not significantly degrade intersection operating conditions.

IMPACT EVALUATION

- a) *Would the project conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

Less Than Significant Impact

The project does not propose any changes to the existing circulation system (including roadways, mass transit, or bicycle or pedestrian facilities) providing access to and from the two campuses. Project-related construction would be contained on the project site, and the project would have no impact on any proposed transportation-related projects in the surrounding circulation system. The project's impact would be considered less than significant in relation to this criterion.

- b) *Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

Potentially Significant Unless Mitigation Incorporated

Impact of Project Operations

The Transportation Authority of Marin (TAM) is a Joint Powers Agency established between Marin County and all cities within the county, including the City of San Rafael, to address Marin's unique transportation issues and to fulfill the legislative requirements of California Propositions 111 and 116

TABLE 35 INTERSECTION LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS, AM PEAK HOUR

Intersection	Control	Cumulative			Delay (s/veh)	Cumulative plus Project		
		Movement	LOS			Movement	LOS	Delay (s/veh)
1 Lindaro / Andersen	Signal	N/A	C		31	--	C	31
2 Lindaro / Albert Park / Jordan	TWSC	WB	C		21	WB	C	22
3 Lindaro / Woodland / Davidson	AWSC	N/A	B		14	N/A	C	16
4 Woodland / Picnic	OWSC	EB	B		12	EB	B	13
5 Woodland / Seibel	OWSC	EB	B		12	EB	B	12
6 Woodland / Eva	AWSC	N/A	A		10	N/A	A	10
7 Woodland / Bungalow	OWSC	EB	B		11	EB	B	11
8 Woodland / Lovell	OWSC	WB	B		12	WB	B	12
9 Woodland / Irwin	AWSC	WB	C		19	N/A	C	20
10 Andersen / Irwin	Signal	N/A	C		24	--	C	24

Notes: s = seconds; veh = vehicle; LOS = Level of Service; TWSC = two-way stop-controlled; AWSC = all-way stop-controlled; OWSC = one-way stop-controlled; NB = northbound; SB = southbound; WB = westbound; EB = eastbound; N/A = not applicable. For consistency in this study, Woodland Avenue and Lindaro Street are considered to run in the north-south direction.

Source: Parisi Transportation Consulting, 2018.

TABLE 36 INTERSECTION LEVEL OF SERVICE – CUMULATIVE PLUS PROJECT CONDITIONS, PM PEAK HOUR

Intersection	Control	Cumulative			Delay (s/veh)	Cumulative plus Project		
		Movemen	LOS			Movement	LOS	Delay (s/veh)
1 Lindaro / Andersen	Signal	N/A	C		30	--	C	30
2 Lindaro / Albert Park / Jordan	TWSC	WB	B		11	WB	B	11
3 Lindaro / Woodland / Davidson	AWSC	N/A	B		11	N/A	B	11
4 Woodland / Picnic	OWSC	EB	B		11	EB	B	12
5 Woodland / Seibel	OWSC	EB	B		12	EB	B	12
6 Woodland / Eva	AWSC	N/A	A		9	N/A	A	9
7 Woodland / Bungalow	OWSC	EB	B		12	EB	B	12
8 Woodland / Lovell	OWSC	WB	B		13	WB	B	13
9 Woodland / Irwin	AWSC	N/A	B		12	N/A	B	12
10 Andersen / Irwin	Signal	N/A	C		23	--	C	23

Notes: s = seconds; veh = vehicle; LOS = Level of Service; TWSC = two-way stop-controlled; AWSC = all-way stop-controlled; OWSC = one-way stop-controlled; NB = northbound; SB = southbound; WB = westbound; EB = eastbound; N/A = not applicable. For consistency in this study Woodland Avenue and Lindaro Street are considered to run in the north-south direction.

Source: Parisi Transportation Consulting, 2018.

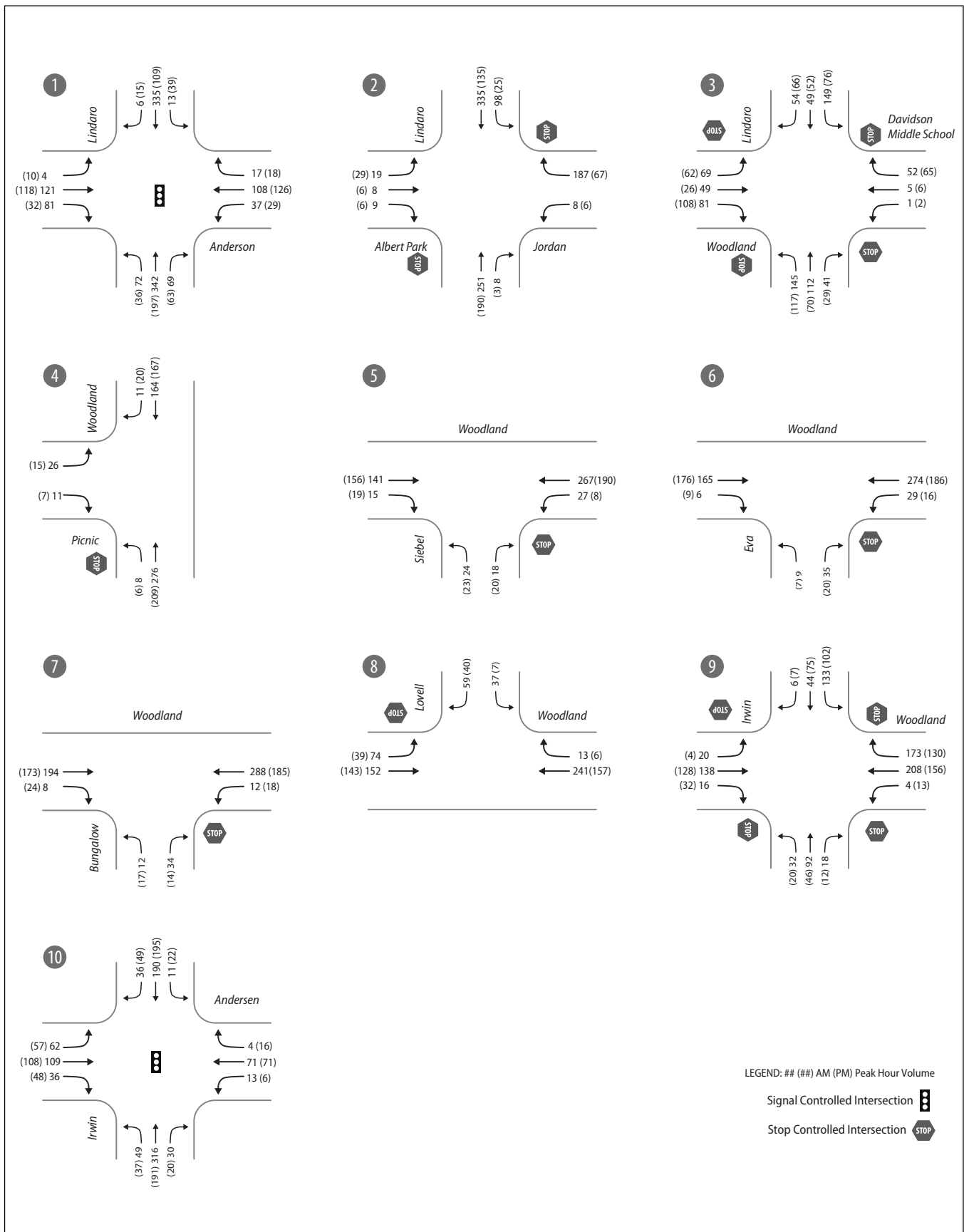


Figure 24

STUDY INTERSECTIONS VOLUMES - CUMMULATIVE PLUS PROJECT CONDITIONS

SOURCE: Parisi Transportation Consulting, 2018

(approved in June 1990). As the Congestion Management Agency (CMA) for Marin County, TAM maintains the Congestion Management Plan (CMP) (Transportation Authority of Marin, 2017).

The *2017 CMP Update* (Transportation Authority of Marin, 2017) identifies regional roadways within San Rafael that are part of the CMP network. CMP network roadways passing through San Rafael are located within downtown San Rafael (i.e., 2nd Street and 3rd Street). The Davidson Middle School and Laurel Dell Elementary School campuses are located a little more than one-half mile away from downtown San Rafael. These streets would absorb less than 5 percent (four trips in the morning and two trips in the afternoon) of new trips generated as a result of the project.

The City of San Rafael uses intersection level of service to assess project impacts on traffic operations along City streets. To ensure an effective roadway network and to maintain adequate traffic level of service consistent with standards for intersections in the AM and PM peak hours, the City considers Level of Service (LOS) D or better to be acceptable at City intersections. The project's impacts on nearby roadways were assessed by reviewing the level of service at each of the 10 study intersections.

As discussed previously, the addition of project-generated trips would slightly increase motorist delay at nearby intersections. Under existing plus project and cumulative plus project conditions, increases in delay would not exceed 5 seconds, and all 10 study intersections would continue to operate at the same level of service as under the baseline conditions. Under existing conditions, pick-up and drop-off activities along Woodland Avenue cause roadway congestion. Vehicle queues extending from intersections along Woodland Avenue form during the peak 15 to 30 minutes of drop-off activities. The increased delay resulting from project-generated trips would slightly increase vehicular congestion along nearby roadways including Woodland Avenue. However, the increase in delay and resulting congestion would be short-lived and any resulting queues would dissipate.

The impact of this increase in traffic congestion from project operations is therefore considered less than significant.

Impact of Project Construction Activities

During construction, the project is expected to add truck trips to nearby city streets. The construction staging area for Davidson Middle School would be located within the campus grounds adjacent to the southeast corner of the Woodland Avenue / Lindaro Street intersection. The staging area for Laurel Dell Elementary School would be located within the campus adjacent to the southwest corner of the Woodland Avenue / Seibel Street intersection. Construction vehicles would travel to and from the campus staging areas from Highway 101 via Woodland Avenue. Truck access to the Davison staging area would be provided via the school driveway on Woodland Avenue, while truck access to the Laurel Dell staging area would be provided via the driveway along Seibel Street. As currently proposed, construction would occur over a 14-month period and construction hours would be 7:00 AM to 6:00 PM Monday through Friday and 9:00 AM to 5:00 PM on Saturdays. No work would occur on Sundays or holidays. No construction truck trips would occur outside of the set construction hours.

Impact TRANSPORTATION-1: Project construction activities could conflict with applicable level of service standards along nearby roadways. (PS)

Although increases in construction-related vehicular traffic would be short term, the increased traffic could potentially result in a decreased level of service along surrounding roadways. In addition, construction would occur during times when students would be using local streets for access to the Davidson campus or the Davidson Annex campus. Implementation of Mitigation Measure TRANSPORTATION-1 would reduce project impacts to a less-than-significant level.

Mitigation Measure TRANSPORTATION-1: The project contractor for both campuses shall develop a traffic management plan that details construction truck trip operations during periods of anticipated heavy use, such as demolition and delivery of major project components to the site. The plan shall direct all construction truck traffic to travel to and from the campuses via 2nd Street and Woodland Avenue (as currently proposed). To facilitate traffic operations during construction, the construction management plan shall include the provision of a trained flag person for deliveries using large trucks (dumps, transfers, concrete, 18-wheelers), and on an as-needed basis. The flag person shall be on-site for all deliveries. Construction warning signage shall also be posted along Woodland Avenue, Picnic Avenue, and other nearby streets that may be affected by construction activities.

The contractor shall collaborate with the City of San Rafael to coordinate construction truck traffic with significant construction activities related to other development, if any, occurring concurrently in the vicinity of the project. (LTS)

- c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact

The project does not propose any features relating to air traffic. The project would not affect air traffic patterns and no mitigation is necessary.

- d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact

No modifications to roadways or intersections are proposed. The impact would be less than significant, and no mitigation is necessary.

e) *Would the project result in inadequate emergency access?*

Less Than Significant Impact

Emergency vehicle access to and from the Davidson Middle School campus would continue to be provided via the school's driveways along Lindaro Street, Woodland Avenue, and Jordan Street. Access to the interior of the campus would be provided via a 20-foot-wide fire lane running from the school's driveway along the edge of the campus buildings (see Figure 22).

Emergency vehicle access to and from the Laurel Dell Elementary School campus would continue to be provided via the school's driveway along Seibel Street (see Figure 23). A 110-foot-wide access lane would provide access to the interior of the school's campus.

The project includes the provision of adequate emergency access travelways within the campuses. The impact would be less than significant, and no mitigation is necessary.

f) *Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

Less Than Significant Impact

Existing Conditions

Pedestrian and Bicycle Facilities

Pedestrian facilities in the project site vicinity generally include sidewalks, curb ramps, crosswalks, and school area signage. There are some sidewalk gaps along streets adjacent to Davidson Middle School and Laurel Dell Elementary School. As previously mentioned, pedestrian access is provided by intermittent narrow sidewalks along Picnic Avenue. A portion of the sidewalk along Eva Street (adjacent to the southwest corner of the Eva Street / Picnic Avenue intersection) is in disrepair with cracked uneven pavement. There is limited sidewalk along the east side of Lovell Avenue between Woodland Avenue and Jordan Street. Pavement markings along adjacent streets are faded, potentially limiting the visibility of pedestrians and bicyclists along the roadways.

Bicycle circulation in the vicinity of the two campuses is provided by a network of bicycle routes. Along adjacent roadways, the bicycle network primarily consists of Class II routes (i.e., designated bicycle routes within the paved right-of-way) and Class III routes (i.e., roadways that are shared between vehicular and bicycle traffic). Some of the routes are designated with shared roadway bicycle marking stencils ("sharrows") and intermittent signage.

A paved multi-use pathway accessible via Lovell Avenue provides bicycle and pedestrian access to and from the Davidson Middle School campus.

Davidson Middle School currently has six existing bicycle racks at the main driveway near the drop-off area. The project would also provide additional bicycle access at the new driveway off Woodland

Avenue. Laurel Dell Elementary School has six existing bicycle racks at the southeastern side of campus.

Transit Access

Transit access to and from the campuses is provided via the Downtown San Rafael Transit Center, located a little over one-half mile away from the Davidson and Laurel Dell campuses. The transit center is served by Marin Transit, Golden Gate Transit and the Sonoma-Marin Area Rail Transit (SMART) train service. To reach the transit center from campus, students and faculty can walk and/or bicycle along Woodland Avenue to 2nd Street.

Student Drop-Off and Pick-Up

Under existing conditions, student drop-offs and pick-ups for Davidson Middle School primarily occur within the school driveway and along surrounding streets (i.e., Woodland Avenue and Lovell Avenue). Drop-off and pick-up activity for the Laurel Dell campus primarily occurs along Eva Street and Woodland Avenue. There is a bus drop-off zone located along the south side of Woodland Avenue where yellow school buses serving Laurel Dell drop off and pick up students.

During field observations, it was noted that, during drop-offs and pick-ups at both campuses, vehicles double-park along Woodland Avenue, creating a potential safety hazard for students who disembark or enter vehicles parked in the middle of the street.

Project-Related Safety Hazards

As is currently the case, many pedestrians are expected to walk to and from households in the immediate vicinity of the Davidson Middle School and Laurel Dell Elementary School campuses. Student travel survey data collected in the 2016-2017 school year show that between 13 and 19 percent of Davidson students and 13 to 17 percent of Laurel Dell students travel to and/or from school by walking. If enrollment reaches the increased capacity at both campuses, the project could add up to 35 additional students to the pedestrian facilities providing access to the schools.

The existing pedestrian facilities serving the two campuses are on City property. While they do not adequately accommodate the existing and projected future levels of pedestrian traffic, correction of that condition is within the City's jurisdiction. The addition of student pedestrians, if any, on missing and inadequate sidewalks, particularly along Picnic Avenue and Eva Street, would further exacerbate the existing conditions and increase the potential for safety impacts for pedestrians. The District should encourage the City to improve the conditions as feasible. However, this condition is not a result of District actions, nor is mitigation of the condition within the District's control. The project's impact on the existing pedestrian network would be less than significant.

REFERENCES

- City of San Rafael, 2011. *Bicycle/Pedestrian Master Plan 2011 Update*. Adopted April 4, 2011.
- City of San Rafael, 2013. *The City of San Rafael General Plan 2020*. Amended and reprinted January 18.
- Institute of Transportation Engineers (ITE), 2012. *Trip Generation, 9th Edition*.
- National Center for Safe Routes to Schools (NCSRTS), 2016. *Sample Student Travel Survey*. Website: http://www.saferoutesdata.org/downloads/SRTS_Two_Day_Tally.pdf, viewed on April 9, 2018.
- San Rafael City Schools, 2017. *Student Travel Survey*.
- San Rafael City Schools, 2016. *San Rafael High School Master Facilities Long-Range Plan and Stadium Project Draft Environmental Impact Report*.
- Transportation Authority of Marin, 2016a. *About Us*. Website: <http://www.tam.ca.gov/index.aspx?page=49>, viewed on April 17, 2018.
- Transportation Authority of Marin, 2016b. *Marin County Safe Routes to Schools Program Evaluation*, September.
- Transportation Authority of Marin, 2017. *2017 CMP Update*.
- Transportation Research Board (TRB), 2000. *Highway Capacity Manual*.

Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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XVII. TRIBAL CULTURAL RESOURCES. Would the project:

- a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and this is:
 - i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or,



	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IMPACT EVALUATION

- a) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: (i) Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?*

No Impact

Background

Assembly Bill 52 (AB 52), which became law on January 1, 2015, provides for consultation with California Native American tribes during the CEQA environmental review process, and equates significant impacts on “tribal cultural resources” with significant environmental impacts.

The consultation provisions of the law require that a public agency consult with local Native American tribes that have requested placement on that agency’s notification list for CEQA projects. Within 14 days of determining that a project application is complete, or a decision by a public agency to undertake a project, the lead agency must notify tribes of the opportunity to consult on the project, should a tribe have previously requested to be on the agency’s notification list. California Native American tribes must be recognized by the Native American Heritage Commission (NAHC) as traditionally and culturally affiliated with the project site, and must have previously requested that the lead agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead agency.

The purpose of consultation is to inform the lead agency in its identification and determination of the significance of tribal cultural resources. If a project is determined to result in a significant impact on an identified tribal cultural resource, the consultation process must occur and conclude prior to adoption of

a Negative Declaration or Mitigated Negative Declaration, or certification of an Environmental Impact Report (Public Resources Code Sections 21080.3.1, 21080.3.2, 21082.3).

Tribal Outreach

The NAHC in West Sacramento was contacted to review its Sacred Lands File to identify registered, Native American sacred sites in or near the project site. Sharaya Souza, NAHC Staff Services Analyst, responded to the request for information via e-mail on January 10, 2018, stating that "A records search of the Native American Heritage Commission Sacred Lands File was completed...with negative results" (Souza, 2018).

To date, no California Native American tribe has formally requested consultation notifications with San Rafael City Schools in accordance with the requirements of Public Resources Code Section 21080.3.1. As such, tribal consultation for the proposed project was not required for this project.

As discussed in Section V, Cultural Resources, of this Initial Study, the NWIC records search and the archaeological survey completed for the project did not identify evidence of Native American archaeological deposits or ancestral remains.

Conclusion

The proposed project would have no impact on known tribal cultural resources that are listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources, nor has San Rafael City Schools identified a tribal cultural resource at the project site.

REFERENCES

Souza, Sharaya, 2018. E-mail and letter received from Native American Heritage Commission via e-mail, January 11, 2018.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, State, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

IMPACT EVALUATION

- a) *Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

Less Than Significant Impact

The project would not exceed the wastewater treatment requirements of the applicable RWQCB. The following discussion reviews the wastewater collection and treatment system for the project site and vicinity and the potential project impact on wastewater treatment.

Since wastewater treatment capacity would be adequate to serve the project (see discussion below), the project would not exceed wastewater treatment requirements of the San Francisco Bay RWQCB. The project's impact in relation to this significance criterion would therefore be less than significant.

Wastewater Service Agencies

The San Rafael Sanitation District, a member of the Central Marin Sanitation Agency (CMSA), provides wastewater services in San Rafael. CMSA, formed in 1979, is a public joint powers agency of the San Rafael Sanitation District, Sanitary District No. 2, the Ross Valley Sanitary District, and the City of Larkspur. The San Rafael Sanitation District has an eight-person crew that maintains 32 pump stations, 13 miles of force main, and 132 miles of sewer pipelines. This collection and transportation system delivers wastewater to CMSA for treatment (CMSA, 2018; San Rafael Sanitation District, 2018).

Wastewater Treatment Plant

CMSA owns and operates the CMSA Wastewater Treatment Plant, located off Interstate 580 in San Rafael. The treatment plant treats wastewater and biosolids from member districts and the San Quentin State Prison via conveyance from several remote pump stations. The treatment plant produces clean effluent, which is treated to an advanced secondary treatment level and then discharged into San Francisco Bay through an outfall structure owned and maintained by CMSA. Biosolids from the treatment process are either applied as soil enhancement for agriculture in Sonoma County or Solano County or taken to Redwood Landfill in Novato where they are processed for compost, used for alternative daily cover, or directly disposed to the landfill. Some of the treated wastewater is recycled and used for washdown and irrigation at the plant site (San Rafael City Schools, 2016b).

The treatment plant is capable of processing more than 125 mgd of wastewater during peak rainfall periods. The average dry weather flow is approximately 8 mgd, and permitted dry weather flow is 10 mgd. The maximum peak wet weather flow has reached about 121.5 mgd (Dow, 2018).

Wastewater Facilities in Project Site Vicinity

Existing wastewater facilities in the project site vicinity include a San Rafael Sanitation District 10-inch sewer main in Woodland Avenue. In addition, the Davidson campus contains (1) a sewer lateral that exits onto Woodland Avenue, and (2) a sewer lateral that exits onto Lovell Avenue from the rear and southwest area of the campus (Savidge, 2018a). The Laurel Dell campus uses an existing sewer lateral located adjacent to the administration building (Savidge, 2018b). Sewer laterals on the two school campuses connect to San Rafael Sanitation District lines that convey wastewater to the CMSA Wastewater Treatment Plant. The on-site sewer laterals are the responsibility of San Rafael City Schools, not the San Rafael Sanitation District (Toy, 2018). Existing and proposed connections would be to the Woodland Avenue sewer main.

Wastewater Generation by Proposed Project

Compared to existing conditions, the project has the potential to increase the total population on the two campuses by about 197 people or 13 percent (see Table 2 in Chapter I, Project Description, of this Initial Study). The project thus could generate up to a 13 percent increase in wastewater generation, compared to existing conditions.

Proposed Changes to Wastewater Facilities

With the project, existing sewer lines on the Davidson and Laurel Dell campuses would be relocated and/or replaced as necessary, as stated in Chapter I, Project Description, of this Initial Study. On the Davidson campus, the new building in Phase 1 would use the adjoining existing sewer lateral that exits to Woodland Avenue, and the Multi-Purpose Building and gym modifications in Phases 2 and 3 would use the sewer lateral that exits onto Lovell Avenue (Savidge, 2018a). On the Laurel Dell campus, connections would be to the existing on-campus sewer lateral (Savidge, 2018b).

The San Rafael Sanitation District anticipates that the 10-inch sewer main in Woodland Avenue would have adequate capacity to handle the additional flow created by the project (Toy, 2018). Sewage from the development would be conveyed through the San Rafael Sanitation District sewer system to the CMSA Wastewater Treatment Plant.

Conclusion

The CMSA Wastewater Treatment Plant would have adequate capacity to handle the project-related increase in sewage flows (Dow, 2018). The project's impact would therefore be less than significant and no mitigation is necessary.

- b) *Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Less Than Significant Impact

Water Facilities

The project would not require or result in the construction of new water facilities or expansion of existing facilities that would cause significant environmental effects. The following discussion reviews the water supply and delivery system for the project site and vicinity and the potential project impact on water facilities.

Water Supply and Demand

The City of San Rafael obtains its water supply from the Marin Municipal Water District (MMWD), which provides potable water to the eastern corridor of Marin County from the Golden Gate Bridge up to but not including Novato. The incorporated cities and towns of San Rafael, Corte Madera, Mill Valley, Fairfax, San Anselmo, Ross, Larkspur, Belvedere, and Sausalito are within the MMWD service area (MMWD, 2016; MMWD, 2017).

The MMWD potable water supplies come from a combination of local surface water supplies and water imported from the Russian River and purchased from the Sonoma County Water Agency (SCWA). MMWD operates seven surface water storage reservoirs with a total capacity of 79,566 acre-feet (25,927 million gallons), but MMWD estimates that operational yield of the reservoirs is about 20,000 acre-feet per year. The reservoir supply is supplemented with SCWA water through a contract that allows MMWD to take deliveries of up to 14,300 acre-feet per year (MMWD, 2016).

Current demand for potable and raw water is 22,610 acre-feet per year. Demand is expected to increase to as much as 29,200 acre-feet per year by 2040 (MMWD, 2016; MMWD, 2017).

Through its commitment to water conservation, MMWD expects that water supplies will be sufficient to meet demands during normal and dry water years through 2040, except in the case of a 6-year severe drought, which has a low probability of occurring. The MMWD water rationing plan includes provisions

that require MMWD customers to reduce their water usage by up to 25 percent during periods of severe drought (MMWD, 2016; MMWD, 2017).

Water Treatment

To treat its water supply, MMWD operates three water treatment plants: the Bon Tempe Treatment Plant, the San Geronimo Treatment Plant, and the Ignacio treatment facility. Together, these facilities have a combined design capacity of 71 million gallons per day (mgd). Observed high flows have reached 58 mgd; however, the average daily maximum flow is approximately 25 mgd. In 2015, the total production of the three plants averaged 20.4 mgd (MMWD, 2016).

Water Distribution

Because of Marin County's hilly terrain, about 90 percent of the water must be pumped at least once before it reaches the customer's tap. The MMWD potable water distribution system includes approximately 886 miles of water mains, 94 pumping stations, and 127 treated water storage tanks with a total storage capacity of approximately 82 million gallons (MMWD, 2016).

Recycled Water System

In addition to its potable water system, MMWD owns and operates a recycled water system, which consists of nearly 25 miles of pipeline and delivers about 520 acre-feet per year through 342 service connections. MMWD produces its own recycled water by treating secondary effluent provided by the Las Gallinas Valley Sanitary District (MMWD, 2016).

Water Facilities Serving Project Site

The project site is served by MMWD water lines and fire hydrants.

Need for New or Expanded Water Facilities Due to Project

With the project, existing water lines and fire hydrants on the Davidson and Laurel Dell campuses would be replaced as necessary, as stated in Chapter I, Project Description, of this Initial Study. Buildings on both campuses would use existing on-site water connections. The project would include fire sprinklers in buildings, and this fire water service would be from a connection to the MMWD water main in Woodland Avenue (Savidge, 2018b).

Conclusion

The project would include connections to existing MMWD water facilities on the two campuses. Existing on-site piping and fire hydrants would be replaced in a phased manner as construction proceeds. MMWD would be informed about any new tie-ins to existing water mains prior to construction and would determine the adequacy of the existing water services using a fixture count or flow requirement estimate. No additional water facilities such as storage tanks or treatment plant upgrades, either on-site or off-site, would be required in order for MMWD to serve the project (Anderson, 2018). The

environmental impacts of the water facilities required for the project are therefore evaluated as part of the analysis of project construction impacts throughout this EIR. The water facilities would not have any specific significant environmental impacts requiring mitigation. San Rafael City Schools would pay appropriate development impact and utility connection fees toward ongoing improvements and maintenance of the water system (MMWD, 2018a). The environmental impact would be less than significant, and no mitigation is necessary.

Wastewater Facilities

The project would not require or result in the construction of new wastewater facilities or expansion of existing facilities that would cause significant environmental effects. As noted under Item (a) above, the project would include connections to existing San Rafael Sanitation District facilities serving the two campuses. The San Rafael Sanitation District would be informed about any new tie-ins to existing sewer lines. Construction of new off-site wastewater facilities or expansion of existing facilities is not currently anticipated. The environmental impacts of the wastewater facilities required for the project are therefore evaluated as part of the analysis of project construction impacts throughout this Initial Study. The wastewater facilities would not have any specific significant environmental impacts requiring mitigation. San Rafael City Schools would be required to submit civil engineering plans to the San Rafael Sanitation District for approval; at that time, the capacity of each pipeline would be checked, and various options for connection would be evaluated. San Rafael City Schools would also be required to pay appropriate development impact and utility connection fees toward ongoing improvement and maintenance of the wastewater system (San Rafael City Schools, 2016b). The environmental impact would be less than significant, and no mitigation is necessary.

- c) *Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Less Than Significant Impact

Please refer to Section X, Hydrology and Water Quality, of this Initial Study for discussion of this issue.

- d) *Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Less Than Significant Impact

Sufficient water supplies are available to serve the project, and no new or expanded water entitlements would be needed. The following discussion reviews existing and projected water consumption at the project site and the potential project impact on water supply. Please refer to Item (b) above for discussion of the water supply and delivery system for the project site and vicinity and the potential project impact on water facilities.

Existing Water Entitlement at Project Site

MMWD uses formulas to determine the necessary water entitlement for different types of users. If, at a later date, it is determined that actual consumption is exceeding the current entitlement, additional water must be purchased to increase the property's entitlement, or the consumption must be reduced to the level consistent with the existing entitlement.

MMWD records show that the total existing water entitlement for the project site is 24.88 acre-feet per year, consisting of 23.68 acre-feet at Davidson Middle School and 1.20 acre-feet at Laurel Dell Elementary School (Anderson, 2018).

Existing Water Consumption at Project Site

Total average annual water consumption at the project site over the past 5 years was 20.46 acre-feet. Davidson Middle School has 3 meters with one dedicated to irrigation, and the average annual consumption of the 3 meters was 17.94 acre-feet over the past 5 years. Laurel Dell Elementary School has one meter for the entire campus, and average annual consumption was 2.52 acre-feet over the past 5 years. The resulting total for the project site—20.46 acre-feet—is 4.42 acre-feet less than the site's water entitlement of 24.88 acre-feet (Anderson, 2018).

Water Consumption by Proposed Project

The project would increase the total enrollment capacity at the two campuses to 1,576 students, or an additional 185 students compared to existing enrollment (1,391 students) (see Table 2 in Chapter I, Project Description, of this Initial Study). Based on MMWD's water entitlement formula for schools, the 185-student enrollment increase would increase water demand by 2.29 acre-feet per year (185 students x 0.0124 acre-feet per student per year) (Anderson, 2018). Total estimated water consumption with the project would therefore be 22.75 acre-feet per year (20.46 acre-feet existing consumption + 2.29 acre-feet = 22.75 acre-feet total consumption).

The project would be subject to MMWD and State of California water conservation requirements, which would help reduce the project's water use (MMWD, 2018b). In addition, the two campuses would continue to be subject to the San Rafael City Schools energy and water management policy (Board Policy [BP] 3511), which requires the Superintendent or designee to develop a resource management program that includes strategies for implementing effective and sustainable resource practices, reducing water consumption, minimizing utility costs, and promoting conservation principles (San Rafael City Schools, 2016a).

Sufficiency of Water Supplies and Entitlements to Serve Project

Water supplies would be sufficient to serve the project, and new or expanded water entitlements would not be necessary. The estimated total water consumption of 22.75 acre-feet per year would be 2.13 acre-feet less than the project site's existing water entitlement of 24.88 acre-feet per year. Therefore, the two schools have sufficient entitlement for the project, and additional entitlement is not required.

(Anderson, 2018). The project's impact on water supplies would therefore be less than significant, and no mitigation is necessary.

While not necessary as mitigation, MMWD recommends that San Rafael City Schools adjust the entitlement for Laurel Dell Elementary School (1.20 acre-feet) to be commensurate with its actual water consumption (2.52 acre-feet). This adjustment would lead to a reduction in charges for water consumption (Anderson, 2018).

- e) *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Less Than Significant Impact

The project would not result in a determination by the wastewater treatment provider that serves the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments. See discussion under Item (a) above. The project's impact in relation to this significance criterion would therefore be less than significant.

- f) *Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

Less Than Significant Impact

The project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. The following discussion reviews the solid waste collection system for the project site and vicinity, landfill capacity, and the potential project impact on this capacity.

Solid Waste Collection

Marin Sanitary Service, a privately owned waste hauler, provides solid waste collection service in San Rafael and other areas of central Marin County. Marin Sanitary Service operates a resource recovery and recycling plant, as well as a transfer station where waste is accepted and then hauled by transfer truck to Redwood Landfill (San Rafael City Schools, 2016b).

Landfill Capacity

Redwood Landfill, a fully permitted Class III disposal site located approximately 3.5 miles north of Novato, is the main landfill used for residential and commercial wastes generated in the San Rafael area. Redwood Landfill has a current maximum permitted capacity of 19.1 million cubic yards. According to the State of California's database, as of December 2008, the landfill had a remaining capacity of 26 million cubic yards, which is different from the permitted capacity. The landfill has a permitted throughput of 2,300 tons per day and currently is expected to cease operation in 2024 (CalRecycle, 2018b).

Existing Solid Waste Generation at Project Site

Data on actual solid waste generation at the project site are not available. Standard solid waste generation rates provided by the State of California Department of Resources Recycling and Recovery (CalRecycle, 2018a) indicate that schools might generate up to 1 pound of solid waste per student per day. Based on this standard rate, the two schools might generate up to 1,391 pounds of solid waste per day (1,391 students x 1 pound per student per day = 1,391 pounds per day).

Solid Waste Generation by Proposed Project

The project would involve demolition of existing facilities and construction of new facilities on the Davidson and Laurel Dell campuses, as described in Chapter I, Project Description, of this Initial Study. Solid waste would be generated during both the construction and operational phases of the project. The construction phase would include building demolition and is expected to generate approximately 1,460 cubic yards of debris (see Tables 6 and 15 of this Initial Study). Once in operation, the project would be expected to increase solid waste generation on the project site by up to 185 pounds per day. This estimate is based on the projected capacity of the two schools, which would allow a 185-student increase over existing enrollment, and the standard solid waste generation rate of 1 pound per student per day (CalRecycle, 2018a). The amount of material sent to the landfill is expected to decrease with education and implementation of recycling programs on the two campuses. Further, San Rafael City Schools is implementing California Green Building Standards Code (CALGreen Code) and Coalition for High Performing Schools (CHIPS) measures that are expected to reduce solid waste generation. A demolition and construction waste management plan would significantly reduce waste from the project while construction is underway, and operational waste would be reduced by implementation of operational waste procedures developed in consultation with Marin Sanitary Service.

Impact on Landfill Capacity

Redwood Landfill would have sufficient capacity to accommodate the project's solid waste disposal needs. The landfill's maximum permitted capacity (19.1 million cubic yards) and permitted throughput (2,300 tons per day) far exceed the net increase in solid waste that would be generated by the project (approximately 1,460 cubic yards during construction and up to 185 pounds per day during operations). The impact on landfill capacity would therefore be less than significant.

g) *Would the project comply with federal, State, and local statutes and regulations related to solid waste?*

Less Than Significant Impact

By law, the project must comply with all applicable federal, state, and local statutes and regulations related to solid waste. The DSA would review the project to verify compliance with State of California requirements, including the California Green Building Standards Code (CALGreen Code), which includes requirements for waste reduction and recycling; these include requirements that a minimum of 65 percent of nonhazardous construction and demolition waste be recycled and/or salvaged for reuse, that a construction waste management plan be prepared, and that readily accessible areas be provided to allow recycling by project occupants (DSA, 2018). In addition, the two campuses would continue to

be subject to the San Rafael City Schools energy and water management policy (BP 3511), which requires the Superintendent or designee to develop a resource management program that includes strategies for implementing effective and sustainable resource practices, reducing the amount of waste of consumable materials, and encouraging recycling (San Rafael City Schools, 2016a). The project therefore is not expected to cause any conflicts with federal, state, or local statutes or regulations related to solid waste, and its impact would be less than significant.

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	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IMPACT EVALUATION

- a) *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?*

Potentially Significant Unless Mitigation Incorporated

Section IV, Biological Resources, of this Initial Study addresses the need for mitigation due to the potential loss of active bird nests during construction. Such birds are protected under the Migratory Bird Treaty Act (MBTA). No other significant impacts related to the plant or animal community were noted. Section V, Cultural Resources, identifies mitigation measures needed in case of the discovery of as-yet unknown archaeological or paleontological resources during project construction. No further mitigation measures were necessary.

- b) *Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)*

Less Than Significant Impact

As defined in the CEQA Guidelines, “cumulative impacts” refer to two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts (CEQA Guidelines Section 15355). When evaluating cumulative effects, a lead agency shall consider whether the cumulative impact, itself, is significant, and whether the project’s incremental contribution to that effect is “cumulatively considerable” (CEQA Guidelines Section 15064(h)(1)). An individual project’s contribution is “cumulatively considerable” if the incremental effects of the individual project are significant when viewed in connection with the effects of past, current, and probable future projects. The individual project must contribute to the adverse impact; otherwise, the impact cannot be characterized as a cumulative impact of the individual project. A project’s incremental effect may be found to be less than significant when its contribution to a cumulative impact is insubstantial.

This Initial Study/Mitigated Negative Declaration considers the impacts of the proposed project in combination with potential environmental effects of recently completed projects, projects currently under construction, and pending reasonably foreseeable future projects in the project area, taking into account the nature of the resource affected, time, project location, and project type.

The proposed Davidson and Laurel Dell campus improvements were evaluated together as a single project so that the cumulative impacts of development on both campuses could be considered. This was especially relevant given the proximity of the two campuses. Thus, for the immediate surroundings, cumulative impacts have been evaluated.

To evaluate cumulative impacts, the City of San Rafael Planning Department was contacted to identify approved or pending new developments in the vicinity of the Davidson and Laurel Dell campuses (Bolyan, 2018). No projects are proposed in the immediate vicinity of the two campuses. Generally, the two sites are surrounded by established residential or industrial development and little vacant land exists. The downtown area of San Rafael located north of the campuses includes a number of approved or potential projects. Those nearest to the two campuses are (1) the BioMarin main campus, where a 72,000-square-foot building and 312 parking space expansion have been approved but not yet built; and (2) the BioMarin/Whistlestop project that is currently under review. The BioMarin/Whistlestop project, located at 999 3rd Street, would possibly include approximately 200,000 square feet of research and development space. This same site would house the Whistlestop facility, which could include about 18,700 square feet of senior center uses and 54 senior housing units.

Given the location of the BioMarin and Whistlestop projects, cumulative impacts related to the two school campuses are not considered significant. These other projects would have vehicular access primarily from 2nd and 3rd streets and would not require access along Woodland Avenue near the campuses. Also, the projects would occur in developed portions of the downtown and are not expected to have significant impacts related to biological resources. While construction of the pending projects could have potential impacts on unknown archaeological resources, the City is expected to impose appropriate mitigation measures as part of the environmental review process. This would also apply to other topics for which environmental impacts might be identified. The BioMarin/Whistlestop project is projected to undergo environmental review in 2018-2019, but this review has not yet begun.

The mitigation measures proposed for the Davidson and Laurel Dell campuses would help to reduce overall cumulative impacts and no further mitigation measures would be necessary.

- c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Potentially Significant Unless Mitigation Incorporated

The potential for substantial adverse direct and indirect effects on human beings is addressed throughout the analysis in this Initial Study. Potentially significant impacts related to aesthetics, air quality, noise, and other issues are identified, and mitigation measures are recommended to reduce these impacts to less-than-significant levels. With implementation of the recommended mitigation measures, the impacts would be adequately mitigated.

REFERENCES

Bolyan, Raffi, Planning Manager, City of San Rafael, 2018. E-mail to A. Skewes-Cox, April 17, 2018.

APPENDIX A

SUMMARY OF MITIGATION MEASURES

Mitigation Measure AESTHETICS-1a: A minimum of six new trees shall be planted along Woodland Avenue to the west of the new STEM Center. These trees shall be either evergreen or deciduous, drought-tolerant, and shall be at least 25 to 30 feet at maturity. Any trees within the sidewalk area shall be approved by the City of San Rafael Department of Public Works. At the time of planting, the trees shall be in 24-inch boxes, adequately protected with staking and fencing as needed for early growth, and shall be planted within 6 months of completion of the STEM Center. In addition, shrubbery landscaping that is drought-tolerant shall be planted in the vicinity of the new building, especially in areas visible from Woodland Avenue.

Mitigation Measure AESTHETICS-1b: A minimum of five new trees shall be planted along Woodland Avenue to the north/northeast of the new Laurel Dell buildings. An additional three new trees shall be planted on the south side of the campus on Eva Street. These trees shall be either evergreen or deciduous, drought-tolerant, and shall be at least 25 to 30 feet at maturity. Any trees within the sidewalk area shall be approved by the City of San Rafael Public Works Department. At the time of planting, the trees shall be in 24-inch boxes, adequately protected with staking and fencing as needed for early growth, and shall be planted within 6 months of completion of the Laurel Dell project. In addition, shrubbery landscaping that is drought-tolerant shall be planted in the vicinity of the new buildings, especially in areas visible from Woodland Avenue.

The combination of the two mitigation measures above would reduce this impact to less than significant. (LTS)

Mitigation Measure AESTHETICS-2: All new lighting shall be shielded to reduce off-site light and glare. Pedestrian pathway lighting shall be of a uniform style and quality of illumination that aids in navigation without overlighting the surroundings. Signage lighting shall be minimized to provide context for pedestrians and drivers. Parking lot lighting shall be shielded and cast downward to minimize "light spillage" to off-site locations and shall be placed on timers so that minimal lighting occurs after 11:00 PM. (LTS)

Mitigation Measure AIR-1: During project construction, the contractor shall implement a dust control program that includes the following measures recommended by the Bay Area Air Quality Management District (BAAQMD):

- All exposed surfaces (e.g., parking areas, staging areas, graded areas, and unpaved access roads) shall be watered two times per day. Soil piles shall be covered.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- A publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD phone number shall also be visible to ensure compliance with applicable regulations.

In addition, an independent construction monitor shall conduct periodic site inspections, but in no event fewer than four total inspections, during the course of construction to ensure these mitigation measures are implemented and shall issue a letter report to San Rafael City Schools documenting the inspection results. Reports indicating non-compliance with construction mitigation measures shall be cause to issue a stop-work order until such time as compliance is achieved. (LTS)

Mitigation Measure AIR-2: Mitigation Measure AIR-1 shall be implemented. (LTS)

Mitigation Measure AIR-3: During project construction, the contractor shall use off-road equipment equipped with Tier 4 engines as certified by the California Air Resources Board (CARB). Contract specifications shall include this requirement prior to the start of construction. (LTS)

Mitigation Measure BIOLOGY-1: Adequate measures shall be taken to avoid inadvertent take of raptor nests and other nesting birds protected under the Migratory Bird Treaty Act when in active use. This shall be accomplished by taking the following steps:

- If construction is proposed during the nesting season (February through August), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within 14 days prior to the onset of tree removal or construction, in order to identify any active nests on the project site and in the vicinity of proposed construction.
- If no active nests are identified during the survey period, or if development is initiated during the non-breeding season (September through February), construction may proceed with no restrictions.
- If bird nests are found, an adequate setback shall be established around the nest location and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the California Department of Fish and Wildlife (CDFW) and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the construction area.

- A report of findings shall be prepared by the qualified biologist and submitted to San Rafael City Schools for review and approval prior to initiation of construction within the no-disturbance zone during the nesting season (February through August). The report either shall confirm absence of any active nests or shall confirm that any young within a designated no-disturbance zone have fledged and construction can proceed.

Implementation of Mitigation Measure BIOLOGY-1 would reduce the potentially significant impact on nesting birds to a less-than-significant level. (LTS)

Mitigation Measure CULTURAL-1: Should an archaeological deposit be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology contacted to assess the situation, determine if the deposit qualifies as a historical resource, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. If the deposit is found to be significant (i.e., eligible for listing in the California Register of Historical Resources), San Rafael City Schools shall be responsible for funding and implementing appropriate mitigation measures. Mitigation measures may include recordation of the archaeological deposit, data recovery and analysis, and public outreach regarding the scientific and cultural importance of the discovery. Upon completion of the selected mitigations, a report documenting methods, findings, and results shall be prepared and submitted to San Rafael City Schools for review, and the final report shall be submitted to the Northwest Information Center at Sonoma State University. Significant archaeological materials shall be submitted to an appropriate local curation facility and used for future research and public interpretive displays, as appropriate.

With implementation of the above mitigation measure, the potential impact on historical and archaeological resources would be reduced to a less-than-significant level. (LTS)

Mitigation Measure CULTURAL-2: Mitigation Measure CULTURAL-1 shall be implemented. (LTS)

Mitigation Measure CULTURAL-3: Should paleontological resources be encountered during project subsurface construction activities, all ground-disturbing activities within 25 feet shall be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. For purposes of this mitigation, a "qualified paleontologist" shall be an individual with the following qualifications: 1) a graduate degree in paleontology or geology and/or a person with a demonstrated publication record in peer-reviewed paleontological journals; 2) at least two years of professional experience related to paleontology; 3) proficiency in recognizing fossils in the field and determining their significance; 4) expertise in local geology, stratigraphy, and biostratigraphy; and 5) experience collecting vertebrate fossils in the field. If the paleontological resources are found to be significant and project activities cannot avoid them, measures shall be implemented to ensure that the project does not cause a substantial adverse change in the significance of the paleontological resource. Measures may include monitoring, recording of the fossil locality, data recovery and analysis, a final report, and accessioning of the fossil material and technical report to a paleontological repository. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to San Rafael

City Schools for review. If paleontological materials are recovered, this report also shall be submitted to a paleontological repository such as the University of California Museum of Paleontology, along with significant paleontological materials. Public educational outreach may also be appropriate.

With implementation of the above mitigation measure, the potential impact on paleontological resources would be reduced to a less-than-significant level. (LTS)

Mitigation Measure HAZARDS-1: As applicable, San Rafael City Schools shall implement the recommendations of the report completed in 2017 by Millennium Consulting Associates for Davidson Middle School entitled "Limited Hazardous Material Survey Report, Davidson Middle School", and the report completed in 2017 by Sensible Environmental Solutions Inc., for Laurel Dell Elementary School entitled "Hazardous Materials Inspection Report, Laurel Dell Elementary School". These recommendations include, but are not limited to:

- The inspection and testing for the presences of hazardous materials of spaces (including buildings, asphalt hardscape areas, and soils) outside of those that were already inspected and tested as part of the hazardous materials inspection reports.
- The development and implementation of a comprehensive set of Hazardous Materials Abatement Plans and Specification for incorporation into the Contract Documents. This includes identifying the scope of work and responsibility for compliance with Occupational Safety and Health Administration (OSHA), U.S. Environmental Protection Agency (USEPA), Bay Area Air Quality Management District (BAAQMD), and California Department of Public Health (CDPH) requirements as well as defining submittal, control, and set-up procedures, training requirements, and disposal requirements. (LTS)

Mitigation Measure HAZARDS-2: Mitigation Measure HAZARDS-1 shall be implemented. (LTS)

Mitigation Measure NOISE-1a: Construction equipment operation shall be limited to the hours of Monday through Friday from 7:00 AM to 6:00 PM and Saturday from 9:00 AM to 6:00 PM. Construction on Sundays and holidays shall be prohibited.

Mitigation Measure NOISE-1b: San Rafael City Schools shall not allow the use of heavy construction equipment during established testing periods (e.g., finals week).

Mitigation Measure NOISE-1c: San Rafael City Schools and/or the construction contractor shall develop a set of procedures for tracking and responding to complaints received pertaining to construction vibration and noise, and shall implement the procedures during construction. At a minimum, the procedures shall include:

1. Designation of an on-site construction complaint and enforcement manager for the project;
2. Protocols specific to on-site and off-site receptors for receiving, responding to, and tracking received complaints; and
3. Maintenance of a complaint log that records received complaints and how complaints were addressed.

Mitigation Measure NOISE-1d: Nearby residents, students, and staff at Davidson Middle School and Laurel Dell Elementary School shall be informed by posting informational notices on the fence line of the construction site, nearby buildings, and classrooms. The notice shall state the date of planned construction activity and include the contact information of the construction complaint and disturbance coordinator identified in Mitigation Measure NOISE-1c.

Mitigation Measure NOISE-1e: To address the potential for building damage from vibration, San Rafael City Schools and/or the construction contractor shall develop a set of procedures for ensuring that vibration-generating construction equipment is operated at least 18 feet away from the off-site residences during construction. If it is not feasible to avoid operating vibration-generating construction equipment within 18 feet from the off-site residences, San Rafael City Schools shall retain a structural engineer or other qualified professional to evaluate the potential for vibration generated by the use of the construction equipment to damage off-site buildings. The evaluation shall take into account project specific information such as the composition of the structures and the soil characteristics in the project area, to determine whether construction equipment may cause damage to nearby structures. If the evaluation finds that the operation of the construction equipment may cause damage to a structure, the structural engineer or other qualified professional shall recommend design means and methods of construction to avoid the potential damage.

If there are no feasible design means and methods to eliminate the potential for damage, the structural engineer or other qualified professional shall undertake an existing conditions study of any buildings that may experience damage. The study shall establish the baseline condition of adjoining buildings including, but not limited to, the location and extent of any visible cracks or spalls on the buildings. The study shall include written descriptions and photographs of the building. Upon completion of the project, the building shall be resurveyed, and any new cracks or other changes in the building shall be compared to pre-construction conditions and a determination shall be made as to whether the proposed project caused the damage. If it is determined that project construction has resulted in damage to the building, the damage shall be repaired to the pre-existing condition by San Rafael City Schools (working with consultants), provided that the property owner approves of the repair.

The combination of the above mitigation measures would reduce the impact to a less-than-significant level. (LTS)

Mitigation Measure NOISE-2: San Rafael City Schools shall use mechanical equipment selection and acoustical shielding to ensure that noise levels from the installation of mechanical equipment do not exceed the exterior noise standards of 60 dBA L_{max} /50 dBA L_{eq} during daytime or 50 dBA L_{max} /40 dBA L_{eq} during nighttime at the nearest residential land uses. Controls that would typically be incorporated to attain this outcome include locating equipment in less noise-sensitive areas, when feasible; selecting quiet equipment; and providing sound attenuators on fans, sound attenuator packages for cooling towers and emergency generators, acoustical screen walls, and equipment enclosures. (LTS)

Mitigation Measure NOISE-3a: Mitigation Measures NOISE-1a through NOISE-1d shall be implemented.

Mitigation Measure NOISE-3b: San Rafael City Schools shall require use of noise-reducing measures that may, as applicable and feasible, include the following and that shall be addressed in applicable contract specifications:

- Equip internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and are appropriate for the equipment.
- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from noise-sensitive land uses, as feasible. Muffle the stationary equipment, and enclose within temporary sheds or surround by insulation barriers, if feasible.
- To the extent feasible, establish construction staging areas at locations that would create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
- Construct or use temporary noise barriers, as needed, to shield on-site construction and demolition noise from noise-sensitive areas to the extent feasible. To be most effective, the barrier should be placed as close as possible to the noise source or the sensitive receptor.
- Control noise levels from workers' amplified music so that sounds are not audible to sensitive receptors in the vicinity.
- Prohibit all unnecessary idling of internal combustion engines.

The combination of the above measures would reduce this potential impact to a less-than-significant level. (LTS)

Mitigation Measure RECREATION-1: San Rafael City Schools shall comply with all mitigation measures identified in this Initial Study/Mitigated Negative Declaration. Compliance with these measures would ensure that the impact of recreational facilities included in the project would be reduced to a less-than-significant level. (LTS)

Mitigation Measure TRANSPORTATION-1: The project contractor for both campuses shall develop a traffic management plan that details construction truck trip operations during periods of anticipated heavy use, such as demolition and delivery of major project components to the site. The plan shall direct all construction truck traffic to travel to and from the campuses via 2nd Street and Woodland Avenue (as currently proposed). To facilitate traffic operations during construction, the construction management plan shall include the provision of a trained flag person for deliveries using large trucks (dumps, transfers, concrete, 18-wheelers), and on an as-needed basis. The flag person shall be on-site for all deliveries. Construction warning signage shall also be posted along Woodland Avenue, Picnic Avenue, and other nearby streets that may be affected by construction activities.

The contractor shall collaborate with the City of San Rafael to coordinate construction truck traffic with significant construction activities related to other development, if any, occurring concurrently in the vicinity of the project. (LTS)

APPENDIX B

SUMMARY OF COMMENTS FROM SCOPING MEETING



Davidson MS/Laurel Dell Neighborhood Meeting

Tuesday, March 27, 2018

5:30 PM – 7:00 PM

Davidson Middle School Community Room

AGENDA

- | | | |
|----|---|---|
| 1. | Welcome / Introduction | Dr. Dan Zaich, Senior Director
San Rafael City Schools |
| 2. | Davidson Middle School
Project Overview & Schedule | John Dybczak /QKA |
| 3. | Laurel Dell Elementary
Project Overview & Schedule | John Dybczak / QKA |
| 4. | Environmental Review
Public Comments | Amy Skewes-Cox |
| 5. | Questions / Answers | Dr. Dan Zaich, Senior Director
San Rafael City Schools |

SUMMARY OF SCOPING MEETING COMMENTS for Davidson and Laurel Dell

March 2018

My driveway is already often illegally blocked by people picking up and dropping off kids during the day at Laurel Dell. The intersection of Lindaro and Woodland is congested during pick up and drop off and the escape route on Lovell will no doubt be impacted with construction equipment and trucks. I'm feeling a bit besieged with the added train construction on Anderson, and the impending BioMarin project at the top of Lindaro. Noise, dust, road closures, etc.. Its a lot to put up with. I can only hope it will enhance the value of our properties in the long run and create a better educational environment for the kids. I would like to know specifically the time line for Laurel Dell and for Davidson projects. And the traffic path that trucks and equipment will be taking to access Laurel Dell specifically.



Amy Skewes-Cox <amysc@rtasc.com>

FW: Laurel Dell/DMS Neighborhood Meeting

1 message

Daniel Zaich <dzaich@srcs.org>
To: Amy Skewes-Cox <amysc@rtasc.com>

Tue, Mar 27, 2018 at 1:40 PM

fyi

Dan Zaich, Ed.D. | Senior Director – Capital Improvements | **San Rafael City Schools**

Phone: 415.492.3285 | dzaich@srcs.org | www.SRCS.org

310 Nova Albion Way | San Rafael, CA 94903

----- Forwarded message -----

From: **Angelita Sanchez** <angelita.sanchez@vpcsonline.com>
Date: Mon, Mar 26, 2018 at 2:44 PM
Subject: Laurel Dell/DMS Neighborhood Meeting
To: Daniel Zaich <dzaich@srcs.org>

Hi Dan,

Gail Knowels called and has questions regarding the project. She isn't able to attend tomorrow's meeting and would like a call back. Gail can be reached at [415-307-4229](tel:415-307-4229)

She is concerned about SRCS coordinating with the work that the Smart Train and PG&E are currently doing and streets closing.

Regards,

Angelita Sanchez, Office Coordinator



[707-639-7535](tel:707-639-7535) Mobile

[415-492-5904](tel:415-492-5904) Office

angelita.sanchez@vpcsonline.com



Amy Skewes-Cox <amysc@rtasc.com>

RE: Impact on the neighborhood and timeline for Construction of Laurel Dell and Davidson Middle Schools

1 message

Daniel Zaich <dzaich@srcs.org>
To: Amy Skewes-Cox <amysc@rtasc.com>

Wed, Mar 21, 2018 at 2:43 PM

Hi Amy,

What is the best way to provide the information requested below?

dZ

Dan Zaich, Ed.D. | Senior Director – Capital Improvements | San Rafael City Schools
Phone: 415.492.3285 | dzaich@srcs.org | www.SRCS.org
310 Nova Albion Way | San Rafael, CA 94903

-----Original Message-----

From: Beth Niles [mailto:b.niles@sbcglobal.net]
Sent: Wednesday, March 21, 2018 1:48 PM
To: Daniel Zaich <dzaich@srcs.org>
Cc: patti.llamas@vpcsonline.com
Subject: Impact on the neighborhood and timeline for Construction of Laurel Dell and Davidson Middle Schools

Dear Dan,

I just left you a message on your vm and am following up with you (and Patti) regarding the upcoming planned construction. I feel like our little corner of San Rafael is impacted by a lot of development.

Unfortunately, I will be out of the country, I won't be able to attend the upcoming Scope Meeting on the 27th at Davidson Middle School, so I am particularly anxious to have a brief discussion with you or a staff member about the project. I am happy for the kids, they deserve great schools and have been in the pods for a long time. That said, I have already endured months of residential construction going on behind me already, on the house on the corner of Bungalow and Woodland, including various people living in their vans and campers on the property, and I am impacted directly by the school construction because it will be directly across the street.

My driveway is already often illegally blocked by people picking up and dropping off kids during the day at Laurel Dell. The intersection of Lindaro and Woodland is congested during pick up and drop off and the escape route on Lovell will no doubt be impacted with construction equipment and trucks. I'm feeling a bit besieged with the added train construction on Anderson, and the impending BioMarin project at the top of Lindaro. Noise, dust, road closures, etc.. Its a lot to put up with. I can only hope it will enhance the value of our properties in the long run and create a better educational environment for the kids.

I would like to know specifically the time line for Laurel Dell and for Davidson projects. And the traffic path that trucks and equipment will be taking to access Laurel Dell specifically.

Thank you in advance for your attention and please try to get back to me no later than Monday as I leave on Tues 27th.

Kind regards,

Beth Niles
16 Eva St.
San Rafael, CA. 94901
[415-518-7438](tel:415-518-7438) cell
b.niles@sbcglobal.net
SKYPE: vineline