

# DRAFT

## School Traffic Congestion Analysis



2023

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## EXECUTIVE SUMMARY

The TRAFFIX School Traffic Congestion Analysis (the “study”) is a traffic study and site analysis aimed at evaluating traffic delay at selected intersections within the vicinity of school sites to assess existing and potential new student bus transportation routes and schools served that would provide the most effective and efficient impacts for reducing traffic congestion. Eleven schools have existing TRAFFIX student bus service, and are highlighted throughout the report with **bold lettering**.

### Level of Service

65 intersections in the vicinity of 33 schools were evaluated for level of service (LOS) based on average intersection delay. School-related impacts on LOS of adjacent stop-controlled intersections and roadway delay in the surrounding neighborhood during school peaks are minor with little-to-no impacts based on staff evaluations and known conditions. Considering the deliverables and budget, staff was pragmatic with the selection of the study locations. See Chapter 2 for more details on level of service. Two intersections operate at LOS E and eight intersections operate at LOS F in the a.m. peak hour, and one of those intersections also operate at LOS F in the school p.m. peak hour.

The current LOS results were compared with LOS results from previous studies conducted in 2016, 2011 and 2006. 18 intersections have degraded in LOS in either the AM or PM period when compared to the results from the most recent LOS result available and 29 intersections have improved in either the AM or PM period. Residential development growth in the area can be attributed to increases in overall traffic volume resulting in degraded LOS. However, it is more challenging to determine the reasons for improvements in level of service. Various reasons include implementation of TRAFFIX bus routes, continued traffic pattern shifts due to the lingering impacts from COVID-19, school bell times, and the re-distribution of traffic due to the opening of new schools since 2006.

### Traffic Delay Impact with Bus Implementation

The results of the SimTraffic model simulation are presented on **Table 8**. Of the 29 zones analyzed, 14 would experience a reduction of at least 10 percent in total delay as modeled with the addition of two bus routes. Two school zones, **California High School** and Tassajara Hills Elementary School, have model results with increased delay with the addition of busing. The SimTraffic model for **California High School** had challenges with calibration due to excessive queuing and thus has results that do not reflect observed conditions, thus the result can be unpredictable. The SimTraffic model for Tassajara Hills Elementary School reflects observed field conditions thus indicating it is well calibrated. Therefore the minor increased delay could be due to the variation inherent in simulations. Four schools, **Neil Armstrong Elementary School, Green Valley Elementary School, Los Cerros Middle School and Vista Grande Elementary School**, were not analyzed because the existing TRAFFIX routes already cover the school residential zone and therefore there was no reasonable location to implement additional bus routes.

## School Site Observations

Comprehensive in-person field observations were conducted at all 33 schools. The observation focused on vehicle and pedestrian patterns on public roadways adjacent to the school as well as on-site through the passenger loading zone and parking lot, noting length of queues and conflict points. In order to quantify the observed level of congestion, a metric was structured to capture this qualitative assessment. The detailed description of the observations at each school includes options to improve traffic congestion as well as enhance safety.

Three schools had severe observed congestion: **Coyote Creek Elementary School**, Dougherty Valley High School and **California High School**. Seven schools had a high level of observed congestion: Rancho Romero Elementary School, **San Ramon Valley High School**, Iron Horse Middle School, Bella Vista Elementary School, Windemere Ranch Middle School, Gale Ranch Middle School and Golden View Elementary School.

## Summary of Findings

In an effort to summarize all the findings and determine where to prioritize school bus service with the goal of reducing traffic congestion, a point system was developed for the LOS analysis, SimTraffic percentage delay reduction, and the observed level of congestion. The result is a prioritized list of schools that would have the greatest impact on traffic congestion if bus service were provided.

### Tier 1

The following schools are currently served by TRAFFIX and are candidates to be considered for continued TRAFFIX service. The routes and stops for the schools can be re-evaluated to increase efficiency and ridership if a specific route is operating below capacity:

- **Vista Grande Elementary School (#25)**
- **Los Cerros Middle School (#27)**
- **Green Valley Elementary School (#26)**
- **Neil Armstrong Elementary School (#18)**
- **Walt Disney Elementary School (#13)**
- **San Ramon Valley High School (#24)**
- **Country Club Elementary School (#2)**



## **Tier 2**

The following schools are currently served by TRAFFIX and are candidates to be considered for continued student bus service with potential expansion:

- **Monte Vista High School** (#28)
- **Pine Valley Middle School** (#16)
- **Coyote Creek Elementary School** (#3)
- **California High School** (#17)

## **Tier 3**

The following schools are candidates to be considered for new student bus service (listed in priority order):

- Gale Ranch Middle School (#9)
- Golden View Elementary School (#4)
- Rancho Romero Elementary School (#29)
- Dougherty Valley High School (#11)
- Sycamore Valley Elementary School (#20)
- Iron Horse Middle School (#15)
- Windemere Ranch Middle School (#10)

## CHAPTER 1 INTRODUCTION

### 1.1 Background

TRAFFIX is an independent joint powers authority known as the Measure J Traffic Congestion Relief Agency, and is funded by the Contra Costa County Measure J half-cent transportation sales tax approved by voters in 2004. One of the programs identified in the measure is for Safe Transportation for Children: School Bus Program in Southwest County.

TRAFFIX first began bus operations in 2009 and currently operates a 24-bus student transportation service at three high schools, two middle schools and six elementary schools within the San Ramon Valley Unified School District (SRVUSD). The SRVUSD is comprised of the City of San Ramon, Town of Danville and the unincorporated communities of Alamo, Blackhawk and Diablo in the Contra Costa County.

The TRAFFIX Board of Directors consists of a total of seven representatives. Day to day program administration is provided by an Administrative Coordinator, who is a City of San Ramon employee, with oversight by the City of San Ramon Transportation Division Manager, a Technical Advisory Group (TAG) and a Citizen Advisory Committee.

### 1.2 Project Overview

The School Traffic Congestion Analysis (the "study") is a traffic study and site analysis that evaluates traffic delay at identified intersections within school study areas as a means to assist in prioritizing student bus transportation with the goal of reducing traffic congestion. Previous LOS studies were conducted in 2006, 2011 and 2016 with the goal of conducting the assessment every five years.

The purpose of the report is to present the following:

- Existing intersection level of service (LOS) based on average intersection delay,
- Impact on traffic delay reduction with the implementation of bus service at each school,
- Results of school site observations during drop-off and pick-up times,
- Evaluation of potential bus route catchment areas
- Prioritized list of schools that would have the greatest impact on reducing traffic congestion

### 1.3 School Sites and Study Intersections

The TAG identified the schools and intersections to be evaluated for this report. This report analyzes 33 school sites and 65 intersections for level of service. The school sites and corresponding intersections selected for the study are listed in Table 1 below and illustrated in Figure 1 and 2. Schools that already have TRAFFIX student bus service are highlighted with bold lettering in the following table and throughout the report.

**Table 1: Study School Sites and Intersections**

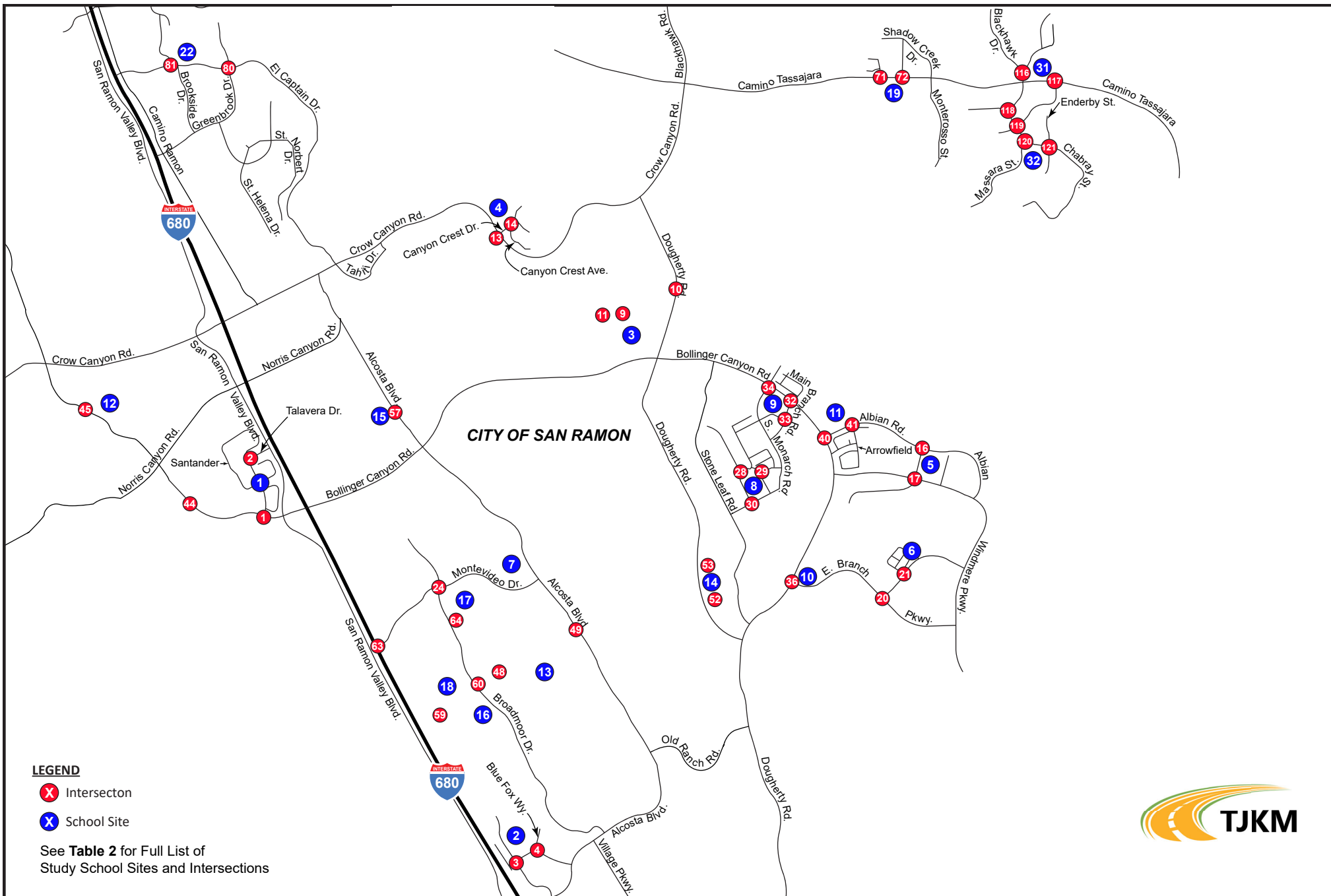
School No.	School Name	School Currently Served by TRAFFIX	Jurisdiction	Intersection No.	Intersection in School Analysis Zone
1	Bollinger Canyon ES	no	San Ramon	1	Bollinger Canyon Rd & Talavera Dr
			San Ramon	2	Santander Dr & Talavera Dr
2	<b>Country Club ES</b>	yes	San Ramon	5	Davona Dr & Blue Fox Way
			San Ramon	6	Brockton Ave & Blue Fox Way
3	<b>Coyote Creek ES</b>	yes	San Ramon	9	North Gale Ridge Rd & Lilac Ridge Rd
			San Ramon	10	North Gale Ridge Rd & Dougherty Rd
			San Ramon	11	North Gale Ridge Rd & Lantana Way
4	Golden View ES	no	San Ramon	13	Crow Canyon Rd & Canyon Crest Dr (East)
			San Ramon	14	Canyon Crest Ave & Canyon Crest Dr / Driveway In
5	Hidden Hills ES	no	San Ramon	16	Albion Rd & Harcourt Way
			San Ramon	17	Windemere Parkway & Harcourt Way
6	Live Oak ES	no	San Ramon	20	East Branch Parkway & Sherwood Dr
			San Ramon	21	Melbourne Way & Sherwood Dr
7	Montevideo ES	no	San Ramon	24	Broadmoor Dr & Montevideo Dr
8	Quail Run ES	no	San Ramon	28	Goldenbay Ave & Cinnamon Ridge Rd
			San Ramon	29	Goldenbay Ave & Applewood Dr
			San Ramon	30	Goldenbay Ave & Ivy Leaf Springs
9	Gale Ranch MS	no	San Ramon	32	Bollinger Canyon Rd & Main Branch
			San Ramon	33	S. Monarch Rd & Bayleaf Dr
			San Ramon	34	Bollinger Canyon Rd & S. Monarch Rd
10	Windemere Ranch MS	no	San Ramon	36	Bollinger Canyon Rd & East Branch Parkway
11	Dougherty Valley HS	no	San Ramon	40	Bollinger Canyon Rd & Albion Rd
			San Ramon	41	Albion Rd & Arrowfield Way / Driveway
12	Twin Creeks ES	no	San Ramon	44	Bollinger Canyon Rd & Marsh Dr
			San Ramon	45	Bollinger Canyon Rd & Dos Rios Dr
13	<b>Walt Disney ES</b>	yes	San Ramon	48	Pine Valley Rd & Del Mar Dr
			San Ramon	49	Pine Valley Rd & Alcosta Blvd
14	Bella Vista ES	no	San Ramon	52	Trumpet Vine Lane & Hibiscus Rd
			San Ramon	53	Trumpet Vine Lane & Trefoil Dr
15	Iron Horse MS	no	San Ramon	57	Alcosta Boulevard & Woodland

School No.	School Name	School Currently Served by TRAFFIX	Jurisdiction	Intersection No.	Intersection in School Analysis Zone
16	<b>Pine Valley MS</b>	yes	San Ramon	59	Davona Dr & Pine Valley Rd
			San Ramon	60	Broadmoor Dr & Pine Valley Rd
17	<b>Cal HS</b>	yes	San Ramon	63	San Ramon Valley Blvd & Montevideo Dr
			San Ramon	64	Broadmoor Dr & Millbridge Dr
18	<b>Neil Armstrong ES</b>	yes	San Ramon	59	Davona Dr & Pine Valley Rd
19	Diablo Vista MS	no	Danville	71	Camino Tassajara & Lawrence Rd
			Danville	72	Camino Tassajara & Hansen Lane
20	Sycamore Valley ES	no	Danville	73	Camino Tassajara & Holbrook Dr
			Danville	74	Camino Tassajara & Alta Vista Way
21	John Baldwin ES	no	Danville	75	Brookside Dr & Timberline Court
			Danville	76	Brookside Dr & Paraiso Dr
			Danville	77	Brookside Dr & Sycamore Valley Rd
22	Charlotte Wood MS	no	Danville	80	El Capitan Dr & Greenbrook Dr
			Danville	81	El Capitan Dr & Orange Blossom Way
23	Montair ES	no	Danville	84	Linda Mesa & Esther Lane
			Danville	85	Quinterra Lane & Estates Dr
24	<b>San Ramon Valley HS</b>	yes	Danville	87	Danville Blvd & Railroad Ave
			Danville	88	Danville Blvd & El Cerro Blvd
			Danville	89	El Cerro Blvd & La Gonda Way
25	<b>Vista Grande ES</b>	yes	Danville	95	Camino Tassajara & Diablo Rd
26	<b>Green Valley ES</b>	yes	Danville	98	Diablo Rd & Green Valley Rd / McCauley
			Danville	99	Diablo Rd & Matadera Way
			Danville	101	Green Valley Rd & Blemer Rd
			Danville	104	Green Valley Rd & Stone Valley Rd
27	<b>Los Cerros MS</b>	yes	Danville	101	Green Valley Rd & Blemer Rd
			Danville	104	Green Valley Rd & Stone Valley Rd
			Danville	98	Diablo Rd & Green Valley Rd / McCauley
			Danville	99	Diablo Rd & Matadera Way
28	<b>Monte Vista HS</b>	yes	Danville	104	Green Valley Rd & Stone Valley Rd
			Danville	105	Stone Valley Rd & MVHS Entry / Monte Sereno
			Danville	98	Diablo Rd & Green Valley Rd / McCauley

School No.	School Name	School Currently Served by TRAFFIX	Jurisdiction	Intersection No.	Intersection in School Analysis Zone
			Danville	99	Diablo Rd & Matadera Way
			Danville	101	Green Valley Rd & Blemer Rd
29	Rancho Romero ES	no	County	108	Danville Blvd & Hemme Ave
			County	109	Danville Blvd & La Serena Ave
30	Stone Valley MS	no	County	112	Danville Blvd & Stone Valley Rd
			County	113	Miranda Ave & Granite Dr
31	Tassajara Hills ES	no	County	116	Camino Tassajara & Charbray Street
			County	117	Camino Tassajara & Tassajara Hills School Entry
32	Creekside ES	no	County	118	Charbray Street & Casablanca Street
			County	119	Lusitano Street & Charbray Street
			County	120	Massara Street & Charbray Street
			County	121	Enderby street & Charbray Street
33	Alamo ES	no	County	124	Livorna Rd & Wilson Way

**Bold** indicates school with existing TRAFFIX service





**LEGEND**

- X Intersection
- X School Site

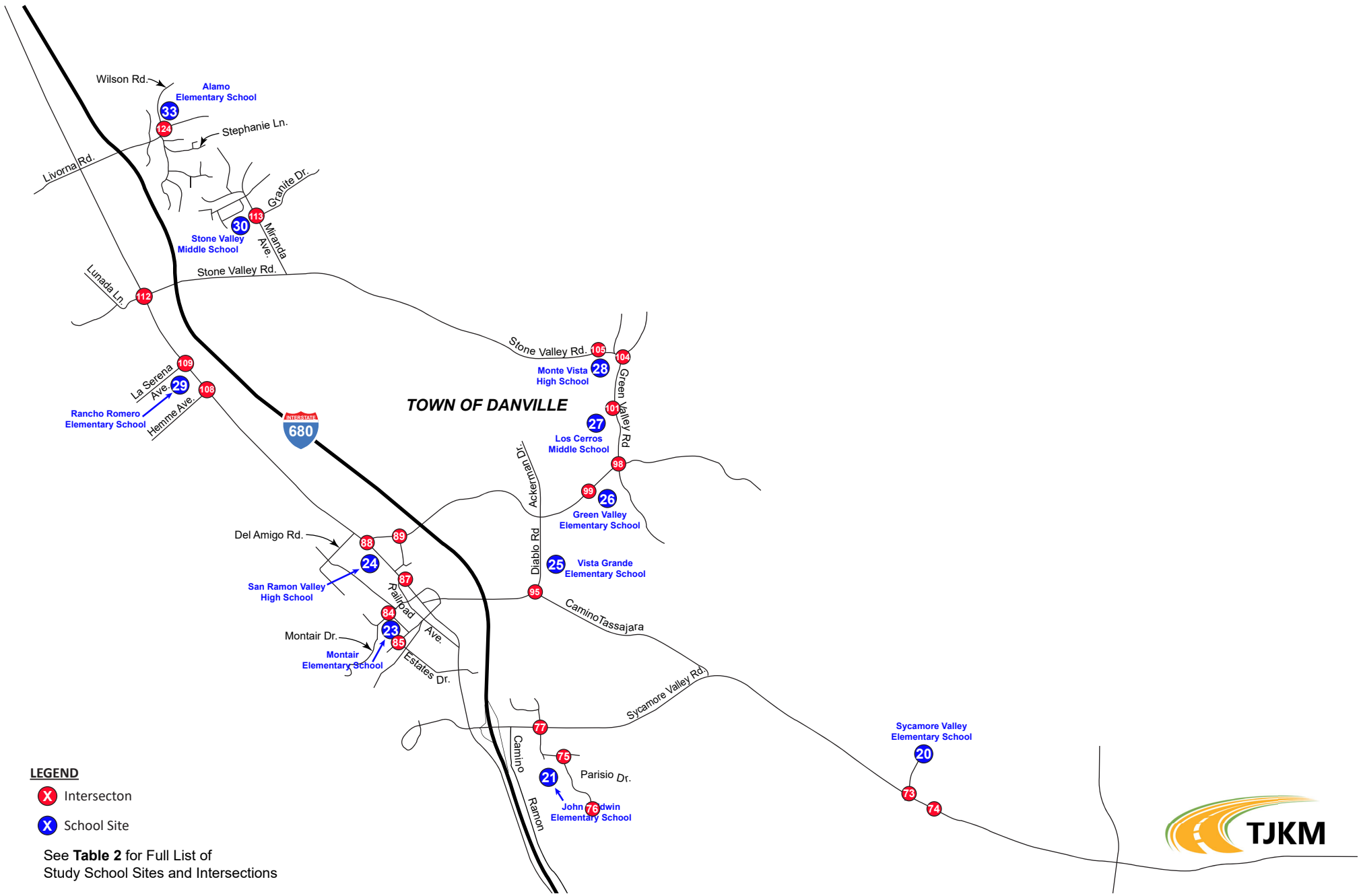
See **Table 2** for Full List of Study School Sites and Intersections





**FIGURE 1: STUDY INTERSECTIONS & SCHOOL SITES**  
**SCHOOL TRAFFIC COUNTS & ANALYSIS PROJECT**



Map not to scale.



**LEGEND**

-  Intersection
-  School Site

See **Table 2** for Full List of Study School Sites and Intersections



**FIGURE 2: STUDY INTERSECTIONS & SCHOOL SITES**



Map not to scale.

## CHAPTER 2 LEVEL OF SERVICE ANALYSIS

Level of service was evaluated for a.m. and school p.m. peak hours at 65 study intersections in the vicinity of the 33 schools.

### 2.1 Methodology

Traffic impacts on study intersections are quantified through the determination of level of service (LOS), a qualitative measure describing average delay at an intersection. LOS describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. LOS generally describes these conditions in terms of delay. There are six levels of service defined for signalized and unsignalized (i.e. stop controlled) intersections with letter designations ranging from A to F with LOS A representing free flow traffic conditions with little or no delay and LOS F representing conditions with excessive average delay and long back-ups.

The study intersections were analyzed using the Highway Capacity Manual 2000 (HCM 2000) methodology contained in the Synchro 11 software. The following tables present the levels of service and their descriptions.

**Table 2: Signalized Intersection Level of Service Description**

Level of Service	Description
A	Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Source: Highway Capacity Manual

**Table 3: Unsignalized Intersection Level of Service Description**

Level of Service	Description
A	Very low control delay less than 10 seconds per vehicle for each movement subject to delay.
B	Low control delay greater than 10 and up to 15 seconds per vehicle for each movement subject to delay.
C	Acceptable control delay greater than 15 and up to 25 seconds per vehicle for each movement subject to delay.
D	Tolerable control delay greater than 25 and up to 35 seconds per vehicle for each movement subject to delay.
E	Limit of tolerable control delay greater than 35 and up to 50 seconds per vehicle for each movement subject to delay.
F	Unacceptable control delay in excess of 50 seconds per vehicle for each movement subject to delay.

Source: Highway Capacity Manual

## 2.2 Traffic Volumes

In order to calculate the level of service, the number of vehicles making each turning movement is required at each intersection. Turning movement counts were collected at each of the 65 study intersections in March and April 2023, for the 7 - 9 AM and school PM (1:30-3:30 PM) peak periods. Please note that the PM period analysis is different from the PM commuter period which is usually 4 – 6 PM. The counts were conducted on a typical weekday Tuesday through Thursday, excluding days with inclement weather and holidays. The traffic counts included vehicles as well as pedestrian and bicyclist counts, as well as trucks.

It should be noted that at some locations, the turning movement counts do not reflect actual demand due to upstream congestion which limits the vehicle movement through the intersection. This impacts the level of service results such that the calculated average delay may not reflect the actual average delay at the intersection.

Level of service analysis is based on a peak hour evaluation, however, the duration of the school traffic ranges from approximately 15 to 30 minutes. In order to account for the worst peak within the hour, a peak hour factor is used to increase the traffic volumes in the analysis to mimic the shorter peak over the course of the analysis peak hour. This peak hour factor is unique to each intersection and is measured based on the evaluation of the traffic counts which were collected in 15 minute increments.

## 2.3 Level of Service Results

Table 4 shows the a.m. and p.m. level of service results for the 65 study intersections. Two intersections operate at LOS E and eight intersections operate at LOS F in the a.m. peak hour, and one of those intersections also operate at LOS F in the school p.m. peak hour.

**Table 4: 2023 Level of Service Results**

Intersection No.	Intersection Name	2023	
		AM	PM
		LOS	LOS
1	Bollinger Canyon Rd & Talavera Dr	C	C
2	Santander Dr & Talavera Dr	A	A
5	Davona Dr & Blue Fox Way	B	A
6	Brockton Ave & Blue Fox Way	A	A
9	North Gale Ridge Rd & Lilac Ridge Rd	F	D
10	North Gale Ridge Rd & Dougherty Rd	C	C
11	North Gale Ridge Rd & Lantana Way	B	B
13	Crow Canyon Rd & Canyon Crest Dr (East)	F	B
14	Canyon Crest Ave & Canyon Crest Dr / Driveway In	E	C
16	Albion Rd & Harcourt Way	C	C
17	Windemere Parkway & Harcourt Way	D	C
20	East Branch Parkway & Sherwood Dr	C	C
21	Melbourne Way & Sherwood Dr	A	A
24	Broadmoor Dr & Montevideo Dr	C	B
28	Goldenbay Ave & Cinnamon Ridge Rd	C	B
29	Goldenbay Ave & Applewood Dr	B	B
30	Goldenbay Ave & Ivy Leaf Springs	B	A
32	Bollinger Canyon Rd & Main Branch	D	D
33	S. Monarch Rd & Bayleaf Dr	F	F
34	Bollinger Canyon Rd & S. Monarch Rd	C	C
36	Bollinger Canyon Rd & East Branch Parkway	C	B
40	Bollinger Canyon Rd & Albion Rd	D	C
41	Albion Rd & Arrowfield Way / Driveway	D	C
44	Bollinger Canyon Rd & Marsh Dr	C	B
45	Bollinger Canyon Rd & Dos Rios Dr	B	B
48	Pine Valley Rd & Del Mar Dr	A	A



Intersection No.	Intersection Name	2023	
		AM	PM
		LOS	LOS
49	Pine Valley Rd & Alcosta Blvd	C	B
52	Trumpet Vine Lane & Hibiscus Rd	C	B
53	Trumpet Vine Lane & Trefoil Dr	B	A
57	Alcosta Boulevard & Woodland	C	C
59	Davona Dr & Pine Valley Rd	F	B
60	Broadmoor Dr & Pine Valley Rd	D	B
63	San Ramon Valley Blvd & Montevideo Dr	D	D
64	Broadmoor Dr & Millbridge Dr	C	B
71	Camino Tassajara & Lawrence Rd	D	C
72	Camino Tassajara & Hansen Lane	C	B
73	Camino Tassajara & Holbrook Dr	F	C
74	Camino Tassajara & Alta Vista Way	B	B
75	Brookside Dr & Timberline Court	A	A
76	Brookside Dr & Paraiso Dr	A	A
77	Brookside Dr & Sycamore Valley Rd	B	B
80	El Capitan Dr & Greenbrook Dr	B	B
81	El Capitan Dr & Orange Blossom Way	B	B
84	Linda Mesa & Esther Lane	A	A
85	Quinterra Lane & Estates Dr	B	A
87	Danville Blvd & Railroad Ave	B	B
88	Danville Blvd & El Cerro Blvd	C	C
89	El Cerro Blvd & La Gonda Way	C	C
95	Camino Tassajara & Diablo Rd	C	D
98	Diablo Rd & Green Valley Rd / McCauley	E	D
99	Diablo Rd & Matadera Way	B	B
101	Green Valley Rd & Blemer Rd	C	B
104	Green Valley Rd & Stone Valley Rd	F	C
105	Stone Valley Rd & MVHS Entry / Monte Sereno	F	D
108	Danville Blvd & Hemme Ave	D	C
109	Danville Blvd & La Serena Ave	F	D
112	Danville Blvd & Stone Valley Rd	D	D
113	Miranda Ave & Granite Dr	B	A
116	Camino Tassajara & Charbray Street	C	B
117	Camino Tassajara & Tassajara Hills School Entry	C	B

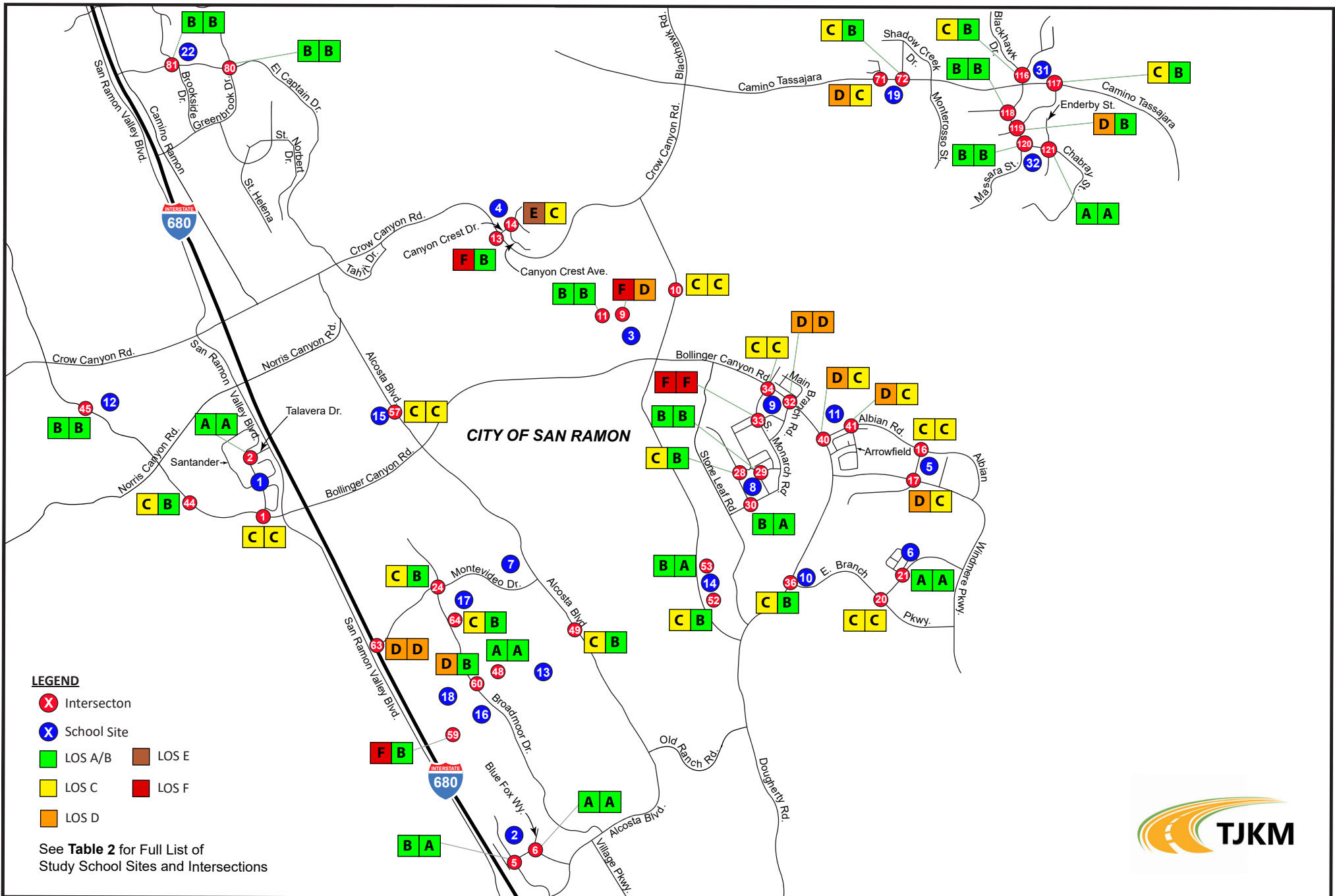
Intersection No.	Intersection Name	2023	
		AM	PM
		LOS	LOS
118	Charbray Street & Casablanca Street	B	B
119	Lusitano Street & Charbray Street	D	B
120	Massara Street & Charbray Street	B	B
121	Enderby street & Charbray Street	A	A
124	Livorna Rd & Wilson Way	C	C

Yellow indicates LOS C

Orange indicates LOS D

Brown indicates LOS E

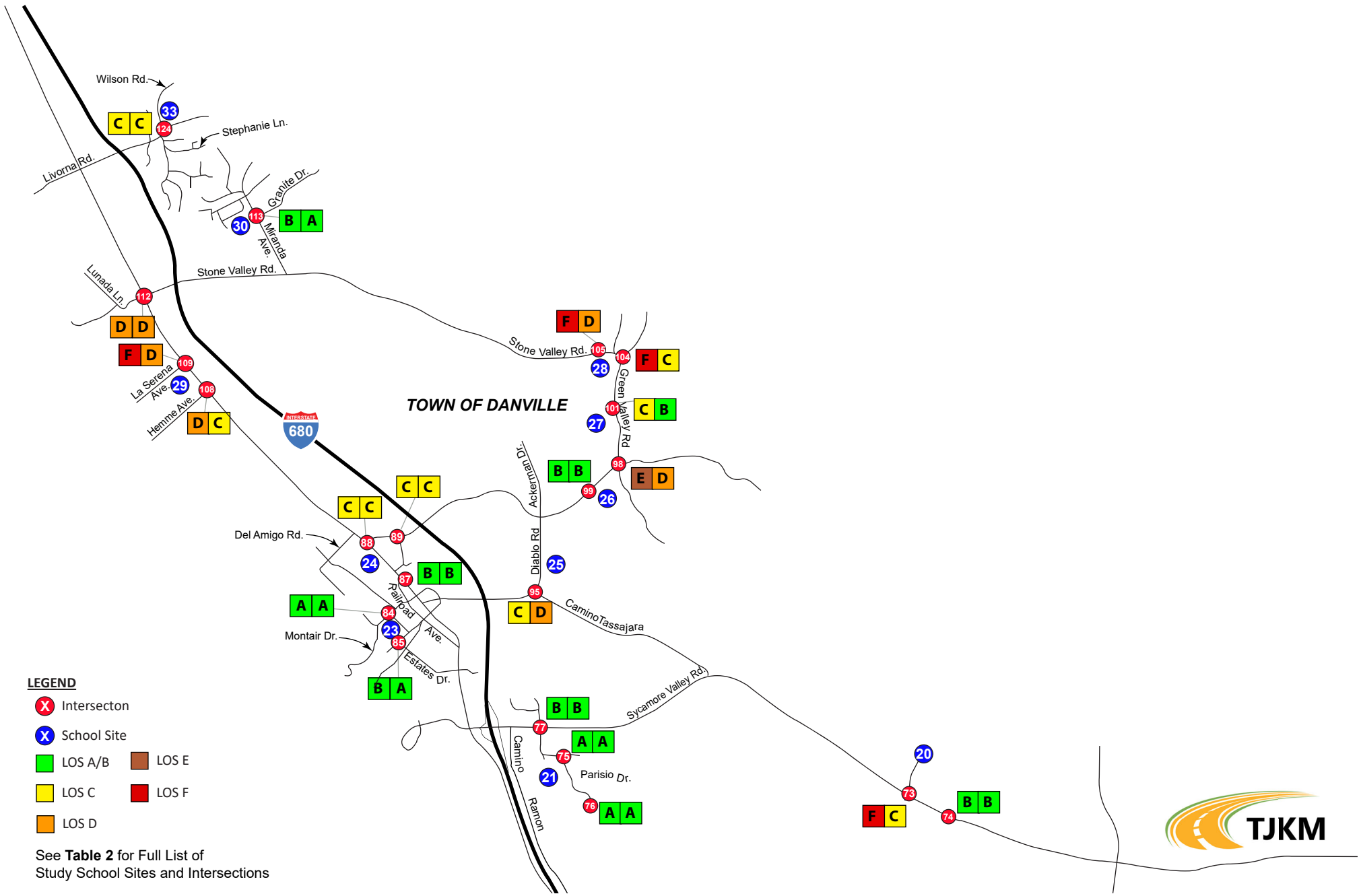
Red indicates LOS F



**FIGURE 3: LOCATION OF LEVEL OF SERVICES RESULTS (SOUTH)**



Map not to scale.



**Table 5: 2023 Level of Service Historical Comparison**

Inter-section No.	Intersection Name	2006		2011		2016		2023	
		AM	PM	AM	PM	AM	PM	AM	PM
		LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS
1	Bollinger Canyon Rd & Talavera Dr	C	B	C	C	C	C	C	C
2	Santander Dr & Talavera Dr	A	A	A	A	A	A	A	A
5	Davona Dr & Blue Fox Way	B	B	B	A	B	A	B	A
6	Brockton Ave & Blue Fox Way	A	A	A	A	A	A	A	A
9	North Gale Ridge Rd & Lilac Ridge Rd	F	B	C	B	-	-	F	D
10	North Gale Ridge Rd & Dougherty Rd	C	C	C	C	-	-	C	C
11	North Gale Ridge Rd & Lantana Way	-	-	-	-	-	-	B	B
13	Crow Canyon Rd & Canyon Crest Dr (East)	B	A	B	B	C	B	F	B
14	Canyon Crest Ave & Canyon Crest Dr / Driveway	-	-	-	-	F	C	E	C
16	Albion Rd & Harcourt Way	B	B	C	C	D	C	C	C
17	Windemere Parkway & Harcourt Way	C	C	C	B	D	C	D	C
20	East Branch Parkway & Sherwood Dr	-	-	C	C	D	B	C	C
21	Melbourne Way & Sherwood Dr	-	-	-	-	C	C	A	A
24	Broadmoor Dr & Montevideo Dr	F	E	C	C	F	F	C	B
28	Goldenbay Ave & Cinnamon Ridge Rd	-	-	-	-	D	C	C	B
29	Goldenbay Ave & Applewood Dr	-	-	-	-	C	B	B	B
30	Goldenbay Ave & Ivy Leaf Springs (south)	-	-	C	B	C	B	B	A
32	Bollinger Canyon Rd & Main Branch	-	-	D	B	E	D	D	D
33	S. Monarch Rd & Bayleaf Dr	-	-	-	-	-	-	F	F
34	Bollinger Canyon Rd & S. Monarch Rd	-	-	C	C	F	D	C	C
36	Bollinger Canyon Rd & East Branch Parkway	C	C	C	C	D	D	C	B
40	Bollinger Canyon Rd & Albion Rd	-	-	-	-	D	E	D	C



Inter-section No.	Intersection Name	2006		2011		2016		2023	
		AM	PM	AM	PM	AM	PM	AM	PM
		LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS
41	Albion Rd & Arrowfield Way / Driveway	-	-	-	-	C	C	D	C
44	Bollinger Canyon Rd & Marsh Dr	C	B	C	B	-	-	C	B
45	Bollinger Canyon Rd & Dos Rios Dr	C	B	C	B	-	-	B	B
48	Pine Valley Rd & Del Mar Dr	B	A	A	B	-	-	A	A
49	Pine Valley Rd & Alcosta Blvd	C	B	B	B	-	-	C	B
52	Trumpet Vine Lane & Hibiscus Rd	-	-	-	-	-	-	C	B
53	Trumpet Vine Lane & Trefoil Dr	-	-	-	-	-	-	B	A
57	Alcosta Boulevard & Woodland	C	C	C	C	-	-	C	C
59	Davona Dr & Pine Valley Rd	F	B	C	B	-	-	F	B
60	Broadmoor Dr & Pine Valley Rd	C	C	C	B	-	-	D	B
63	San Ramon Valley Blvd & Montevideo Dr	-	-	-	-	-	-	D	D
64	Broadmoor Dr & Millbridge Dr	-	-	-	-	-	-	C	B
71	Camino Tassajara & Lawrence Rd	C	C	B	A	C	B	D	C
72	Camino Tassajara & Hansen Lane	C	C	B	A	C	B	C	B
73	Camino Tassajara & Holbrook Dr	E	C	B	B	B	B	F	C
74	Camino Tassajara & Alta Vista Way	-	-	-	-	-	-	B	B
75	Brookside Dr & Timberline Court	-	-	-	-	A	A	A	A
76	Brookside Dr & Paraiso Dr	-	-	-	-	B	B	A	A
77	Brookside Dr & Sycamore Valley Rd	C	B	B	A	B	B	B	B
80	El Capitan Dr & Greenbrook Dr	B	B	-	-	C	B	B	B
81	El Capitan Dr & Orange Blossom Way	-	-	-	-	C	B	B	B
84	Linda Mesa & Esther Lane	-	-	-	-	B	B	A	A
85	Quinterra Lane & Estates Dr	-	-	-	-	A	B	B	A

Inter-section No.	Intersection Name	2006		2011		2016		2023	
		AM	PM	AM	PM	AM	PM	AM	PM
		LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS
87	Danville Blvd & Railroad Ave	B	B	B	B	C	C	B	B
88	Danville Blvd & El Cerro Blvd	C	C	C	C	B	B	C	C
89	El Cerro Blvd & La Gonda Way	C	D	B	B	E	F	C	C
95	Camino Tassajara & Diablo Rd	C	D	D	C	C	C	C	D
98	Diablo Rd & Green Valley Rd / McCauley	E	E	D	-	D	C	E	<b>D</b>
99	Diablo Rd & Matadera Way	-	-	-	-	A	A	<b>B</b>	<b>B</b>
101	Green Valley Rd & Blemer Rd	E	E	C	B	C	C	C	B
104	Green Valley Rd & Stone Valley Rd	C	A	F	E	F	C	F	C
105	Stone Valley Rd & MVHS Entry / Monte Sereno		-	-	-	D	D	<b>F</b>	D
108	Danville Blvd & Hemme Ave	E	C	C	B	B	A	D	C
109	Danville Blvd & La Serena Ave	-	-	-	-	F	F	F	<b>D</b>
112	Danville Blvd & Stone Valley Rd	-	-	-	-	E	D	<b>D</b>	D
113	Miranda Ave & Granite Dr	A	A	B	A	B	A	B	A
116	Camino Tassajara & Charbray Street	-	-	-	-	E	D	<b>C</b>	<b>B</b>
117	Camino Tassajara & Tassajara Hills School Entry	C	C	C	C	D	C	C	<b>B</b>
118	Charbray Street & Casablanca Street	-	-	-	-	C	B	<b>B</b>	B
119	Lusitano Street & Charbray Street	-	-	-	-	C	C	<b>D</b>	<b>B</b>
120	Massara Street & Charbray Street	-	-	-	-	B	B	B	B
121	Enderby street & Charbray Street	-	-	-	-	B	B	<b>A</b>	<b>A</b>
124	Livorna Rd & Wilson Way	F	C	D	C	B	B	C	C

Blue shading indicates degradation in LOS compared to most recent results

Green shading indicates improvement in LOS compared to most recent results

**Blue LOS letter grade with blue shading indicates worst LOS recorded**

**Green LOS letter grade with green shading indicates best LOS recorded**



Table 5 contains the LOS results of 2023 compared to all previous studies which were conducted in 2016, 2011 and 2006. If the LOS result in 2023 is different from previous years, the result is shaded blue if the LOS has degraded or it is shaded green if the LOS has improved.

Eighteen (18) intersections have degraded in LOS when compared to the previous year with available data whereas 29 intersections have improved in either the AM or PM period. Residential development growth in the area can be attributed to increases in overall traffic volume resulting in degraded LOS. However, it is more challenging to determine the reasons for improvements in level of service. Various reasons include implementation of TRAFFIX bus routes, continued traffic pattern shifts due to the lingering impacts from COVID-19, the re-distribution of traffic due to the opening of new schools and the change in school bell times.

Of the eight (8) intersections that have an LOS F result, three (3) intersections experienced LOS F for the first time, four (4) intersections have a history of LOS F, and one (1) intersection has no comparison data.

## CHAPTER 3 SCHOOL SITE CIRCULATION & ANALYSIS

This section provides the analysis of the on-site circulation at each of the 33 schools evaluated. This includes the 11 schools currently served by TRAFFIX, as well as schools that may be served in the future. Comprehensive field observations were conducted on typical non-holiday weekdays Tuesday through Thursday, eliminating teacher work days, and parent-teacher conference days. The observation focused on vehicle and pedestrian patterns on public roadways adjacent to the school as well as ingress and egress on-site at the driveways and within the school passenger loading zones and school parking lot.

Observations included:

- Vehicle queue lengths at school driveway ingress and egress as well as approximate duration
- Vehicle queue lengths along the roadway visible from the school frontage
- Conflict points, including pedestrian crossings
- Passenger loading zone efficiency and drop-off and pick-up procedures
- Quality of vehicular driver behavior and adherence to traffic regulations
- Approximate duration of traffic queues and congestion.
- Length of the passenger vehicle loading zones, both on-site and roadside
- Potential location(s) for school bus loading zone

Based on the attributes evaluated, when there is an opportunity to facilitate traffic flow or enhance traffic safety, suggested changes or improvements are recommended.

### 3.1 Observed Level of Congestion

In order to quantify the observed level of congestion, a metric was structured to capture this qualitative assessment. Factors considered in defining the level of congestion include:

- Observed length of vehicle queues and amount in public roadway
- Through traffic on public roadway blocked by queue
- Duration of queue
- Number and severity of conflict points
- Vehicular driver behavior, including adherence to traffic regulations

There are five categories of the level of observed congestion and they are defined as follows:

**Low**

In this condition, there is little to no queuing on the public roadway and the flow of traffic is smooth. Through traffic is not impeded by any queuing. If there is a little queue, the duration is momentary. The number of conflict points are minimal and vehicular driver behavior is normal with adherence to traffic regulations.

**Mild**

There is some queuing on the public roadway and the duration is less than a few minutes. Or if the duration of the queue is long, the queue is relatively short. Through traffic is minimal and rarely blocked by queuing. There are some conflict points that are successfully managed and low pressure for the motorist. Vehicular driver behavior is normal and with adherence to traffic regulations.

**Moderate**

In this condition, there is some queuing in the public roadway that lasts for more than ten minutes. Through traffic may be blocked although the through traffic volumes are low. There are conflict points that require a high level of attention by the motorist. Vehicular driver behavior is normal although there may be instances of erratic behavior.

**High**

In this condition, there is a significant amount of queuing in the public roadway, possibly in several approaches, which last for more than 10 minutes. Through traffic may be blocked although the through traffic volumes are low. Or if through traffic is high, there is space for the vehicles to bypass the queue. There are multiple conflict points that require a high level of attention by the motorist. Vehicular driver behavior is a mix of normal and erratic.

**Severe**

In this condition, this is similar to the High category, except that through traffic is more heavily impacted as there is no way to bypass the queue.

**Table 6: Level of Observed Congestion**

School No.	School Name	Level of Observed Congestion
1	Bollinger Canyon ES	Mild
2	<b>Country Club ES</b>	Moderate
3	<b>Coyote Creek ES</b>	Severe
4	Golden View ES	High
5	Hidden Hills ES	Low
6	Live Oak ES	Mild
7	Montevideo ES	Low
8	Quail Run ES	Mild
9	Gale Ranch MS	High
10	Windemere Ranch MS	High
11	Dougherty Valley HS	Severe
12	Twin Creeks ES	Mild
13	<b>Walt Disney ES</b>	Moderate
14	Bella Vista ES	High
15	Iron Horse MS	High
16	<b>Pine Valley MS</b>	Moderate
17	<b>Cal HS</b>	Severe
18	<b>Neil Armstrong ES</b>	Low
19	Diablo Vista MS	Moderate
20	Sycamore Valley ES	Moderate
21	John Baldwin ES	Mild
22	Charlotte Wood MS	Moderate
23	Montair ES	Moderate
24	<b>San Ramon Valley HS</b>	High
25	<b>Vista Grande ES</b>	Moderate
26	<b>Green Valley ES</b>	Mild
27	<b>Los Cerros MS</b>	Low
28	<b>Monte Vista HS</b>	Moderate
29	Rancho Romero ES	High
30	Stone Valley MS	Moderate
31	Tassajara Hills ES	Moderate
32	Creekside ES	Mild
33	Alamo ES	Low

## Bollinger Canyon Elementary School (#1)

Bollinger Canyon Elementary School, in the City of San Ramon, is located in a residential area bordered by Talavera Drive to east, Bollinger Canyon Road to the south, open space to the west and residences to the north. There is one ingress driveway to access the main loading zone in front of the school and one egress driveway accessed on Talavera Drive. Talavera Drive is a two-lane residential street with on-street parking.

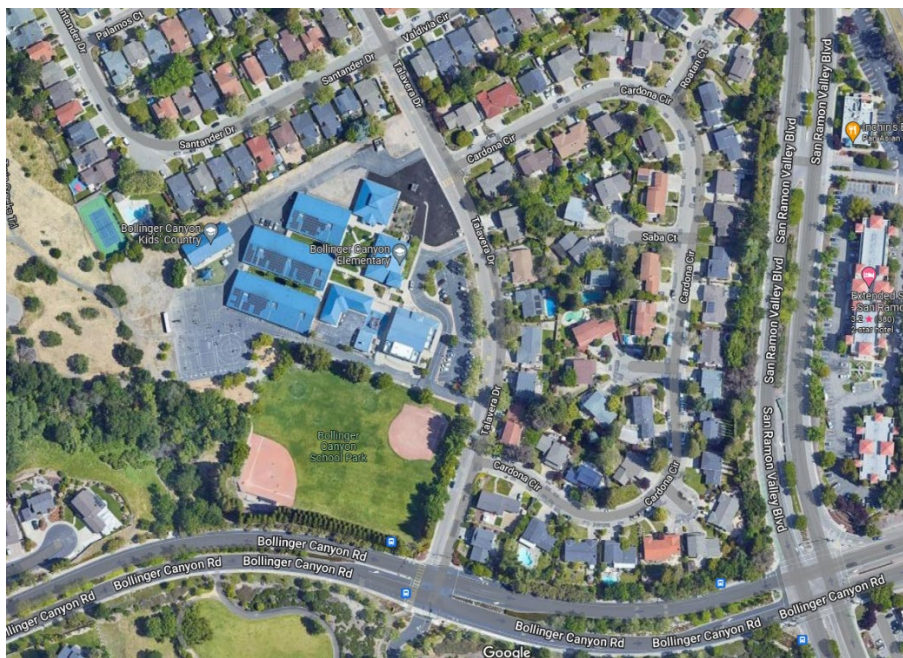
**2022/23 Enrollment:** 497 Students

### Length of Loading Zone

The loading zone in front of the school is 150 feet long and consists of two lanes. The ingress stacking distance is 100 feet and the egress stacking distance is 200 feet.

### Potential Bus Loading Zone

The front of the loading zone is currently utilized by four small buses. The geometry of the loading zone precludes a full-length school bus from being accommodated within the loading zone. Additionally, this would not be recommended as it will impede function of the loading zone. A bus loading zone can be accommodated on-street either in front of the school, or just south of the school in front of the school park. The school park location would provide a space for students to wait for the bus, as well allow pedestrian access to the school that doesn't conflict with the loading zone.



School access was observed on Thursday April 20<sup>th</sup>, 2023 from 7:50 a.m. – 8:05 a.m. with a 8:00 a.m. beginning bell and from 12:40 p.m. to 1:00 p.m. with a 12:50 p.m. dismissal bell.

### **Morning Observation**

Two staff members were observed assisting students and directing vehicles forward at the loading zone. Loading zone activities were efficient and vehicles moved through quickly. Conflicts with pedestrians were minor. Four small buses dropped off students using the half of the loading zone closest to the egress driveway. The ingress queue at the driveway was only right turns in as left turns into the driveway was prohibited. The queue at the driveway varied up to 8 vehicles. At 7:53 a.m. there was a westbound right turn queue on Bollinger Canyon Road and would clear with each cycle. The choke point for this queue was the heavily marked crosswalk at the intersection of Talavera Drive and Cardona Circle. This crosswalk was also the choke point for the loading zone egressing traffic due to a steady trickle of pedestrian crossings.

### **Afternoon Observation**

At 12:50 p.m. the right turn queue into the loading zone driveway extended for 12 vehicles on Talavera Drive and through vehicles were able to pass. Many students exited the school by the park to the south where parents were waiting to pick up. By 1:00 p.m. the queue on Talavera Drive was clear and all loading zone activities were complete by 1:01 p.m. No observed queues, other than the short ingress right turn queue.

### **Level of Observed Congestion**

Mild. Although there is some observed queuing, it does not impede through traffic and clears less than 10 minutes.

### **Recommendations**

Consider providing a crossing guard at the crosswalk at the intersection of Talavera Drive and Cardona Circle to help meter pedestrian crossings.



## Country Club Elementary School (#2)

**Country Club Elementary School**, in the City of San Ramon, is bordered by Blue Fox Way on the south and residences on all other sides. There is one ingress and one egress driveway for the circular loading zone which also contains the staff parking lot on Blue Fox Way. The school is currently serviced by two TRAFFIX school buses.

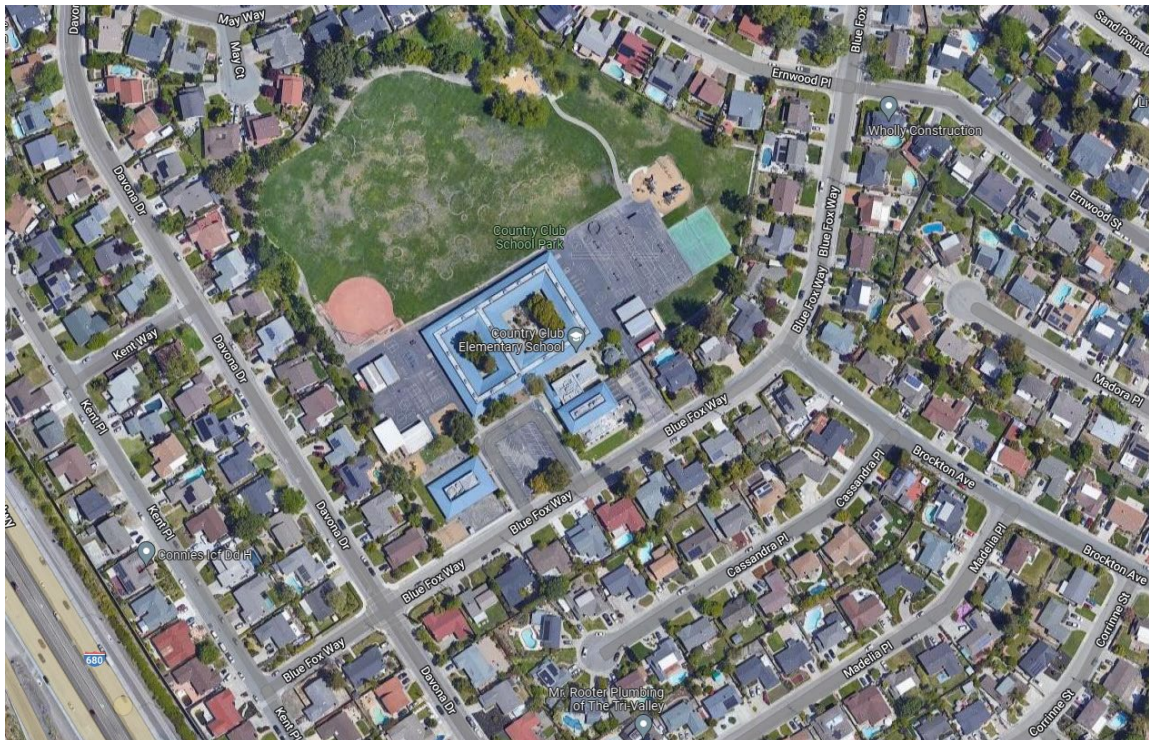
**2022/23 Enrollment:** 529 Students

### Length of Loading Zone

The loading zone in the circular driveway is approximately 300 feet with the last 100 feet reserved for parking for two small buses.

### Potential Bus Loading Zone

This school is currently served by two buses and the 120-foot bus zone is located curbside on the street directly east of the ingress driveway. There are no other ideal options for an additional bus. The circular driveway is too narrow and busy to accommodate a large bus. There are no other curbside locations to accommodate the bus with a space for queuing students.



School traffic patterns was observed from 8:10 a.m. – 8:35 a.m. and from 2:55-3:15 p.m. on Thursday, March 16, 2023.

### **Morning Observation**

At 8:22 an ingress queue began to form on Blue Fox Way. A staff member controlled traffic at the ingress driveway and another staff member assisted vehicles in the loading zone. An egress queue extended into the loading zone. The egress queue was formed due to the all-way stop sign controlled-intersection of Blue Fox Way at Davona Drive. There was vehicle traffic demand and pedestrian crossings at all four legs of this intersection. The egress queue blocked the flow of vehicles to access the loading zone. Buses were stuck in the westbound queue. At 8:26, the ingress queue extended for at least 10 to 12 vehicles. Westbound through traffic on Blue Fox Way was unable to pass the queuing vehicles. The bell was at 8:30 a.m. At 8:31, the ingress queue cleared the road, but the egress queue remained for another 3 minutes.

### **Afternoon Observation**

At 2:55 p.m., the roadway was fully parked and the loading zone was full of vehicles waiting in the loading zone. There were three westbound vehicles in the roadway waiting to make a right turn into the loading zone driveway. The dismissal bell was at 3:00 p.m. and there were nine westbound vehicles queued to make a right turn into the driveway, and one eastbound vehicle queued to make a left turn. The traffic control staff at the ingress driveway is key in maintaining orderly access from both the east and westbound directions as well as directing vehicles to make space for the buses. At 3:04 p.m. the end of the westbound queue was not visible, and there were five eastbound vehicles in a queue. At 3:07 p.m. there are only five westbound vehicles in the queue. One bus arrives in the westbound queue and waits for approximately four minutes to get access to the loading zone. At 3:09 p.m. the queue in the street is clear.

### **Level of Observed Congestion**

Moderate. Overall, the traffic congestion level was moderate for a short amount of time and through traffic is unable to bypass school traffic for less than 10 minutes. There is one main conflict point that requires a high level of attention.

### **Recommendations**

Additional bus service is not recommended due to lack of bus loading zones. Some traffic congestion during the morning drop-off procedure could be alleviated with a trained crossing guard at the intersection of Blue Fox Way and Davona Drive, to minimize the conflicts for egressing vehicles. To minimize conflicts at the ingress driveway, consider restricting left turns into the driveway.



### Coyote Creek Elementary School (#3)

**Coyote Creek Elementary School**, in the City of San Ramon, is bordered by N. Gale Ridge Road on the north side, residential neighborhood on the west side and open space areas to the south and east. There is one circular driveway in front of the school on N. Gale Ridge Road. The main school entrance driveway provides access to a staff parking lot on the west side of the school, three lanes through the loading zone in front of the school, and a second staff parking lot on the east side of the school.

There are two high visibility crosswalks across N. Gale Ridge Road at Lilac Ridge Road and Lantana Way. The signalized intersection of N. Gale Ridge Road and Dougherty Road is approximately 1300 feet to the east of the school entrance driveway. Parking is mostly allowed on-street in the vicinity of the school.

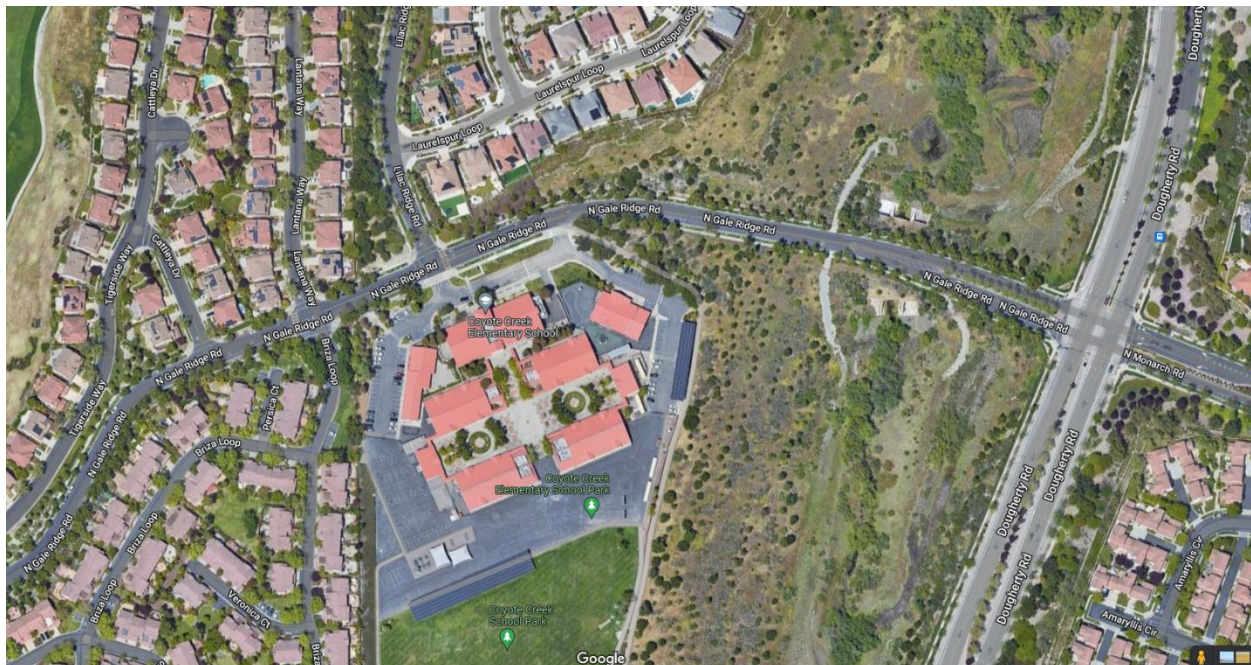
**2022/23 Enrollment:** 674 Students

#### Length of Loading Zone

The loading zone in front of the school is approximately 200 feet.

#### Potential Bus Loading Zone

Two buses currently serve this school. The bus loading zone is the front half of the loading zone. Another potential location for bus loading is the on-street curb in front of the school, which is 160 feet and can accommodate three buses and includes a grassy area for student staging.



School access was observed from 8:13 – 8:35 a.m. and from 2:55-3:15 p.m. on Thursday, February 23, 2023.

### **Morning Observation**

At 8:13 a.m. vehicles were already queuing in all directions at the entrance driveway with the westbound queue 19 vehicles long. At 8:20 the westbound queue was observed to be 28 vehicles. Through vehicles were able to pass to the right of the queue as parking was restricted on the north side of N. Gale Ridge Road. There was one staff person directing all traffic at the school entrance and this is a high pressure position as there are lot of competing movements including pedestrians. There is also a staff person at the mid-block crosswalk in the parking lot at the school entrance. There were student volunteers assisting students out of their vehicles. There was little direction for vehicles to move forward and most of the time, only the first half of the loading zone was utilized. Additionally, vehicles were observed to linger in the loading zone.

Both buses waited in the westbound queue and arrived at the loading zone at 8:26. There was no egress queue due to low volume of vehicles that are able to access loading zone at one time and all vehicles turned right at the egress driveway. At 8:30 a.m. there were still ten vehicles in the westbound queue.

### **Afternoon Observation**

The dismissal bell was 3:00 p.m. and at 2:55 p.m. vehicles were queued in every direction. At 2:59 p.m., the westbound queue on N. Gale Ridge Road was 25 vehicles. At 3:04, the westbound queue started to very slowly move as the dwell time at the loading zone decreased as the students made their way to the waiting area. At 3:04, the school buses arrived from the eastbound direction and occupied half of the loading zone, which allowed four to five vehicles to load at one time. At 3:07, the westbound queue extended to the painted median near Dougherty Road, about 800 feet, which is about 30 vehicles. During this time, a through motorist became stuck and was unable to pass the queue due to two vehicles parked along the curb. The staff at the entrance intersection was effective at directing traffic and kept an eye on the downstream flow, encouraging the staff member at the crosswalk in front of the school to direct vehicles to pull forward after the buses left. At 3:10 the eastbound queue was clear. At 3:17, the westbound queue was clear.

### **Level of Observed Congestion**

Severe. None of the traffic spilled onto Dougherty Road. However, the duration of congestion was more than 20 minutes. There was a moderate number of through vehicles that sometimes became blocked by the queue. Some vehicular drivers expressed erratic behavior. There was a queue at all approaches to the school. The number of conflict points were minimal, however, the main intersection required complete manual traffic control.

## **Recommendations**

Consider relocating the bus loading area to the on-street area in front of the school to free up the entire loading zone. The effective loading zone is only about 100 feet or four to five vehicles at a time with the bus loading zone occupying the other 100 feet. It is possible to have a staff person directing traffic to utilize the full loading zone when buses are not present, but this can be confusing to the motorists about where to be in the loading zone. If the full loading zone is utilized, it is possible to reduce the queue and/or the duration of the queue on N. Gale Ridge Road. The eastbound lane on N. Gale Ridge Road in front of the school is 18 feet wide which can accommodate a bus eight feet wide and a ten-foot travel lane. With most of the vehicles exiting downstream of this potential load zone, this constriction of the through lane impacts few vehicles for a short duration.

## Golden View Elementary School (#4)

Golden View Elementary School, in the City of San Ramon, is bordered by Crow Canyon Road and Canyon Crest Drive on the south side, and residential neighborhoods on the north side. There are two circular driveways on Canyon Crest Drive. The north entrance mainly serves as emergency vehicle access where only a few parking spaces are observed, while the south entrance is used as the main entrance to school and also the entrance to staff parking lot. There is also a pedestrian access point through the park at the rear of the school.

In the main entrance parking lot, there are two loading zone areas. There are three lanes at the loading zone in front of the school and there is a single lane loading zone area for pick-ups at the side gate. There are three high visibility school crosswalks with two across Canyon Crest Drive, one on the northeast leg of the intersection at Canyon Crest Avenue and another on the northeast leg of the intersection of Quartermaster Canyon Road and the third is at the signalized intersection across the northwest leg of Crow Canyon Road at Canyon Crest Drive.

**2022/23 Enrollment:** 662 Students

### Length of Loading Zone

Within the main entrance there's a total of 300 feet with 150 feet in front of the school, 150 feet at the side gate. At the north circular drive, there's a total of 60 feet. Along the curb on Canyon Crest Drive between the two circular driveways, there's a loading zone of 80 feet and 60 feet between the entrance and exit driveways for the northern circular driveway.

### **Potential Bus Loading Zone**

The space for a bus loading zone on-campus is limited due to tight turn radii. The recommended location for bus loading is curbside on Canyon Crest Drive, north of the main driveway entrance in the 80-foot loading zone and the 60-foot loading zone. Three to four buses can be accommodated there with lawn areas for the students to stage prior to loading.



School access was observed from 7:40 – 8:05 a.m. and from 2:15-2:45 p.m. on Thursday, February 23, 2023.

### **Morning Observation**

At 7:40 a.m. vehicles began queuing in the loading zones at the two access points, the main entrance and the side gate. Vehicles queued here until 7:45 a.m., which is when the school gates opened. There were four staff members who were actively directing traffic and coordinating with each other. One staff directed traffic at the internal conflict point between the two queues in the main lot. One to two staff assisted with students exiting the vehicles, another staff directed traffic, including left turns into the driveway and assisted pedestrians at the crosswalk at the intersection of Canyon Crest Drive and the main entrance driveway. These positions at the two conflict points require a lot of training and awareness of traffic flow to keep things moving.

At 7:45 a.m., a queue began for westbound right turns on Crow Canyon Road. At 7:50, this queue was eight vehicles in length. These vehicles queued in the bike lane, which still allowed for two through lanes. There was very little queuing in eastbound left turn movement from Crow Canyon. The ingress and egress

were fairly balanced until about 7:55. Egress was delayed due to stacking of the southbound left turn lane on Canyon Crest Drive at Crow Canyon Road. The southbound right turn lane remained accessible, but vehicles at the egress driveway wanting to turn left onto Crow Canyon Road impeded egress. At 7:59, the westbound right turn queue on Crow Canyon Road cleared. The egress friction for southbound left turns is now the control point. All clear at 8:03.

### **Afternoon Observation**

The dismissal bell was 2:30 p.m. and vehicles began queuing at 2:00 p.m. At 2:15 p.m., the queue on Canyon Crest Drive extended from the entrance driveway to Crow Canyon Road. Although vehicles were parked along both side of Canyon Crest Drive, vehicles were able to pass by the queue. Once the queue was full along the block, vehicles from Crow Canyon Drive passed the queue and filled up the on-street parking areas. At 2:30, there were four vehicles in the westbound right turn queue on Crow Canyon Road. At 2:34, this grew to nine vehicles (maximum) and the queue still hadn't moved. At 2:35, there was an egress queue, but it was able to clear in a single signal cycle (approx. 45 sec green). At 2:41, there were four vehicles in the westbound right turn queue and this queue cleared at 2:42. Once all the students were curbside waiting, the control point became the signal cycle for the southbound left turn movement for egress. At 2:45 p.m., the loading activities were complete.

### **Level of Observed Congestion**

High. Most of the congestion was contained on Canyon Crest Drive, which blocked southbound traffic, there was also some queuing on Crow Canyon Road that did not block traffic but stacked in the bike lane. There are multiple conflict points, two of which require skilled traffic control. Without skilled traffic control at the two conflict points, this could easily breakdown into a higher level of congestion.

### **Recommendations**

Consider additional programs to reduce vehicle trips, such as encouraging bike and walk trips and carpools. Consider a few seconds more green time southbound at Crow Canyon Road at Canyon Crest Drive during the a.m. peak. Consider restricting north bound vehicles on Canyon Crest Avenue to turn right only during school hours as these vehicles take capacity for egress vehicles turning left at Crow Canyon. Since Canyon Crest Avenue is a loop, this detour would detour these vehicles just under one mile.



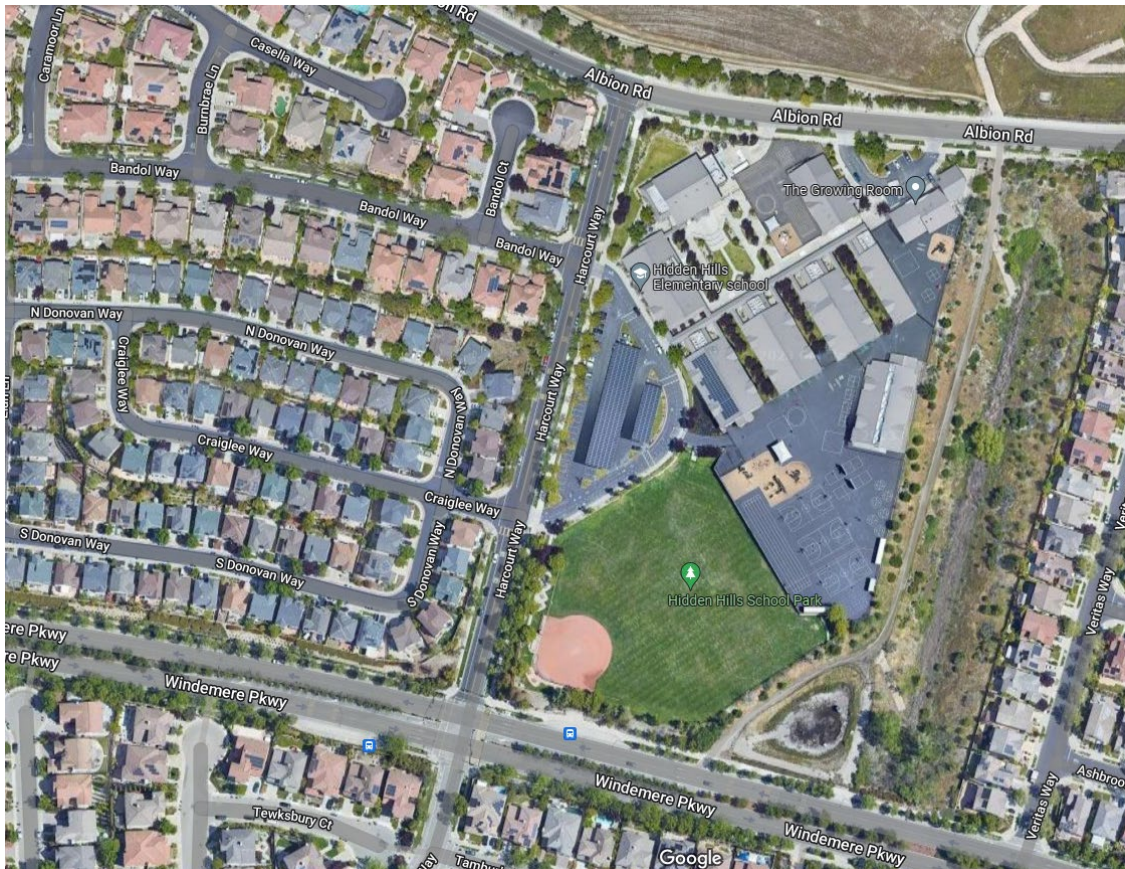
## Hidden Hills Elementary School (#5)

Hidden Hills Elementary School, in the City of San Ramon, is bordered by Albion Road to the north, Harcourt Way to the west, Windemere Parkway to the south and residences to the east. There is one ingress and one egress driveway for the circular loading zone which also contains the staff parking lot on Harcourt Way.

**2022/23 Enrollment:** 543

**Length of Loading Zone:** The entire loading zone is over 450 feet and the main school entrance is at the middle of the loading zone.

**Potential Bus Loading Zone:** A bus loading zone can be accommodated within the loading zone. Ideally the designated bus zone should be at the front of the loading zone, especially since this area is less used by vehicles.



School traffic patterns was observed from 7:45 a.m. – 8:00 a.m. with a start bell of 8:00 a.m. and from 2:30-2:45 p.m. with a dismissal bell of 2:30 p.m. on Thursday March 16, 2023.

### **Morning Observation**

There was one crossing guard at the crosswalk across Harcourt Way at the intersection of the egress driveway and Bandol Way. There is a lighted crosswalk across Harcourt Way at the ingress driveway and left turns are prohibited into the ingress driveway. There is a high volume of pedestrians walking to school, with a large concentration crossing Harcourt Way at the crosswalk at the egress driveway. Several staff members were observed to assist the loading zone activities with one person directing vehicles forward. Even with this assistance, the full loading zone was unused due to the main entrance to the school located at the halfway point of the loading zone. The loading zone queue extends into Harcourt Way for short periods and then clears. At 7:52 a.m. the eastbound right turn queue, located in the parking strip, extends to the traffic signal at Windemere Parkway, but clears quickly. Through vehicles are able to pass the queue. The egress queue extends into the loading zone due to right-turning vehicle conflicting with pedestrians. At 8:00 a.m., the ingress queue is clear and the egress queue clears two minutes later.

### **Afternoon Observation**

Staffing is similar to the morning, with the addition of a staff announcing student names as vehicles pull up in the loading zone. At 2:30 p.m. the on-street parking is nearly full and the school parking lot has over 30 vacant parking spots. There is a high concentration of pedestrians crossing Harcourt Way at the egress driveway. At 2:31 p.m. the loading zone queue is contained within the loading zone. At 2:38 p.m., there are four eastbound right-turn vehicles queued on Harcourt Way. At 2:43 p.m. loading zone activities are complete.

### **Level of Observed Congestion**

Low. Vehicles were not observed to impede the flow of traffic. The biggest conflict for vehicle flow were pedestrians crossing Harcourt Way at Bandol Way at the egress driveway for the loading zone.

### **Recommendations**

If school enrollment grows, additional efficiency in the loading zone may be needed. This can be accomplished by encouraging vehicles to use all of the loading zone by providing Pull Forward signs and having multiple staff directing vehicles to pull all the way forward. Additionally, having a highly trained traffic control officer at the egress driveway will help improve pedestrian and vehicles flow through the intersection.



## Live Oak Elementary School (#6)

Live Oak Elementary School, in the City of San Ramon, is bordered by Sherwood Way to the west, Enfield Street to the east and San Ramon Sports Park to the south. Sherwood Way is a two-lane residential road with no on-street parking but with bike lanes. There is one ingress driveway and one egress driveway for the loading zone in front of the school. There's also a second loading zone with parking area to the south of the school primarily for the pre-school but can be used by parents who park and walk in.

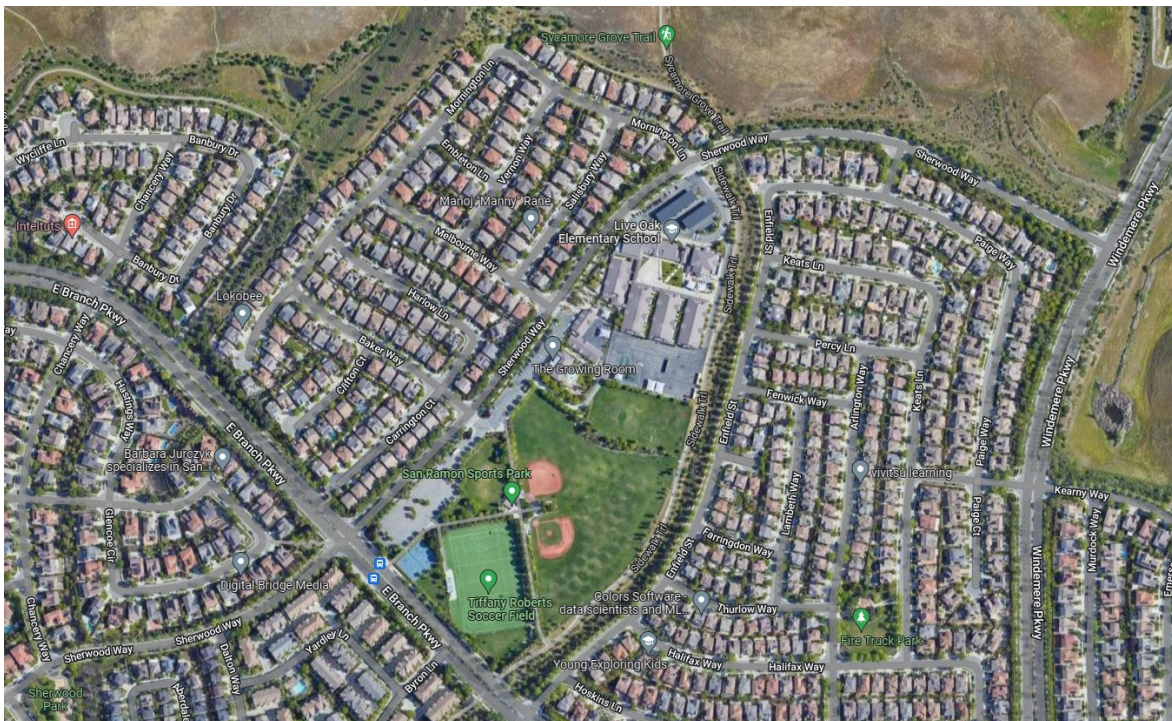
**2022/23 Enrollment:** 569 Students

### Length of Loading Zone

The designated loading zone is approximately 500 feet. There is 25 feet of stacking distance from the beginning of the loading zone to the ingress driveway and 75 feet of stacking distance from the end of the loading zone to the egress driveway. There are two pedestrian crosswalks within the loading zone connecting to the parking area.

### Potential Bus Loading Zone

There is plenty of space to accommodate bus loading within the existing loading zone. Up to 150 feet at the end of the loading zone can be used for three buses.



School access was observed on Thursday April 13<sup>th</sup>, 2023 from 7:50 a.m. – 8:00 a.m. with an 8:00 a.m. beginning bell and from 2:20 p.m. to 2:40 p.m. with a 2:30 p.m. dismissal bell.

### **Morning Observation**

Two staff were observed assisting the loading zone activities. One was directing traffic to pull forward and another was assisting pedestrians at the crosswalks through the loading zone to the parking lot. The first 200 feet of the loading zone was used as a queuing area. There were traffic cones separating the loading zone lane from the adjacent through lane to minimize vehicles from dropping off students early and leaving the line. There were five distinct drop off spots near the main student entrance to the school. There were student volunteers at these drop off spots. The last 150 feet of the loading zone was unused.

At 7:50 a.m. the ingress queue extended to the ingress driveway and by 7:52 a.m. there were eight southbound vehicles queued on Sherwood Way waiting to turn left into the ingress driveway. A few through vehicles were able to pass by encroaching into the bike lane. For a short time, the southbound queue on Sherwood Way extended over 300 feet past the upstream stop-controlled intersection Mornington Lane. At 8:00 a.m. loading activities were complete.

### **Afternoon Observation**

A similar staffing set-up was observed during pick-up activities, with the addition of a microphone calling out student names of vehicles arriving in the loading zone. At 2:22 p.m. there were five southbound vehicles queued on Sherwood Way waiting to turn left into ingress driveway and four northbound vehicles waiting to turn right. By 2:35 p.m. this grew to 13 vehicles southbound and 7 vehicles northbound queued on Sherwood Way. Through traffic is able to pass, although it is tight in the southbound direction. The loading zone activities starts to move quickly. The parking lot is approximately 90% full with many parents parking and walking in to pick up their student. Loading zone activities are complete by 2:42 p.m.

### **Level of Observed Congestion**

Mild. The traffic queued on Sherwood Way is relatively short and does not block through traffic. The number of conflict points is minimal.

### **Recommendations**

Although loading zone operations currently functions efficiently, the capacity of the loading zone can be increased by increasing the number of functional loading zone spots. The active portion of the loading zone is currently limited to 5 vehicles, and this can be easily doubled within the existing area.

## Montevideo Elementary School (#7)

Montevideo Elementary School, in the Town of Danville, is bordered by residences to the south, the Iron Horse Trail to the east, Dunbarton Circle to the north and Broadmoor Drive to the west. The school entrance driveway on Broadmoor provides access to a staff parking lot and two lanes to traffic along the loading zone in front of the school. The egress driveway is on Dunbarton Circle. There are two high visibility crosswalks at Broadmoor Drive and Dunbarton Circle and one across Broadmoor Drive at Ascot Drive. There are also school crosswalks at the all-way stop intersection of Broadmoor Drive and Montevideo Drive.

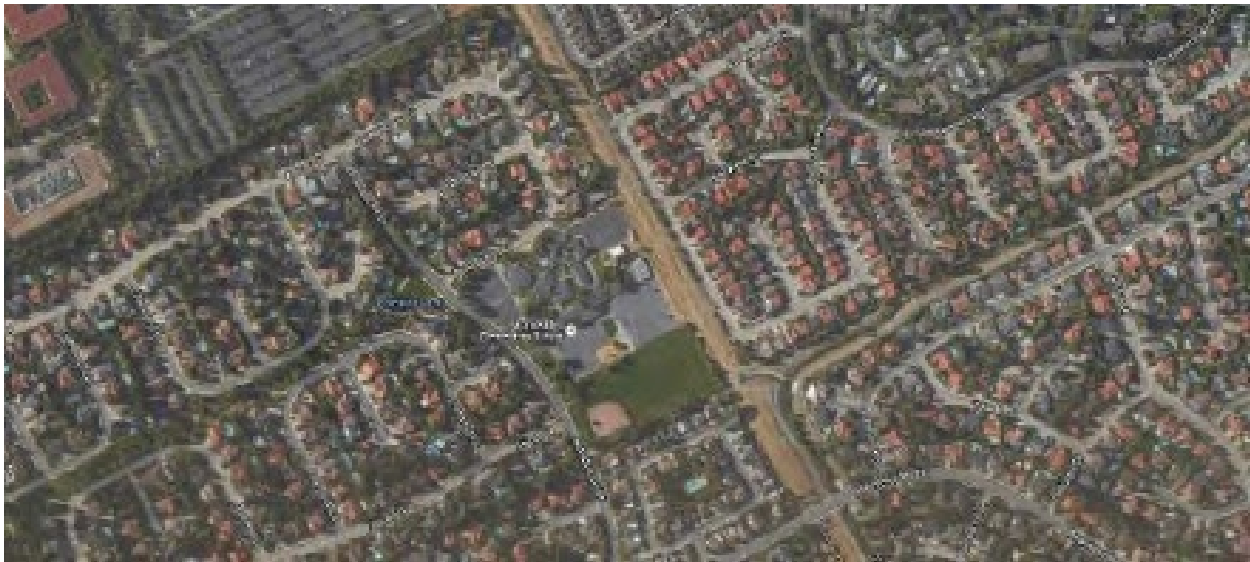
**2022/23 Enrollment:** 628 Students

### Length of Loading Zone

The loading zone in front of the school is approximately 170 feet.

### Potential Bus Loading Zone

On Broadmoor Drive in front of the school is a 200-foot parking lane that can be utilized as a bus loading zone for up to four buses. The travel lane is 19 feet wide. The best location is closest to the mid-block crosswalk through the parking lot.



School access was observed from 7:30 a.m. – 8:00 a.m. and from 12:45-1:15 p.m. on Wednesday, February 15, 2023.

### **Morning Observation**

Vehicles began dropping off students at 7:45 in the loading zone. There was one staff member assisting students, providing crossing assistance at the parking lot crosswalk and directing traffic. The queue for the entrance to the loading zone never extended onto Broadmoor Drive. Many parents were observed to drop off their student at the park entrance on Broadmoor Drive near Ascot Drive although there is no loading zone here. Parents would park their vehicle and walk their student either to the pathway or to the gate to the blacktop where the students lined up for the classes. A queue of seven vehicles was observed on southbound on Broadmoor Drive waiting for pedestrians crossing, but this cleared quickly.

### **Afternoon Observation**

The dismissal bell was 12:50 p.m. and there was no observed queue at the school entrance onto Broadmoor Drive. Vehicles were parked on all sides of Broadmoor Drive and Ascot Drive but there were still available spaces. A lot of pedestrians were channeled to the crosswalk at Ascot Drive and there was a northbound queue of seven vehicles at 12:57 due to pedestrians crossing. At 12:58, a queue was observed southbound of about 12 vehicles at the intersection of Broadmoor Drive at Montevideo Drive due to pedestrians crossing. A crossing guard was stationed at this intersection.

### **Level of Observed Congestion**

Low. There was no queue spillover at the loading zone. Many parents parked and walked to pick up their child, which created minor congestion due to pedestrian crossing activity.

### **Recommendations**

No recommendations. Continue to monitor for enrollment changes.



## Quail Run Elementary School (#8)

Quail Run Elementary School, in the City of San Ramon, is located in a residential area bordered by Ivy Leaf Springs Road to the south and Goldenbay Avenue on the remaining sides. All roadways in the vicinity are local residential roads with on-street parking. There is one ingress driveway and one egress driveway for the main loading zone in front of the school and one ingress and one egress driveway for a secondary loading zone all accessed on Goldenbay Avenue.

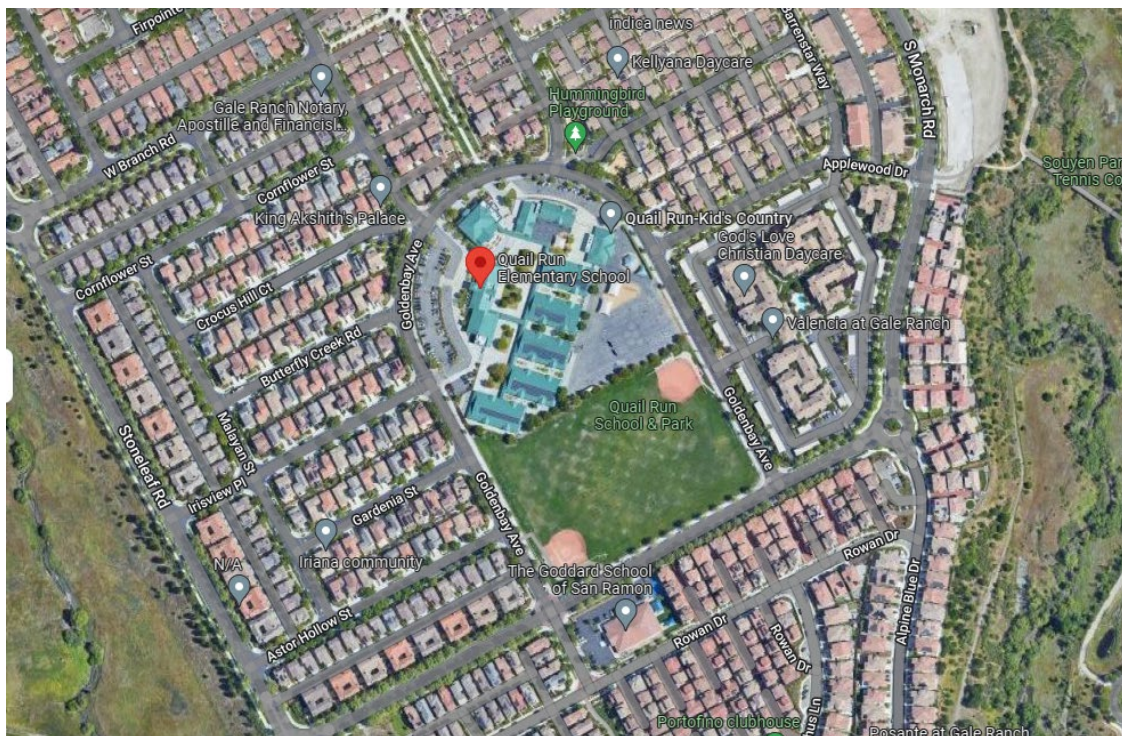
**2022/23 Enrollment:** 867 Students

### Length of Loading Zone

The loading zone in front of the school is 200 feet long and consists of two lanes. The secondary loading zone at the east side of the school is approximately 175 feet long consisting of one lane adjacent to a parking aisle.

### Potential Bus Loading Zone

Three buses can be accommodated at the secondary loading zone. Additionally, two buses can be accommodated at the 100 feet past the mid-block crosswalk at the loading zone in the front of the school.



School access was observed on Tuesday April 25<sup>th</sup>, 2023, from 7:45 a.m. – 8:00 a.m. with an 8:00 a.m. beginning bell and from 2:20 p.m. to 2:36 p.m. with a 2:30 p.m. dismissal bell.

### **Morning Observation**

Three staff were observed providing pedestrian crossing assistance at the mid-block crosswalk in the loading zone, and at the egress intersection of Goldenbay Avenue at Cinnamon Ridge Road and the ingress intersection of Goldenbay Avenue at Irisview Place. The secondary loading zone was not observed. There was also one person directing traffic forward. Because of the entrance gate close to the beginning of the loading zone, the second half of the loading zone was lightly used. Left turns were restricted into the ingress driveway. Queuing was minimal. At 7:59 a.m. a short ingress queue formed but quickly dissipated. There was also a short egress queue due to pedestrians but it cleared quickly. Traffic on Goldenbay Avenue was minimal. Pedestrian traffic was heavy with many students walking to school.

### **Afternoon Observation**

The same staff positions were observed in the afternoon. At 2:30 p.m. there were only four northbound right turn vehicles queued on Goldenbay Avenue. Many parking spaces were available on-street. A heavy stream of pedestrians crossed at the egress driveway which created an egress queue. The secondary loading zone was not observed.

### **Level of Observed Congestion**

Mild. Congestion was not observed on Goldenbay Avenue and conflicts were minimal.

### **Recommendations**

None.



## Gale Ranch Middle School (#9)

Gale Ranch Middle School, in the City of San Ramon, is located in a residential area bordered by S. Monarch Road to the northwest, Bollinger Canyon Road to the northeast, Main Branch Road to the southeast and residences to the south. There is one ingress driveway accessed from Main Branch Road that consists of three lanes and one egress driveway accessed from S. Monarch Road that consists of two lanes. Main Branch Road and S. Monarch Road are residential collector streets and Bollinger Canyon Road is a major arterial.

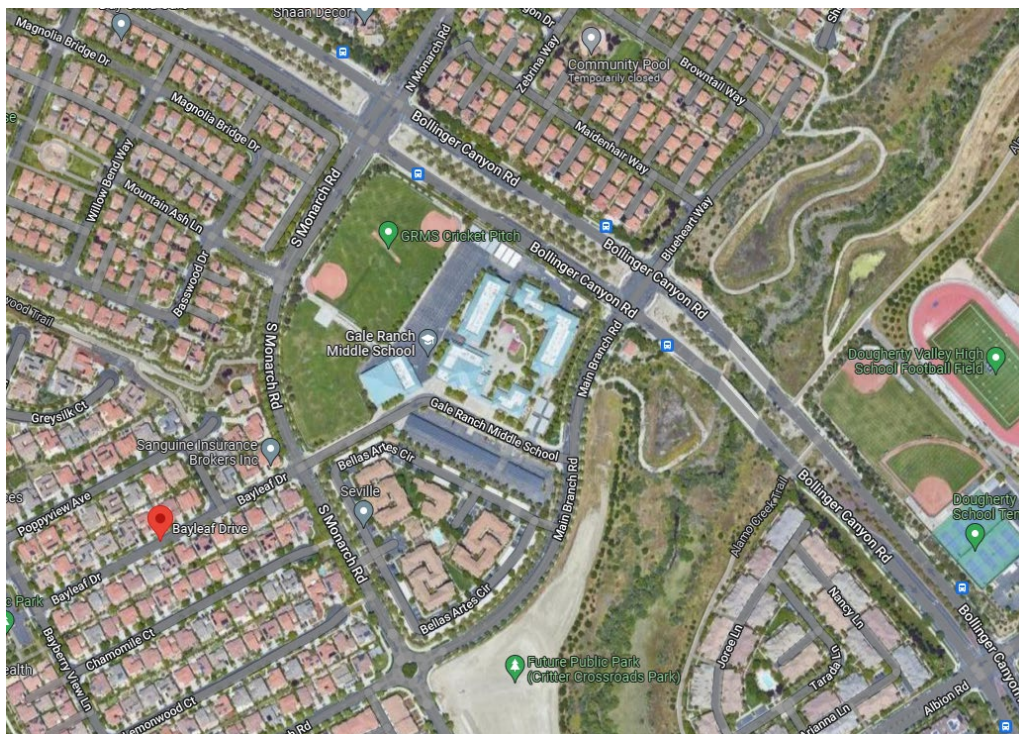
**2022/23 Enrollment:** 1086 Students

### Length of Loading Zone

The loading zone within the parking lot in front of the school is approximately 400 feet and consists of three lanes. There is 185 feet of stacking distance from the beginning of the loading zone to the ingress driveway. There is 270 feet of stacking distance from the end of the loading zone to the egress driveway. There is one crosswalk across the loading zone.

### Potential Bus Loading Zone

The last 200 feet of the loading zone would be appropriate to accommodate four buses.



School access was observed on Tuesday April 25<sup>th</sup>, 2023, from 8:05 a.m. – 8:20 a.m. with an 8:15 a.m. beginning bell and from 2:40 p.m. to 3:00 p.m. with a 2:45 p.m. dismissal bell.

### **Morning Observation**

There were three staff members providing crossing guard duties with one at the mid-block crossing within the loading zone, one at the ingress driveway on Main Branch Road and one at the egress driveway on S. Monarch Road. At 8:05 a.m. the ingress queue extended along Main Branch Road to Bollinger Canyon Road and the end of the queue was not visible. At 8:09 a.m. the egress queue backs up to the loading zone and impedes loading zone operations such that last one-third of the zone is unusable. Pedestrians crossing and cross traffic at the egress driveway is the conflict point that creates the congestion. At 8:09 a.m. the ingress queue persists. The left turns into the ingress driveway clear after pedestrians clear the intersection and a left turn queue did not form.

### **Afternoon Observation**

Staffing was the same as the morning observation. At 2:40 p.m. the right turn ingress queue extended to Bollinger Canyon Road. There were more than 50 parking spots unused in the parking lot. Some vehicles queued in the parking aisles to wait for students. By 2:48 p.m. the egress queue backed up to the last half of the loading zone. A heavy stream of pedestrians exited the school via the sidewalk to the egress driveway at the intersection of S. Monarch Road and Bayleaf Drive. This stream of pedestrians continued for approximately five minutes which reduced vehicle capacity at the intersection greatly, thus the egress queue. The crossing guard did an excellent job of metering pedestrians, however, cross traffic limited egressing vehicles. Once the pedestrian crossing was complete, the egress queue started to clear. By 2:55 p.m. the ingress queue was clear and by 3:00 p.m. the egress queue was clear.

### **Level of Observed Congestion**

High. Ingress queuing along Main Branch Road and Bollinger Canyon Road lasted more than ten minutes. Traffic congestion at the egress driveway at the intersection of S. Monarch Road and Bayleaf Drive resulted in some erratic vehicular driver behavior due to the long delays.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools.

## Windemere Ranch Middle School (#10)

Windemere Ranch Middle School, in the City of San Ramon, is bordered by residences to the south and east, open space to the west, and E. Branch Parkway to the north. There is one driveway in and one driveway out on E. Branch Parkway. The driveways create a loop through the loading zone and the exiting driveway is a signalized driveway at the intersection of E. Branch Parkway. There is a westbound left turn lane on E. Branch Parkway into the ingress driveway with a length of 275 feet. There is an eastbound right turn lane on E. Branch Parkway approximately 300 feet.

**2022/23 Enrollment:** 1,104 Students

### Length of Loading Zone

The loading zone is approximately 500 feet (20 vehicles) with 150 feet of stacking distance at the ingress driveway and 300 feet stacking distance at egress. There are two lanes at the ingress stacking area, three lanes through the loading zone and three lanes at the egress.

### Potential Bus Loading Zone

Although the loading zone can accommodate many buses, it is recommended that no more than two buses load in the red zone area at the very front of the loading zone since this curbside space is not used by the loading activity.





School access was observed from 9:20 a.m. – 9:42 a.m. and from 2:25 - 3:00 p.m. on Wednesday, March 8, 2023.

### **Morning Observation**

At 9:21, the queue for the ingress driveway extended onto Bollinger Canyon Road. The queue for southbound vehicles on Bollinger Canyon Road waiting to turn left onto E. Branch Parkway extended over 2000 feet near Harcourt Way. It took seven minutes to make the left turn onto E. Branch Parkway. The northbound right turn queue also extended; however, the entire length of the queue was not visible. There was one crossing guard at each of the crosswalks across the loading zone. Drop-offs were also made within the parking lot, which increased the pedestrian conflicts. Vehicles at the egress would clear during each cycle of the traffic signal. Egress was not a factor in the congestion. The bell ring was 9:41 a.m. and the queue was clear at 9:43 a.m.

### **Afternoon Observation**

The dismissal bell was at 2:45 p.m. At 2:25 p.m., the loading zone and parking lot queue extended onto E. Branch Parkway. Vehicles were parking all along E. Branch Parkway in the bike lane, even though there were multiple No Parking signs. There were lots of empty parking spaces in the parking lot, but sometimes access was blocked due to the queue. At 2:41 p.m., there were still 35 parking spaces available in the front lot and many more in the open parking lot. By 2:40, p.m., the queue extended onto Bollinger Canyon Road blocking both the northbound right turn lane and one of the two southbound left turn lanes onto E. Branch Parkway. There were two crossing guards at the loading zone crosswalks. There was a high volume of pedestrians at the second crosswalk due to students walking to parked vehicles along E. Branch Parkway. The loading zone activity was relatively efficient, with the lanes being used appropriately and vehicles utilizing the entirety of the curbside. Egressing vehicles cleared the signalized intersection each cycle, and egress was not contributing to congestion. At 2:56, the westbound left turn queue at the ingress driveway was clear, and the eastbound right turn queue cleared Bollinger Canyon Road. By 3:00, the queue was out of the roadway.

### **Level of Observed Congestion**

High. Overall, the traffic congestion level was high for a moderate amount of time. There are relatively few conflict points, however, the volume of vehicles is high.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools.

## Dougherty Valley High School (#11)

Dougherty Valley High School, in the City of San Ramon, is bordered by residences to the east, the Alamo Creek Trail to the north, Bollinger Canyon Road to the west and Albion Road to the south. There are three driveways into the school along Albion Road. The main driveway is a signalized driveway at the intersection of Albion Road and Arrowfield Way. The west driveway allows for left turns into the driveway but only right turns out of the driveway onto Albion Road. The eastern driveway has an eastbound left turn pocket to turn left into the driveway. There is a left turn and right turn lane at the driveway exit.

**2022/23 Enrollment:** 3,249 Students

### Length of Loading Zone

The loading zone is approximately 325 feet (13 vehicles) with 450 feet (18 vehicles) stacking distance at both the ingress and egress. There are two lanes at the ingress stacking area, three lanes through the loading zone and two lanes at the egress.

### Potential Bus Loading Zone

This currently does not have bus service. Although the loading zone can accommodate many buses, it is recommended that no more than two buses load in the red zone area at the very front of the loading zone since this curbside space is not used by the loading activity. Additionally, there's extra width in the curbside lane to accommodate two buses. If additional buses are required, it is recommended to remove 18 curbside parking spaces in front of the building to the west of the loading area. These 160 feet could accommodate two to three additional buses.



School access was observed from 8:45 a.m. – 9:15 a.m. and from 3:05-3:20 p.m. on Wednesday, March 8, 2023.

### **Morning Observation**

A steady flow of vehicles was dropping off students as early at 8:45 a.m. in the unstaffed loading zone. There are two raised crosswalks across the loading zone and most vehicles would pull up to the second crosswalk to drop off, leaving the last 50 feet unused. It was observed that vehicles would release students from all three lanes of the loading zone, contributing to congestion. The second crosswalk was the main crosswalk to the school from the student parking lot. By 9:10, the stream of pedestrians was steady which essentially blocked the loading zone traffic for several minutes.

At 8:51 a.m., the loading zone queue extended into the westbound right turn lane on Albion. By 8:57, this queue extended for more than 15 vehicles on Albion Road, blocking the bike lane, and through traffic was able to pass. The eastbound left turn into the ingress loading zone driveway extended to Arrowfield Way. At 9:02 a.m., it was noted there were large platoons of pedestrians on Arrowfield Way, such that all the pedestrians were not able to cross at the signalized intersection of Albion Road in a single cycle.

### **Afternoon Observation**

The dismissal bell was 3:00 p.m. At 3:05 p.m., the queue of vehicles eastbound on Albion Road extended from Arrowfield Way to the northbound right turn lane on Bollinger Canyon Road. The eastbound queue on Albion Road was due to two issues: 1) for the right lane, vehicles turning vehicles onto Arrowfield Way conflicting with heavy pedestrian volumes and congestion on Arrowfield Way, 2) for the left lane, vehicles turning left into the western driveway. The left lane turns into a left turn only late at Arrowfield Way, which was relatively unused. The right lane queue blocked through traffic. At 3:10 p.m. there was no queue overflow onto Albion Road at the ingress driveway for the loading zone. There seemed to be a lot of pick-up activity in the residential neighborhood along Arrowfield Way.

### **Level of Observed Congestion**

Severe. Overall, the traffic congestion level was high for a moderate amount of time and through traffic is unable to bypass school traffic. There were multiple conflict points that required a high level of attention.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools. Also, consider providing traffic control within the loading zone to keep traffic moving forward and to meter pedestrians at the crosswalks.

## Twin Creek Elementary School (#12)

Twin Creek Elementary School, in the City of San Ramon, is bordered by Marsh Drive on the south, Dos Rios Drive to the north and residences on the other sides. There is one ingress and one egress driveway for the circular loading zone which also contains the staff parking lot on Marsh Drive. Although the staff parking lot is separate from the loading zone, vehicles are routed through the staff parking lot to provide egress stacking distance.

**2022/23 Enrollment:** 654

### Length of Loading Zone

The length of the loading zone in front of the school is approximately 190 feet. There are two lanes through the loading zone.

### Potential Bus Loading Zone

The loading zone is fairly short, and it is not recommended that buses use the loading zone as this will have a significant negative impact on the efficiency of the loading zone. The recommended location for the bus loading zone is curbside on Marsh Drive in front of the loading zone. Two to three buses can be accommodated within the 120-foot curb distance.





School traffic patterns was observed from 7:45 a.m. – 8:00 a.m. on Tuesday, April 18, 2023, with a start bell of 8:00 a.m. and from 12:50-1:05 p.m. on Wednesday, April 19, 2023, with a dismissal bell of 12:50 p.m.

### **Morning Observation**

During morning drop-off, a crossing guard was observed at the crosswalks at the intersection of Bollinger Canyon Road and Marsh Drive and at the crosswalk within the loading zone. A short ingress queue was observed intermittently for short periods of time as the loading zone activities flowed smoothly and quickly. At 7:53 a.m. there were six vehicles queued on Marsh Drive waiting to turn left into the ingress driveway. This was the longest left turn queue observed and this queue quickly cleared at 7:54 a.m. Vehicles traveling westbound on Marsh Drive waiting to right-turn into the ingress driveway line up within the on-street parking aisle so that through vehicles are able to pass. The longest observed queue was eight vehicles long.

### **Afternoon Observation**

In addition to the crossing guards at the locations observed in the morning, an additional crossing guard was observed at the ingress driveway and staff was observed directing traffic forward within the loading zone. At 12:35 p.m. the street was full of on-street parking and vehicles making a westbound right-turn into the ingress driveway are queued up along the curb so that through traffic may pass. At 12:50 p.m. many parents have walked and are standing on the lawn area waiting for their student. At 12:54 p.m. the ingress queue moves and at 12:57 p.m. an egress queue forms due to pedestrian crossing at the driveway; however, the queue of vehicles begins to move swiftly and by 1:00 p.m. the ingress queue clears Marsh Drive. By 1:03 p.m. all loading zone activities are complete.

### **Level of Observed Congestion**

Mild. Vehicles were observed to impede the flow of traffic for very short periods of time. The duration of the loading zone activities was relatively short.

### **Recommendations**

No recommendations.



## Walt Disney Elementary School (#13)

**Walt Disney Elementary School**, in the City of San Ramon, is bordered by residences with Pine Valley Road to the north. There is one ingress driveway and one egress driveway for the loading zone in front of the school. There's also a driveway just to the east of the egress driveway for the staff parking lot. Pine Valley Road is a two-lane residential collector street with on-street parking. There is a mid-block crosswalk in front of the school with push-button rapid flashing beacons.

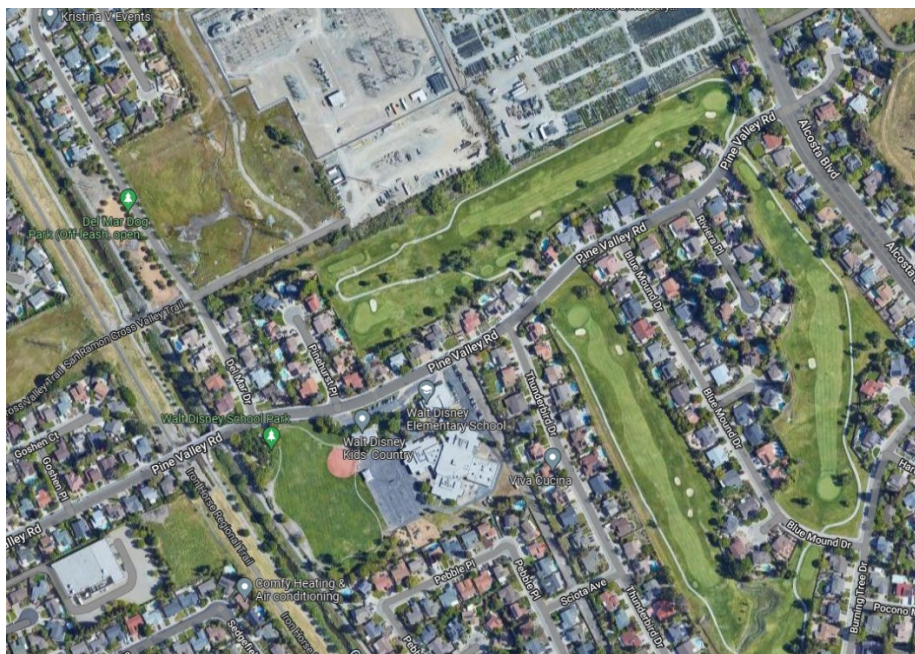
**2022/23 Enrollment:** 503 Students

### Length of Loading Zone

The loading zone is approximately 150 feet. There is 100 feet of stacking distance from the beginning of the loading zone to the ingress driveway and 140 feet of stacking distance from the end of the loading zone to the egress driveway. There is a pedestrian crosswalk within the egress stacking distance. There is also an on-street loading zone in front of the school approximately 100 feet to the west of the mid-block crosswalk and 100 feet to the east of the crosswalk.

### Potential Bus Loading Zone

This school is currently served by one TRAFFIX bus which utilizes the on-street loading zone just east of the mid-block crosswalk. An additional three buses can be accommodated by utilizing the on-street loading zone.



School access was observed on Thursday April 13<sup>th</sup>, 2023, from 8:20 a.m. – 8:30 a.m. with an 8:30 a.m. beginning bell and from 2:55 p.m. to 3:10 p.m. with a 3:00 p.m. dismissal bell.

### **Morning Observation**

There were three staff assisting at the loading zone, one with a whistle directing traffic and one at the crosswalk within the loading zone. There was an additional staff member at the mid-block crosswalk on Pine Valley Road. The loading zone activities were very efficient with traffic moving smoothly through the area with minimal back-up onto Pine Valley Road. At 8:26 a.m. the last-minute drop-off rush saw 12 vehicles queued eastbound on Pine Valley Road to turn right into the ingress driveway. The on-street loading zone had low utilization. There was traffic congestion in the westbound direction due to Pine Valley Middle School downstream. It was observed that a westbound motorist was distracted and nearly collided with the crossing guard at the mid-block crosswalk. When traffic was flowing on Pine Valley Road, vehicle speeds of through traffic seemed to exceed the 25 mph speed limit.

### **Afternoon Observation**

A similar staff was assisting the loading zone and crosswalks. One of the staff had a microphone to announce student names whose vehicles were in the loading zone. There were 13 eastbound vehicles queued in the parking lane to make a right turn into the ingress driveway at 2:56, which grew to 16 vehicles at 3:00 p.m. There were no westbound vehicles queued as this would block through traffic. The eastbound queue cleared at 3:05 p.m., however, westbound traffic was queuing due to a downstream pedestrian crossing at an uncontrolled marked crosswalk. At 3:02 p.m. the bus arrived and parked just east of the mid-block crosswalk. The bus was unable to pull forward enough, such that the last 10 feet of the bus extended into the red zone adjacent to the crosswalk. This made sight distance very difficult for pedestrians crossing from the south to the north side of Pine Valley Road. The loading zone activities were complete at 3:08 p.m.

### **Level of Observed Congestion**

Moderate. The traffic congestion related to **Walt Disney Elementary School** was mild for a short time. However, congestion due to the nearby **Pine Valley Middle School** made conditions more challenging.

### **Recommendations**

There are no specific suggestions to improve traffic congestion at **Walt Disney Elementary School**. Consider traffic calming measures, such as a choker at the mid-block crosswalk to slow vehicle speeds and improve pedestrian visibility. Consider eliminating passenger loading zone to the east of the crosswalk to allow more space for the bus loading zone.

## Bella Vista Elementary School (#14)

Bella Vista Elementary School, in the City of San Ramon, is bordered by residences to the north, Trumpet Vine Lane to the east, Hibiscus Road to the south and Dougherty Road to the west. There is one driveway in and one driveway out on Trumpet Vine Lane. The driveways create a loop through the loading zone. Left turns are prohibited at both the ingress and egress driveways.

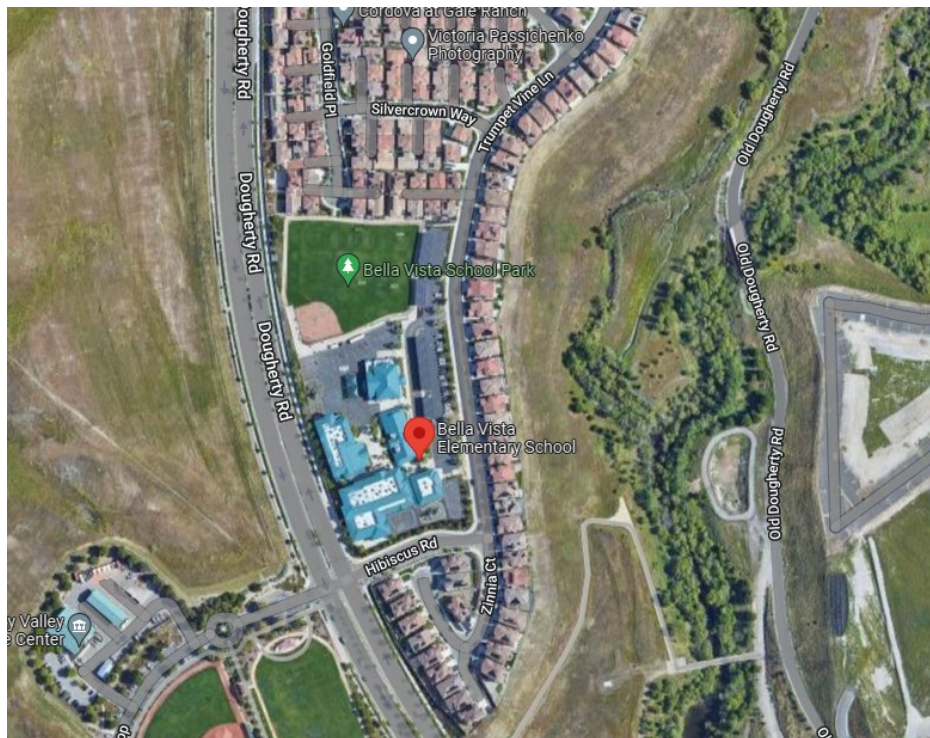
**2022/23 Enrollment:** 506 Students

### Length of Loading Zone

The loading zone is approximately 250 feet (10 vehicles) with 100 feet of stacking distance at both the ingress and egress driveway. There are two lanes at the ingress stacking area, three lanes through the loading zone and two lanes at the egress.

### Potential Bus Loading Zone

This school currently does not have bus service. There is only one option for bus loading areas, and that is in the loading zone itself. Although the loading zone can accommodate many buses, it is recommended that no more than one bus load at the very front of the loading zone since this curbside space less used by the loading activity. More than one bus in the loading zone will negatively impact the capacity of the loading zone activities.



School access was observed from 7:45 a.m. – 8:05 a.m. and from 12:40 - 1:05 p.m. on Wednesday, March 8, 2023.

### **Morning Observation**

At 7:45 a.m. the queue on Trumpet Vine Lane for vehicles waiting to turn right into the school ingress driveway extended past Trefoil Road, approximately 800 feet and there were vehicles queued on Trefoil Road and Silvercrown Way waiting to turn onto Trumpet Vine Lane. There was some space for through vehicles to pass if vehicles in the queue were pulled to the curbside where there are no parking signs during school drop off on Trumpet Vine Lane. However, where the queue extended on Trefoil Road and Silvercrown Way, through traffic was blocked.

There were two staff crossing guards, one at the crosswalk within the loading zone and another at the egress driveway. Vehicles were utilizing a majority of the loading zone area, with the exception of the very front. Many parents were parking in the neighborhood, even on Hibiscus Road and dropping off or walking their children into the school.

At 7:50 a.m. it was observed that egressing vehicles was limiting access to the loading zone. The conflict point for the egress queue was the downstream crosswalks at Hibiscus Road and Trumpet Vine Lane. A steady stream of pedestrians constricted the flow of vehicles exiting the area. When the bell rang at 8:00 a.m., there were still vehicles in the ingress queue. At 8:05, loading zone activities were complete.

### **Afternoon Observation**

The dismissal bell was 12:50 p.m. At 12:42, the ingress queue began to form on Trumpet Vine Lane. Vehicles in the queue were pulled curbside to allow through vehicles to pass. On-street parking was full, however, there were several available parking spaces in the parent lot at the time of the dismissal bell. There were two small school buses, as well as two afterschool program buses in the loading zone at the back end. When the loading zone queue began to move, these buses did not move and blocked ingress traffic into the loading zone. The staff that was assisting pedestrians at the crosswalk, left the crosswalk and directed traffic around the buses. The second staff member was directing traffic at the inner parking lot, unlike the morning which was at the egress driveway. At 12:54 p.m., the egress queue extended into the loading zone due to the pedestrian crossing at Hibiscus Road and Trumpet Vine Lane, similar to morning conditions. By 12:58, most pedestrians cleared this crosswalk, and egressing traffic was able to flow. Another area of friction for egressing traffic is that the two loading zone lanes merge into one lane at the driveway.

### **Level of Observed Congestion**

High. Overall, the traffic congestion level was high for a moderate amount of time. There are times when non-school traffic is unable to bypass school traffic, although background traffic is very low. There are relatively few conflict points.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools. Consider providing trained staff to conduct traffic control at the intersection of Hibiscus Road and Trumpet Vine Lane. Metering pedestrian crossings, and directing vehicle traffic will improve egress flow conditions, thus facilitating the flow of traffic through the loading zone.



## Iron Horse Middle School (#15)

Iron Horse Middle School, in the City of San Ramon, is located in a transitional area adjacent to office parks to the west and a residential neighborhood across Alcosta Boulevard, which is an arterial roadway, to the east. The main driveway to access the main loading zone in front of the school is a signalized intersection on Alcosta Boulevard at Woodland Drive. There is also driveway to access the overflow parking lot to the south of the school. Although there is an ingress driveway at the north edge of the school, this driveway is closed at Alcosta Boulevard.

**2022/23 Enrollment:** 1009 Students

### Length of Loading Zone

The loading zone in front of the school is 500 feet long and consists of three lanes. The ingress stacking distance is 800 feet, which allows approximately 40 vehicles to queue before extending onto Alcosta Boulevard.

### Potential Bus Loading Zone

The recommended location for a bus loading zone is the front half of the loading zone as it was relatively unused for loading zone activities and the egress queue during the afternoon can back up to this area. This area encompasses the 250 feet of the loading zone closest to the egress driveway and can accommodate up to 5 buses.



School access was observed on Wednesday April 12<sup>th</sup>, 2023 from 9:20 a.m. – 9:35 a.m. with a 9:34 a.m. beginning bell and from 2:30 p.m. to 3:00 p.m. with a 2:45 p.m. dismissal bell.

### **Morning Observation**

There were two staff assisting the loading zone with one providing pedestrian crossing assistance at the crosswalk through the loading zone to the parking lot, and the other at a midpoint of the loading zone directing staff to move forward. The first half of the loading zone was primarily used, despite staff direction for motorists to pull forward. At 9:17 a.m. the loading zone is full of activity with a queue mid-way through the parking lot. By 9:22 a.m. the queue starts to extend onto Alcosta Boulevard. The southbound right turn on Alcosta Boulevard at the ingress driveway extends along the school frontage, blocking the bike lane, but not impeding through traffic. The northbound left turn queue is approximately 20 vehicles. By 9:27 a.m. the northbound left turn queue clears with the signal cycle and the southbound right turn on Alcosta Boulevard clears. At 9:32 a.m. loading zone activities are complete.

### **Afternoon Observation**

At 2:33, the southbound right turn begins to queue on Alcosta Boulevard. At the bell ring at 2:45 p.m. this queue consists of 17 vehicles on Alcosta Boulevard. There are two entry lanes at the ingress driveway. The right lane is to access the loading zone and the left lane is used to access the overflow parking lot to the south. At the bell ring, the south parking lot is full of motorists (approximately 100 spaces) waiting for their student. Motorists existing the overflow parking lot must use the southern driveway and are limited to make a right turn only. This is very helpful in distributing the egress activities to two points. At 2:53 p.m. the southbound right turn queue clears Alcosta Boulevard. At this time, the egress at the signalized driveway doesn't clear with each cycle and starts to back up into the last half of the loading zone. There's friction within the circle at the signalized driveway with pedestrians crossing and vehicles blocking circulation with pick-ups within the circle. The south parking lot egress queue extends through the south parking lot. By 3:00 p.m. all loading zone activities are complete.

### **Level of Observed Congestion**

High. Queuing on an arterial roadway that blocked the bike lane lasted nearly 20 minutes in the afternoon.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools. Another consideration is to provide a staff person to direct traffic at the traffic circle at the ingress driveway. A sign that prohibits loading activities within the traffic circle may be helpful. Overall, there were few conflict points and traffic moved as best as it could with the heavy demand that was placed on the network.

## Pine Valley Middle School (#16)

**Pine Valley** Middle School, in the City of San Ramon, is located in a residential area bordered by Pine Valley Road to the north, Broadmoor Drive to the east, Boone Acres Park to the west and residences to the south. There is one ingress driveway and one egress driveway for a three-lane loading zone in front of the school on Pine Valley Road. There's also a parking lot to the south of the school accessed from Broadmoor Drive with one two-way driveway and one egress driveway. This parking lot includes a designated loading zone. All roadways are two-lane local residential roads with on-street parking.

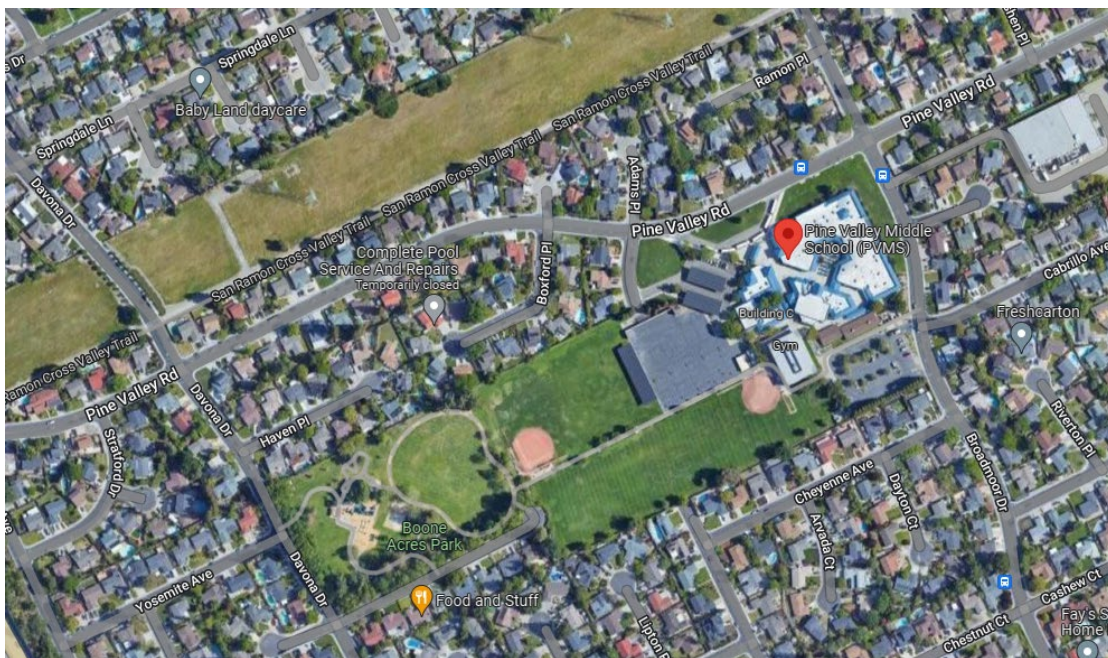
**2022/23 Enrollment:** 955 Students

### Length of Loading Zone

The loading zone in front of the school within the parking lot is approximately 60 feet. There is 170 feet of stacking distance from the beginning of the loading zone to the ingress driveway and 500 feet of stacking distance from the end of the loading zone to the egress driveway. There are few conflicts within the loading zone. The on-street loading zone along the west side of the school is approximately 160 feet, however this loading zone is unattended by staff and parents use this area to park and walk.

### Potential Bus Loading Zone

This school is currently served by six TRAFFIX buses which utilizes the main loading zone in front of the school. One additional bus can be accommodated within this loading zone.





School access was observed on Thursday April 27<sup>th</sup>, 2023, from 7:45 a.m. – 8:03 a.m. with an 8:00 a.m. beginning bell and from 2:20 p.m. to 2:40 p.m. with a 2:30 p.m. dismissal bell.

### **Morning Observation**

There was no staff observed assisting the loading zones in front of the school on Pine Valley Road. The first lane closest to the curb and sometimes the second lane were used the drop-off students, while the third lane was used to by-pass the drop-off zone. There was one crossing guard at the all-way stop-controlled intersection of Pine Valley Road at Broadmoor Drive. By 7:40 a.m. the buses that serve the school had already dropped off the students and left. This allowed the front portion of the loading zone to be used by parents dropping off students. At 7:50 a.m. the ingress queue starts to spill onto Pine Valley Road. Left turns into the ingress driveway used second ingress lane and vehicles weaved to access the curb to drop off students. At 7:55 a.m. an egress queue developed due to congestion at the all-way stop intersection of Pine Valley Road and Broadmoor Drive due to high volume of pedestrian crossing. Loading zone activities are complete by 8:00 and by 8:04 a.m. the queue at the intersection clears.

### **Afternoon Observation**

The loading zone in front of the school along Pine Valley Road is used solely for bus loading activities in the afternoon. Parents were queued at the loading zone at the south parking lot. The parking lot was near capacity with parked vehicles waiting to pick up students. Only two vehicles were queued on Broadmoor Drive for a short period of time. The loading zone activities were complete by 2:37 p.m. Congestion was observed at the intersection of Pine Valley Road and Broadmoor Drive although it was less congestion observed compared to the morning.

### **Level of Observed Congestion**

Moderate. The traffic congestion was observed to be much higher during the morning observation with both an ingress and egress queue. After the morning bell, congestion cleared after four minutes.

### **Recommendations**

Provide additional training for the crossing guard at the intersection of Pine Valley Road and Broadmoor Drive to meter pedestrians to allow more vehicle capacity to reduce congestion. Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools.

## California High School (#17)

**California High School**, in the City of San Ramon, is bordered by residences to the north and south, the Iron Horse Trail to the east, Broadmoor Street to the west and Charbray to the north. There are several driveways into the school. The main driveway into the school is located at the southern edge at the school at the all-way stop intersection with Millbridge Drive. The other entrance driveway is at the two-lane circular driveway at the front of the school. A third driveway is located at the tennis courts to the north and provides access to additional parking and a small loading zone in front of the aquatic center.

**2022/23 Enrollment:** 2,869 Students

### Length of Loading Zone

The loading zone in the circular driveway is approximately 100 feet with 130 feet stacking distance at the ingress and 170 feet stacking at the egress. The south loading zone provides 185 feet.

### Potential Bus Loading Zone

This school is currently served by one bus which loads in the red zone just south of the entrance to the circular loading zone. There is 250 feet between the ingress circular driveway and the driveway for the south loading area. This can be converted to bus loading for up to five buses.



School access was observed from 8:10 a.m. – 8:40 a.m. and from 1:50-2:25 p.m. on Wednesday, February 15, 2023.

### Morning Observation

Queuing on Broadmoor Street was observed to begin at 8:05 a.m. with nine vehicles queued southbound at Millbridge Drive. The conflicting movements were pedestrians crossing Millbridge Drive, vehicles

westbound exiting the south loading zone. At 8:12 a.m. pedestrians crossing the access road to the student parking lot created a conflict point that queued vehicles through the intersection of Broadmoor Drive at Millbridge Drive. The queue extended past the entire length of the school on Broadmoor Drive. Vehicles were also observed queuing to turn left into the circular loading zone driveway. Some through vehicles were able to drive past this queue depending on where the queue ended and if there were on-street parked vehicles. It was observed that the south loading zone often had unused capacity. The upstream friction limited access. At 8:30 bell, the queue continued to extend the length of the school. A travel time run at 8:30 indicated it took 4 minutes and 45 seconds to go southbound on Broadmoor Drive from Christopher Way to Millbridge Drive.

### **Afternoon Observation**

The dismissal bell is 2:05 p.m. At 2:00 p.m. on-street parking was nearly fully occupied. The loading zones were full, including both lanes of the circular loading zone. The parking lot at the south loading zone was also full of waiting vehicles in the aisles. The bus was waiting for student at the curb. Southbound traffic was blocked by vehicles queued to turn left into circular driveway. At 2:10 p.m. there were seven vehicles queued to turn left into main driveway. There was a queue of five vehicles turning left into the south entrance. The queue at the intersection of Broadmoor Drive and Millbridge Drive was due to the loading zone queue, exiting vehicles and pedestrian crossings. All queues were clear by 2:22 p.m. but the student/staff lot was still emptying. There was a staff person conducting traffic control at the pedestrian crossing of the access road to the student/staff lot. This pedestrian crossing is a key choke point for circulation in the southern area.

### **Level of Observation Congestion**

Severe. Overall, the traffic congestion level was high for a moderate amount of time and through traffic is unable to bypass school traffic. There were multiple conflict points that required a high level of attention.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools. Also consider implementing the plan that was drafted for the school loading zone by closing the circular driveway entrance and directing all loading zone traffic to the south entrance. This plan would require eliminating the loading zone egress of the southern driveway. An alternative circulation plan would extend the circular driveway loading zone into the parking area to the north of the circle driveway with the exit at the end of the tennis courts. This could reduce congestion by reducing friction at the southern entrance by restricting it to student/staff parking only. However, this alternative would require staff support to direct traffic forward, instead of stopping in front of the school.



## Neil Armstrong Elementary School (#18)

**Neil Armstrong Elementary School**, in the City of San Ramon, is located in a residential area bordered by Calais Drive to the south, Mennet Way to the east, Westchester Drive to the north and Gorham Place to the west. There is one ingress and one egress driveway for the loading zone in front of the school. There's also a loading zone designated curbside on Gorham Place adjacent to a staff parking lot. All roadways are two-lane local residential roads with on-street parking.

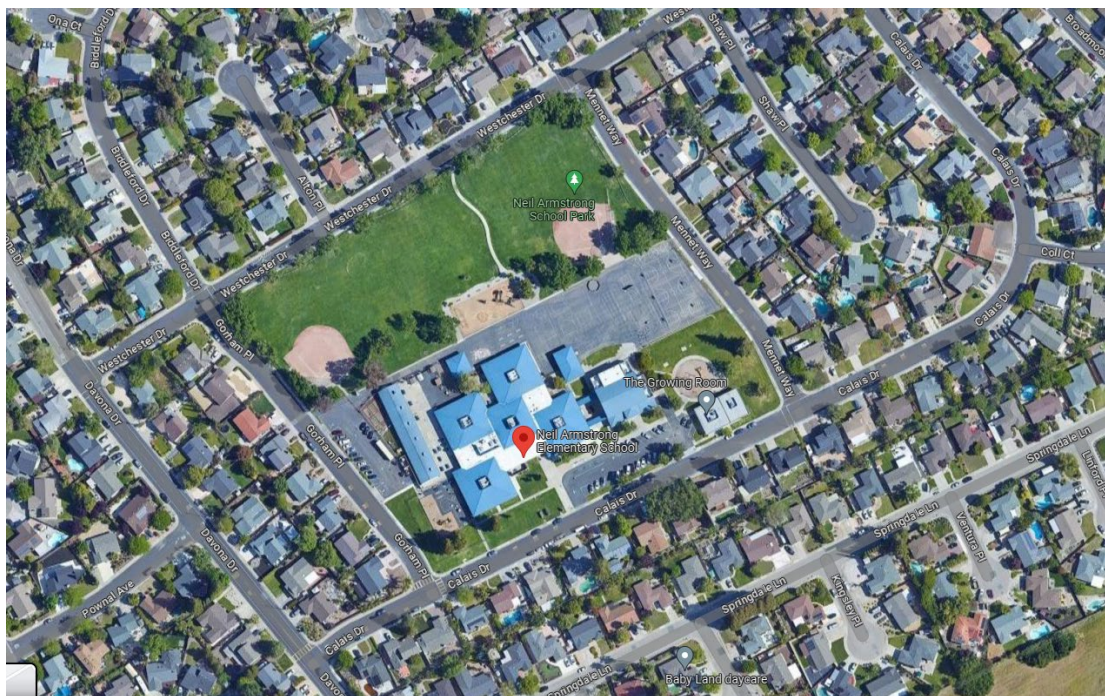
**2022/23 Enrollment:** 498 Students

### Length of Loading Zone

The loading zone in front of the school within the parking lot is approximately 60 feet. There is 170 feet of stacking distance from the beginning of the loading zone to the ingress driveway and 500 feet of stacking distance from the end of the loading zone to the egress driveway. There are few conflicts within the loading zone. The on-street loading zone along the west side of the school is approximately 160 feet, however this loading zone is unattended by staff and parents use this area to park and walk.

### Potential Bus Loading Zone

This school is currently served by one TRAFFIX bus which utilizes the on-street curbside along the east side of the school on Mennet Way. An additional four buses can be accommodated by utilizing the on-street loading zone.



School access was observed on Thursday April 27<sup>th</sup>, 2023, from 8:20 a.m. – 8:30 a.m. with an 8:30 a.m. beginning bell and from 2:55 p.m. to 3:10 p.m. with a 3:00 p.m. dismissal bell.

### **Morning Observation**

There were two staff assisting at the loading zone in front of the school. Traffic volumes were relatively low at this loading zone and a queue never extended out into the roadway. On-street parking spaces were available for parents to park and walk students in. Many parents parked along Gorham Place to drop off their student or walk their student in. Traffic was dispersed throughout the area with no observed conflicts or queues.

### **Afternoon Observation**

A similar staff was assisting the loading zone in the front of the school. At 2:54 p.m. a queue began forming on Calais Drive to enter the loading zone. By 3:00 p.m. this queue blocked through traffic for less than 5 minutes and by 3:05 the loading zone activities were complete. Many parents who parked along the streets were standing around the front entrance and the west side entrance waiting for their student.

### **Level of Observed Congestion**

Low. The traffic congestion was relatively low as many parents parked and walked, and traffic was dispersed at various access points around the school.

**RECOMMENDATIONS:** None.

## Diablo Vista Middle School (#19)

Diablo Vista Middle School, in the Town of Danville, is located on the major arterial of Camino Tassajara that runs through a residential area. The school is bordered by Camino Tassajara to the north, Lawrence Road to the west, Monterosso Street to the east, and residences to the south. There is main driveway at the signalized intersection of Camino Tassajara at Hansen Lane with one lane in and two lanes out. This driveway provides access to the main loading zone in front of the school and the overflow parking lot to the east. Camino Tassajara is a major four-lane roadway with bike lanes and a center median with left turn pockets.

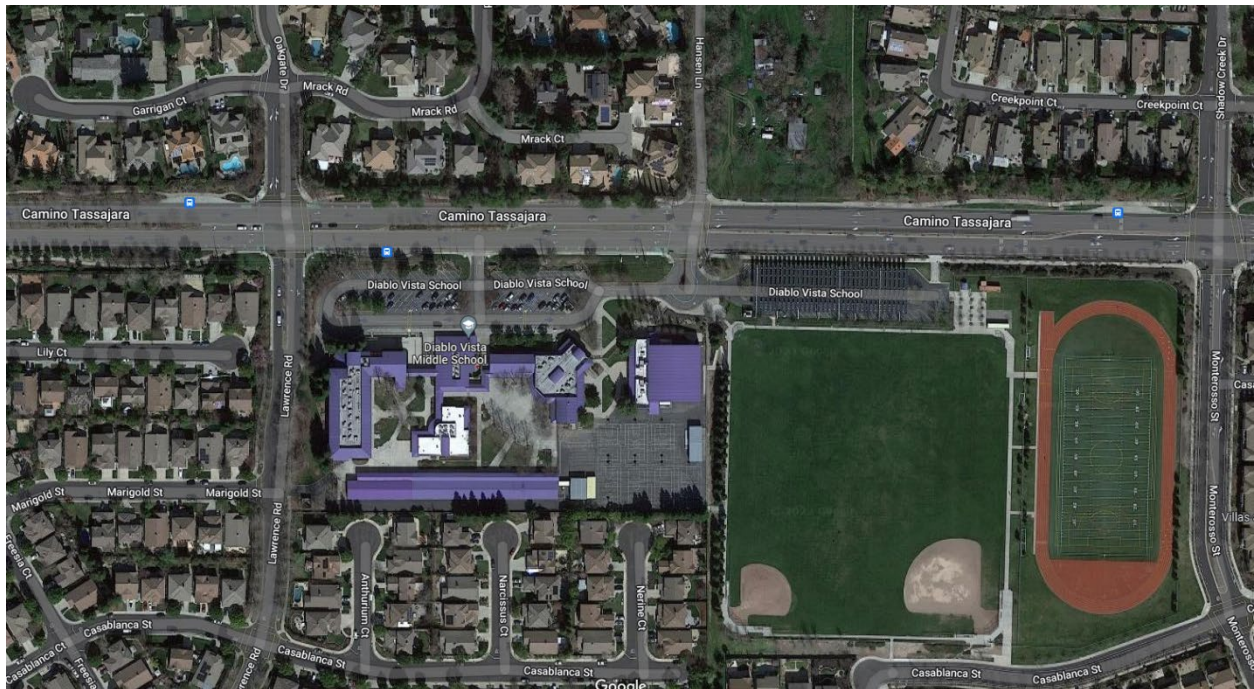
**2022/23 Enrollment:** 890 Students

### Length of Loading Zone

The loading zone in front of the school is 420 feet long and consists of two lanes. The ingress stacking distance is 780 feet and the egress stacking distance is 380 feet.

### Potential Bus Loading Zone

The only location feasible for a bus loading zone is within the existing loading zone in front of the school. It is recommended that only up to two buses are accommodated with 100 feet of loading zone to avoid severely impacting the capacity of the loading zone.





School access was observed on Thursday March 30<sup>th</sup>, 2023, from 8:00 a.m. – 8:15 a.m. with an 8:15 a.m. beginning bell and on Friday March 31<sup>st</sup>, 2023, from 2:30 p.m. to 3:00 p.m.

### **Morning Observation**

One staff member provided crossing guard assistance at the crosswalk from the loading zone to the parking lot. Although vehicles would queue on Camino Tassajara, the queues would mostly clear with one traffic signal cycle. The loading zone operated smoothly with very little conflict points. There was one signal cycle at 8:09 a.m. where the northbound egress at the signalized intersection could not clear due to a downstream queue westbound on Camino Tassajara. The choke point for the westbound queue on Camino Tassajara was unseen. Overall operations were efficient with lots of capacity on-site and adequate egress capacity.

### **Afternoon Observation**

One staff member provided crossing guard assistance at the crosswalk from the loading zone to the parking lot. The overflow parking lot to the east was fairly full with motorists waiting to pick up students. There was some queueing on Camino Tassajara with the maximum queue being 12 vehicles eastbound on Camino Tassajara. At 2:53, the egress queue extended into the loading zone and into the overflow parking lot. For the next 10 minutes, traffic moved slowly as vehicles exited the school. Conflict points were relatively minor and on-site school traffic moved smoothly. Loading zone activities were complete by 3:00p.m.

### **Level of Observed Congestion**

Moderate. There was some queueing on Camino Tassajara that blocked the bike lane for less than 10 minutes in the morning and approximately 15 minutes in the afternoon. Vehicular driver behavior was normal as there were few conflict points.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools. Another consideration is to provide a second egress driveway at the east side of the overflow parking lot to distribute the egress traffic in the afternoon across two points.

## Sycamore Valley Elementary School (#20)

Sycamore Valley Elementary School, in the Town of Danville, is bordered by Camino Tassajara to the south and open space and residences on the other sides. The driveway to access the school (Holbrook Drive) is the north leg of the signalized intersection of Camino Tassajara and Holbrook Drive/Creekside Avenue. Camino Tassajara is a four-lane major arterial with protected left turn pockets and bike lanes.

**2022/23 Enrollment:** 588 students

### Length of Loading Zone

The loading zone is 320 feet in length. The 100 feet at the rear of the loading zone is located in the 1<sup>st</sup> travel lane of a total of 3 travel lanes. The remaining 220 feet of loading zone is in a turnout, thus providing four lanes of vehicles directly in front of the school.

### Potential Bus Loading Zone

There are limited locations appropriate for a bus loading zone. It is recommended that 100 feet at the front of the loading zone can be utilized as a bus loading zone. This area is less used by vehicles since it is past the school entrance. Two buses can be accommodated at this location.





School traffic patterns was observed from 7:45 a.m. – 8:00 a.m. with a start bell of 8:00 a.m. and from 2:30 - 2:45 p.m. with a dismissal bell of 2:30 p.m. on Tuesday, April 11, 2023.

### **Morning Observation**

At 7:44 a.m. the ingress queue spilled onto Camino Tassajara and the end of the northbound right-turn queue at the signalized intersection of the school driveway and Camino Tassajara is not visible. The queue blocked the bike lane and both through travel lanes were unimpeded. Three staff persons were observed to assist the loading zone activities with two staff at the main crosswalk and one at the crosswalk at the rear of the loading zone. The staff at the main crosswalk were often distracted by talking to each other as well as other adults. The lack of focus on vehicles resulted in vehicles not pulling forward creating inefficiencies in loading zone activities. The parking lot, shared with Sycamore Valley Park, was underutilized. Many vehicles would drop off students in the parking lot, which created more pedestrian crossing of the loading zone. At 7:50 a.m. the egress queue backed up into the parking lot but did not impact efficiency of the loading zone. It is observed that students were not released at the end of the loading zone, near the first crosswalk, and students would wait to exit vehicles until they were within the turnout located directly in front of the school.

### **Afternoon Observation**

The ingress queue did not spill onto Camino Tassajara and was contained on-site. Many vehicles were observed to park in the parking lot and walk in to pick up their student. Staff was not observed assisting students into vehicles nor announcement of student names as vehicles arrived. There was a period of two minutes, from 2:36 p.m. -2:38 p.m., where vehicles were standing in the loading zone and did not move because students were not yet at the loading zone. At 2:40 p.m. the egress queue backed up to the front of the loading zone but did not impede flow. At 2:45 p.m. loading zone activities were complete.

### **Level of Observed Congestion**

Moderate. During the morning peak period, vehicles were queued on a major arterial roadway blocking a bike lane, although the queue did not impede the flow of through traffic.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools. Create more efficiency in the loading zone operations by utilizing the rear of the loading zone by providing staff to assist students exiting the vehicle. Provide student volunteers to direct students from the rear of the loading zone to the school entrance. It is to be noted that subsequent to the field analysis in preparation of the study, and prior to the start of the 2023-24 school year, the Town collaborated with SRVUSD to implement signing and striping and traffic signal timing measure that have since improved traffic

circulation and intersection/roadway delay. In conjunction, school bell times were changed that have also likely contributed to decreased delay and improved circulation.

## John Baldwin Elementary School (#21)

John Baldwin Elementary School is located on Brookside Drive in Danville, California. The school is bordered by Brookside Drive to the east, Iron Horse Regional Trail to the west, Paraiso Drive to the south and residences to the north. Brookside Drive has one travel lane and one parking lane in each direction. There are no bicycle lanes along Brookside Drive. The school entrance and exit are both on Brookside Drive connected by a two-lane counterclockwise driveway with a loading zone and a staff parking lot. Parking on the east side of Brookside Drive is restricted during school hours to allow for vehicles to pass on the right when vehicles are queued for the loading zone. Parking is available on the west side of Brookside Drive for parents to park and walk-in students. A high visibility crosswalk is provided at Brookside Place that allows pedestrian access to the front of the school. This access path is continued with a crosswalk in the parking lot crossing the loading zone.

The other entry point is pedestrian access at the rear of the school through the field, at an entry gate off the Iron Horse Trail.

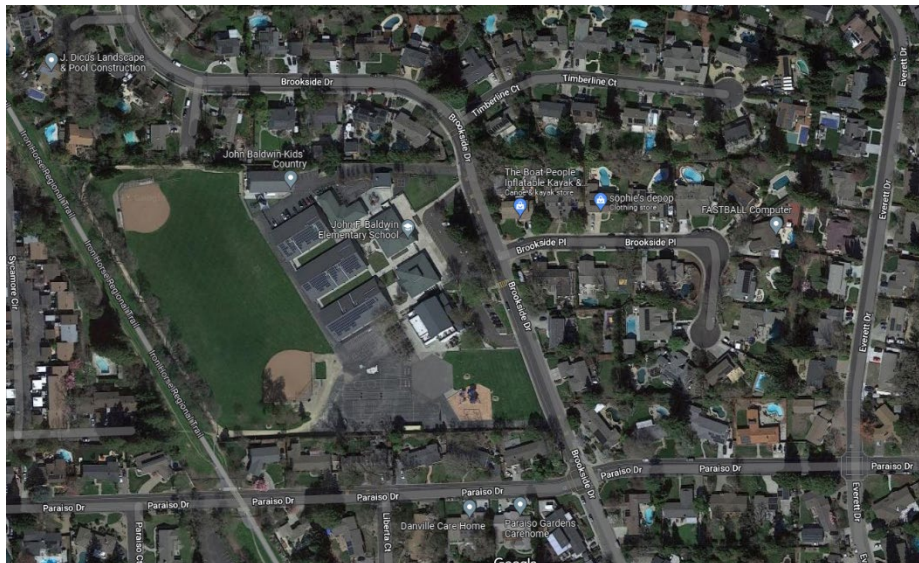
**2022/23 Enrollment:** 434 Students

### Length of Loading Zone

200' north of crosswalk and 100' south of the crosswalk

### Potential Bus Loading Zone

Convert the 100' loading zone south of the crosswalk to accommodate up to two buses. Or convert up to 150 feet of on-street parking in front of the school between the entrance and exit driveways to accommodate up to three buses.



School access was observed from 8:00 – 8:30 a.m. and from 1:15 – 1:45 p.m. on Wednesday February 22, 2023.

### **Morning Observation**

It was observed that the loading zone is at capacity around 15 minutes prior to school start bell. The greatest number of vehicles queued up at the ingress driveway was 6 vehicles, 3 of which were southbound turning right into driveway and 3 northbound turning left onto driveway. This queue lasted less than a minute as the loading zone moved forward. For the most part, drivers were pulling forward utilizing the full capacity of the loading zone. Student volunteers assisted students exiting the vehicle along the loading zone. There was a pedestrian crossing guard on-site at the mid-block crosswalk in the parking lot that provided a balanced flow between walk-in drop offs and vehicle flow at the loading zone.

For approximately 3 minutes, an egress queue developed due to a downstream pedestrian crossing conflict at the intersection of Brookside Drive and Paraiso Drive, which is an all-way stop intersection. There is a crossing guard at this location that was observed to prioritize pedestrians upon arrival. Traffic congestion could be slightly reduced if pedestrians were paused and crossed in groups rather than in long drawn-out lines. Overall, the congestion level was low and queuing into the roadways was minimal.

### **Afternoon Observation**

At the dismissal bell at 1:20 p.m., there was a queue that extended into Brookside Drive from the ingress driveway. There were 8 northbound left-turning vehicles and 2 southbound right-turning vehicles queued on Brookside Drive. Through vehicles are able to pass the vehicles queued on Brookside Drive. The peak of the queue occurred at 1:22 p.m. with more than six southbound right-turning vehicles and 13 northbound left-turning vehicles queued on Brookside Drive. At 1:27 there were seven northbound left-turning vehicles queued on Brookside Road that would be clear if the full length of the loading zone was utilized. A staff person provided crossing protection at the mid-block crosswalk in the parking lot and there were student volunteers assisting with students getting into vehicles. However, there was no staff directing the vehicles to move forward. It was observed several times vehicles stopping in front of the school gates instead of pulling forward as much as possible. At 1:29 p.m., the loading activities were complete.

### **Level of Observed Congestion**

Mild. Although there was queuing on Brookside Drive, the background traffic was low and the queues cleared in 10 minutes.

### **Recommendations**

Consider providing a staff member to direct vehicles to pull forward to utilize more of the loading zone.

## Charlotte Wood Middle School (#22)

Charlotte Wood Middle School is located on El Capitan Drive in Danville, California, surrounded by residential neighborhoods and Osage Park to the west. The entrance and exit driveways are on El Capitan Drive. The entrance and exit have two lanes with painted red curb for approximately 300 feet on both sides and sidewalks connecting El Capitan Drive to the front of the school. The student loading zone is well defined in front of the school building three lanes wide. Adjacent to the loading zone there is a school parking lot, which is for both school staff and visitors. The loading zone is clearly separated by a landscaped median.

High-visibility school crosswalks are located at intersections of El Capitan Drive and school entrance, and El Capitan Drive and Brookside Drive. El Capitan Drive is a residential collector street with sidewalks. Across from the school entrance is a pedestrian trail that connects throughout the neighborhood to the south.

Another entry point to the school is through Osage Park with paved pedestrian paths leading through the park to the school.

**2022/23 Enrollment:** 874 Students

### Length of Loading Zone

The loading zone is 525 feet continuous along school frontage.

### Potential Bus Loading Zone

It is recommended to convert up to 200 feet of the westernmost loading zone up to the first mid-block crosswalk to accommodate up to four buses.



School access was observed from 9:00 – 9:30 a.m. and from 2:40 – 3:10 p.m. on Wednesday February 22, 2023, with a start bell of 9:30 a.m. and a dismissal bell of 2:45 p.m.

### **Morning Observation**

Starting at 17 minutes prior to school start bell, traffic was observed to back up onto El Capitan Drive. It was observed that the first third of the loading zone was utilized, which is the area in front of the main entrance to the school. The stop sign and stop pavement markings at the first mid-block crosswalk seemed to be an indication to drivers as the place to stop to unload passengers, despite temporary signage on the sidewalk further up in the loading zone indicating to pull forward.

There was no support staff at the loading zone area. There was one staff member assisting pedestrians crossing at the first mid-block crosswalk after being dropped off in the parking lot area. Pedestrian crossing from students being dropped off in the parking lot created more friction in the loading zone area. There was very minimal egress queuing, likely due to the upstream friction.

### **Afternoon Observation**

At the dismissal bell at 2:45 p.m., it was observed that the right-turning queue on El Capitan into the school driveway was seven vehicles long. Vehicles lined the curbside lane, as well as the third, outermost lane waiting for students to load. The entire length of the loading zone was utilized. There was one staff member assisting pedestrians at the first mid-block crosswalk. There was no support staff at the loading zone area.

There was a heavy platoon of pedestrians and bicyclists using the crosswalk on El Capitan to access the trail. The steady flow of pedestrians at this crosswalk created a long eastbound queue on El Capitan Drive.

At 2:52 p.m. loading activities were mostly complete with an egress queue of about 300 feet due to the eastbound queue on El Capitan Drive and pedestrians crossing El Capitan at the egress driveway.

### **Level of Observed Congestion**

Moderate. There was significant queuing on El Capitan Drive that lasted approximately 12 minutes. The background traffic on El Capitan Drive was moderate.

### **Recommendations**

Consider providing a crossing guard at the ingress driveway to meter pedestrians crossing El Capitan Drive in the afternoon. Consider providing a staff member to direct morning drop-off traffic to pull forward to utilize more of the loading zone. Lastly, consider prohibiting drop-offs in the parking lot to reduce the number of conflicts with the loading zone at the first mid-block crosswalk.



## Montair Elementary School (#23)

Montair Elementary School, in the Town of Danville, is located in a residential area bordered by Quinterra Lane to the south and Esther Lane to the east. All roadways in the vicinity are local residential roads. There is one ingress driveway and one egress driveway for the main loading zone in front of the school from Quinterra Lane, which operates as a one-way street south of Estates Drive.

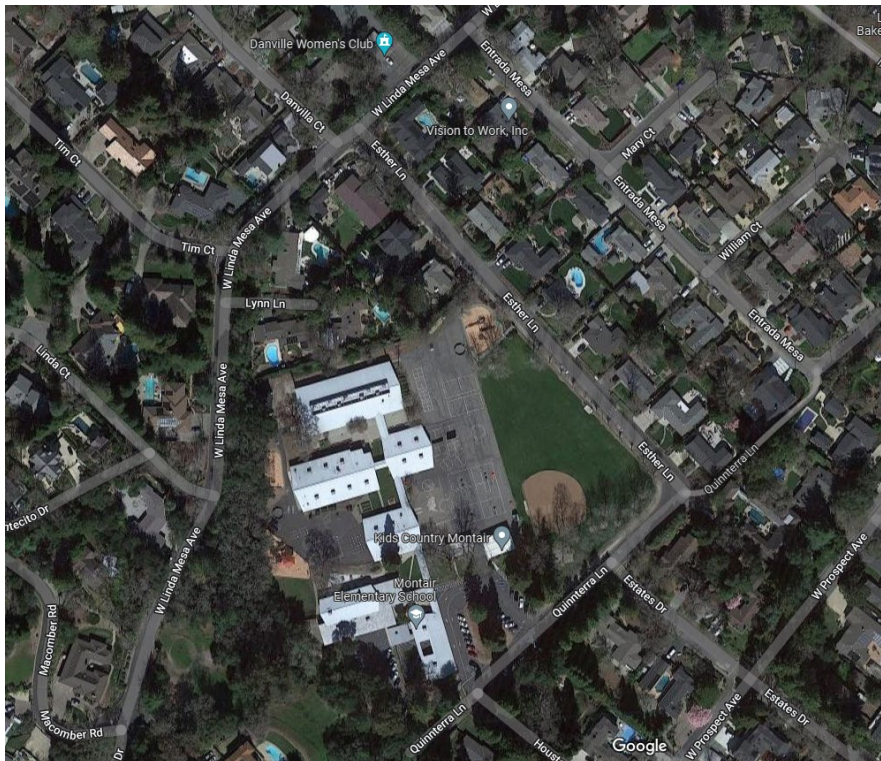
**2022/23 Enrollment:** 511 Students

### Length of Loading Zone

The loading zone in front of the school is 200 feet long and consists of two lanes.

### Potential Bus Loading Zone

It is not recommended that the bus loading zone occupy space within the loading zone in front of the school as this will greatly impact the capacity of the loading zone. It is recommended that the bus loading zone be located at the rear/side of the school near the playground on Esther Lane. The section of Esther Lane offers curb and sidewalk and can accommodate four buses for a length of 200 feet within the existing on-street parking area adjacent to the playground.





School access was observed on Thursday April 20<sup>th</sup>, 2023, from 7:45 a.m. – 8:00 a.m. with an 8:00 a.m. beginning bell and from 2:20 p.m. to 2:45 p.m. with a 2:30 p.m. dismissal bell.

### **Morning Observation**

There were two staff members directing traffic forward at the loading zone. The full loading zone was actively used and there were no pedestrian conflicts through the loading zone. By 7:53 a.m. the ingress queue extended to the intersection of Estates Drive. By 7:55 a.m. there were 12 vehicles queued on Estates Drive. By 7:59 a.m. there were 5 vehicles queued on Estates Drive. By 8:01 a.m. loading zone activities were complete. When traffic is queued on Estates Drive, through traffic are unable to pass. One right-turning vehicles was observed to pass onto on-coming traffic to bypass the queue.

### **Afternoon Observation**

At 2:22 p.m. there were 15 vehicles queued on northbound Estates Drive and through vehicles are unable to pass. At this time, there were also seven vehicles queued on westbound Quinnterra Lane and through vehicles are able to pass. By 2:30 p.m. the parking lot is full and there are 22 vehicles queued on Estates Drive and 10 vehicles on Quinnterra Lane. By 2:33, the queue is observed to be the longest with 26 vehicles on Estates Drive and 14 vehicles on Quinnterra Lane. Two vehicles were observed the bypass the queue by traveling onto the opposing travel lane. There were two staff members assisting at the loading zone and one staff member at the loading zone driveway to call names over the loudspeaker. There are five identified spots for student loading within the loading zone. The loading process is efficient with no choke points or conflicts. By 2:43 p.m. the ingress queue ends and by 2:45 loading zone activities are complete.

### **Level of Observed Congestion**

Moderate. Congestion lasted longer than 10 minutes that blocked through traffic such that a few vehicular drivers were observed traveling in the opposing travel lane to bypass the queue. However, non-school traffic volumes were very low.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools.

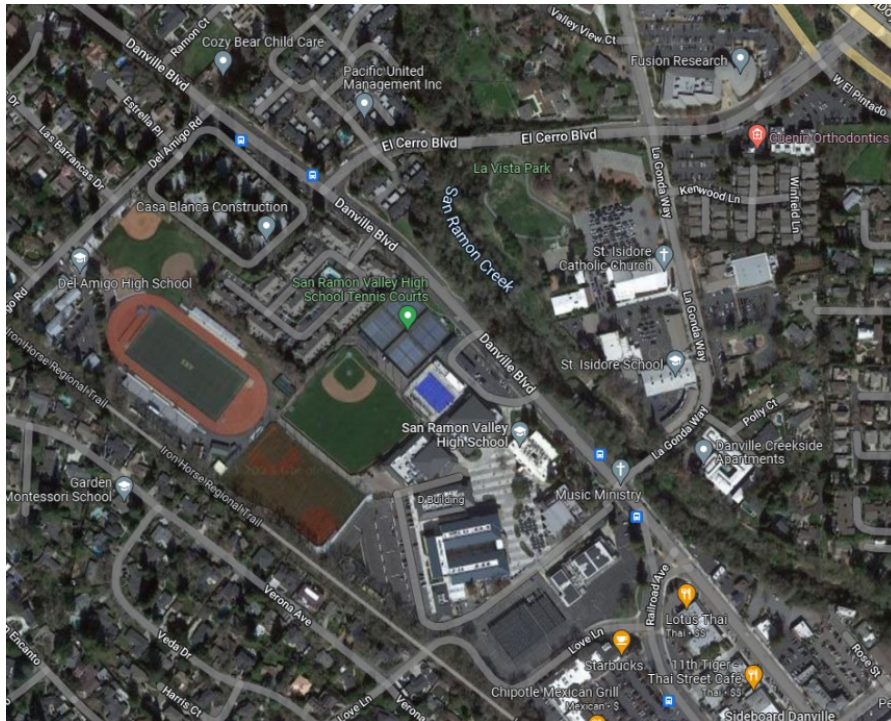
## San Ramon Valley High School (#24)

**San Ramon Valley High School**, in the Town of Danville, is located in a transitional area with residences to the north and a commercial business district to the south. The school is bordered by Danville Boulevard to the east, Love Lane to the south, the Iron Horse Multi-Use Trail to the west, and residences and Del Amigo Road to the north. There is one ingress driveway to access the main loading zone in front of the school and one egress driveway accessed on Danville Boulevard. Danville Boulevard is a major two-lane arterial street with on-street parking, bike lanes, and a center two-way left turn lane. There are also multiple driveway access points to the student parking lot along Love Lane, and one on Danville Boulevard at the intersection of La Gonda Way.

**2022/23 Enrollment:** 1913 Students

### Length of Loading Zone

The loading zone in front of the school is 220 feet long and consists of two lanes. The ingress stacking distance is 100 feet and the egress stacking distance is 100 feet.



### Potential Bus Loading Zone

This school is currently serviced by one bus which utilizes an on-street parking zone on Danville Boulevard just south of the egress driveway. Additional buses can be accommodated in this area. There's 300 feet of usable bus loading zone from the south egress driveway to the marked crosswalk at La Gonda Way. This can accommodate up to 6 buses.

School access was observed on Wednesday March 15<sup>th</sup>, 2023, from 8:15 a.m. – 8:35 a.m. with an 8:30 a.m. beginning bell and from 2:25 p.m. to 2:45 p.m. with a 2:31 p.m. dismissal bell.

### **Morning Observation**

No staff were observed assisting the loading zone. Operations were efficient with consistent flow and no internal conflict points. The maximum observed ingress queue was limited to eight vehicles queued northbound on Danville Boulevard. The egress queue began to form at 8:20 a.m. due to downstream queuing on Danville Boulevard due to conflicts at the pedestrian crosswalk at La Gonda Way. Queues were also observed at the intersection of Danville Boulevard at Railroad Avenue for the northbound left turns representing students accessing the student parking lot. Overall, traffic tended to move slowly from about 8:15 a.m. to 8:30 a.m.

### **Afternoon Observation**

No staff were observed assisting the loading zone. Operations were efficient with consistent flow and no internal conflict points. The maximum observed ingress queue was limited to 5 vehicles queued northbound on Danville Boulevard. The egress queue began to form at 2:34 p.m. due to downstream queuing on Danville Boulevard at first due to conflicts at the pedestrian crosswalk at La Gonda Way, but then the queue extended south past the intersection of Railroad Avenue. At 2:42 p.m. the loading zone activities were complete, however, the southbound through traffic on Danville Boulevard was still slow due to an unseen choke point. This southbound queue extended north past the high school. By 2:45 p.m., traffic congestion had cleared and traffic moved normally again.

### **Level of Observed Congestion**

High. Multiple queues were observed to delay traffic in the vicinity due to both the student parking lot and the loading zone. Some erratic vehicular driver behavior was observed, with westbound vehicles on La Gonda Way making a through movement into the school driveway, which is restricted with signage and striping. A couple of vehicles were observed to pass in the bike lane.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools. Another consideration is to provide physical improvements to restrict the westbound through movement at La Gonda Way.

## Vista Grande Elementary School (#25)

**Vista Grande Elementary School**, in the Town of Danville, is located in a residential area with Diablo Road to the west, and residences bordering all other sides. There is one ingress driveway and one egress driveway accessed on Diablo Road. Diablo Road is a two-lane minor arterial with bike lanes and on-street parking along the school frontage.

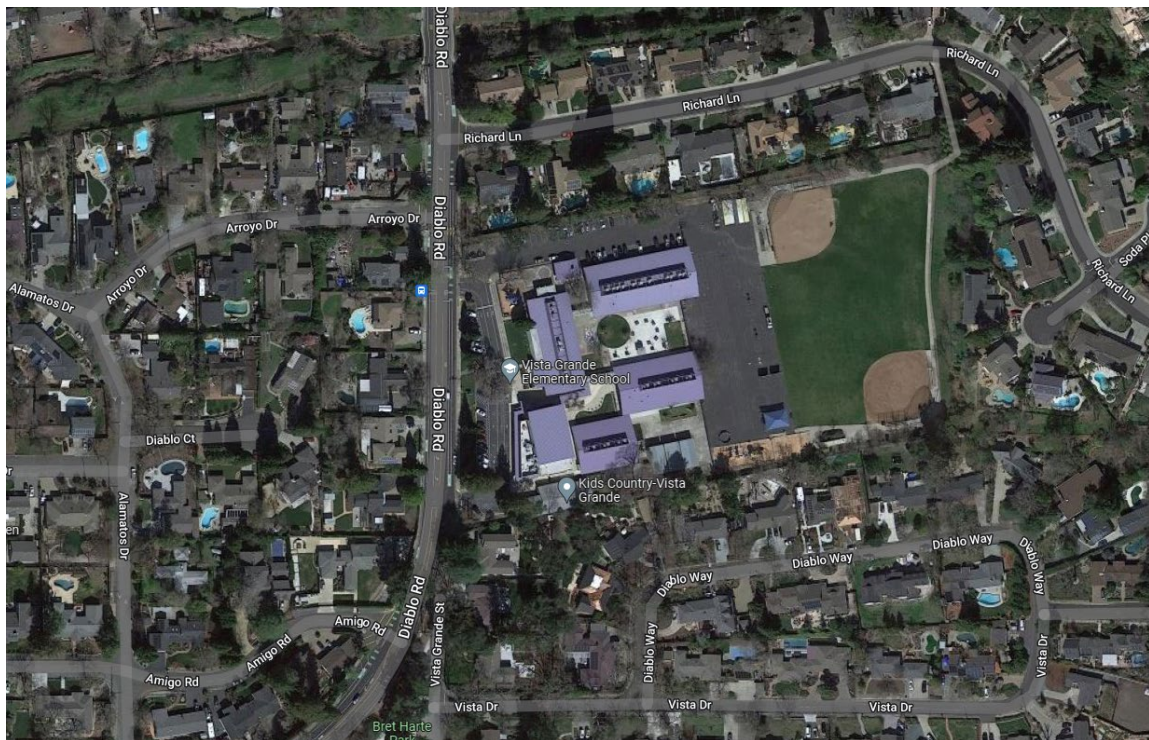
**2022/23 Enrollment:** 548 Students

### Length of Loading Zone

The loading zone in front of the school is 300 feet long and consists of three lanes with lanes 1 and 3 used for loading activities. The ingress stacking distance is 100 feet and the egress stacking distance is 500 feet.

### Potential Bus Loading Zone

The school is currently served by three buses that utilize approximately 120 feet of loading zone closest to the egress driveway. It is not recommended that additional loading zone is utilized for additional buses. If additional bus loading zones are needed, it is recommended that on-street parking in front of the school is utilized for this purpose. This space consists of 220 feet and can accommodate up to 4 more buses.





School access was observed on Thursday April 20<sup>th</sup>, 2023, from 8:10 a.m. – 8:30 a.m. with an 8:30 a.m. beginning bell and from 3:00 to 3:15 p.m. with a 3:00 p.m. dismissal bell.

### **Morning Observation**

One staff member assisted students crossing the loading zone to access the 3<sup>rd</sup> lane in the loading zone or vehicles parked on-street. There was also a crossing guard at the lighted crosswalk at the one-way stop-controlled intersection of Diablo Road at Arroyo Drive. Short queues of one to three vehicles form at the ingress driveway but quickly clear. An egress queue forms due to queuing due to the downstream lighted crosswalk on Diablo Road at Arroyo Drive. For the 3<sup>rd</sup> lane drop offs in the loading zone, there are pavement markings to the left of the vehicle indicating students should exit on the left side. However, it was noted that some students exited the vehicle on the right side, which created a safety concern due to conflicts with vehicles exiting the loading zone area in the 2<sup>nd</sup> lane, although vehicles are moving slowly and cautiously. The 3<sup>rd</sup> lane is important in providing enough loading zone capacity to keep the queues short. At 8:18 a.m. a southbound queue forms on Diablo Road that appears to be unrelated to school traffic. At 8:26 a.m. all queues have cleared and at 8:30 a.m. loading activities are complete.

### **Afternoon Observation**

At 3:00 p.m. vehicles are queued on Diablo Road at the ingress driveway with 12 vehicles in the southbound left turn lane and 22 vehicles in the northbound right turn lane, with the queue extending almost to the signalized intersection of Camino Tassajara and Diablo Road. Through traffic is able to pass, although the northbound queue blocks the bike lane. At 3:07 p.m. the northbound queue is clear and at 3:08 p.m. the southbound queue is clear. There is northbound through traffic congestion due to the pedestrian crossing at Arroyo Drive. The crossing guard appears to hold traffic and prioritize pedestrians as soon as they arrive. By 3:10 p.m. all loading zone activities are complete, with the exception to the arrival of bus #2 and bus #3. At 3:13 p.m. traffic is clear on the street.

### **Level of Observed Congestion**

Mild. Although there is some congestion on the street, it does not block through traffic and it lasts for approximately 10 minutes. There are relatively low conflict points and vehicular driver behavior is normal.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools.  
Continue to time the bus schedules such that they arrive after the peak of the afternoon pick up times.  
Consider providing crossing guard training to meter pedestrian traffic and balance with vehicle traffic.  
Consider providing staff assistance for the 3<sup>rd</sup> lane loading zone to assist with right side vehicle access.

## Green Valley Elementary School (#26)

**Green Valley Elementary School**, in the Town of Danville, is bordered by Diablo Road to the north, McCauley Road to the east, El Cajon Drive to the south and residences to the west. There is a one-way driveway in front of the school accessed on Diablo Road that consists of a bus loading zone and staff parking. There is also a parking lot to the east of the school accessed from McCauley Road that also provides a loading zone for students.

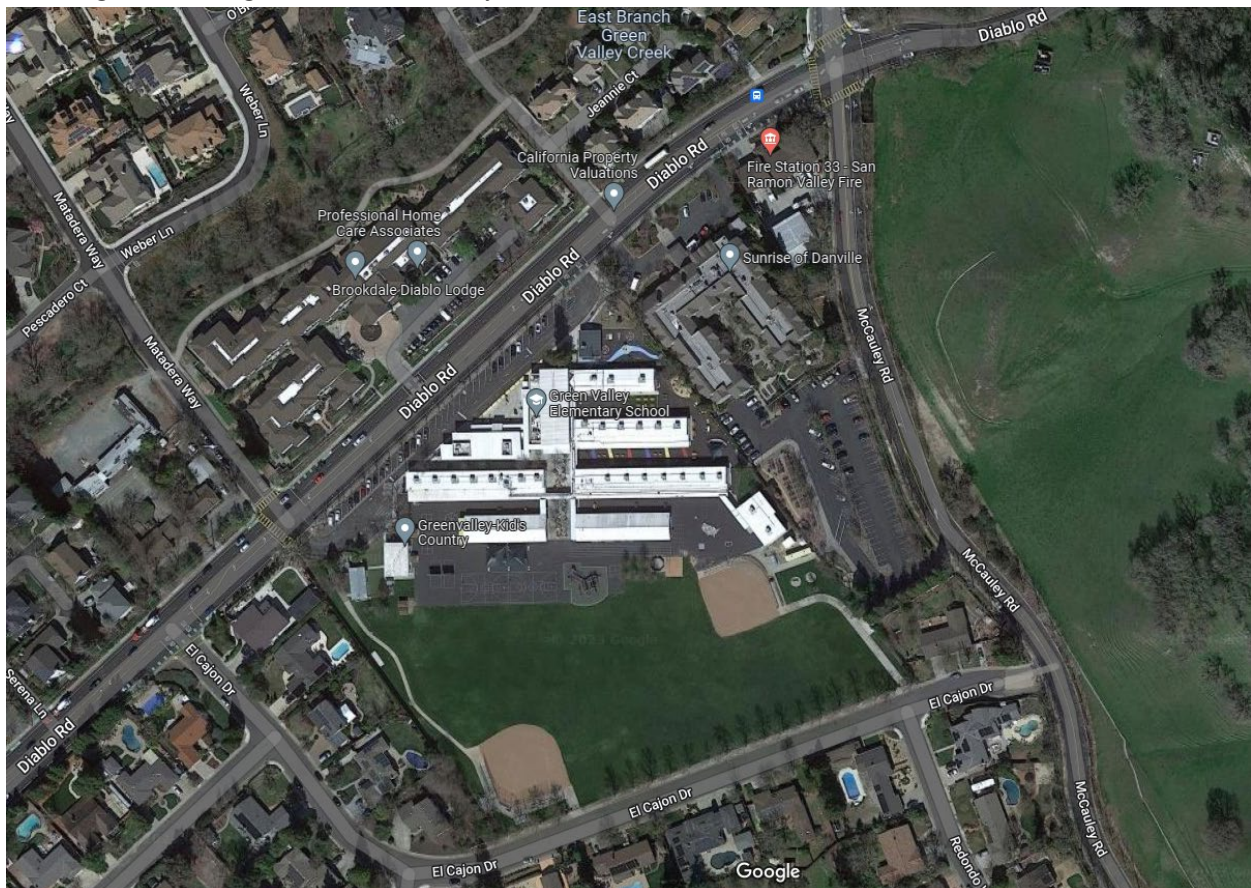
**2022/23 Enrollment:** 512 students

### Length of Loading Zone

The length of the loading zone within the parking lot to the east of the school is 250 feet.

### Potential Bus Loading Zone

This school is currently served by six TRAFFIX buses. The loading zone at the front of the school is 200 feet long and is designated for buses only.





School traffic patterns was observed from 8:15 a.m. – 8:30 a.m. with a start bell of 8:30 a.m. and from 1:15-1:45 p.m. with a dismissal bell of 1:30 p.m. on Wednesday, April 19, 2023.

### **Morning Observation**

The front of the school was observed in the morning as it was not apparent that the side parking lot was being used for student loading. The six buses that utilizing the loading zone in the front of the school arrived between 8:14 and 8:19 a.m. There was no traffic congestion on Diablo Road, yet there was congestion observed at the signalized intersection of Green Valley Road at Diablo Road. There were two crossing guards at this intersection with one assisting pedestrians crossing the east leg and one for the north leg. Although the queues for most movements are long, the queues clear during one green cycle of the signal, with one exception for the northbound through movement. This movement clears after three signal cycles. It is realized after the observation that the northbound vehicles are mostly due to vehicles leaving the school loading zone in the side parking lot.

### **Afternoon Observation**

The ingress queue on McCauley Road for the vehicle loading zone at the side parking lot extends into the roadway. The queue is located curbside so that through vehicles are able to pass. The parking lot is full. There is only one staff person at the loading zone, assisting pedestrians at the crosswalk through the loading zone to the parking lot. The first 85 feet of the loading zone, south of the crosswalk in the parking lot, is underutilized. At 1:20 p.m. the ingress queue extends along McCauley Road almost to the signalized intersection of Diablo Road. It is observed that some parents pick up at the early benches without pulling all the way forward thus reducing the efficiency of the loading zone. Loading zone activities are complete by 1:31 p.m.

### **Level of Observed Congestion**

Mild. Vehicles were not observed to impede the flow of traffic. School related traffic creates increased delay at the signalized intersection of Diablo Road at Green Valley Road.

### **Recommendations**

None.

## Los Cerros Middle School (#27)

**Los Cerros Middle School**, in the Town of Danville, is bordered by residences to the west and east, Blemer Road on the south and **Monte Vista High School** fields to the north. Blemer Road is a local two-lane residential collector road with bike lanes and no parking on both sides.

**2022/23 Enrollment:** 500 Students

### Length of Loading Zone

The entire circular loading zone is approximately 725 feet. There are three lanes through the loading zone with two lanes at the ingress and the egress.

### Potential Bus Loading Zone

Los Cerros is currently served by nine TRAFFIX buses which are accommodated within the existing loading zone.



School access was observed from 9:00 a.m. – 9:20 a.m. on Wednesday April 19, 2023, and from 2:15 - 2:35 p.m. on Tuesday, April 18, 2023.

### **Morning Observation**

Buses begin arriving at 9:00 a.m. and stay for approximately 5 minutes before leaving. The staggered arrivals provide space for all buses to drop off as well as leaving some room for vehicles to drop off at the loading zone. Some vehicles drop off students in the parking lot aisles. One staff person provides pedestrian crossing assistance at the crosswalk through the loading zone to the parking lot. Vehicles flow smoothly through the parking lot and loading zone such that there is never a queue.

### **Afternoon Observation**

At the dismissal bell, all nine buses are parked and fill up the first two-thirds of the loading zone. Parents are lined up in all the parking aisles, and there are many vacant parking spaces. The ingress queue spills onto Blemer Road, blocking the bike lane. One staff person assists pedestrians at the loading zone crosswalk, and another staff person assists pedestrians at the lighted crossed across Blemer Road at the egress driveway. Pedestrians walk through all areas of the parking lot to find their waiting vehicle. Within five minutes of the dismissal bell, all vehicles in the parking aisles are gone. The buses leave in unison at 2:35 p.m. At 2:36 p.m. all loading zone activities are complete.

### **Level of Observed Congestion**

Low.

### **Recommendations**

None

## Monte Vista High School (#28)

**Monte Vista High School**, in the Town of Danville, is bordered by residences to the east, open space to the west, **Los Cerros Middle School** to the south and Stone Valley Road to the north. One signalized driveway on Stone Valley Road provides access to the school to the south and the student parking lot to the north. There is also a driveway across from Monte Sereno Drive that serves a u-shaped loading zone in front of the school.

**2022/23 Enrollment:** 2,231 Students

### Length of Loading Zone

There are two loading zones. The u-shaped loading zone is primarily used for seven TRAFFIX school buses that currently service the school. The second loading zone is located in the staff/student parking lot. This loading zone is approximately 275 feet adjacent to two through lanes. The stacking distance in the parking lot from Stone Valley Road to the beginning of the loading zone is 375 feet and 275 feet from the end of the loading zone to the egress driveway.

### Potential Bus Loading Zone

This school currently offers seven buses which utilize the entire u-shaped loading zone.





School access was observed from 8:15 a.m. – 8:30 a.m. on April 19<sup>th</sup>, 2023 and from 1:45 - 2:10 p.m. on April 28<sup>th</sup>, 2023.

### **Morning Observation**

After the buses dropped off students and left by 8:15 a.m., both loading zones were used by parents for dropping off students. At 8:19 a.m. the westbound left turn queue at the signalized driveway was over 300 feet long, but would clear with each signal cycle. The eastbound right turn queue would also clear with a signal cycle. Many pedestrians who parked their vehicle in the student lot across the street gather to cross at the signal. It was observed that some pedestrians walk down the street to cross at the unprotected crosswalk to avoid waiting. This trickle of pedestrians at the uncontrolled crosswalk creates queuing in both the eastbound and westbound directions. The loading zone operates smoothly without excessive ingress or egress queues. Queuing and loading zone activities are completed by 8:30 a.m.

### **Afternoon Observation**

Seven buses are parked in the u-shaped loading zone. Vehicles are lined up at the parent designated loading zone but it does not spill out onto Stone Valley Road. The bell rings at 1:56 p.m. For approximately five minutes the traffic on Stone Valley Road is at a standstill due to a constant trickle of pedestrians crossing at the uncontrolled crosswalk at the intersection of Monte Sereno Drive. Due to the congestion on Stone Valley Road, the egress queue at the loading zone starts to form eventually blocking loading zone activities. At 2:02, the buses leave in unison and traffic starts to move on Stone Valley Road allowing for egress traffic to move. Loading zone activities are now flowing and by 2:10 activities are complete and traffic congestion is back to normal.

### **Level of Observed Congestion**

Moderate. Overall, the traffic congestion level was moderate for a short time. Although traffic was queued on Stone Valley Road, it cleared within a traffic signal cycle, except for the afternoon congestion caused by the unprotected pedestrian crossing. There were relatively few conflict points.

### **Recommendations**

Consider providing a pedestrian crossing guard to meter pedestrian crossings at the marked crosswalk at the intersection of Monte Sereno Drive. Many pedestrians that cross at this location can also use the crosswalk at the signalized intersection and choose to cross at this location to avoid waiting.

## Rancho Romero Elementary School (#29)

Rancho Romero Elementary School is located in the unincorporated area of Contra Costa County called Alamo. It is bordered by residences on all sides except for Hemme Avenue on the south side. Hemme Avenue is a narrow two-lane residential roadway mostly without curbs and sidewalks, except for the school frontage. There is a 150-foot right turn lane along the school frontage into the school driveway.

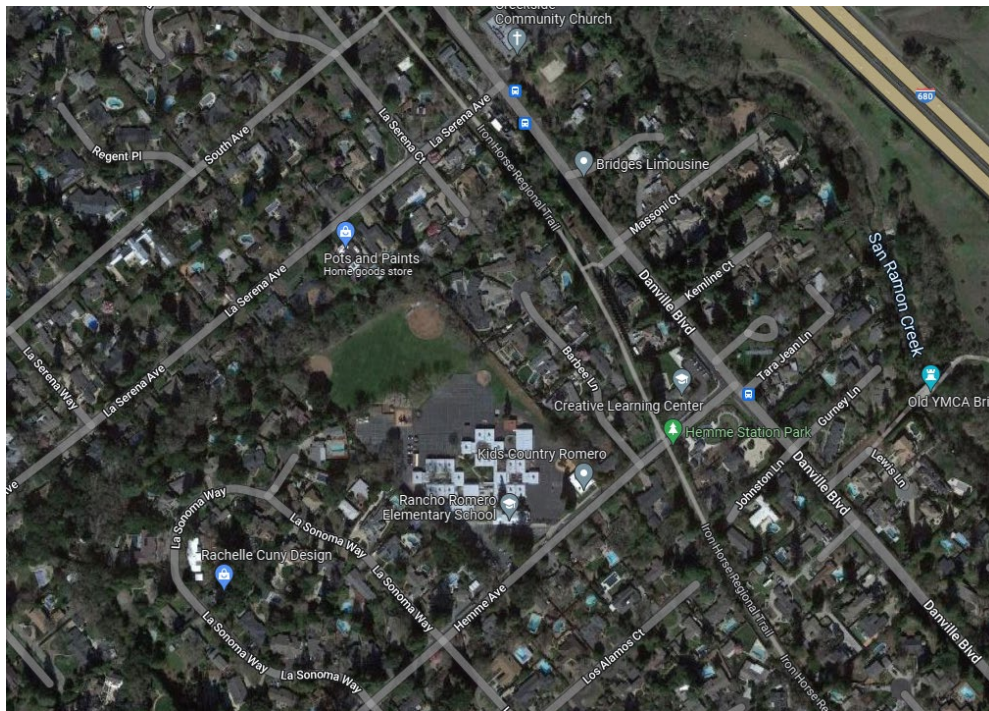
**2022/23 Enrollment:** 447 Students

### Length of Loading Zone

There is one loading zone in front of the school through the staff parking lot. This main loading zone is approximately 175 feet adjacent to one through lanes. The secondary loading zone is approximately 80 feet in length is a used primarily as a pick-up area for fourth and fifth graders.

### Potential Bus Loading Zone

The secondary loading zone currently used for fourth and fifth grade pick-ups could be used to accommodate two buses.



School access was observed on April 17th 2023, from 7:45 a.m. – 8:05 a.m. with an 8:00 am start bell and from 2:25 - 2:45 p.m. with a 2:30 p.m. dismissal bell.



### **Morning Observation**

At 7:51 a.m. the ingress queue was extended several hundred feet on Hemme Avenue. The egress queue on Hemme Avenue extended from Danville Boulevard to the school boundary, however, it was not observed to impede operations at the school loading zone. At 7:58 a.m. there were 12 vehicles queued to right turn onto Hemme Avenue. At 8:02 a.m., vehicles were still arriving to drop off students. There were four staff members assisting and directing traffic at the loading zone. One staff member was a crossing guard at the ingress driveway. Through traffic on Hemme Avenue is blocked by the ingress and egress queue. Two vehicles were observed to drive down the centerline of the road to pass queued traffic. There was also a crossing guard at the Iron Horse Trail crossing of Hemme Drive, approximately 250 feet north of the school, which is a key position to coordinate pedestrian crossings with the downstream traffic signal cycle at Danville Boulevard. The main conflict points are the egress driveway and the traffic signal at Danville Boulevard and Hemme Avenue. Traffic moves slowly on this street as there are many pedestrians and no sidewalks.

### **Afternoon Observation**

At 2:25 p.m., the ingress queue on Hemme Avenue extended to the southbound right turn lane on Danville Boulevard. There were three staff assisting in the loading zone. One staff was on a loudspeaker calling out names. Another staff directed traffic and another provided pedestrian crossing assistance at the ingress driveway crossing. At 2:35 p.m., the egress traffic interfered with loading zone activity due to conflicts of vehicles on Hemme Avenue and pedestrians at the egress driveway. At 2:37 p.m., the egress queue on Hemme extended from Danville Boulevard to the egress driveway but traffic moved quickly. At 2:38 p.m. the ingress queue was complete and by 2:41 p.m., the egress queue dissipated with all loading activities complete at 2:43 p.m.

### **Level of Observed Congestion**

High. Overall, the traffic congestion level was high for approximately 15 minutes during each peak period. Through traffic on Hemme Avenue was blocked in both directions during this time. The attention required for motorists is high due to several conflict points and pedestrians close to the roadway.

### **Recommendations**

Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools. Providing a southbound right turn arrow overlap phase with the eastbound left turn phase would provide more capacity for the southbound right turn movement since right turns on red are prohibited. This would reduce delay during the morning peak period. Providing an eastbound right turn pocket would provide more capacity for this movement which may reduce delay during the afternoon peak period.

## Stone Valley Middle School (#30)

Stone Valley Middle School, in the unincorporated area of Alamo, is located in a residential area bordered by Miranda Avenue to the east and residences on all other sides. There is one ingress driveway and one egress driveway for a three-lane loading zone in front of the school on Miranda Avenue. Miranda is a two-lane road with bike lanes. Along the school frontage, there is on-street parking.

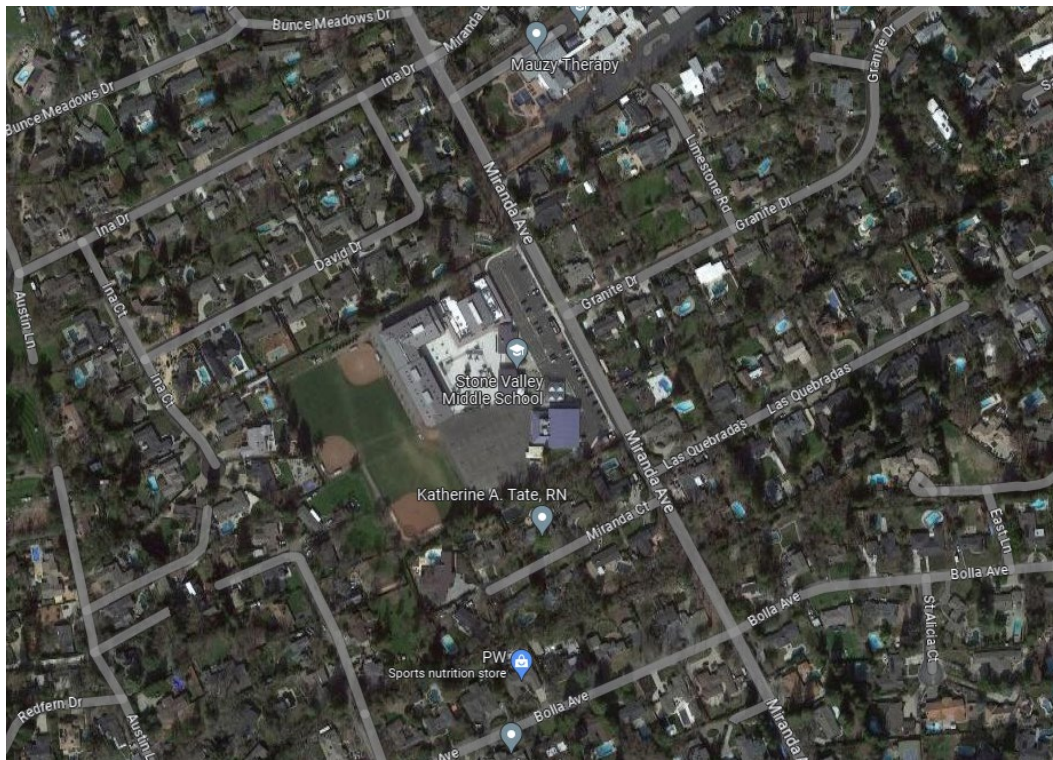
**2022/23 Enrollment:** 584 Students

### Length of Loading Zone

The loading zone in front of the school within the parking lot is approximately 250 feet. There is 80 feet of stacking distance from the beginning of the loading zone to the ingress driveway and 280 feet of stacking distance from the end of the loading zone to the egress driveway. There two crosswalks across the loading zone. The on-street parking zone along Miranda Avenue is approximately 400 feet.

### Potential Bus Loading Zone

This school is not currently served by a TRAFFIX route. Although buses can be accommodated within the loading zone, it is recommended that the bus loading zone is located on-street curbside. Six buses can be accommodated within this loading zone.



School access was observed on Wednesday April 26<sup>th</sup>, 2023, from 8:50 a.m. – 9:15 a.m. with a 9:15 a.m. beginning bell and from 2:40 p.m. to 3:00 p.m. with a 2:45 p.m. dismissal bell.

### **Morning Observation**

There were three staff providing pedestrian crossing support through the loading zone and parking lot. Drop off activities began at 8:50 a.m. and at 9:00 a.m. the ingress queue extended to the street. There were six left turn vehicles queued at the ingress driveway such that northbound through vehicles are unable to pass. The right turn queue is stacked on the shoulder so that southbound through vehicles are able to pass. Vehicles are dropping off students in the third lane in the loading zone and driving through the parking aisle to drop off students. At times, the first half of the loading zone is unused as vehicles stop at the first crosswalk to drop off. At 9:12 a.m. the egress queue backs up to the loading zone. At 9:13 a.m. the ingress queue is clear. At 9:15 a.m. loading zone activities are complete and queuing is resolved.

### **Afternoon Observation**

The same staff were observed supporting pedestrians crossing through the loading zone and parking lot. In the loading zone, vehicles were queued in the first and third lane and also in the parking aisle. The southbound right turn queue at the ingress driveway extended beyond observation. At 2:44 p.m. the northbound left turn queue into the ingress driveway was seven vehicles. At 2:49 p.m. this queue extended to 17 vehicles. At 2:50 p.m. the egress queue extended to the loading zone. The conflict point for egress were pedestrians at the driveway and by 2:53 p.m. the pedestrians had cleared and the egress began to flow. At 2:54 p.m. the loading zone activities were complete but the egress queue was still backed up to the loading zone due to the queuing of southbound traffic on Miranda Avenue due to a downstream traffic signal at Miranda Avenue and Stone Valley Road. At 2:57 p.m. the egress queue was clear and by 3:00 p.m. the queue due to the downstream traffic signal was clear.

### **Level of Observed Congestion**

Moderate. The duration of traffic congestion was short with only a few minutes of queued vehicles on Miranda Avenue in the morning and approximately 10 minutes in the afternoon. There were few conflict points and vehicular driver behavior was normal.

### **Recommendations**

Consider providing staff to direct traffic to pull forward during the morning drop-off activities so that the full length of the loading zone can be utilized. Also, consider restricting left-turns from the egress driveway to facilitate egress flow. Lastly, two vehicles were observed parking within the bike lane at the bulb-out within the intersection of Miranda Avenue and Granite Drive. It is recommended to paint this curb red to improve sight distance to the crosswalk.



## Tassajara Hills Elementary School (#31)

Tassajara Hills Elementary School, located in unincorporated Contra Costa County, is bordered by residences to the west and open space on the other three sides. One signalized driveway on Camino Tassajara provides access to the entire school. The driveway length is 250 feet. Camino Tassajara is a four-lane major roadway with bike lanes a raised median with left turn pockets at signalized intersections and a speed limit of 40 miles per hour.

**2022/23 Enrollment:** 506 Students

### Length of Loading Zone

The loading zone is approximately 260 feet with 630 feet of stacking distance at the ingress and 400 feet of stacking distance for the egress driveway. There are three lanes through the loading zone that merge to two lanes and then to one lane prior to the egress driveway.

### Potential Bus Loading Zone

This school currently does not have bus service. There is one option for bus loading areas, and that is in the loading zone. Although the loading zone can accommodate many buses, it is recommended that no more than two buses load at the very front of the loading zone since this curbside space is less used by the loading activity. More than two buses in the loading zone will negatively impact the capacity of the loading zone activities.



School access was observed from 7:45 a.m. – 8:00 a.m. and from 2:15 - 2:45 p.m. on Thursday, March 30, 2023.

### **Morning Observation**

At 7:45am, it was observed that most vehicles arrived from the north, so the southbound left turn lane on Camino Tassajara at the school driveway was heavily used. The southbound left turn queue would clear each cycle, except for two cycles between 7:50 – 7:55 a.m. By 7:50 a.m. the ingress queue from the loading zone extended nearly to Camino Tassajara. It was also observed that some parents would continue southbound on Camino Tassajara to the downstream signalized intersection to make a u-turn and then make a right turn into the school driveway. There were many pedestrians crossing Camino Tassajara at the school driveway. Some parents parked in the neighborhood across Camino Tassajara to walk to school. At the loading zone, no staff was observed directing traffic or assisting students. The front half of the loading zone was not used as the egress queue would back up into this area. The choke point in the drop off process was the marked crosswalk through the parking lot and loading zone. This unattended crosswalk saw a consistent trickle of pedestrians crossing due to parents dropping off children from the through lane of the loading zone, as well as parents who walked into school.

### **Afternoon Observation**

The school bell was at 2:30 p.m. At 2:25 p.m. the ingress queue through the loading zone was backed up to Camino Tassajara but not yet blocking the road. At 2:31 p.m., there were two vehicles in the southbound left turn lane waiting for the queue to move and by 2:34 p.m. there were 10 vehicles. At 2:35, the egress queue was limiting access to the loading zone. Exiting vehicles are very limited at the driveway traffic signal at the driveway due to the restrictions on right turns on red and crossing pedestrians. At 2:41 p.m. the ingress queue is clear of Camino Tassajara. Once the majority of pedestrians have crossed Camino Tassajara, the egress queue can move, which allows for smooth flow through the loading zone. Loading activities are complete by 2:47 p.m.

### **Level of Observed Congestion**

Moderate. Although there were vehicles that were queued onto Camino Tassajara it did not block through traffic. There were relatively few conflict points.

### **Recommendations**

To facilitate the morning drop off procedures, consider providing a staff person at the crosswalk at the front of the loading zone to meter pedestrian crossings so that vehicles can clear the loading zone efficiently. To facilitate the afternoon pick-up procedures, consider further extending the greentime for the driveway movements, or eliminating the restriction on right turns on red. Consider programs to reduce vehicle traffic, such as encouraging walk or bike trips and carpools.



## Creekside Elementary School (#32)

Creekside Elementary School, located in unincorporated Contra Costa County, is bordered by residences to the south and east, Massara Street to the west and Charbray to the north. The school entrance driveway on Massara Street provides access to the staff parking lot and the two-lane loading zone. Parking is unrestricted on both sides of Massara Street. The southbound left-turn pocket serving the entrance driveway is 200 feet long. The intersection of Charbray Street and Massara Street is an all-way stop controlled intersection.

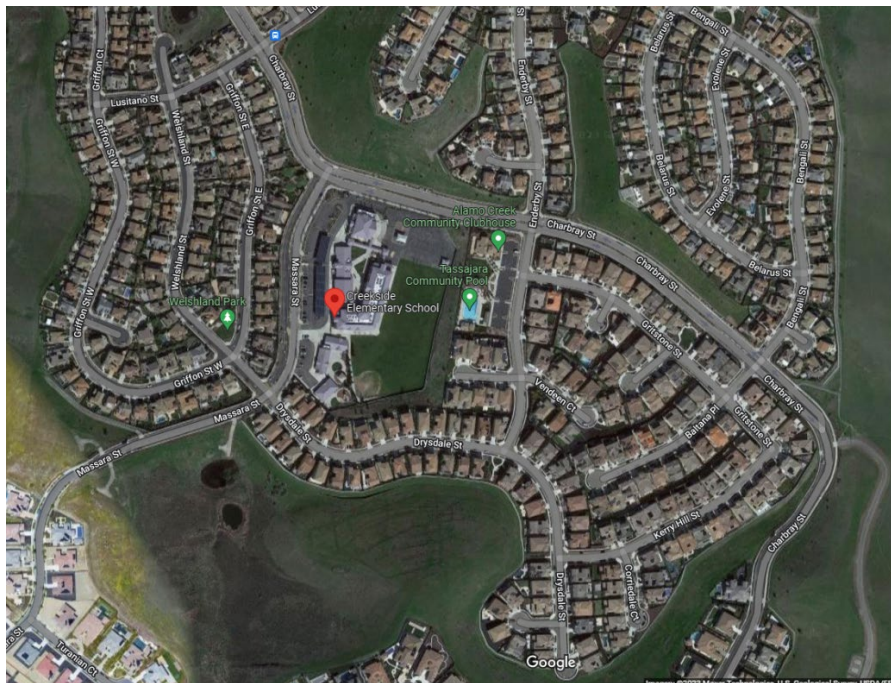
**2022/23 Enrollment:** 550 Students

### Length of Loading Zone

The loading zone in front of the school is approximately 400 feet. There is approximately 130 feet on ingress stacking and 400 feet of egress stacking within the parking lot.

### Potential Bus Loading Zone

Convert 100 feet of the loading zone to provide space for two buses. An on-street option is to convert 150 feet of parking lane on Charbray Street on the north side of the school to provide space for three buses. This location would minimize conflict between students taking the bus and the loading zone. There's a sidewalk with a landscape strip to provide a staging area. This location is also a next to a secondary access point at the side gate for parents picking up students as walk-in traffic.



School access was observed from 7:35 a.m. – 8:06 a.m. and from 2:15-2:45 p.m. on Thursday, February 16, 2023.

### **Morning Observation**

Drop-off traffic began in the loading zone at 7:40 a.m. There was a staff member providing pedestrian crossing assistance at the parking lot crosswalk mid-block in the loading zone. The last 50 feet of the loading zone was rarely utilized as parents opted to drop off closer to the entry gate. Many of the parents walking their student into the school did so via the sidewalk at the south driveway which did not cross the loading zone, or via Charbray Street which also did not cross the loading zone. There were heavy pedestrian volumes at the all-way stop of Charbray Street and Massara Street. The crossing guard balanced flow of pedestrians and vehicles. At 7:53 a.m. the queue at the entrance driveway extended into the street with seven vehicles in the southbound left turn lane and five vehicles northbound. Through vehicles were able to bypass the queue for the school entrance. At 7:58, the ingress queue is clear however the egress is queued due to downstream congestion, potentially at Charbray Street and Lusitano Street. The downstream congestion was not visible from the school area to conclude the reason for the friction. The egress queue fully cleared at 8:06 a.m.

### **Afternoon Observation**

The dismissal bell is 2:30 p.m. On-street parking is fairly full on both sides of Massara Street and also on Charbray Street. Many parents parked on-street and walked in at either the north side gate accessible off Charbray Street or the south entrance via the sidewalk south of the school. The queue into the loading zone was minimal with only two vehicles observed to queue on Massara Street in the left turn pocket. At 2:37, the egress queue extended to the front of the loading zone due to the conflict of pedestrians crossing at Massara Street and Charbray Street. The crossing guard at this location protected pedestrians and did not direct traffic at the all-way stop sign. Then this queue was observed to extend to the downstream intersection of Charbray Street and Lusitano Street. By 2:42, all the queues were clear and the congestion duration was minimal.

### **Level of Observed Congestion**

Mild. Although some queuing was observed, the duration was less than 10 minutes. Much of the congestion was created by pedestrian conflicts which were already minimized.

### **Recommendations**

Consider providing a staff person to direct vehicles to pull forward to use the front portion of the loading zone. Consider red curb on Massara Street between the egress driveway for the pre-school and the ingress driveway for the main entrance. This will provide dedicated space for right turn queuing. Consider painting red curb to prevent parking up to the crosswalks on Charbray Street and Massara Street

to provide more visibility for the pedestrians. Also, consider a no u-turn restriction when children present sign on westbound Charbray Street as this was observed several times with excessive confusion and delay in the busy intersection.

### Alamo Elementary School (#33)

Alamo Elementary School, in the unincorporated area of Alamo, is located in a residential area bordered by Livorna Road to the south, Wilson Road to the west and residences on the north and east. There is one two-way driveway accessed from Wilson Road. Wilson Road is an 18-foot wide local two-lane road without sidewalks, shoulders or parking.

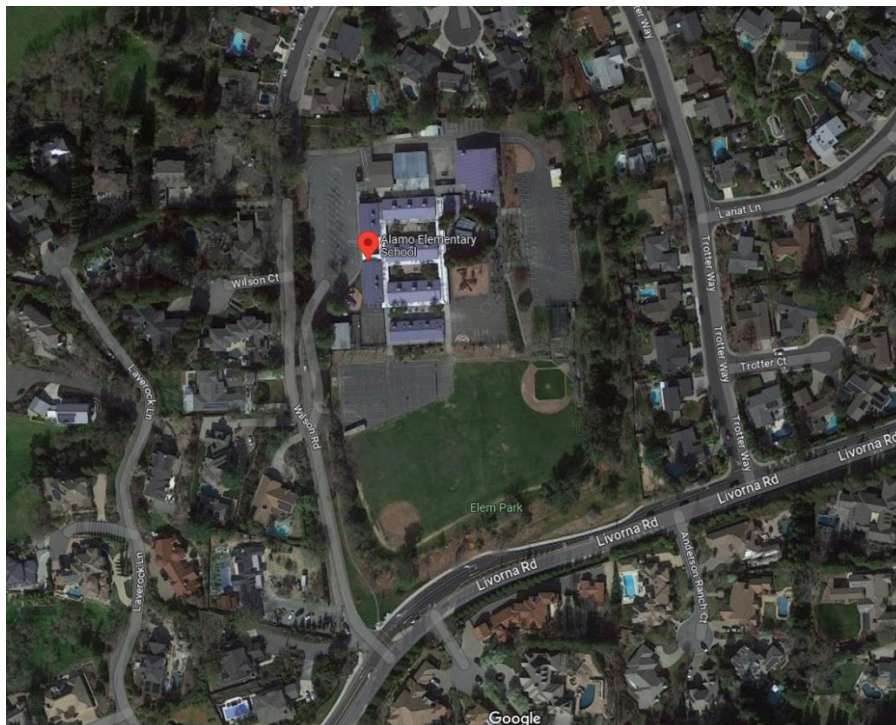
**2022/23 Enrollment:** 339 Students

#### Length of Loading Zone

The loading zone within the parking lot in front of the school is approximately 150 feet. There is 725 feet of stacking distance from the beginning of the loading zone to the intersection of Wilson Road and Livorna Road. There is one crosswalk across the loading zone. There is also a loading zone at the rear of the school used for afternoon pick-ups and it is approximately 120 feet. Vehicles picking up in the afternoon, then make a u-turn in the rear staff parking lot to exit the school.

#### Potential Bus Loading Zone

There are no appropriate locations on the school site that would accommodate a full-size bus. Improvements would be required to provide an area that would accommodate a bus turn-around.



School access was observed on Wednesday April 26<sup>th</sup>, 2023, from 7:45 a.m. – 8:05 a.m. with an 8:00 a.m. beginning bell and from 12:40 p.m. to 1:00 p.m. with a 12:50 p.m. dismissal bell.

### **Morning Observation**

There was one staff directing traffic to pull forward and another staff was assisting students exiting vehicles in the loading zone in the front of the school. At 7:55 a.m. there was a short ingress queue to the driveway gate, which by 7:57 a.m. quickly extended to the traffic signal of Wilson Road and Livorna Road. The queue beyond this intersection is not visible. At 8:00 a.m. the queue continues to extend to the traffic signal. By 8:02 a.m. the queue extends only to Wilson Road. By 8:05 a.m. loading zone activities are complete. Many students were observed to walk to school via the rear trail entrance.

### **Afternoon Observation**

There were three staff at the loading zone to the rear of the school. One staff announced student names and the other two assisted students to their vehicles and the process was very organized and efficient. After vehicles pick up their student, the vehicle would enter the staff parking lot at the rear to make a u-turn. At 12:50 p.m., the ingress queue is contained within the parking lot. The ingress queue did not extend past the parking lot. Many students were observed to walk home via the rear trail entrance.

### **Level of Observed Congestion**

Low. The duration of traffic congestion was short with only a few minutes of queued vehicles on to the signalized intersection of Wilson Road and Livorna Road during the morning drop-off. There were very few conflict points.

### **Recommendations**

No recommendations.



## CHAPTER 4 ENROLLMENT TRENDS & CATCHMENT ANALYSIS

The purpose of this section is to evaluate student enrollment projections for each school as well as identify geographical areas that could be served by future bus routes based on student population residences.

### 4.1 Enrollment Trends

The Student Population Projections by Residence Report for School Year 2022/23, prepared by Davis Demographics on December 1, 2022, was referenced in analyzing the current and projected demographic data for the San Ramon Valley Unified School District (SRVUSD). That report projects student enrollment based on student residence for a seven-year period from 2022 to 2029. GIS data was used to map out the student residences within the boundaries for each school. This data, along with actual student enrollment numbers provided by SRVUSD, was used as the basis for the enrollment trends and catchment analysis. It's important to note that actual enrollment at specific schools can vary from the projected enrollment due to intra-district and inter-district transfers, and special programs at sites.

Table 7 identifies the actual student enrollment for each school measured in February of the 2006/07 school year, which was the beginning of Program Development for TRAFFIX and in the current 2022/23 school year. Student enrollment increased 22.5 percent over the course of this sixteen-year period.

Quail Run Elementary School experienced the greatest increase of student enrollment of 44 percent with 867 students enrolled in the 2022/23 school year. Windemere Ranch Middle School enrollment increased 39.4 percent and Twin Creeks Elementary School increased 27.0 percent. Five schools did not yet exist during the 2006/07 school year so there is no data for those schools. The three schools with the largest decrease in student enrollment are Tassajara Hills Elementary School with 29.6 percent, Hidden Hills Elementary School with 29.3 percent, and **Green Valley Elementary School** with 28.5 percent.

One reason for the enrollment decreases at Tassajara Hills and Hidden Hills Elementary School is due to the re-distribution of students to the opening of new nearby schools.

Table 7 also identifies the current number of students that reside within each school's boundaries and the forecasted number of students for school year 2027/28. The table shows that overall student enrollment is projected to decline by 9.3 percent.

Despite the enrollment decline, ten of the 33 schools are projected to experience an increase in student enrollment. Two schools, Montevideo Elementary School and Iron Horse Middle School, are projected to experience increases of more than 10 percent with 18.9 percent and 15.5 percent.

Six schools are projected to experience student enrollment decreases of more than 20 percent as follows: **Coyote Creek Elementary School** with 28.5 percent, Golden View Elementary School with 24.9 percent,

Hidden Hills Elementary School with 21.7 percent, Live Oak Elementary School with 31.1 percent, Gale Ranch Middle School with 25.2 percent, Windemere Middle School with 37.1 percent and Dougherty Valley with 22.9 percent.

**Table 7: Enrollment Trends from 2007 to 2027**

School No.	School	Actual Enrollment		Actual Enrollment Percent Change	Current Resident Students	Forecasted Resident Students	Resident Students Percent Change
		2006	2022	2006-2022	2022	2027	2022 - 2027
1	Bollinger Canyon ES	513	497	-3.1%	447	387	-13.4%
2	<b>Country Club ES</b>	607	529	-12.9%	544	529	-2.8%
3	<b>Coyote Creek ES</b>	755	674	-10.7%	599	428	-28.5%
4	Golden View ES	602	662	10.0%	590	443	-24.9%
5	Hidden Hills ES	768	543	-29.3%	552	432	-21.7%
6	Live Oak ES	-	569	-	482	332	-31.1%
7	Montevideo ES	519	628	21.0%	533	634	18.9%
8	Quail Run ES	602	867	44.0%	828	692	-16.4%
9	Gale Ranch MS	-	1,086	-	1149	860	-25.2%
10	Windemere Ranch MS	792	1,104	39.4%	999	628	-37.1%
11	Dougherty Valley HS	-	3,249	-	3356	2586	-22.9%
12	Twin Creeks ES	515	654	27.0%	648	684	5.6%
13	<b>Walt Disney ES</b>	512	503	-1.8%	468	439	-6.2%
14	Bella Vista ES	-	506	-	381	351	-7.9%
15	Iron Horse MS	921	1,009	9.6%	1039	1200	15.5%
16	<b>Pine Valley MS</b>	903	955	5.8%	890	787	-11.6%
17	<b>California High</b>	2551	2,869	12.5%	2645	2797	5.7%
18	<b>Neil Armstrong ES</b>	458	498	8.7%	403	356	-11.7%
19	Diablo Vista MS	693	890	28.4%	779	690	-11.4%
20	Sycamore Valley ES	718	588	-18.1%	564	598	6.0%
21	John Baldwin ES	558	434	-22.2%	442	447	1.1%
22	Charlotte Wood MS	1062	874	-17.7%	859	885	3.0%
23	Montair ES	473	511	8.0%	407	369	-9.3%
24	<b>San Ramon Valley HS</b>	2097	1,913	-8.8%	1656	1594	-3.7%
25	<b>Vista Grande ES</b>	630	548	-13.0%	464	418	-9.9%
26	<b>Green Valley ES</b>	716	512	-28.5%	493	475	-3.7%
27	<b>Los Cerros MS</b>	631	500	-20.8%	505	499	-1.2%
28	<b>Monte Vista HS</b>	2591	2,231	-13.9%	2337	1998	-14.5%
29	Rancho Romero ES	571	447	-21.7%	392	427	8.9%
30	Stone Valley MS	651	584	-10.3%	557	535	-3.9%
31	Tassajara Hills ES	719	506	-29.6%	491	518	5.5%
32	Creekside ES	-	550	-	456	382	-16.2%
33	Alamo ES	415	339	-18.3%	327	356	8.9%
	<b>Totals</b>	<b>23,543</b>	<b>28,829</b>	<b>22.5%</b>	<b>27,282</b>	<b>24,756</b>	<b>-9.3%</b>

Source: Actual enrollment provided by SRVUSD and Resident Student data provided by Davis Demographics report, Student Population Projections by Residence Report for School Year 2022/23. **Bold** indicates school currently served by TRAFFIX

## 4.2 Bus Catchment Area Maps

Maps were developed for each of the 33 study schools that identifies the school boundaries, the approximate location of student residences based on student grade at the time of the 2022/23 school year, a ½ mile walkable zone, and potential bus catchment areas for two bus routes, as well as existing TRAFFIX bus stops, if applicable.

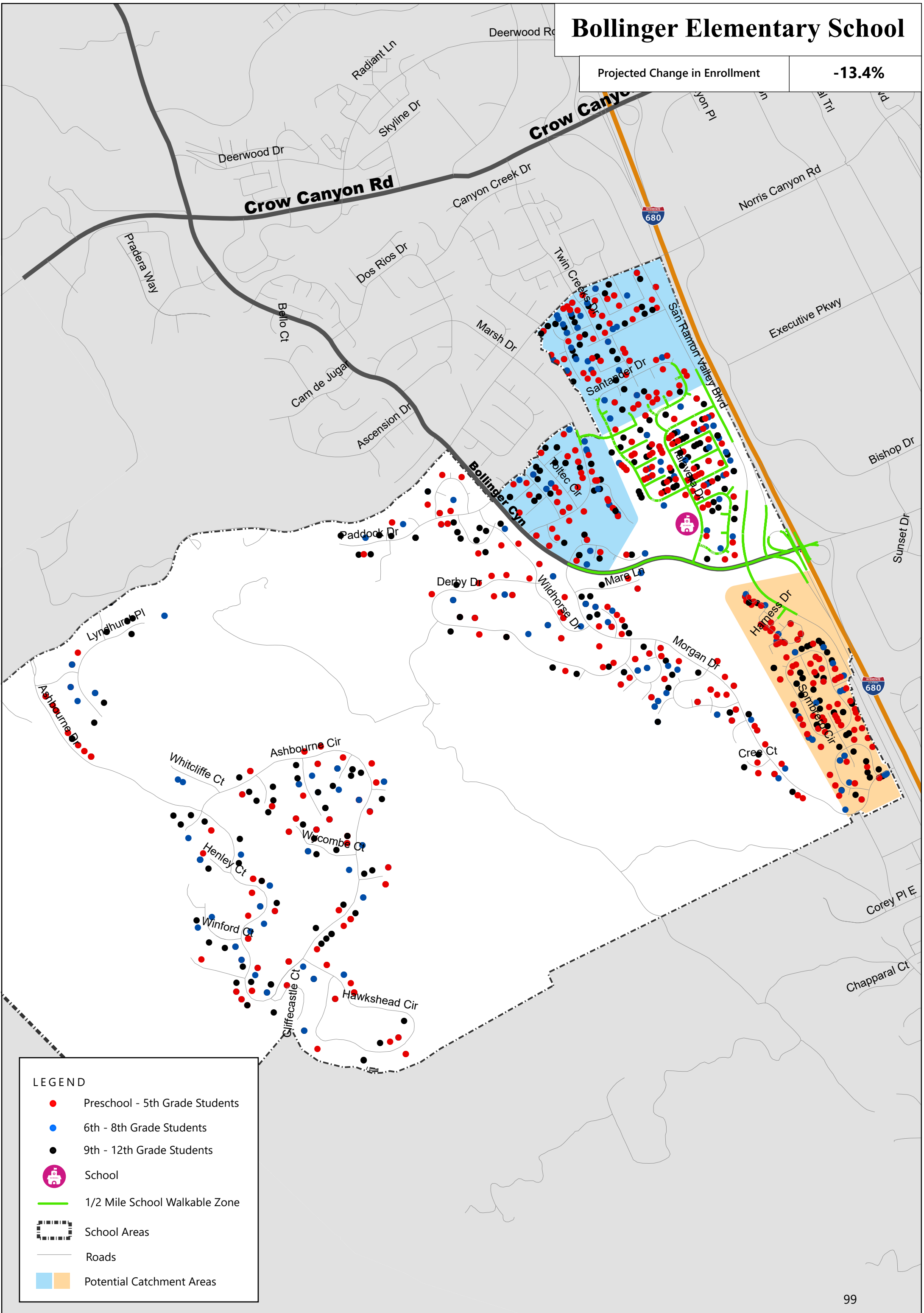
A bus catchment area is defined as the area where bus passengers would originate, such as the area of student residences that would be in the close vicinity of a potential bus stop. The process of identifying the potential student bus catchment areas includes evaluating areas of student density that are not currently served by bus service as well as the roadway network's ability to accommodate a bus route. There are four schools without an identified route catchment area due to existing routes already providing sufficient coverage of the school zone. These schools are Neil Armstrong Elementary School, Green Valley Elementary School, Los Cerros Middle School and Vista Grande Elementary School.

Please find the following maps for each school in Figure 5 through Figure 37.

# Bollinger Elementary School

Projected Change in Enrollment

**-13.4%**



## LEGEND

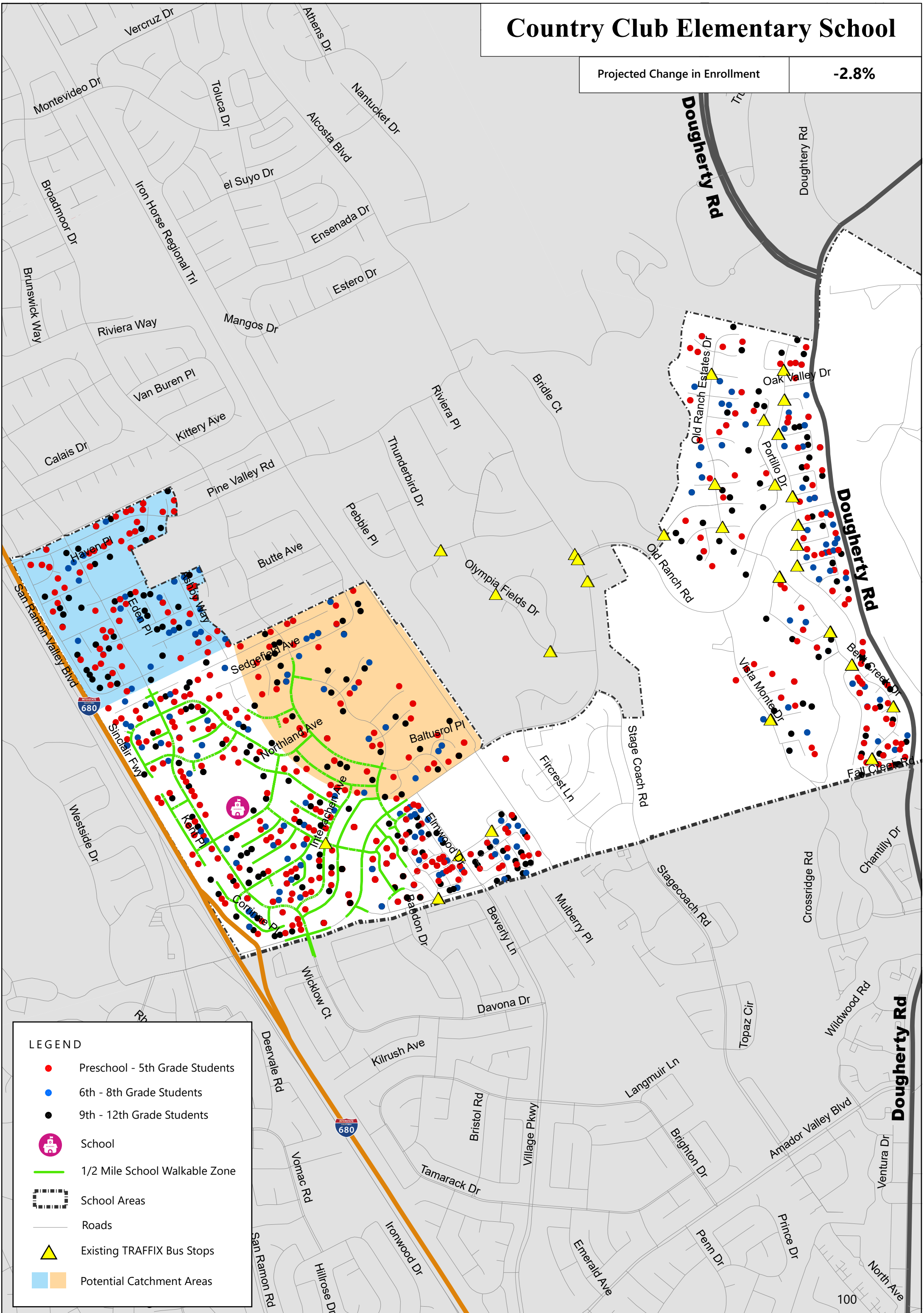
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas



# Country Club Elementary School

Projected Change in Enrollment

-2.8%



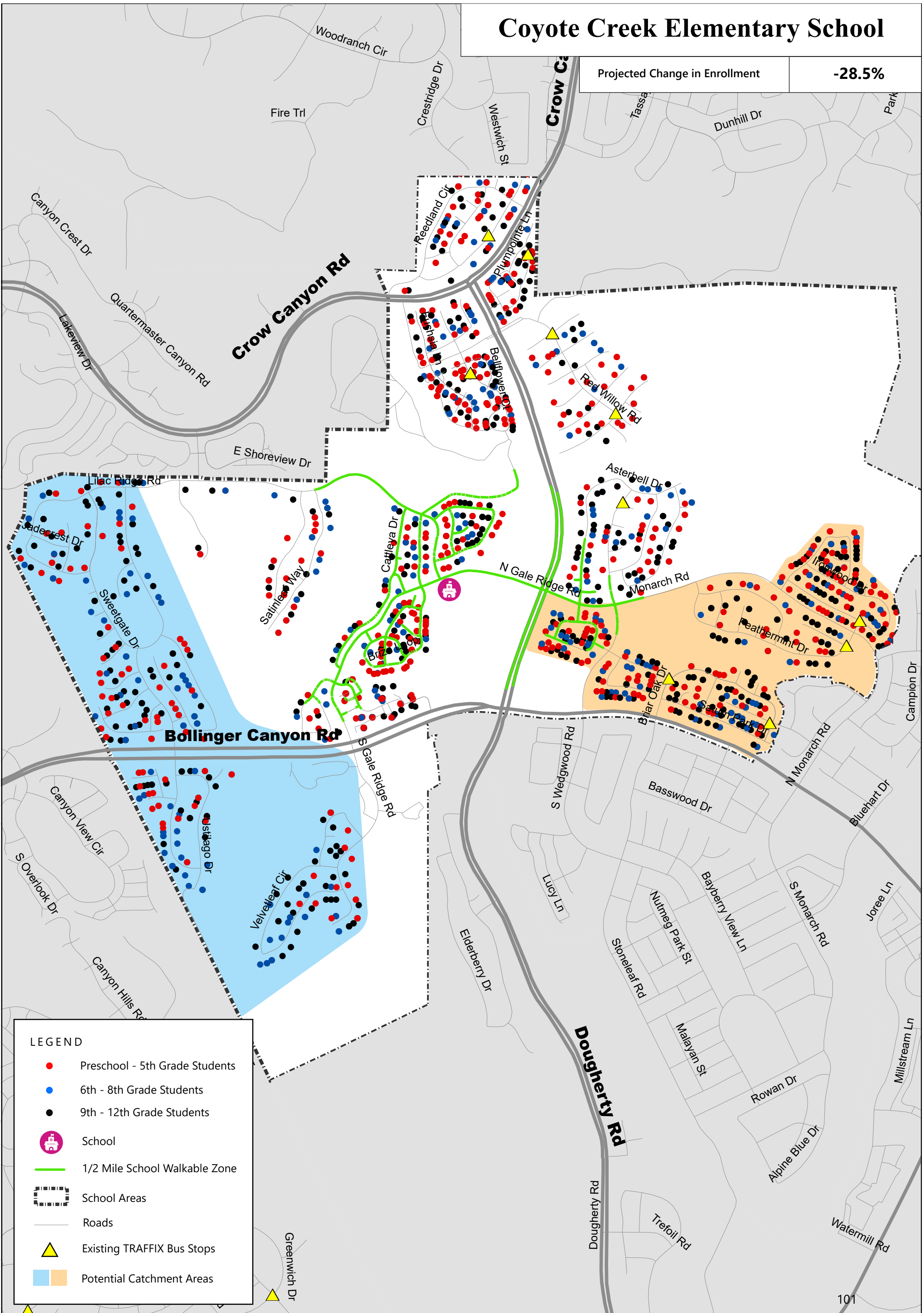
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- 🏫 School
- 🟢 1/2 Mile School Walkable Zone
- ⬛ School Areas
- 🛣️ Roads
- 🚏 Existing TRAFFIX Bus Stops
- 🟡 Potential Catchment Areas

# Coyote Creek Elementary School

Projected Change in Enrollment

**-28.5%**



## LEGEND

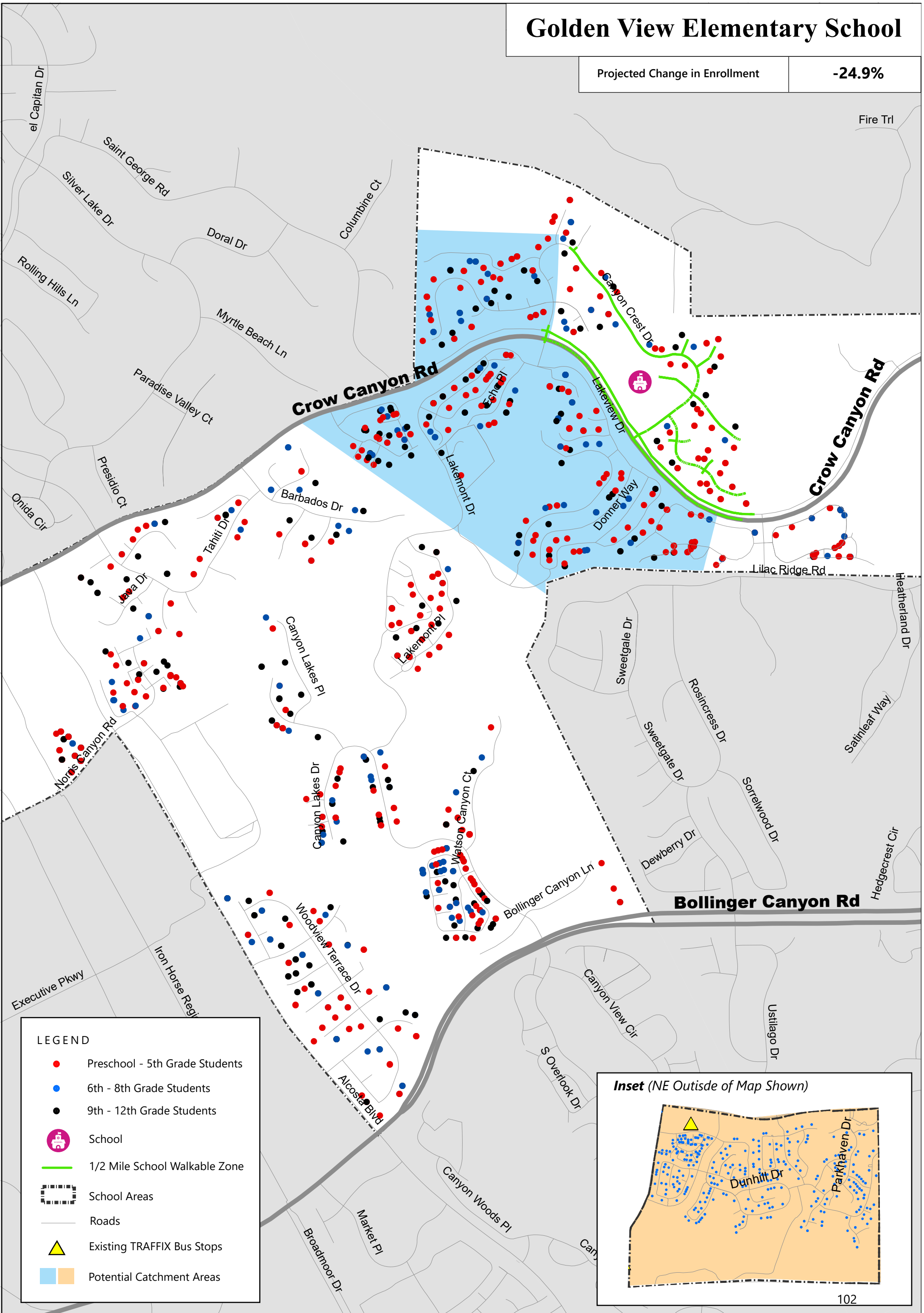
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- 5th School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- ▲ Existing TRAFFIX Bus Stops
- Potential Catchment Areas



# Golden View Elementary School

Projected Change in Enrollment

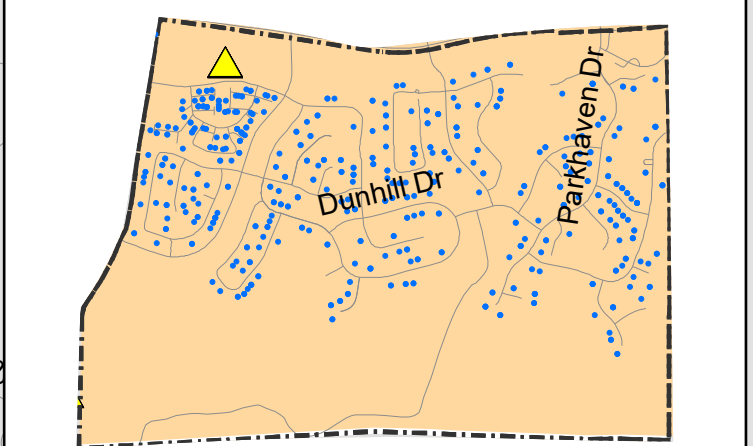
**-24.9%**



## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Existing TRAFFIX Bus Stops
- Potential Catchment Areas

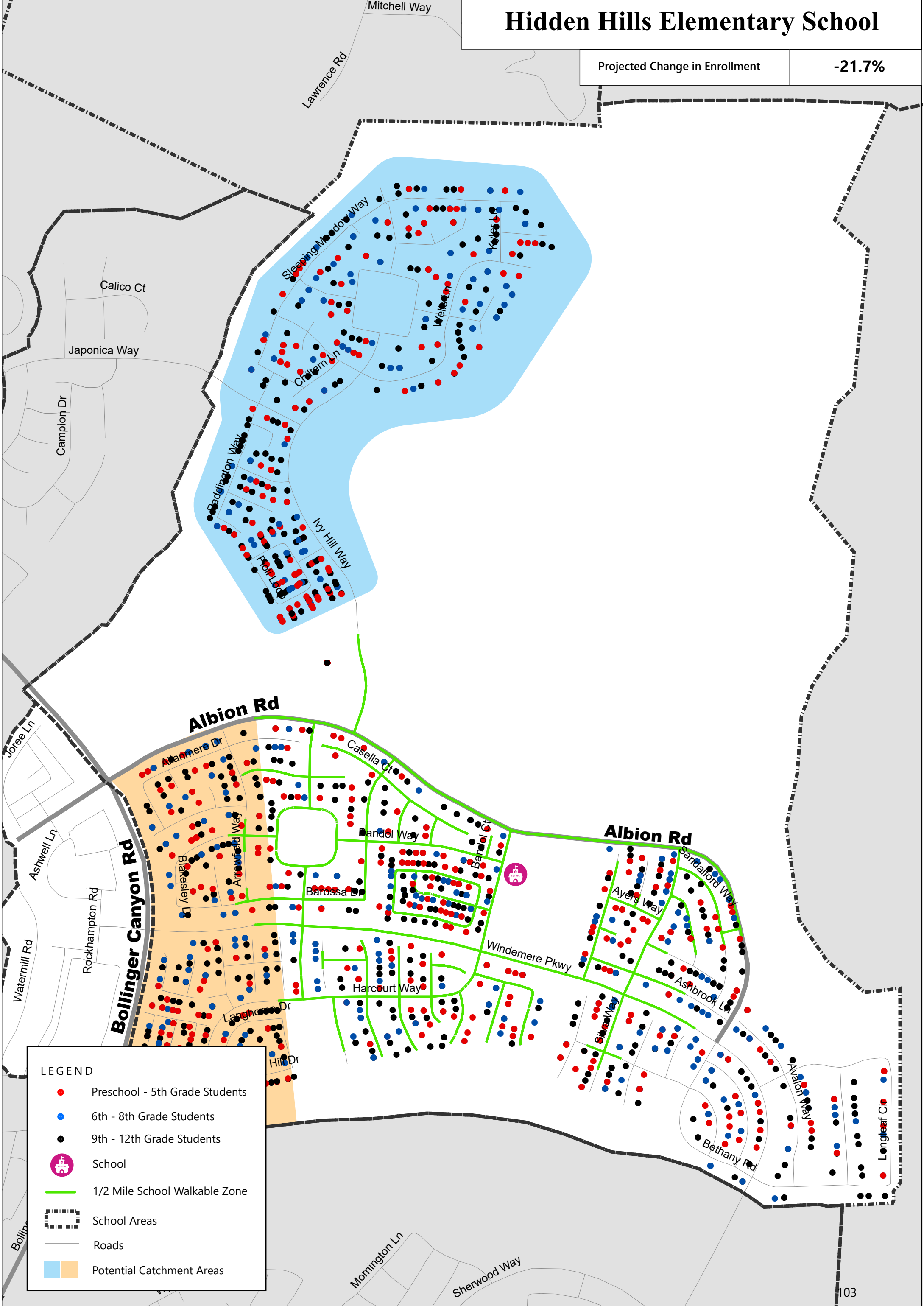
*Inset (NE Outside of Map Shown)*



# Hidden Hills Elementary School

Projected Change in Enrollment

**-21.7%**



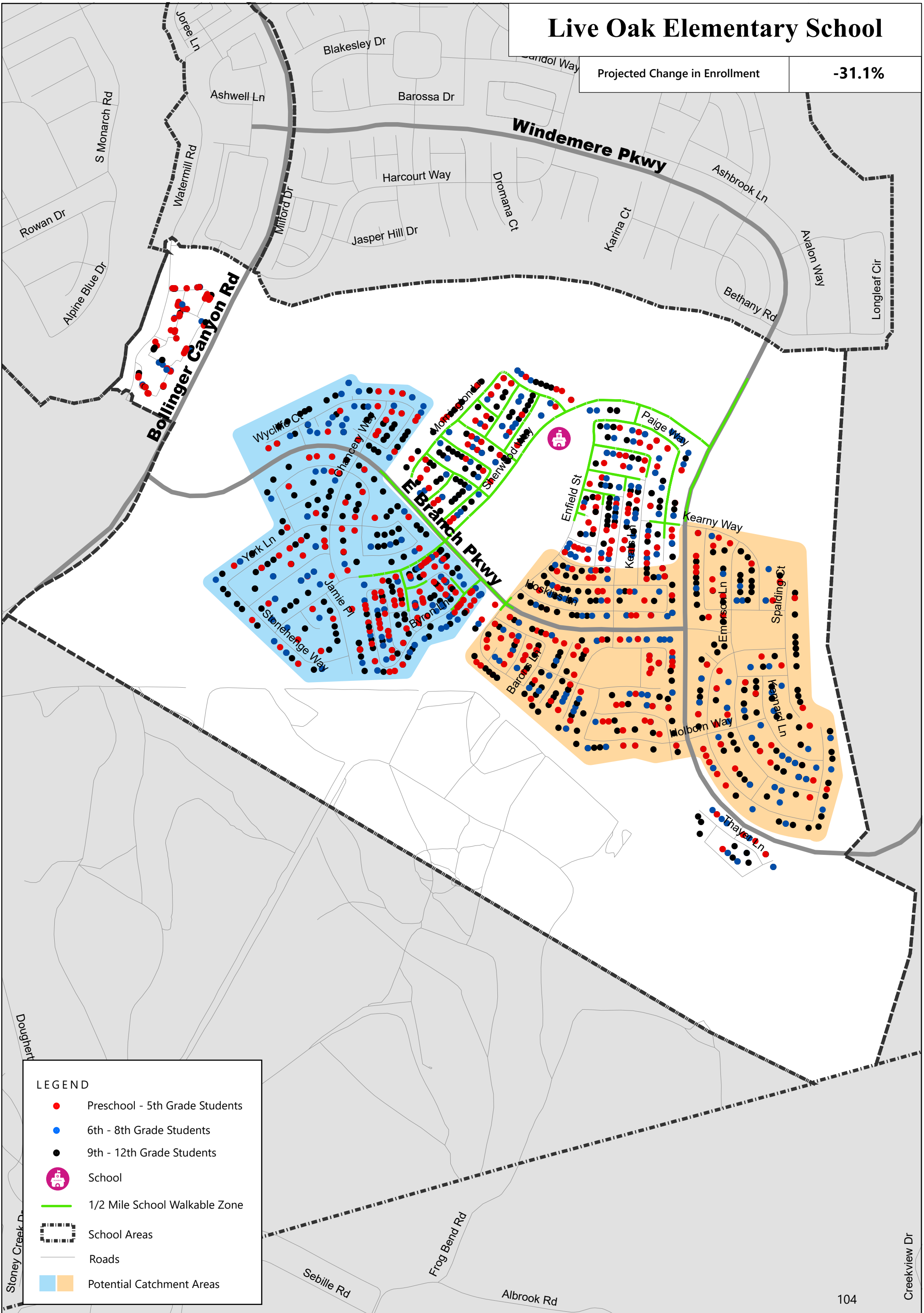
**LEGEND**

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas

# Live Oak Elementary School

Projected Change in Enrollment

**-31.1%**



## LEGEND

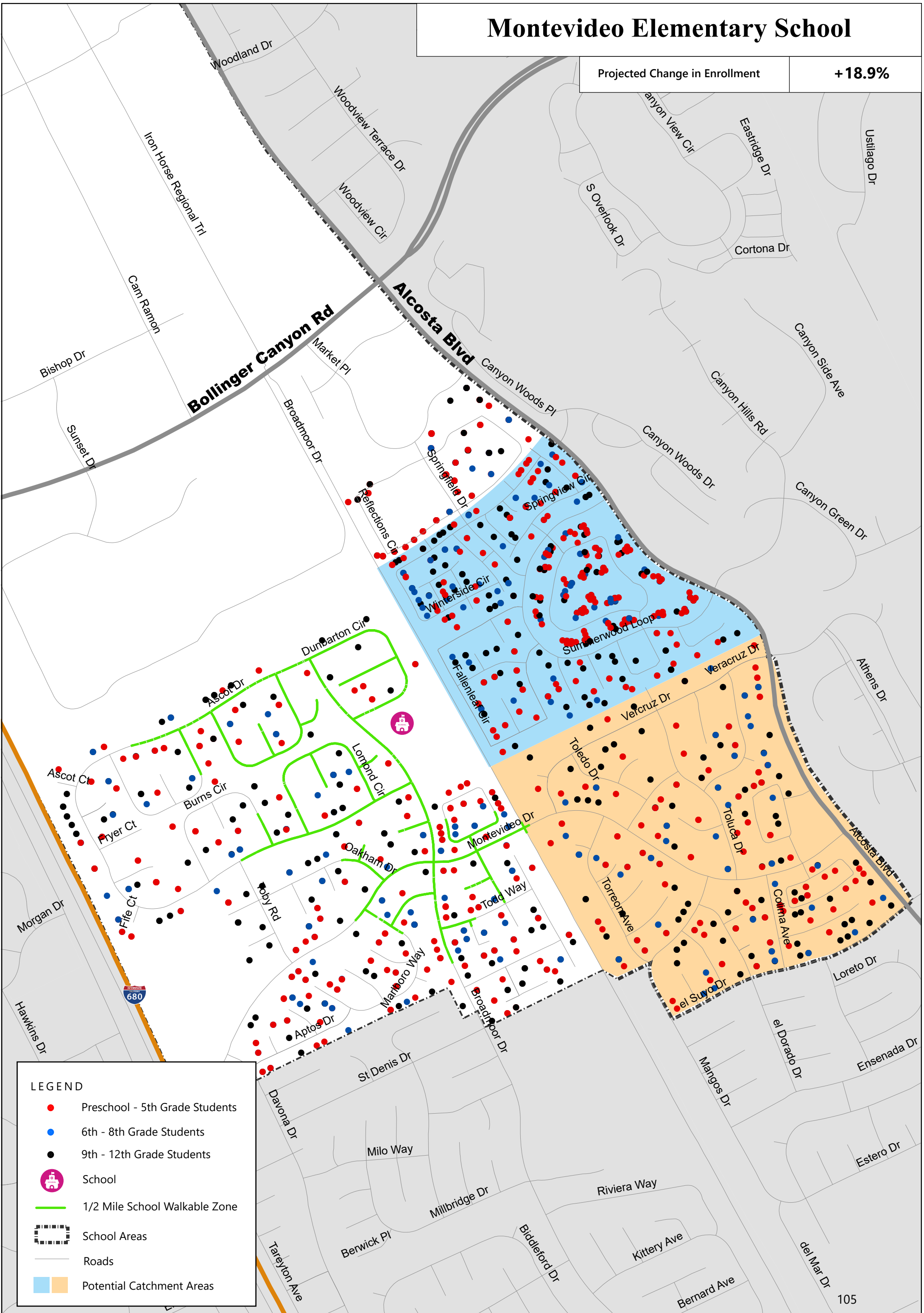
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas



# Montevideo Elementary School

Projected Change in Enrollment

**+18.9%**



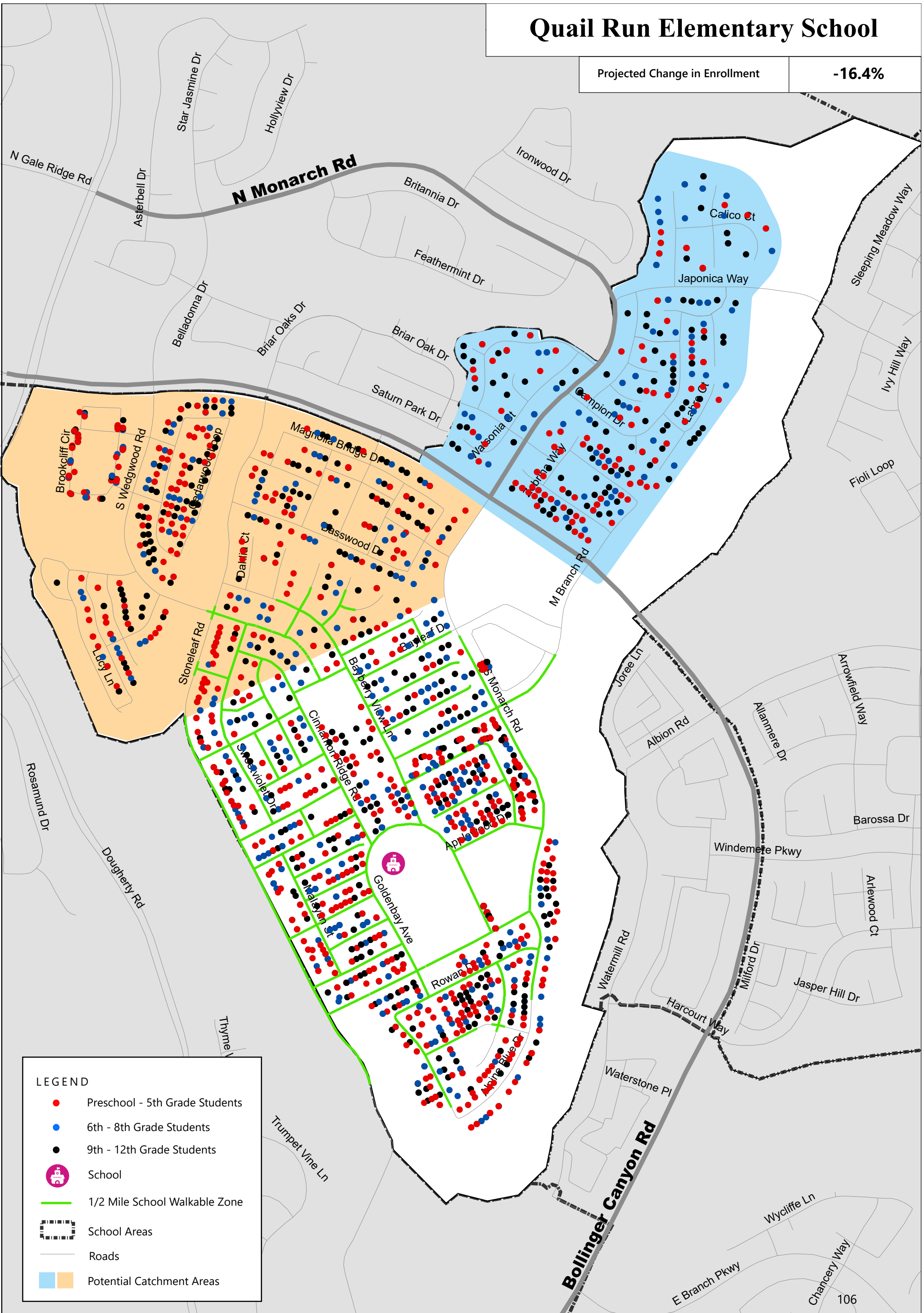
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas

# Quail Run Elementary School

Projected Change in Enrollment

**-16.4%**



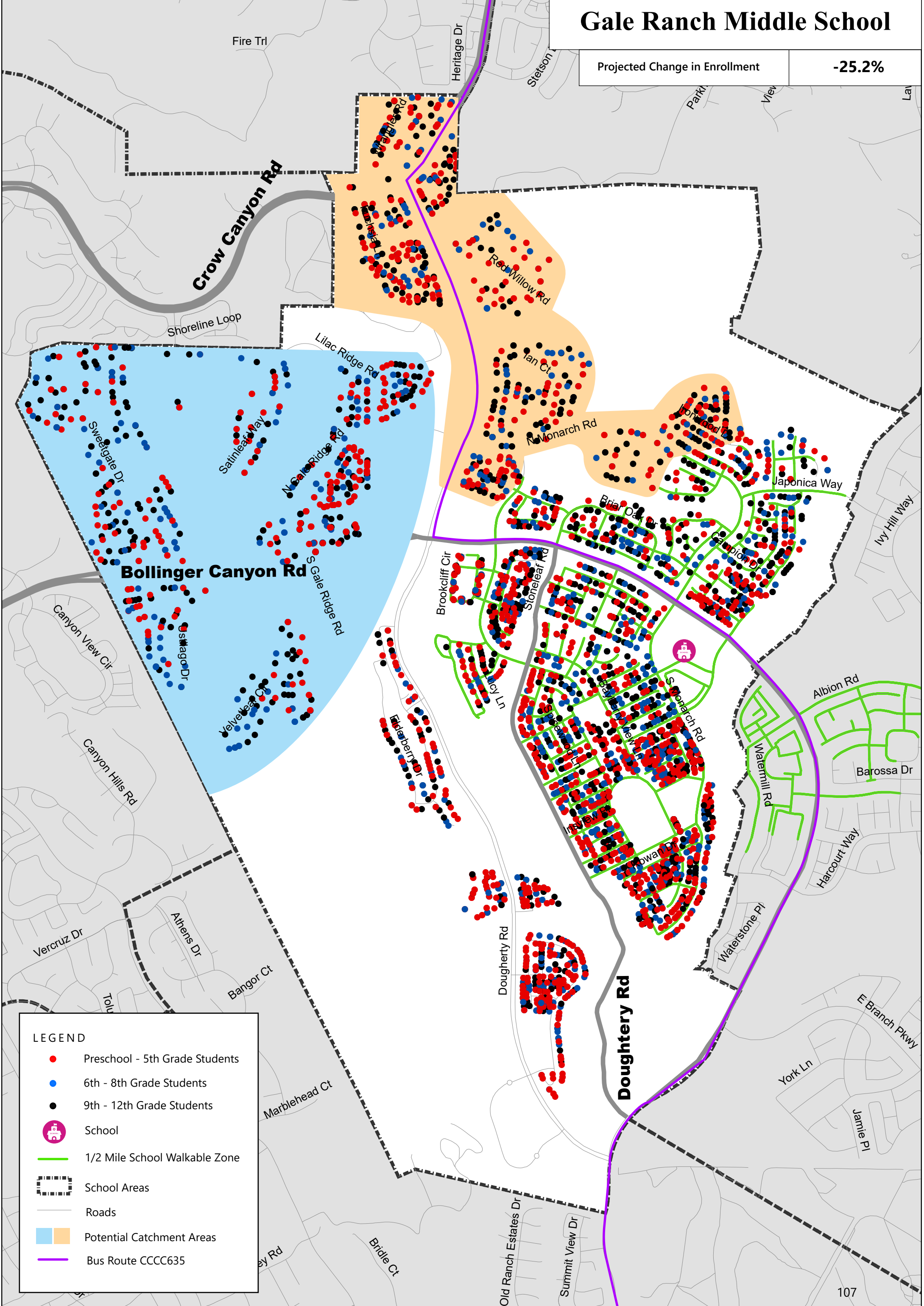
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas



# Gale Ranch Middle School

Projected Change in Enrollment	<b>-25.2%</b>
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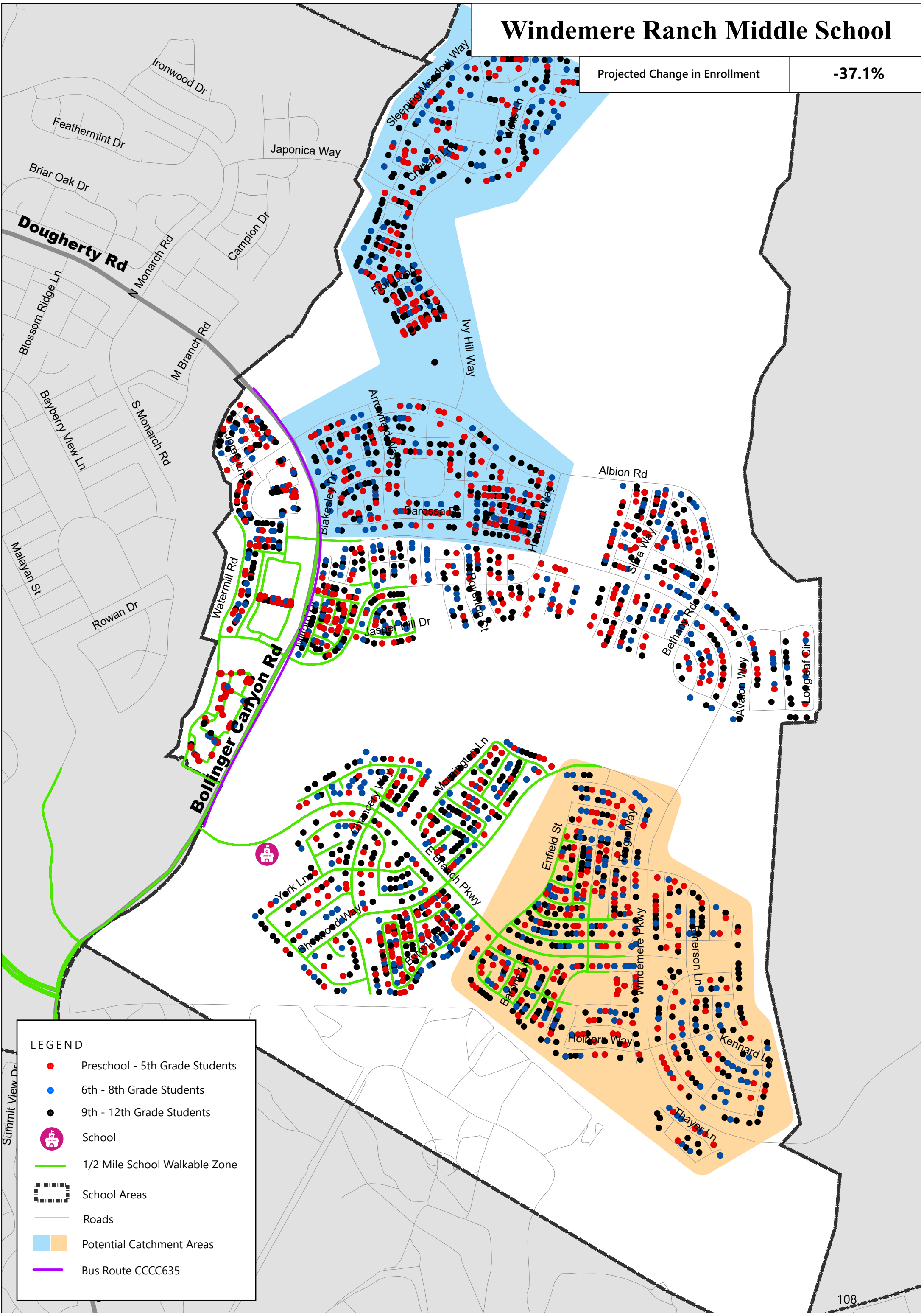
**LEGEND**

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas
- Bus Route CCCC635

# Windemere Ranch Middle School

Projected Change in Enrollment

**-37.1%**



## LEGEND

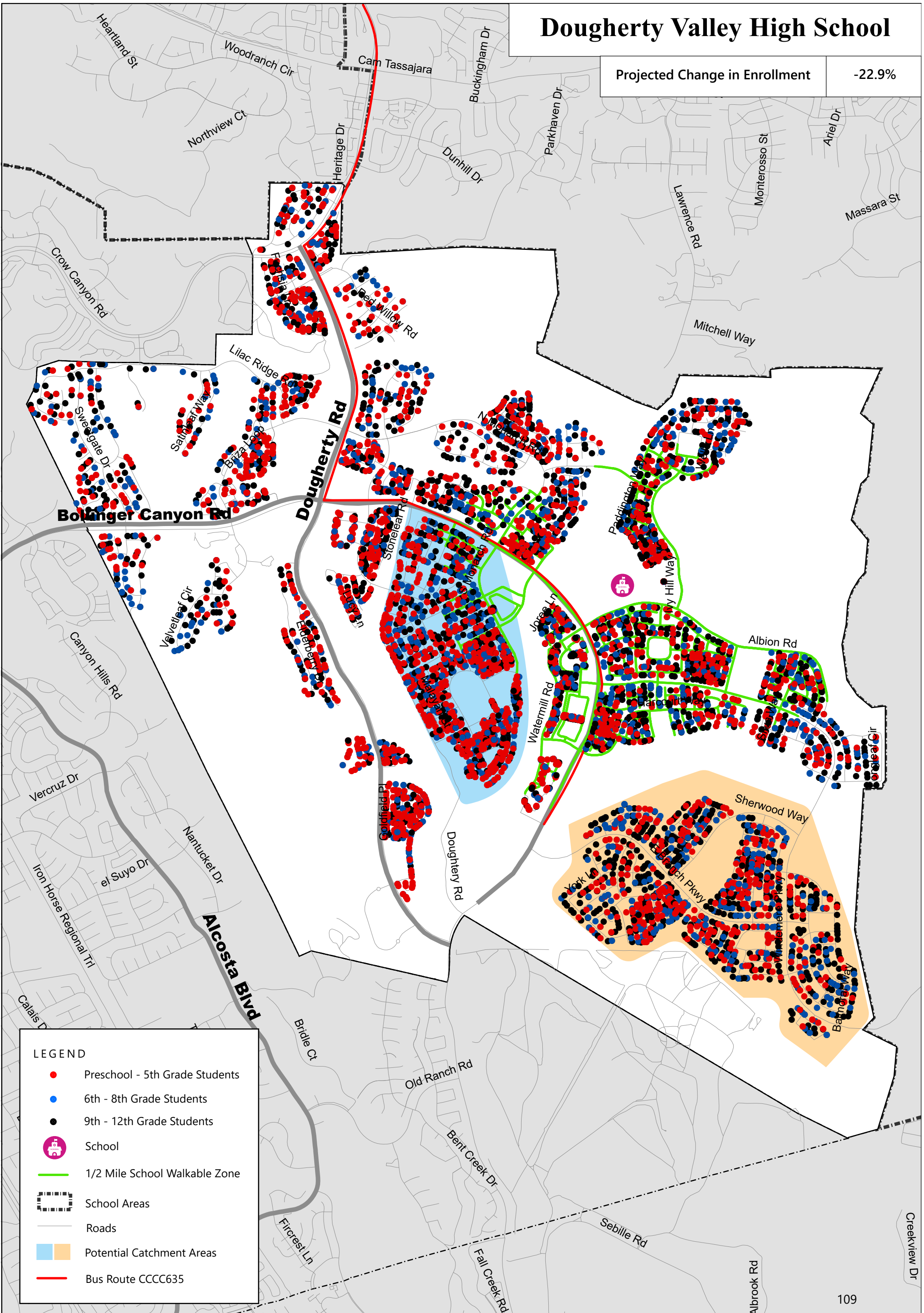
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas
- Bus Route CCCC635



# Dougherty Valley High School

Projected Change in Enrollment

-22.9%



## LEGEND

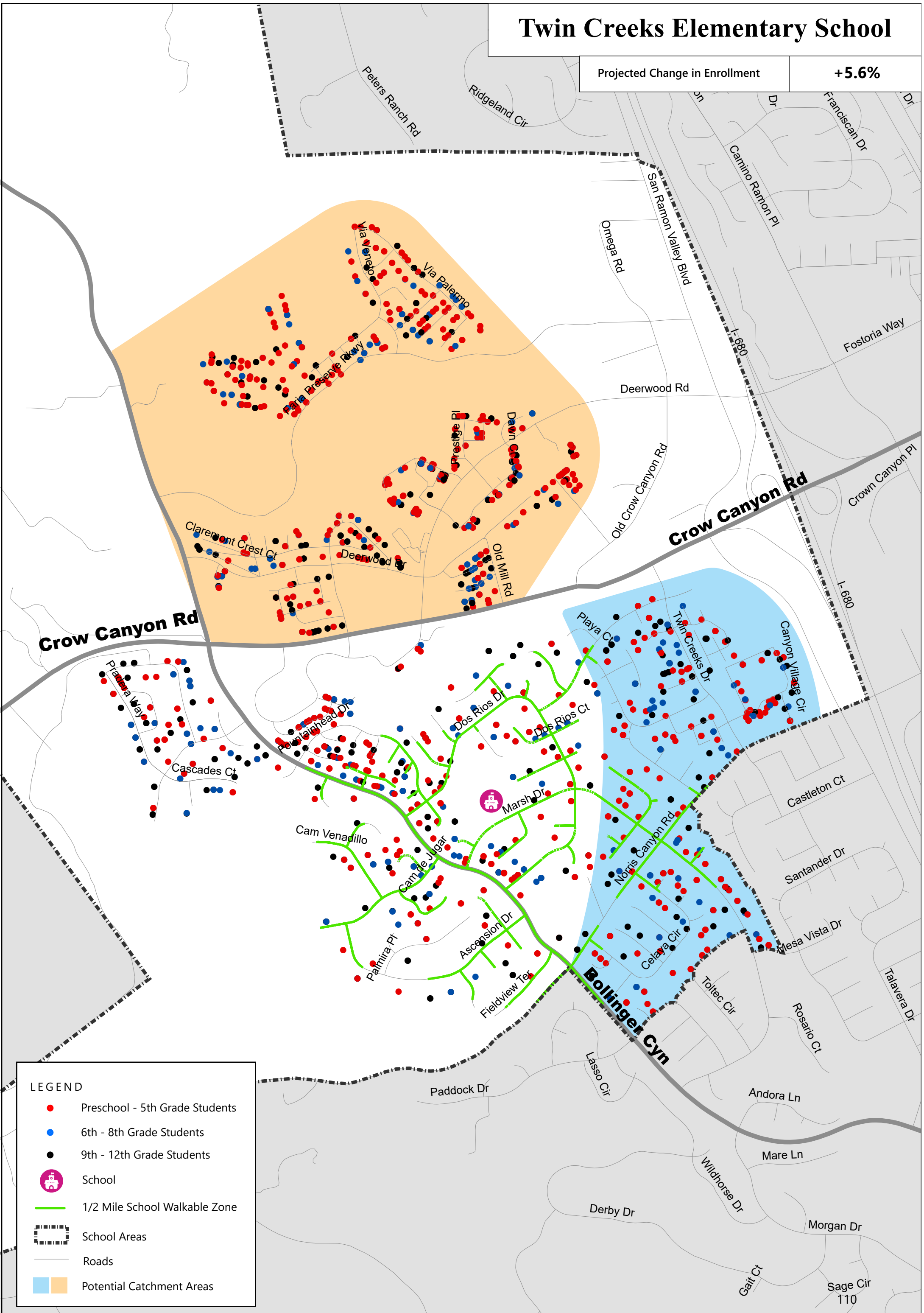
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas
- Bus Route CCCC635



# Twin Creeks Elementary School

Projected Change in Enrollment

**+5.6%**



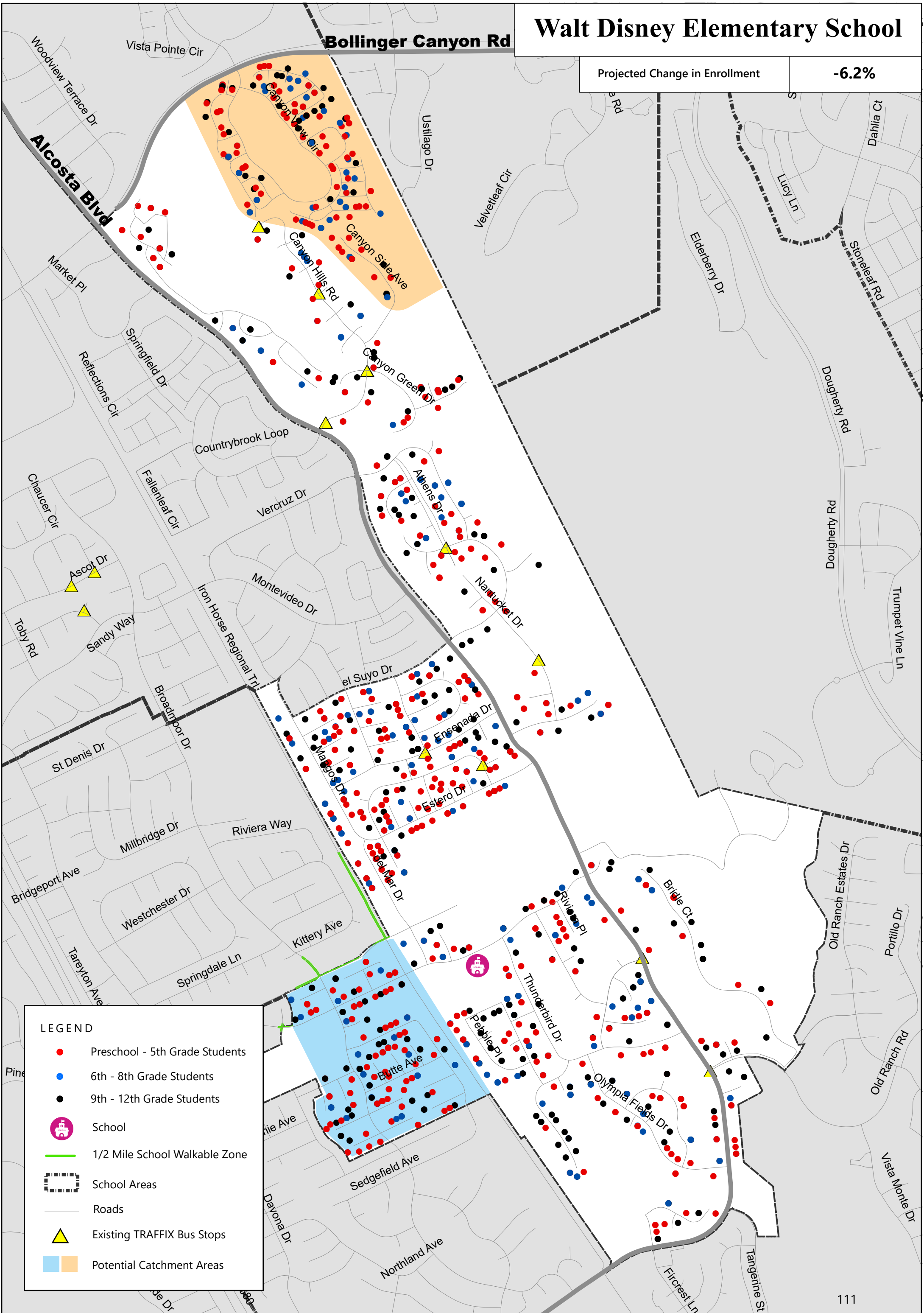
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- 🏫 School
- 🟢 1/2 Mile School Walkable Zone
- ⬜ School Areas
- Roads
- 🟡 🟢 Potential Catchment Areas

# Walt Disney Elementary School

Projected Change in Enrollment

**-6.2%**



## LEGEND

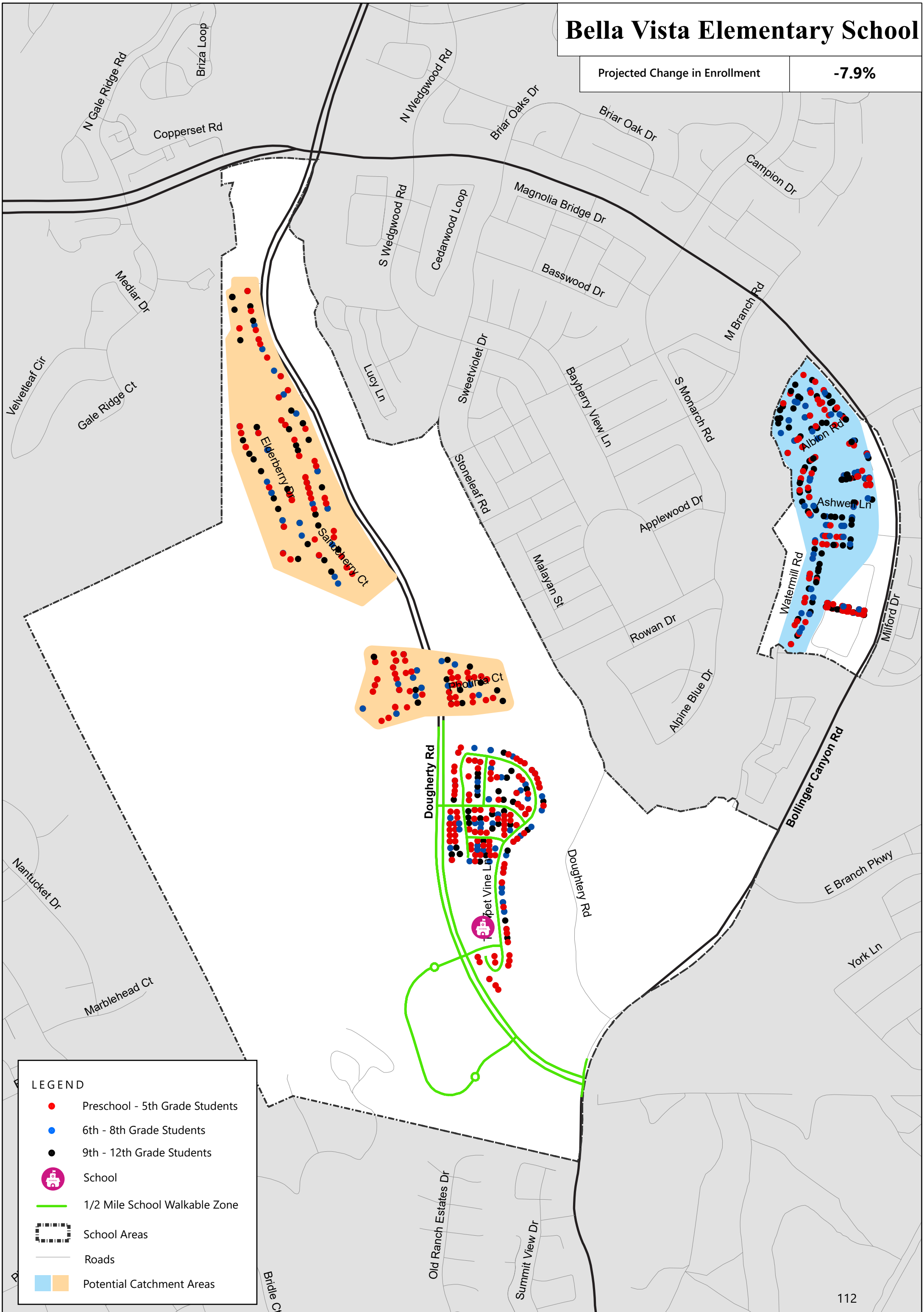
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Existing TRAFFIX Bus Stops
- ■ Potential Catchment Areas



# Bella Vista Elementary School

Projected Change in Enrollment

**-7.9%**



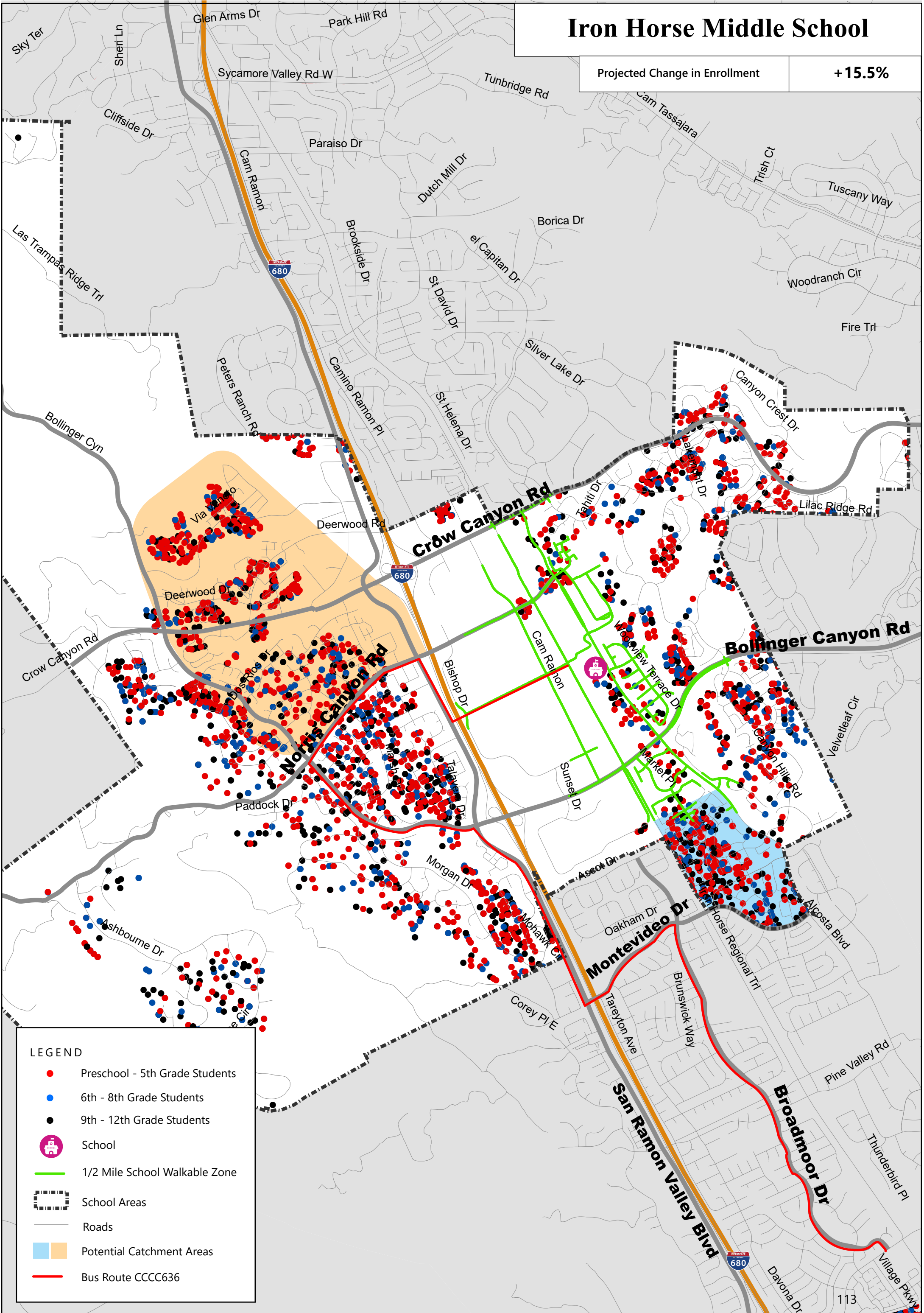
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- ■ Potential Catchment Areas

# Iron Horse Middle School

Projected Change in Enrollment

**+15.5%**



## LEGEND

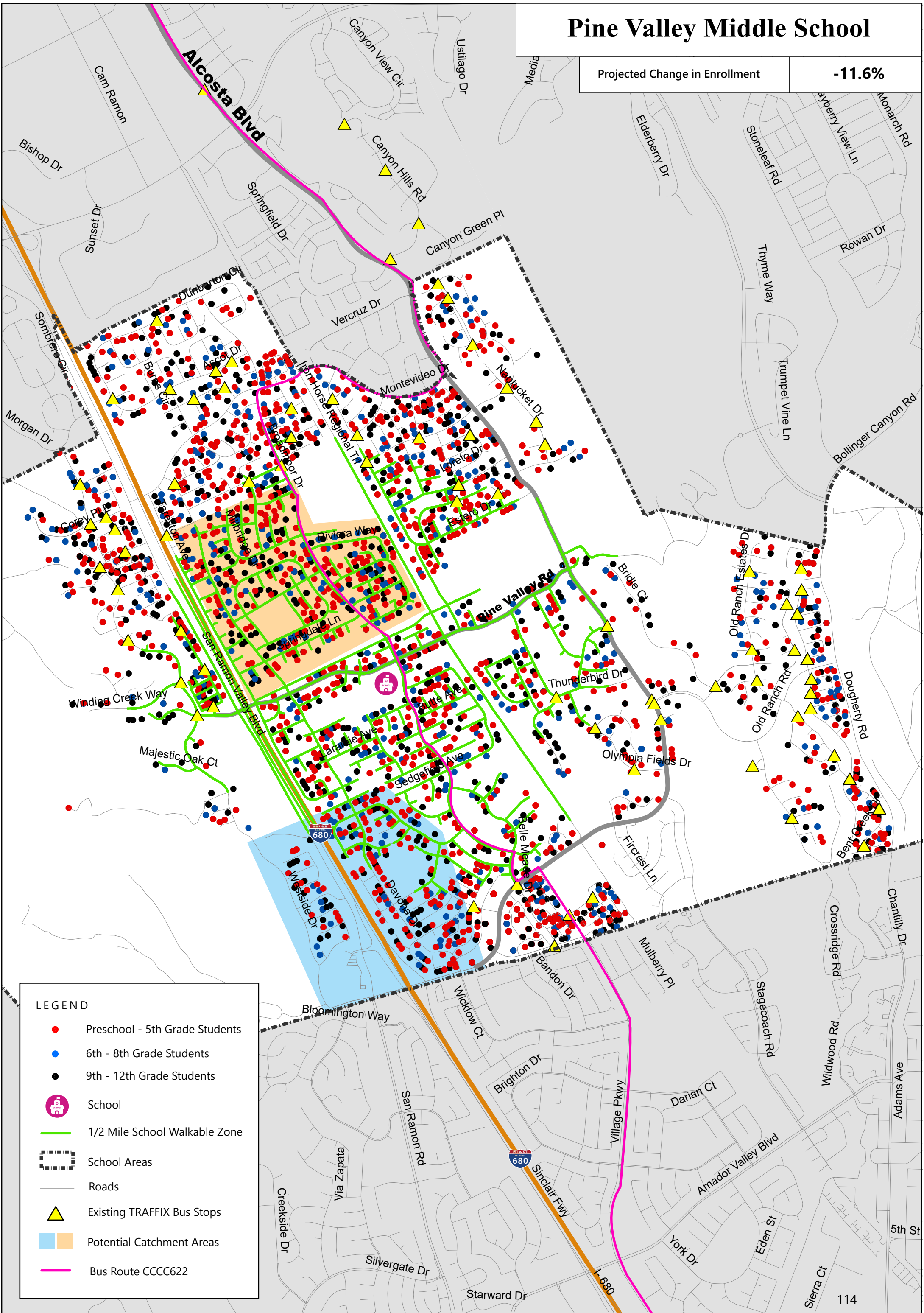
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- 🏫 School
- 🟢 1/2 Mile School Walkable Zone
- ⬛ School Areas
- 🛣️ Roads
- 🟡 🟢 Potential Catchment Areas
- 🔴 Bus Route CCCC636



# Pine Valley Middle School

Projected Change in Enrollment

**-11.6%**



**LEGEND**

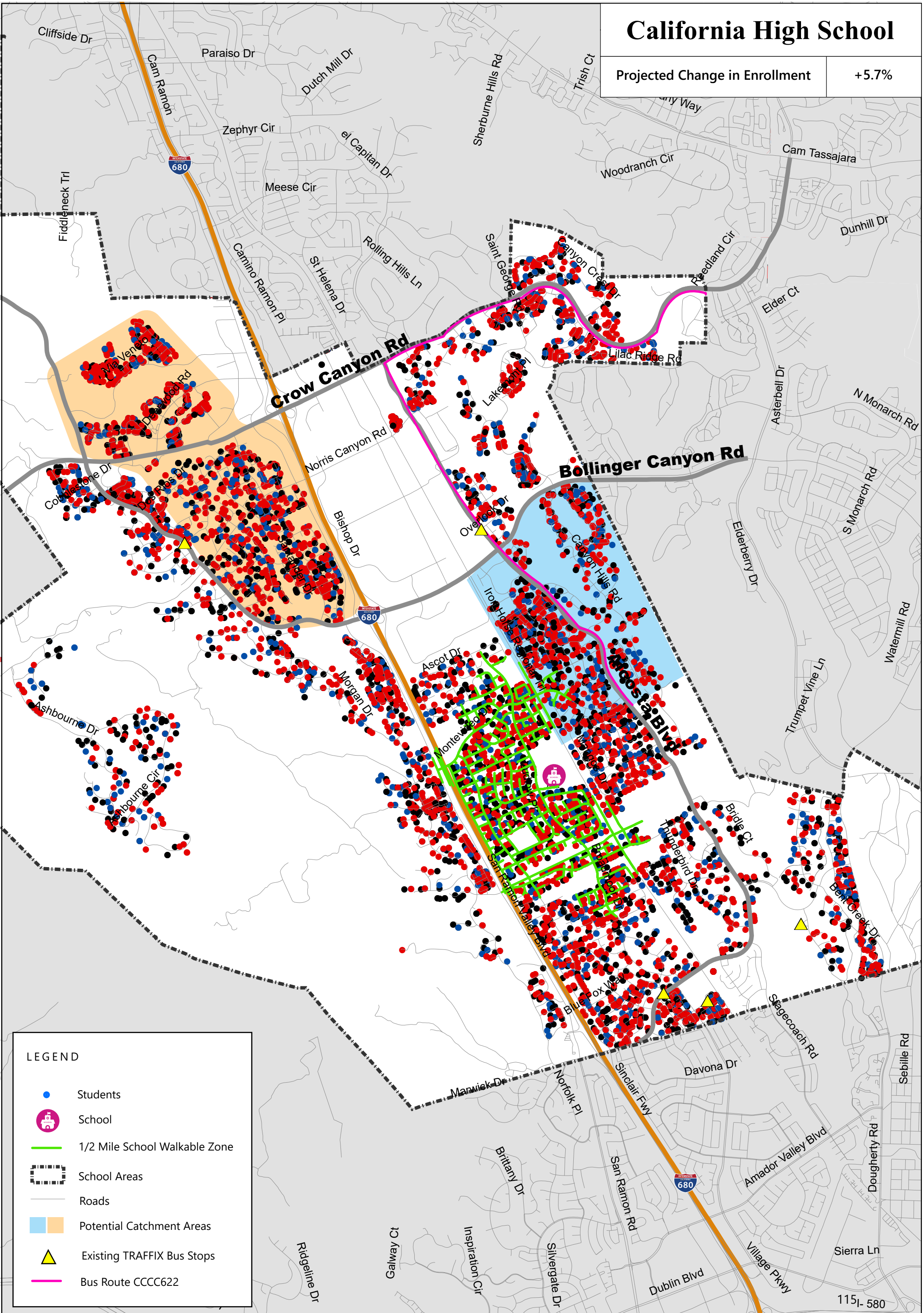
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Existing TRAFFIX Bus Stops
- Potential Catchment Areas
- Bus Route CCCC622



# California High School

Projected Change in Enrollment

+5.7%



## LEGEND

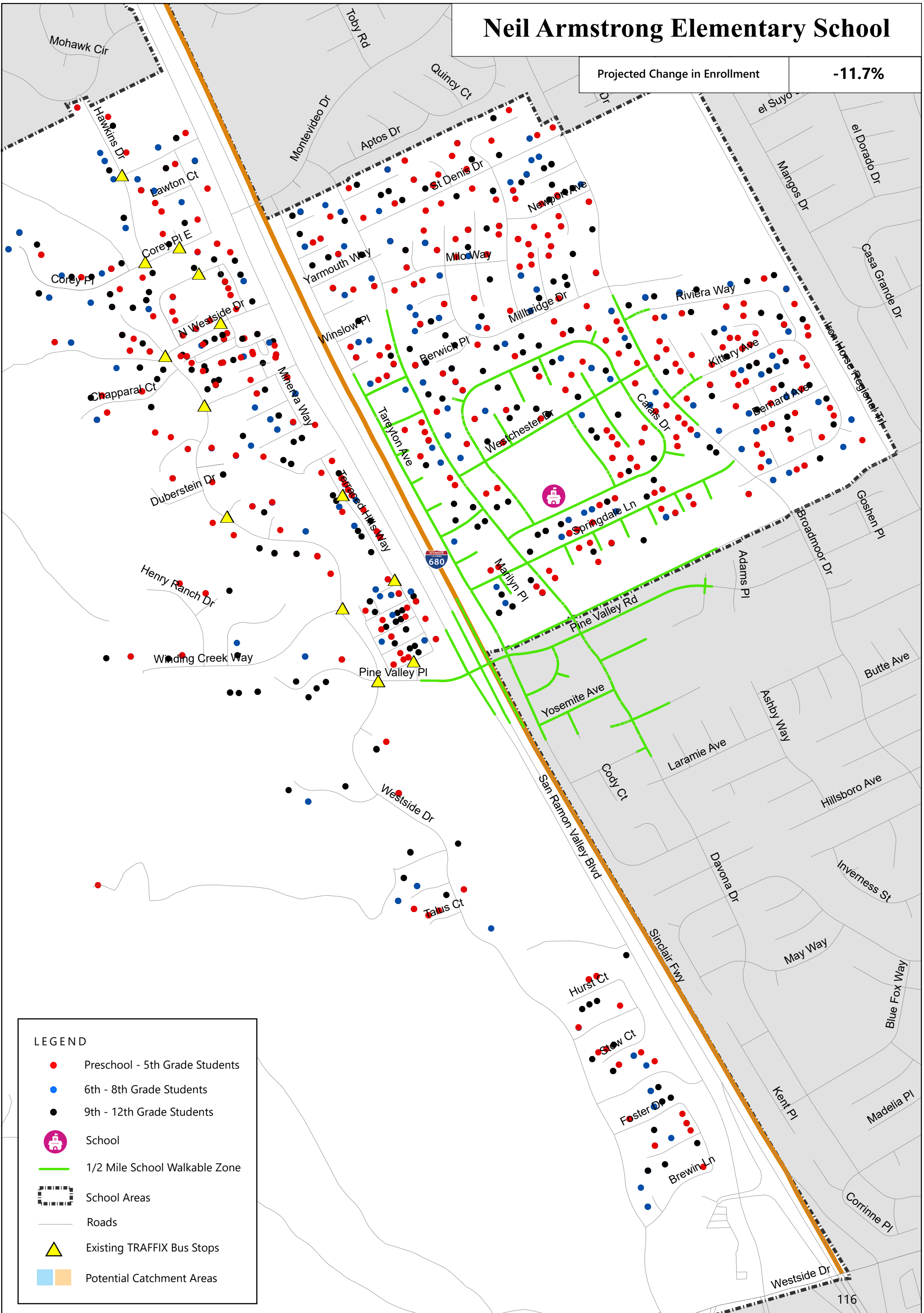
- Students
- 🏫 School
- 1/2 Mile School Walkable Zone
- - - School Areas
- Roads
- Potential Catchment Areas
- ▲ Existing TRAFFIX Bus Stops
- Bus Route CCCC622



# Neil Armstrong Elementary School

Projected Change in Enrollment

**-11.7%**



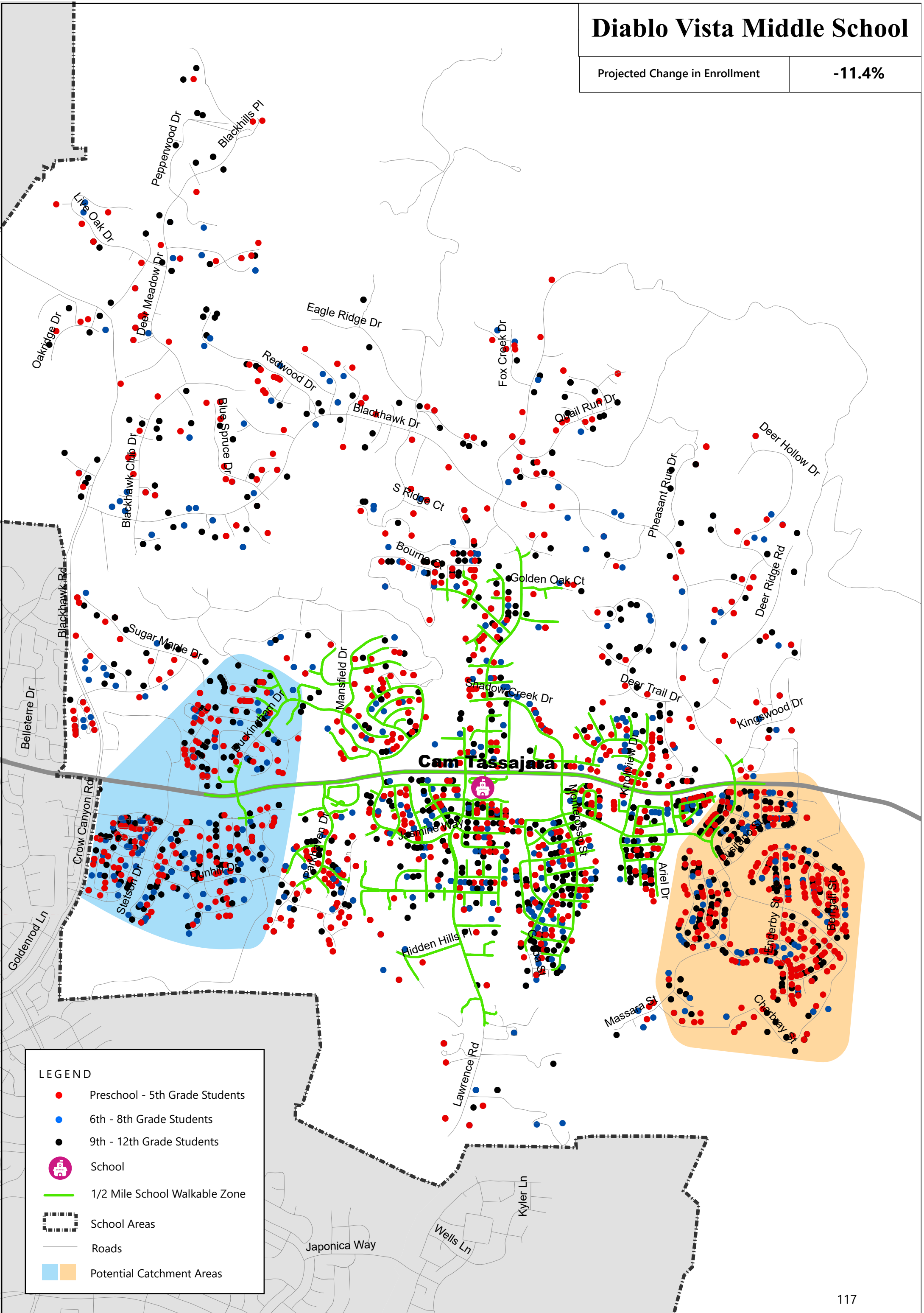
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Existing TRAFFIX Bus Stops
- Potential Catchment Areas

# Diablo Vista Middle School

Projected Change in Enrollment

**-11.4%**



**LEGEND**

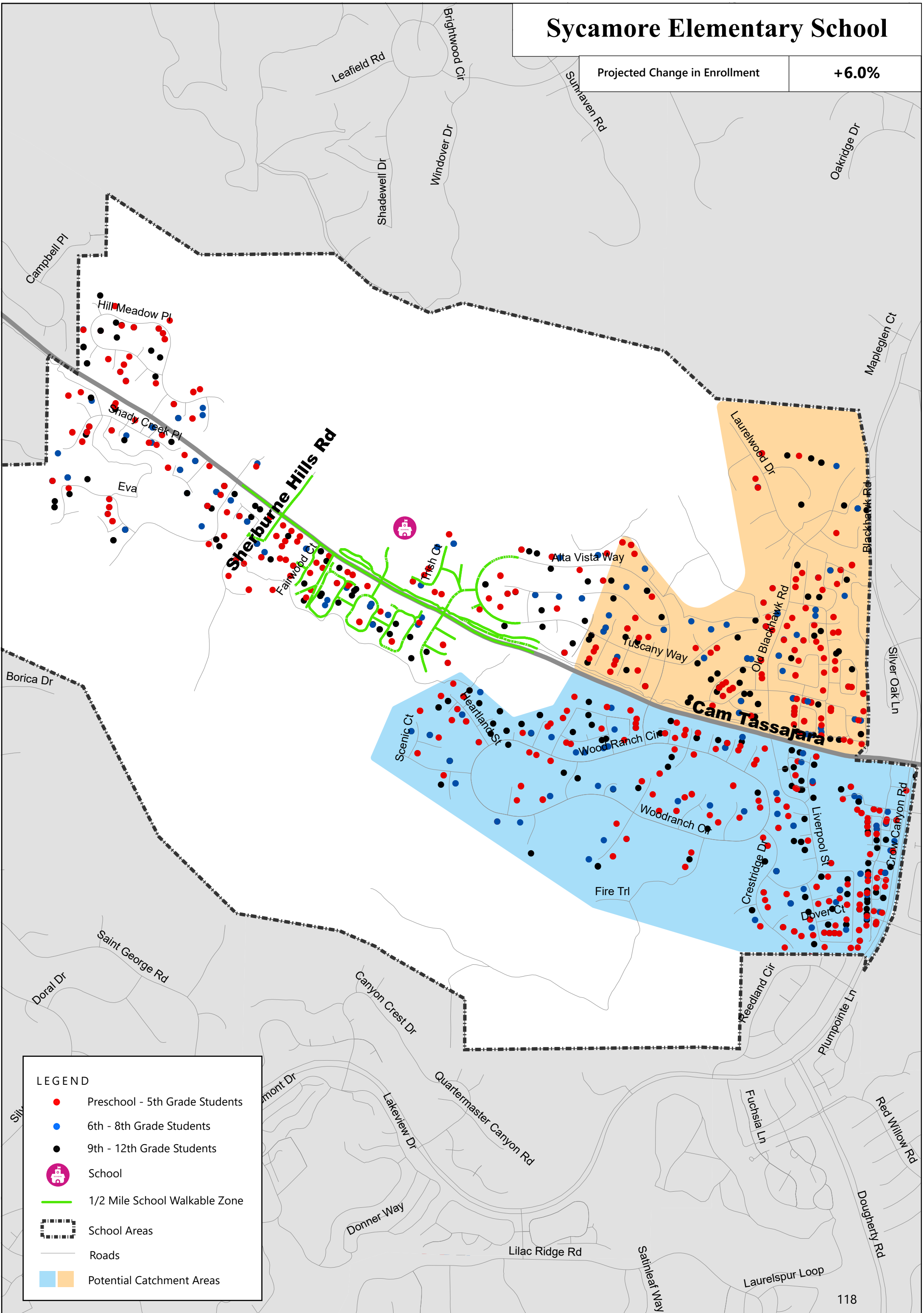
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- ■ Potential Catchment Areas



# Sycamore Elementary School

Projected Change in Enrollment

**+6.0%**



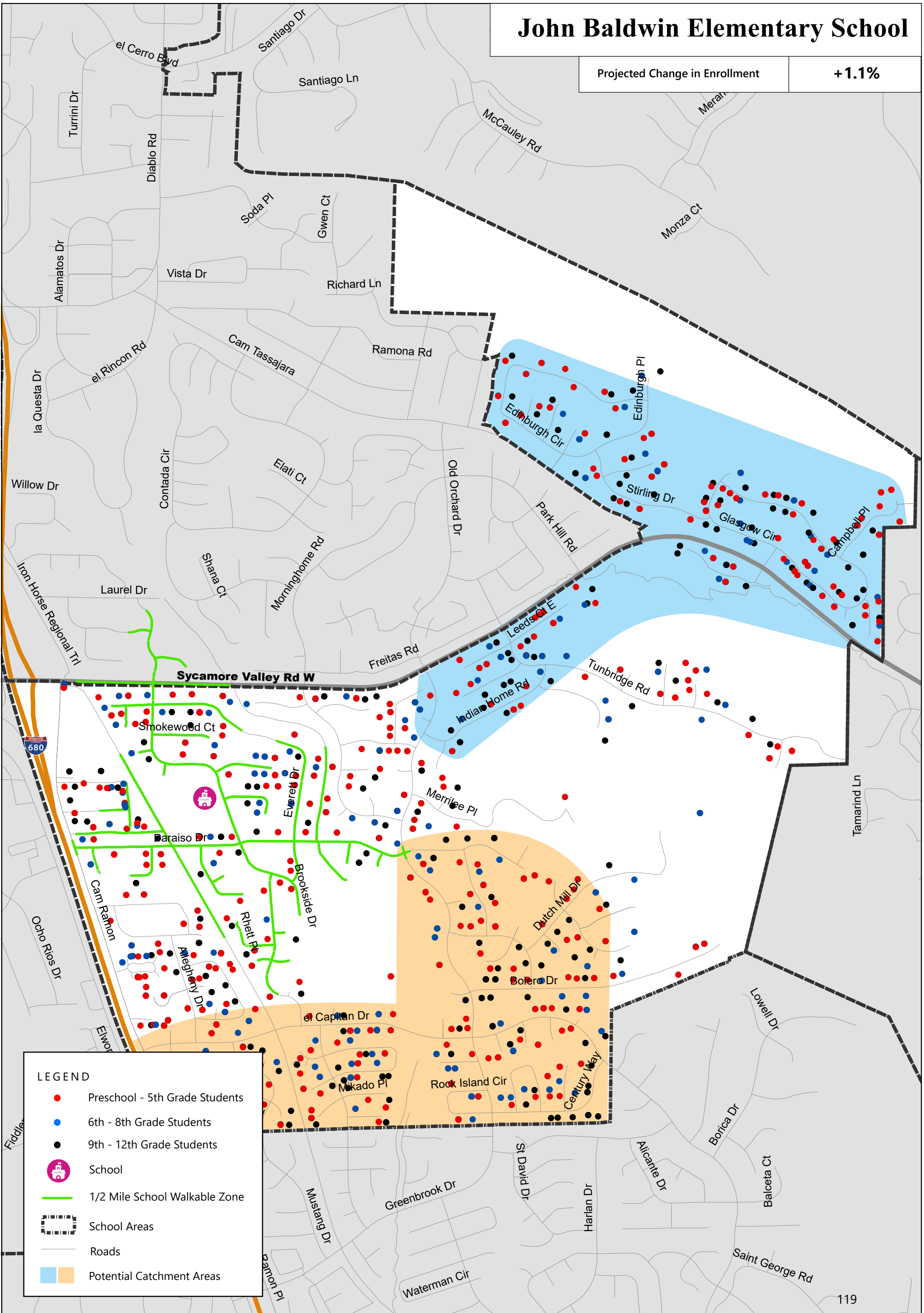
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- ■ Potential Catchment Areas






# John Baldwin Elementary School

Projected Change in Enrollment

**+1.1%**



## LEGEND

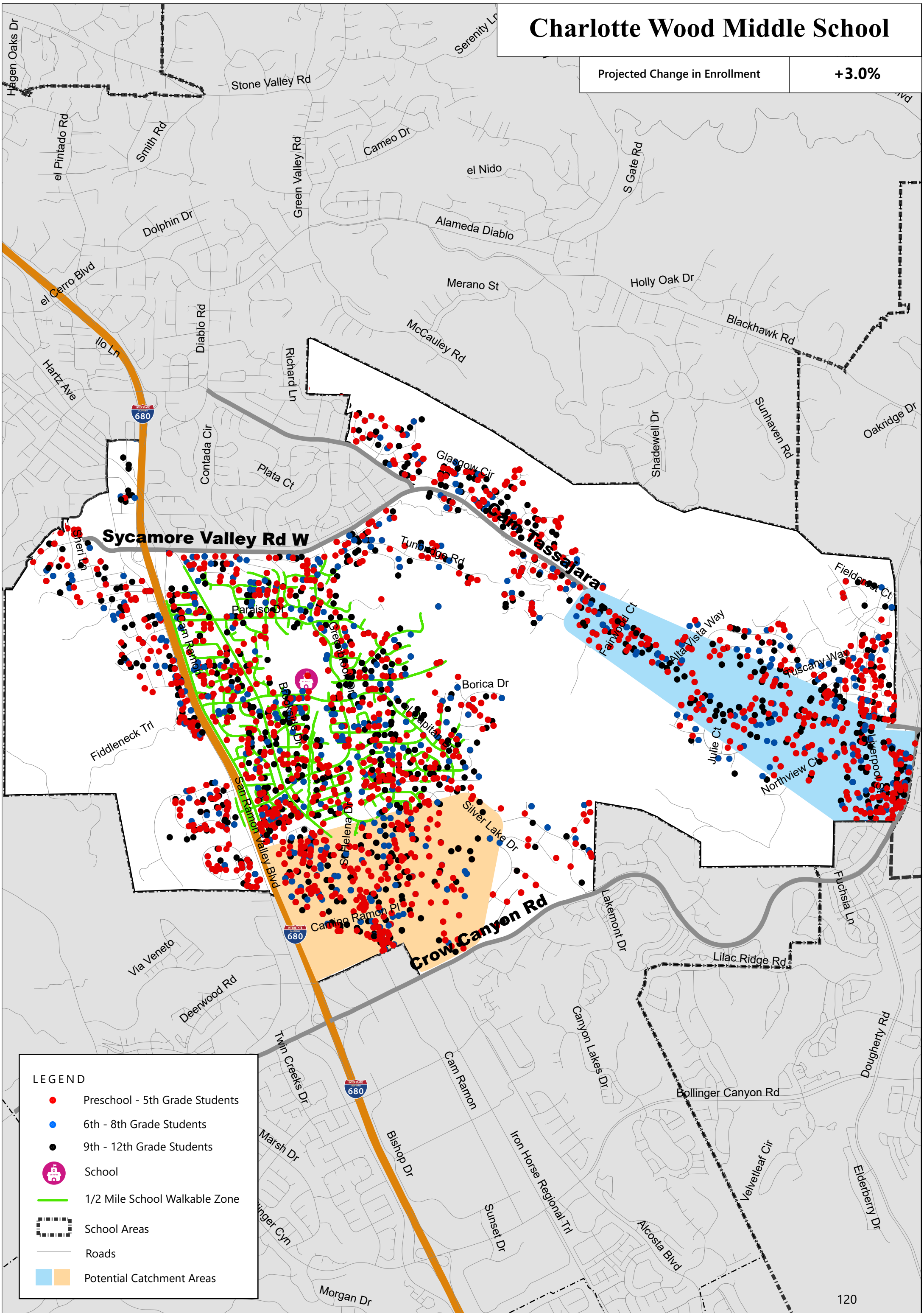
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
-  School
-  1/2 Mile School Walkable Zone
-  School Areas
-  Roads
-  Potential Catchment Areas



# Charlotte Wood Middle School

Projected Change in Enrollment

**+3.0%**



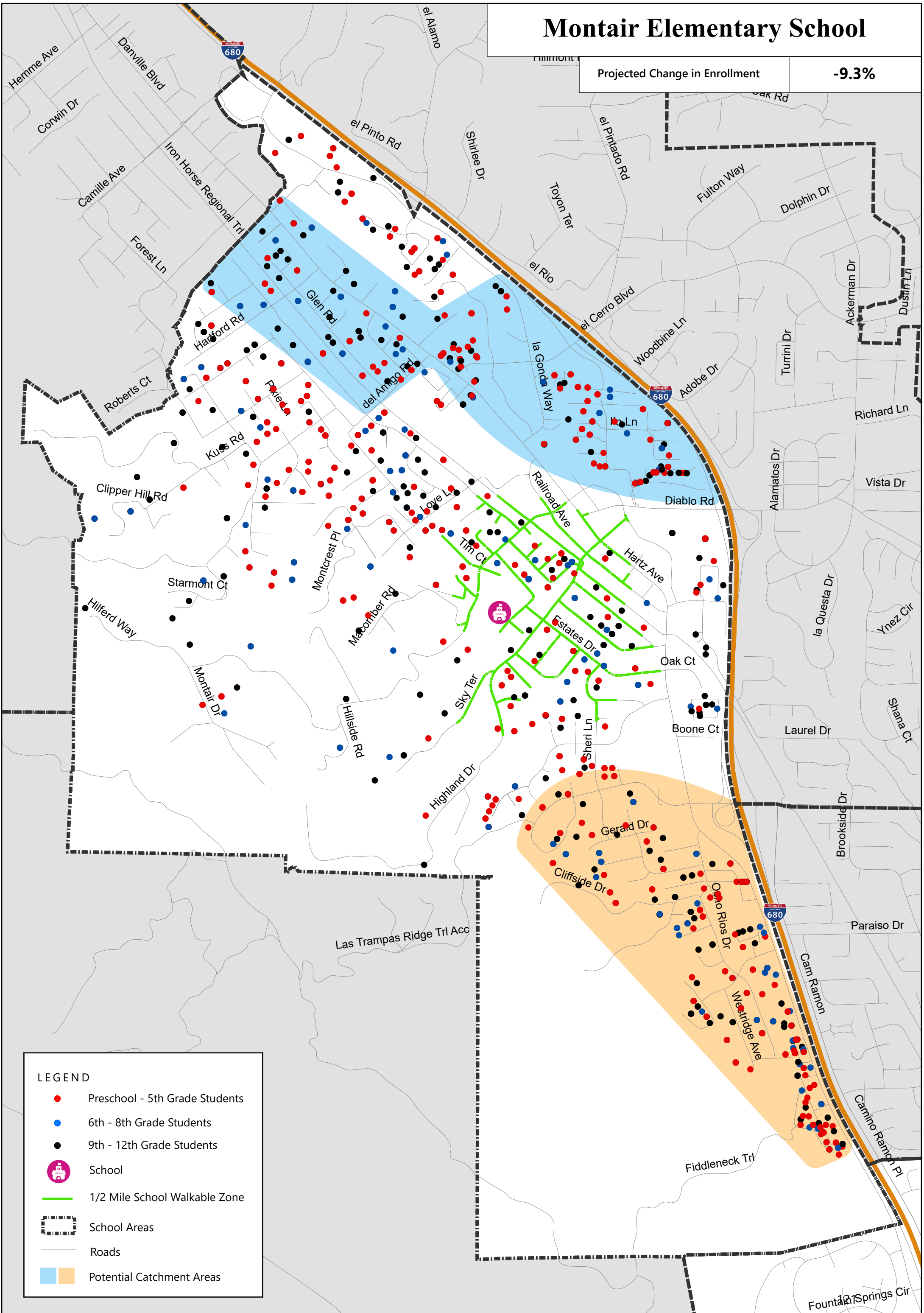
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas

# Montair Elementary School

Projected Change in Enrollment

**-9.3%**



## LEGEND

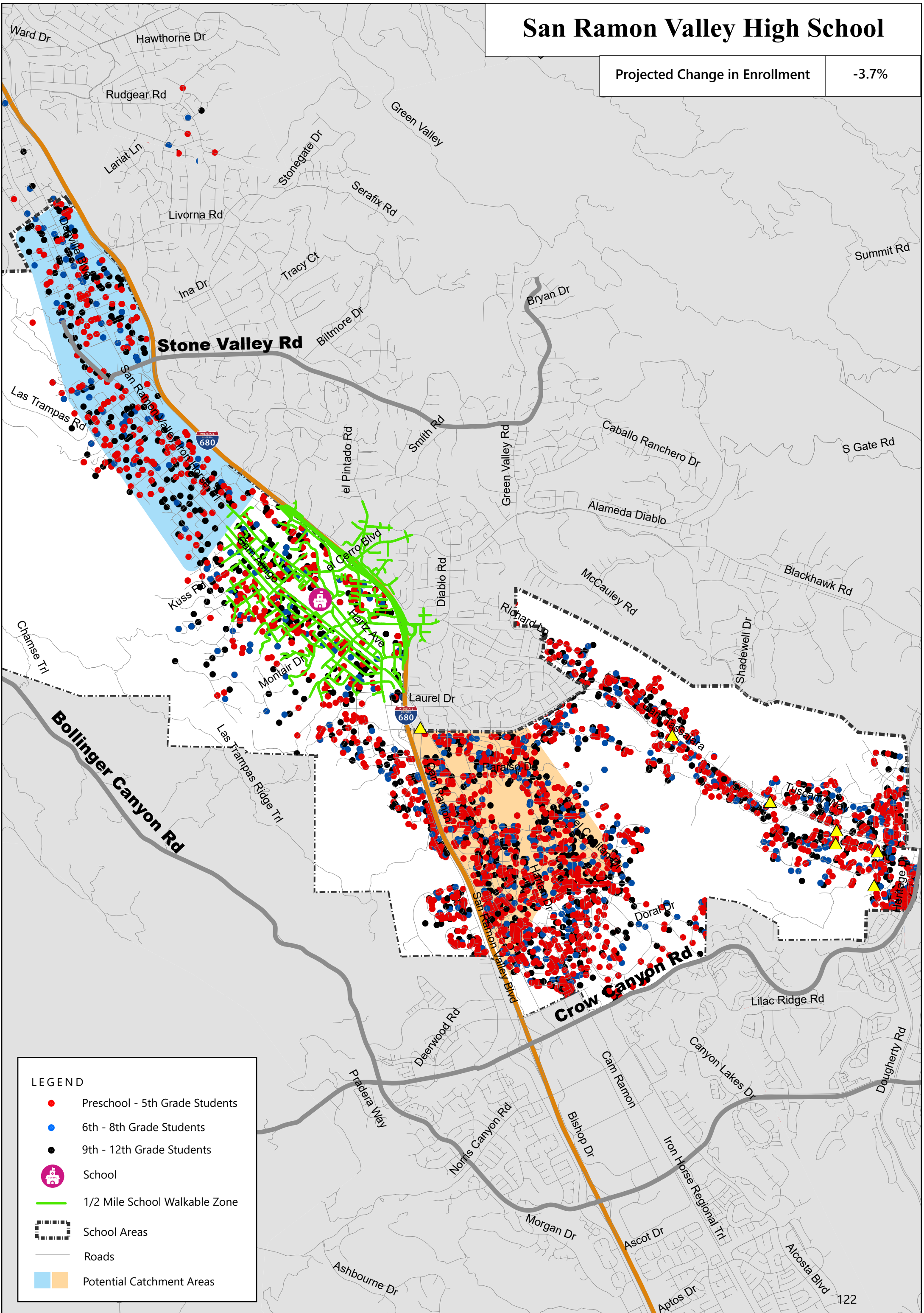
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- ⎓ School Areas
- Roads
- Potential Catchment Areas



# San Ramon Valley High School

Projected Change in Enrollment

-3.7%



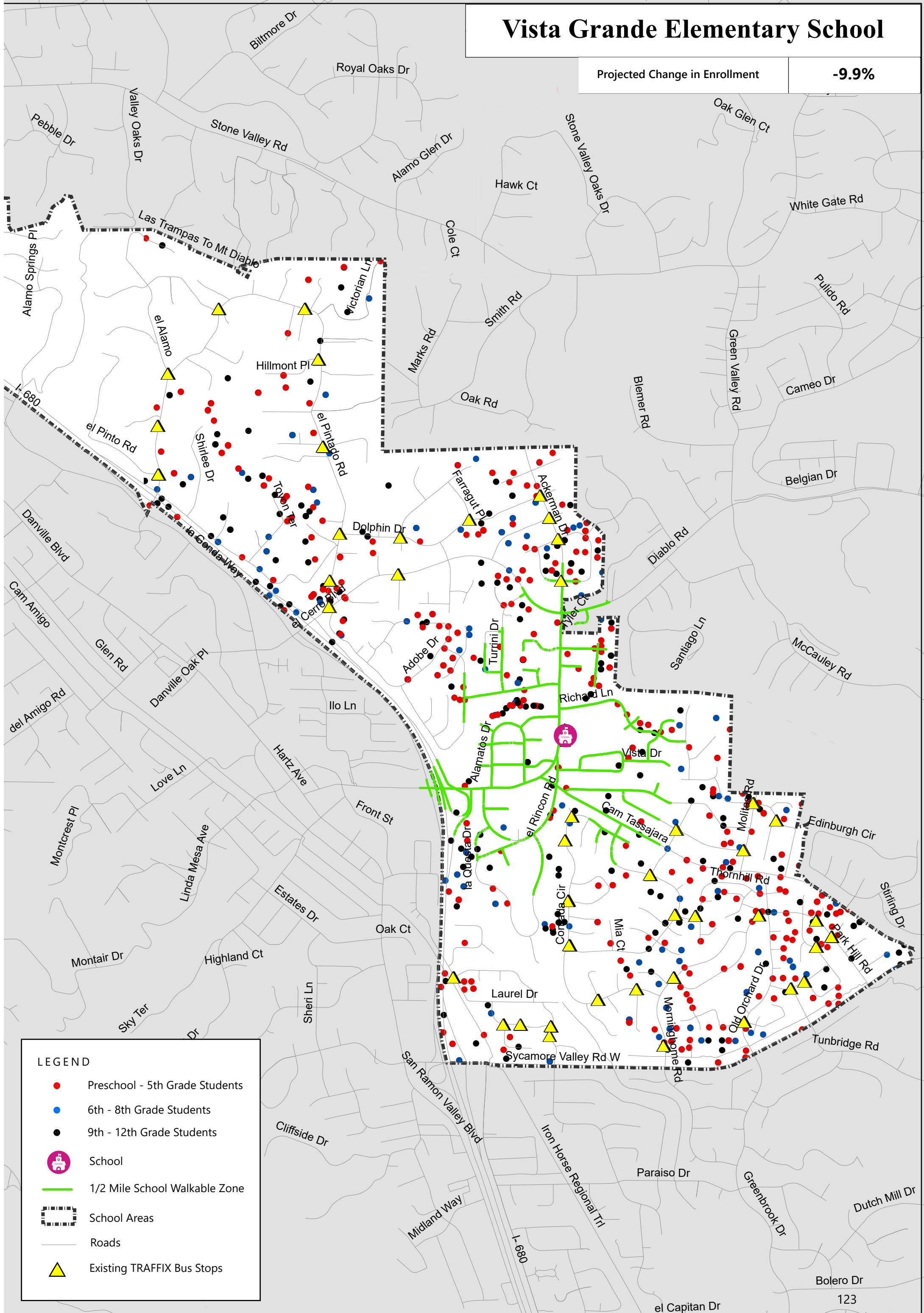
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- 🏫 School
- 🟢 1/2 Mile School Walkable Zone
- ⬛ School Areas
- Roads
- 🟡 Potential Catchment Areas

# Vista Grande Elementary School

Projected Change in Enrollment

**-9.9%**



**LEGEND**

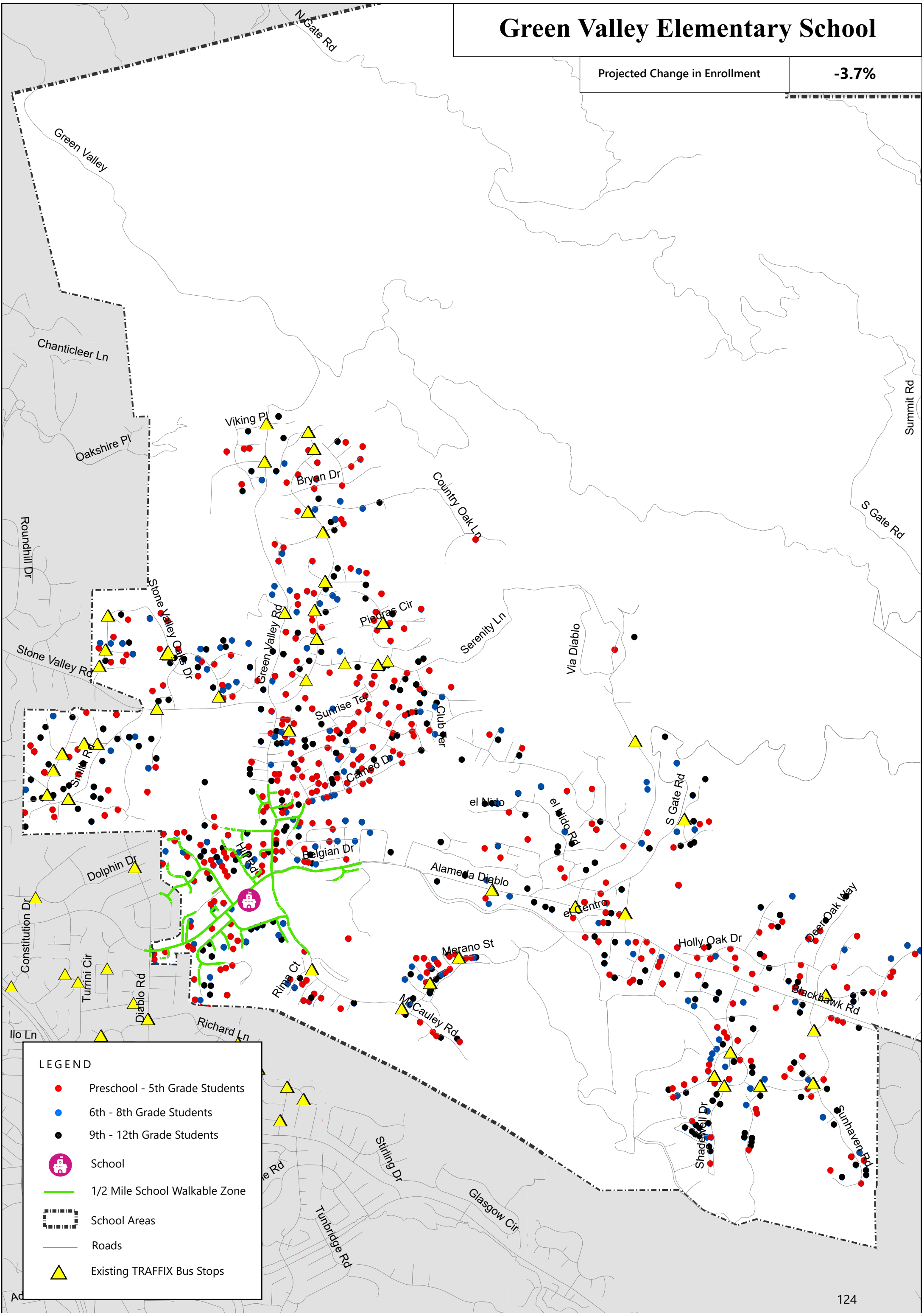
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Existing TRAFFIX Bus Stops



# Green Valley Elementary School

Projected Change in Enrollment

**-3.7%**



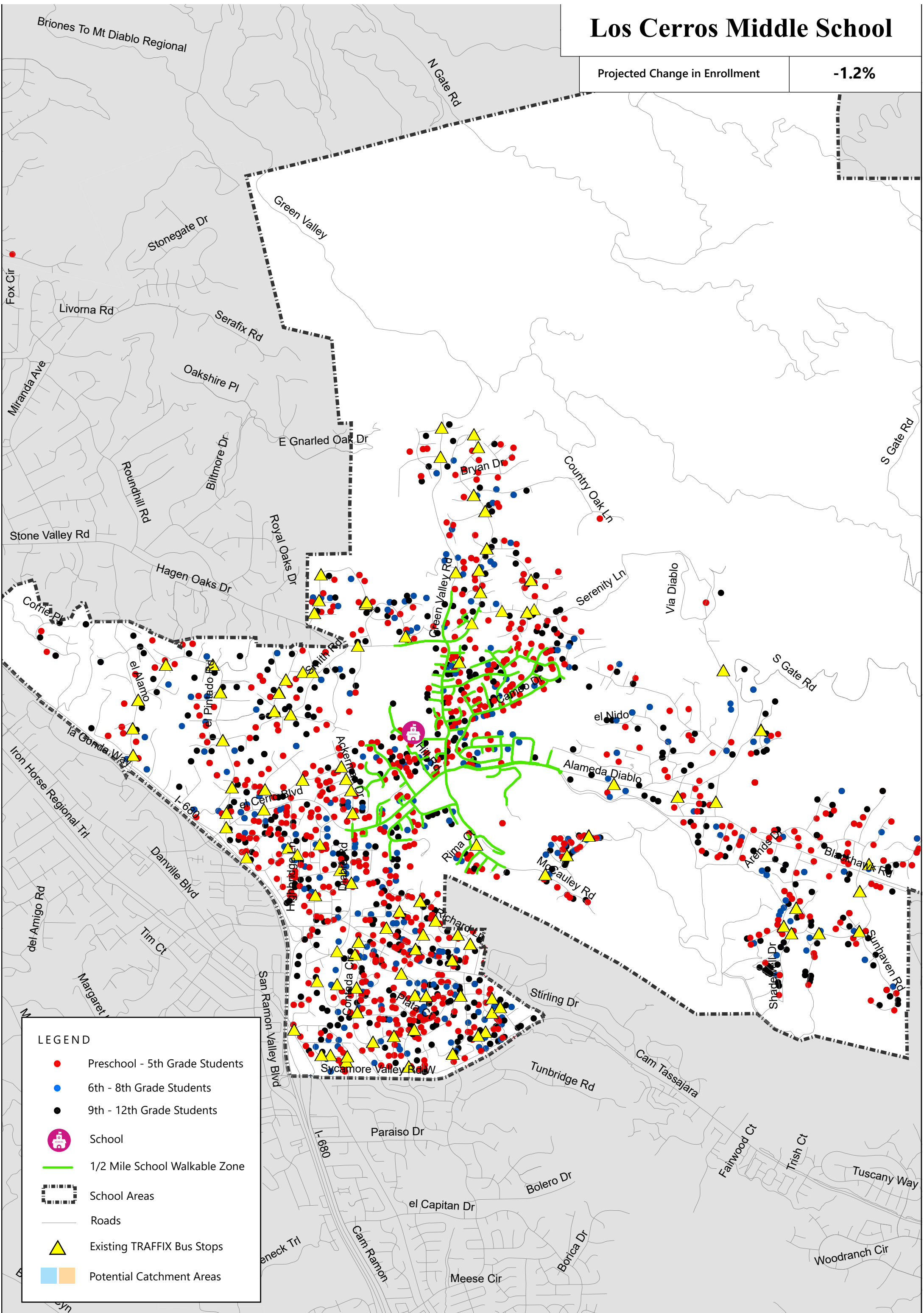
## LEGEND

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Existing TRAFFIX Bus Stops

# Los Cerros Middle School

Projected Change in Enrollment

**-1.2%**



## LEGEND

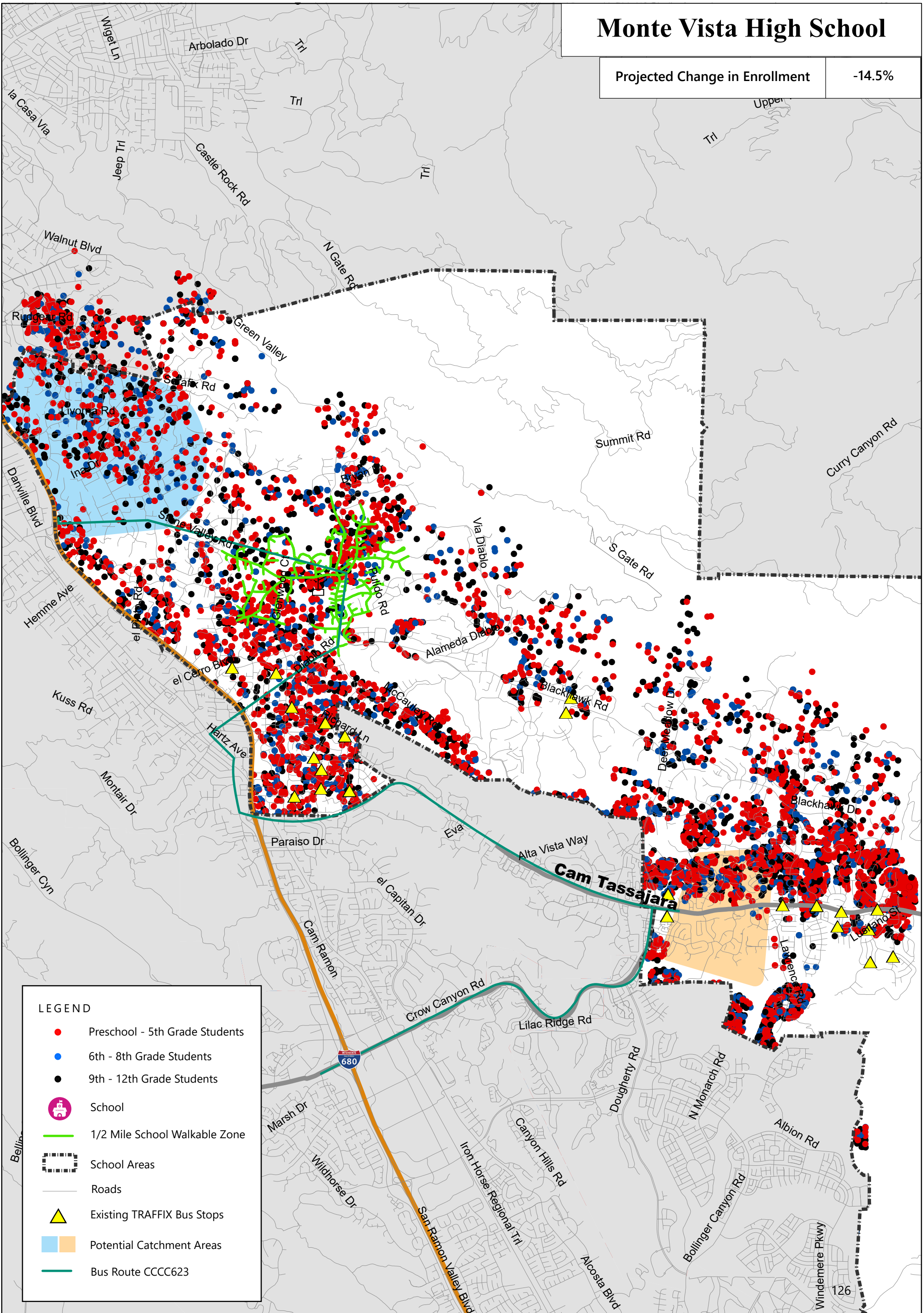
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- ⬡ School Areas
- Roads
- ▲ Existing TRAFFIX Bus Stops
- Potential Catchment Areas



# Monte Vista High School

Projected Change in Enrollment

-14.5%



## LEGEND

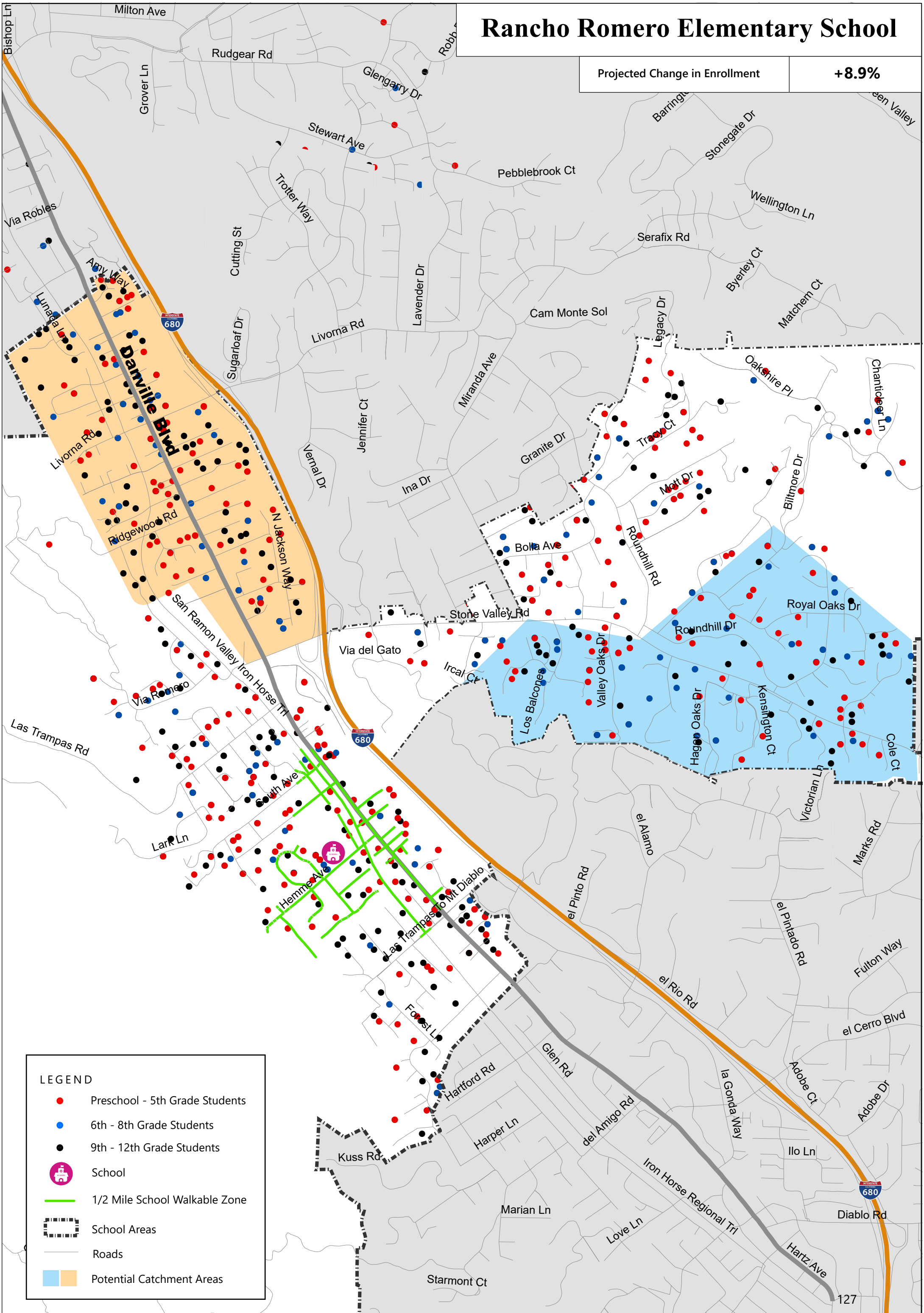
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- 🏫 School
- 🟢 1/2 Mile School Walkable Zone
- ⬛ School Areas
- 🛣️ Roads
- 🚏 Existing TRAFFIX Bus Stops
- 🟡 Potential Catchment Areas
- 🟢 Bus Route CCCC623



# Rancho Romero Elementary School

Projected Change in Enrollment

**+8.9%**



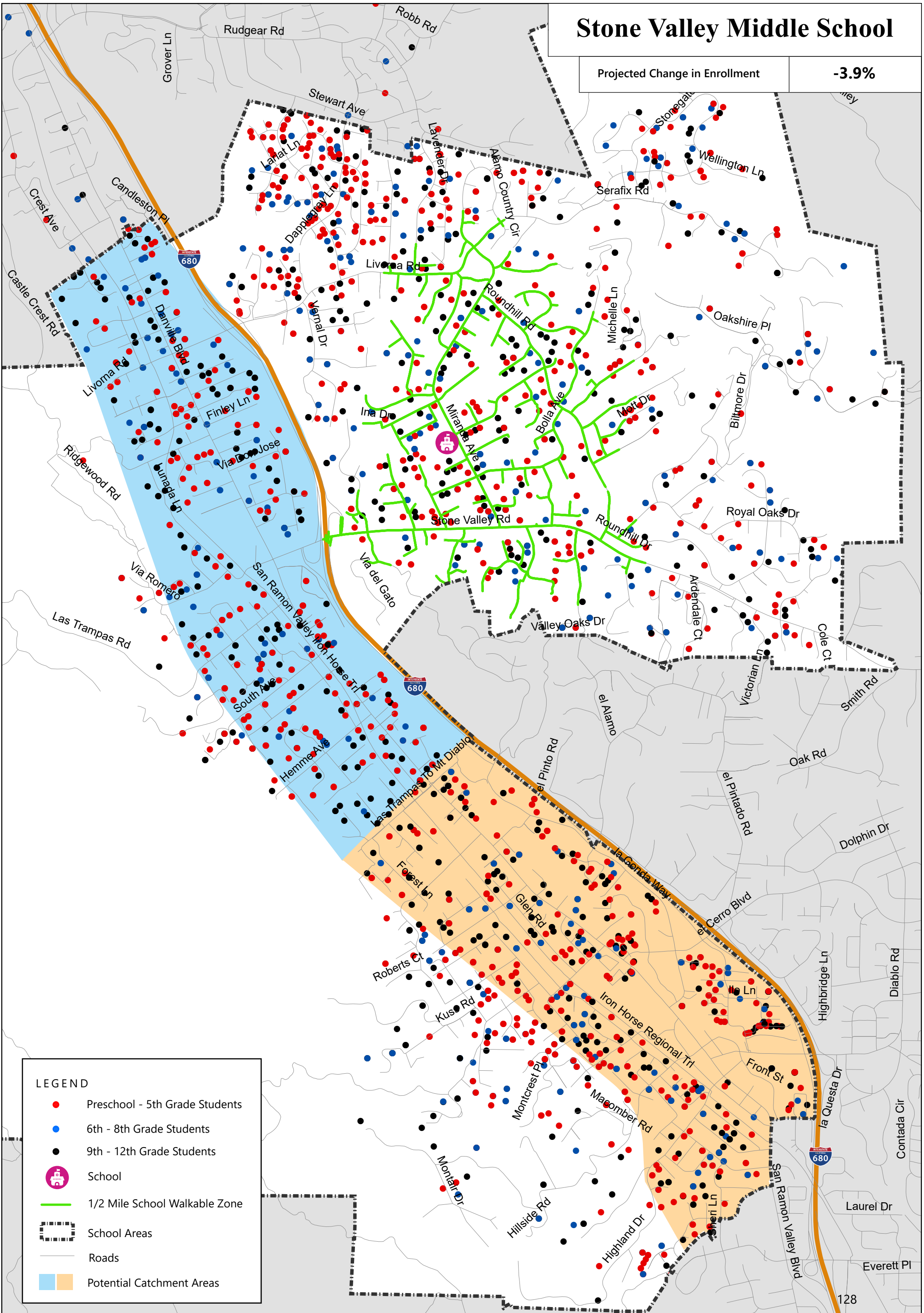
**LEGEND**

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas

# Stone Valley Middle School

Projected Change in Enrollment

**-3.9%**



## LEGEND

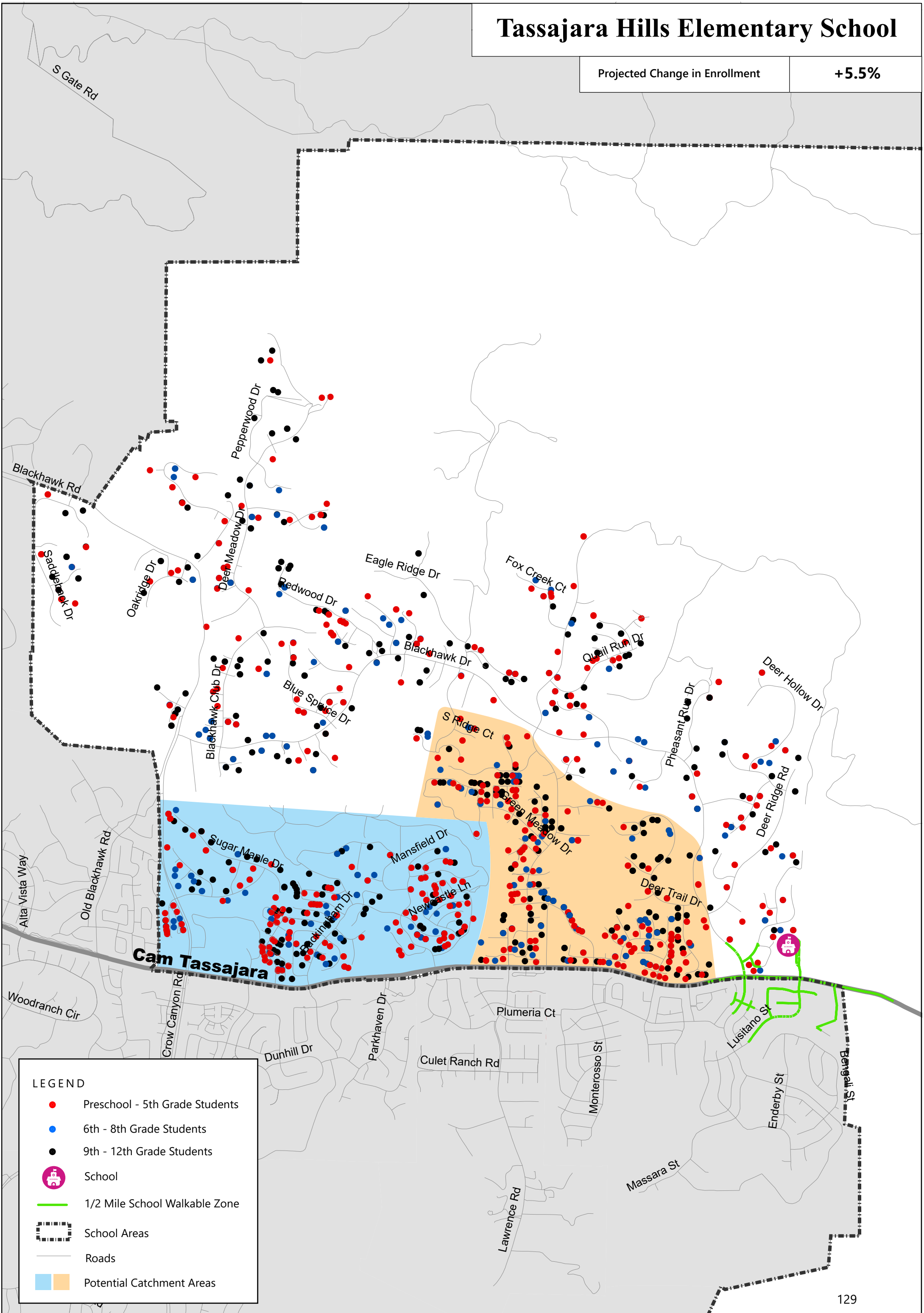
- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- ⬡ School Areas
- Roads
- Potential Catchment Areas



# Tassajara Hills Elementary School

Projected Change in Enrollment

**+5.5%**



**LEGEND**

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Potential Catchment Areas

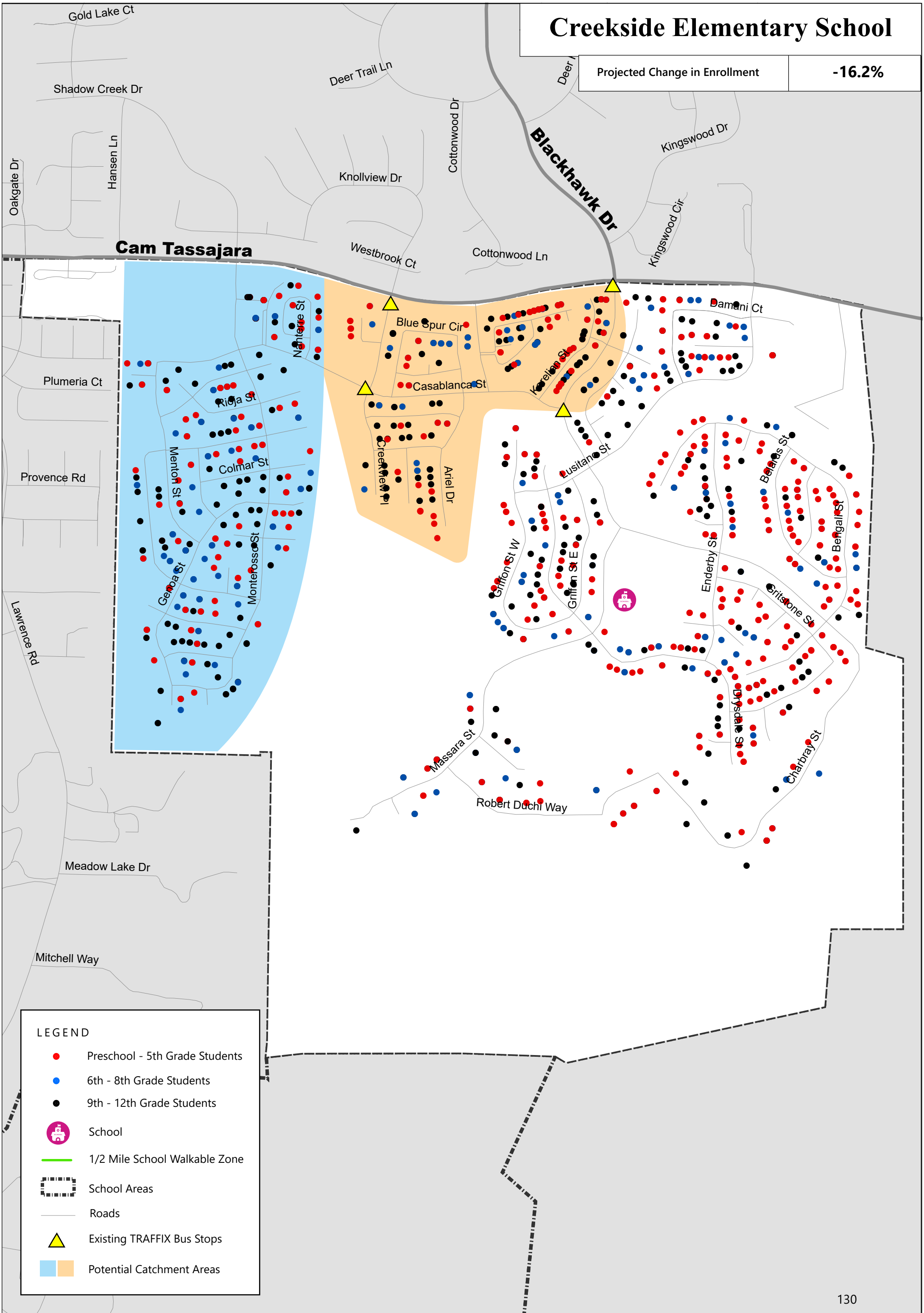


# Creekside Elementary School

Projected Change in Enrollment

**-16.2%**

**Cam Tassajara**



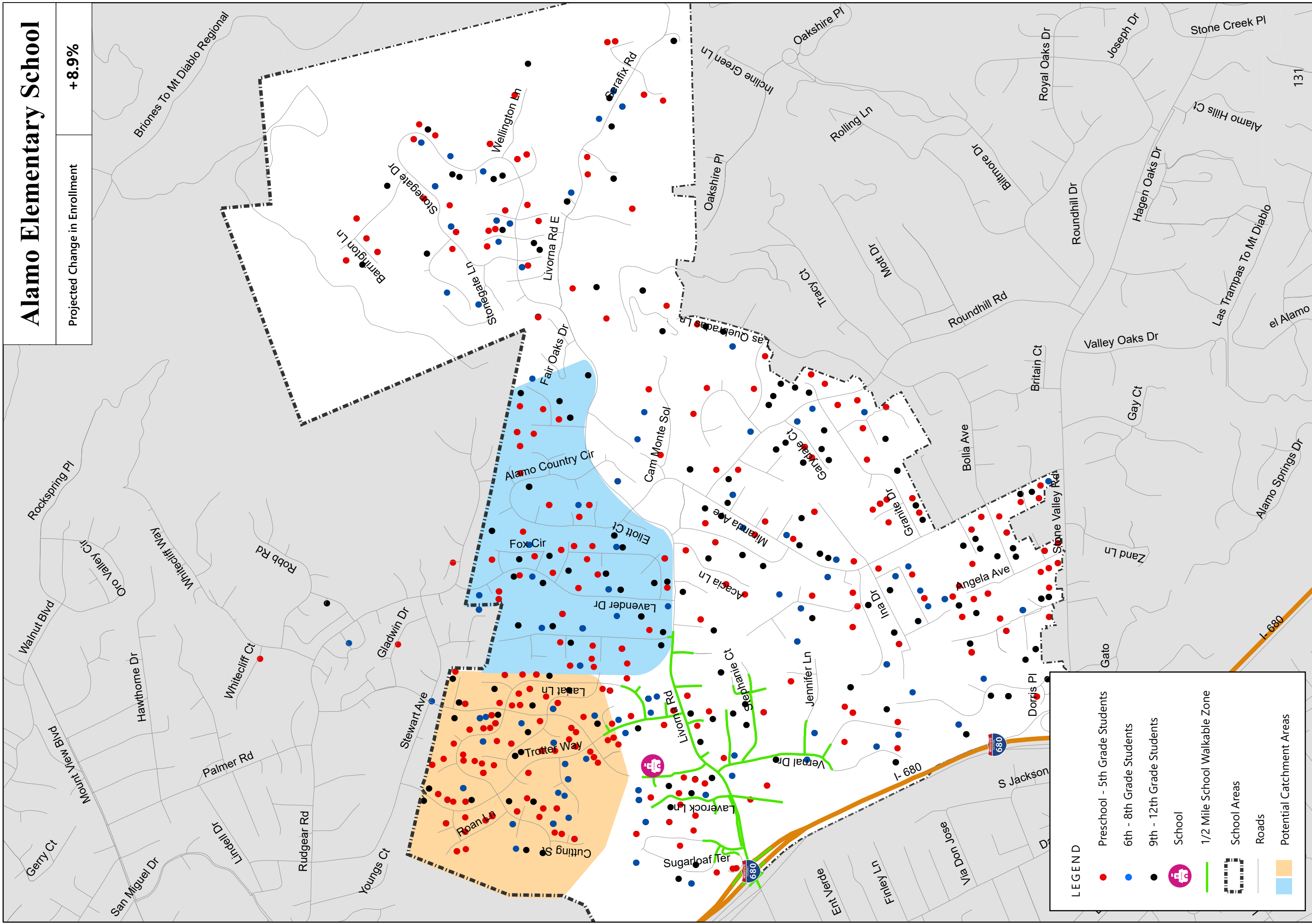
**LEGEND**

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- School
- 1/2 Mile School Walkable Zone
- School Areas
- Roads
- Existing TRAFFIX Bus Stops
- Potential Catchment Areas

# Alamo Elementary School

Projected Change in Enrollment

**+8.9%**



**LEGEND**

- Preschool - 5th Grade Students
- 6th - 8th Grade Students
- 9th - 12th Grade Students
- 🏫 School
- 1/2 Mile School Walkable Zone
- ▭ School Areas
- Roads
- ▭ Potential Catchment Areas

## CHAPTER 5 TRAFFIC DELAY WITH BUS IMPLEMENTATION

An alternate methodology was introduced in this analysis cycle to explore additional data to support the effort of determining the impact of busing on traffic delay. The SimTraffic analysis was proposed to calculate the percentage change in total delay on the roadway network in close vicinity of each school with the potential implementation of two bus routes.

Whereas level of service focuses on average delay at an intersection, this methodology calculates overall average delay within a defined roadway network. However, since each school roadway network is a different size, the average delay would be greater in larger networks. To compare a common value, the percent change in total delay is the primary metric.

### 5.1 SimTraffic Methodology

SimTraffic 11 software works in conjunction with Synchro 11 software using HCM 2000 methodology. A SimTraffic model was developed from the Synchro model used for the LOS analysis. The SimTraffic model includes using existing detailed lane geometry, approach speeds and grades, traffic controls, and signal timings.

A study zone with study intersections was developed for 29 schools, for a total of 29 zones. Four schools were omitted from this analysis since there was no potential new bus route catchment areas due to TRAFFIX bus routes currently serve the entirety of residential areas within the school boundary

The size of each zone varied in size depending upon the number of study intersections and the distance away from the school. Some zones required additional data to provide enough data points to conduct a simulation. Therefore, traffic counts were conducted at an additional 59 intersections. Along with the original 65 study intersections, this makes for a total of 124 study intersections.

The SimTraffic model was calibrated with the available data to ensure that demand volumes could enter the network and that simulated conditions generally reflected observed field conditions for intersection operations and queue lengths.

However, some zones were more challenging to calibrate to reflect field conditions. Some of this can be accounted for due to excessive queuing that could not be accounted for in the model. Additionally, in some cases, turning movement counts at a few intersections are artificially low due to upstream congestion and thus does not reflect actual traffic demand. In order to calibrate the model to compensate for these conditions, additional data would be required as well as a more intensive modeling effort. Therefore, the model results for some school zones do not necessarily reflect observed field conditions.

Lastly, it should be noted that simulation, which is probabilistic, is inherently “noisy” and may not generate consistent results with similar inputs. To minimize variations, ten one-hour model runs were simulated and the averaged results reported.

Therefore, based on the limitations of this methodology, these results should not be relied on as the sole measure of effectiveness and is best when used in conjunction with other measures such as intersection level of service and observed congestion conditions.

## 5.2 SimTraffic Scenarios

SimTraffic model runs were conducted for the a.m. peak hour only since the a.m. peak hour tends to have a higher peak compared to the school afternoon peak hour. Two scenarios were run for each school zone, the Existing Conditions and Existing Conditions with Busing.

The Existing Conditions scenario is based on the collected turning movement counts. The Existing Conditions with Busing scenario is based on the collected turning movement counts less vehicles that would potentially be removed by adding two bus routes. The same number of vehicles were removed from the network for each type of school in the analysis. The number of vehicles removed from the network are based on an average of bus ridership during the months of October 2022 and February 2023 for elementary schools, middle schools and high schools and assuming one vehicle for 80% of the students. This resulted in a 13-vehicle reduction for elementary schools, 17 vehicles for middle schools and 25 vehicles for high schools for each bus.

Based on the potential bus route catchment areas identified for each school, vehicle routes were identified and appropriate vehicle volumes at intersections were reduced accordingly.

For each school zone in the model, total delay for the Existing Conditions scenario was compared with total delay for the Existing Conditions with Busing to report the percentage reduction in delay. ***The percentage change is the important metric rather than total delay.*** The size of the analysis zones for each school are not comparable. Therefore, the total delay will be higher for schools with larger study zones and lower for schools with smaller study zones. However, it’s also important to note that percentage change can tend to have bigger swings with smaller numbers. This is another reason why it’s important to consider the results of this method in conjunction with the intersection level of service and observed congestion conditions.



### 5.3 SimTraffic Results

The results of the SimTraffic model simulation is presented on Table 8. The first two columns identify the school number and name. The third column identifies the total delay (in hours) within the SimTraffic network for the school with the Existing Conditions scenario. The fourth column lists the total delay (in hours) within the SimTraffic network for the school with the Existing Conditions with Two Bus Routes. The fifth column is the difference between the Total Delay (in hours) between the Existing Conditions and Existing Conditions plus Two Bus Routes. The last column is the percentage reduction in total delay between the two scenarios.

The greater the percentage reduction in total delay, potentially the greater impact busing can have on reducing traffic delays. However, this percentage is to be use cautiously when dealing with low delay values.

Of the 29 school zone analyzed, two schools (Twin Creeks Elementary School and Gale Ranch Middle School) may experience a reduction of at least 20 percent in total delay within the analyzed school zones. An additional 12 school zones may experience a reduction of at least 10 percent in total delay within the analyzed school zones. Two school zones, **California High School** and Tassajara Hills Elementary School, have model results with increased delay with the addition of busing. The SimTraffic model for **California High School** had challenges with calibration due to excessive queuing and thus has results that do not reflect observed conditions. The SimTraffic model for Tassajara Hills Elementary School moderately reflects observed conditions.

**Table 8: SimTraffic Percent Delay Reduction Results by School Zone**

School No.	School Name	Total Delay (h) Existing Conditions	Total Delay (h) With 2 (Additional) Bus Routes	Change in Delay	Percent Delay Reduction
1	Bollinger Canyon ES	7.8	7.6	-0.2	-2.60%
2	<b>Country Club ES</b>	1.7	1.4	-0.3	-17.60%
3	<b>Coyote Creek ES*</b>	17.4	17.2	-0.2	-1.10%
4	Golden View ES	8.3	7.4	-0.9	-10.80%
5	Hidden Hills ES	9.3	8.1	-1.2	-12.90%
6	Live Oak ES	9.1	8.8	-0.3	-3.30%
7	Montevideo ES	3.4	2.8	-0.6	-17.60%
8	Quail Run ES	1	0.9	-0.1	-10.00%
9	Gale Ranch MS	57.7	45.6	-12.1	-21.00%
10	Windemere Ranch MS*	28.6	28	-0.6	-2.10%
11	Dougherty Valley HS	42.9	37.5	-5.4	-12.60%
12	Twin Creeks ES	1.3	1	-0.3	-23.10%
13	<b>Walt Disney ES</b>	4.4	4.1	-0.3	-6.80%
14	Bella Vista ES	6	5.5	-0.5	-8.30%
15	Iron Horse MS	9.5	8.6	-0.9	-9.50%
16	<b>Pine Valley MS</b>	13.9	11.8	-2.1	-15.10%
17	<b>California HS*</b>	46.8	49.3	2.5	5.30%
18	<b>Neil Armstrong ES</b>	n/a	n/a	n/a	n/a
19	Diablo Vista ES	24.5	23.6	-0.9	-3.70%
20	Sycamore Valley ES	41.2	37.6	-3.6	-8.70%
21	John Baldwin ES	9	8.9	-0.1	-1.10%
22	Charlotte Wood MS	3	2.7	-0.3	-10.00%
23	Montair ES	1.3	1.1	-0.2	-15.40%
24	<b>San Ramon Valley HS</b>	31.4	30.3	-1.1	-3.50%
25	<b>Vista Grande ES</b>	n/a	n/a	n/a	n/a
26	<b>Green Valley ES</b>	n/a	n/a	n/a	n/a
27	<b>Los Cerros MS</b>	n/a	n/a	n/a	n/a
28	<b>Monte Vista HS</b>	19.3	16.8	-2.5	-13.00%
29	Rancho Romero ES	16.5	14.4	-2.1	-12.70%
30	Stone Valley MS	19.6	17.2	-2.4	-12.20%
31	Tassajara Hills ES	24.1	25.6	1.5	6.20%
32	Creekside ES	4.3	3.9	-0.4	-9.30%
33	Alamo ES	6.1	5.6	-0.5	-8.20%

\*indicates schools with model results that do not reflect observed conditions. (h) = hours

n/a = school is omitted from analysis since existing TRAFFIX routes currently serve entire school boundary area

## CHAPTER 6 SUMMARY OF FINDINGS

In an effort to summarize all the findings and determine where to prioritize school bus service with the goal of reducing traffic congestion, a point system was developed for the LOS analysis, SimTraffic percentage delay reduction, and the observed level of congestion. The result is a prioritized list of schools that would have the greatest impact on traffic congestion if bus service were provided.

Table 9 shows that each metric has a score range of zero to five, with zero points representing conditions of low congestion or low percentage of potential traffic delay reduction with busing and five points representing conditions of higher congestion or a high potential of traffic delay reduction with busing.

**Table 9: Point System to Prioritize Schools for Busing**

LOS <sup>a</sup>	Points	Percentage Delay Reduction	Points	Level of Observed Congestion	Points
A	0	0	0	Low	0
B	1	up to 5.0	1	Mild	1
C	2	5.1 to 10.0	2	Moderate	2
D	3	10.1 to 15	3	-	-
E	4	15.1 to 20	4	High	4
F	5	20+	5	Severe	5

<sup>a</sup>Based on the worst LOS of all the intersections in school vicinity

Table 10 summarizes the results of the LOS, Percent Delay Reduction and Level of Observed Congestion presented in earlier sections of this report.

**Table 10 Summary of Results of Each Metric**

School No.	School Name	Inter-section No.	Intersection in School Analysis Zone for LOS Results	AM LOS	PM LOS	Percent Delay Reduction	Level of Observed Congestion
1	Bollinger Canyon ES	1	Bollinger Canyon Rd & Talavera Dr	C	C	-2.6	Mild
		2	Santander Dr & Talavera Dr	A	A		
2	<b>Country Club ES</b>	5	Davona Dr & Blue Fox Way	B	A	-17.6	Moderate
		6	Brockton Ave & Blue Fox Way	A	A		
3	<b>Coyote Creek ES</b>	9	North Gale Ridge Rd & Lilac Ridge Rd	F	D	-1.1	Severe
		10	North Gale Ridge Rd & Dougherty Rd	C	C		
		11	North Gale Ridge Rd & Lantana Way	B	B		
4	Golden View ES	13	Crow Canyon Rd & Canyon Crest Dr East	F	B	-10.8	High
		14	Canyon Crest Dr / Driveway In	E	C		
5	Hidden Hills ES	16	Albion Rd & Harcourt Way	C	C	-12.9	Low
		17	Windemere Parkway & Harcourt Way	D	C		
6	Live Oak ES	20	East Branch Parkway & Sherwood Dr	C	C	-3.3	Mild
		21	Melbourne Way & Sherwood Dr	A	A		
7	Montevideo ES	24	Broadmoor Dr & Montevideo Dr	C	B	-17.6	Low
8	Quail Run ES	28	Goldenbay Ave & Cinnamon Ridge Rd	C	B	-10	Mild
		29	Goldenbay Ave & Applewood Dr	B	B		
		30	Goldenbay Ave & Ivy Leaf Springs	B	A		
9	Gale Ranch MS	32	Bollinger Canyon Rd & Main Branch	D	D	-21	High
		33	S. Monarch Rd & Bayleaf Dr	F	F		
		34	Bollinger Canyon Rd & S. Monarch Rd	C	C		
10	Windemere Ranch MS	36	Bollinger Canyon Rd & East Branch Pkwy	C	B	-2.1	High
11	Dougherty Valley HS	40	Bollinger Canyon Rd & Albion Rd	D	C	-12.6	Severe
		41	Albion Rd & Arrowfield Way / Driveway	D	C		
12	Twin Creeks ES	44	Bollinger Canyon Rd & Marsh Dr	C	B	-23.1	Mild
		45	Bollinger Canyon Rd & Dos Rios Dr	B	B		
13	<b>Walt Disney ES</b>	48	Pine Valley Rd & Del Mar Dr	A	A	-6.8	Moderate
		49	Pine Valley Rd & Alcosta Blvd	C	B		



School No.	School Name	Inter-section No.	Intersection in School Analysis Zone for LOS Results	AM LOS	PM LOS	Percent Delay Reduction	Level of Observed Congestion
14	Bella Vista ES	52	Trumpet Vine Lane & Hibiscus Rd	C	B	-8.3	High
		53	Trumpet Vine Lane & Trefoil Dr	B	A		
15	Iron Horse MS	57	Alcosta Boulevard & Woodland	C	C	-9.5	High
16	Pine Valley MS	59	Davona Dr & Pine Valley Rd	F	B	-15.1	Moderate
		60	Broadmoor Dr & Pine Valley Rd	D	B		
17	Cal HS	63	San Ramon Valley Blvd & Montevideo Dr	D	D	5.3	Severe
		64	Broadmoor Dr & Millbridge Dr	C	B		
18	Neil Armstrong ES	59	Davona Dr & Pine Valley Rd	F	B	-	Low
19	Diablo Vista MS	71	Camino Tassajara & Lawrence Rd	D	C	-3.7	Moderate
		72	Camino Tassajara & Hansen Lane	C	B		
20	Sycamore Valley ES	73	Camino Tassajara & Holbrook Dr	F	C	-8.7	Moderate
		74	Camino Tassajara & Alta Vista Way	B	B		
21	John Baldwin ES	75	Brookside Dr & Timberline Court	A	A	-1.1	Mild
		76	Brookside Dr & Paraiso Dr	A	A		
		77	Brookside Dr & Sycamore Valley Rd	B	B		
22	Charlotte Wood MS	80	El Capitan Dr & Greenbrook Dr	B	B	-10	Moderate
		81	El Capitan Dr & Orange Blossom Way	B	B		
23	Montair ES	84	Linda Mesa & Esther Lane	A	A	-15.4	Moderate
		85	Quinterra Lane & Estates Dr	B	A		
24	San Ramon Valley HS	87	Danville Blvd & Railroad Ave	B	B	-3.5	High
		88	Danville Blvd & El Cerro Blvd	C	C		
		89	El Cerro Blvd & La Gonda Way	C	C		
25	Vista Grande ES	95	Camino Tassajara & Diablo Rd	C	D	n/a	Mild
26	Green Valley ES	104	Green Valley Rd & Stone Valley Rd	F	C	n/a	Mild
		101	Green Valley Rd & Blemer Rd	C	B		
		98	Diablo Rd & Green Valley Rd / McCauley	E	D		
		99	Diablo Rd & Matadera Way	B	B		
27	Los Cerros MS	98	Diablo Rd & Green Valley Rd / McCauley	E	D	n/a	Low

School No.	School Name	Inter-section No.	Intersection in School Analysis Zone for LOS Results	AM LOS	PM LOS	Percent Delay Reduction	Level of Observed Congestion
		99	Diablo Rd & Matadera Way	B	B		
		101	Green Valley Rd & Blemer Rd	C	B		
		104	Green Valley Rd & Stone Valley Rd	F	C		
28	Monte Vista HS	101	Green Valley Rd & Blemer Rd	C	B	-13	Moderate
		98	Diablo Rd & Green Valley Rd / McCauley	E	D		
		99	Diablo Rd & Matadera Way	B	B		
		104	Green Valley Rd & Stone Valley Rd	F	C		
		105	Stone Valley Rd & MVHS Entry / Monte Sereno	F	D		
29	Rancho Romero ES	108	Danville Blvd & Hemme Ave	D	C	-12.7	High
		109	Danville Blvd & La Serena Ave	F	D		
30	Stone Valley MS	112	Danville Blvd & Stone Valley Rd	D	D	-12.2	Moderate
		113	Miranda Ave & Granite Dr	B	A		
31	Tassajara Hills ES	116	Camino Tassajara & Charbray Street	C	B	6.2	Moderate
		117	Camino Tassajara & Tassajara Hills School Entry	C	B		
32	Creekside ES	118	Charbray Street & Casablanca Street	B	B	-9.3	Mild
		119	Lusitano Street & Charbray Street	D	B		
		120	Massara Street & Charbray Street	B	B		
		121	Enderby street & Charbray Street	A	A		
33	Alamo ES	124	Livorna Rd & Wilson Way	C	C	-8.2	Low

Table 11 displays the results of applying the point system to the three metrics with each school's total score. A maximum score of 15 indicates schools experiencing more traffic congestion and the potential to benefit most from school bus service. Schools with lower scores tend to experience less traffic congestion and may benefit less from school bus service. However, it's important to note that schools with lower scores that already have bus service, score lower due to reduced congestion as a result of the implementation of bus service. The schools are listed in the order of the highest score and are given a corresponding rank.

**Table 11: Prioritization Scores by School**

School No.	School	Prioritization Score			Total	Rank
		LOS	%Delay	Observe		
9	Gale Ranch MS	5	5	4	14	1
4	Golden View ES	5	3	4	12	2
29	Rancho Romero ES	5	3	4	12	2
11	Dougherty Valley HS	3	3	5	11	3
16	<b>Pine Valley MS</b>	5	4	2	11	3
3	<b>Coyote Creek ES</b>	5	1	5	11	3
28	<b>Monte Vista HS</b>	5	3	2	10	4
20	Sycamore Valley ES	5	2	2	9	5
15	Iron Horse MS	2	2	4	8	6
14	Bella Vista ES	2	2	4	8	6
30	Stone Valley MS	3	3	2	8	6
12	Twin Creeks ES	2	5	1	8	6
17	<b>California HS</b>	3	0	5	7	7
10	Windemere Ranch MS	2	1	4	7	7
2	<b>Country Club ES</b>	1	4	2	7	7
23	Montair ES	1	4	2	7	7
24	<b>San Ramon Valley HS</b>	2	1	4	7	7
5	Hidden Hills ES	3	3	0	6	8
7	Montevideo ES	2	4	0	6	8
13	<b>Walt Disney ES</b>	2	2	2	6	8
19	Diablo Vista MS	3	1	2	6	8
32	Creekside ES	3	2	1	6	8
26	<b>Green Valley ES</b>	5	0	1	6	8
8	Quail Run ES	2	2	1	5	9
22	Charlotte Wood MS	1	2	2	5	9
18	<b>Neil Armstrong ES</b>	5	0	0	0	9
27	<b>Los Cerros MS</b>	5	0	0	5	9
6	Live Oak ES	2	1	1	4	10
31	Tassajara Hills ES	2	0	2	4	10
33	Alamo ES	2	2	0	4	10
1	Bollinger Canyon ES	2	1	1	4	10
25	<b>Vista Grande ES</b>	3	0	1	4	10
21	John Baldwin ES	1	1	1	3	11

Table 12 is similar to Table 11 and includes the projected percent change in enrollment as well as which schools are currently served by TRAFFIX and the number of bus routes at those schools.

**Table 12: List of Prioritized Schools with Enrollment Trends and Existing TRAFFIX Routes**

School No.	School	Prioritization Score			Rank	Projected % Change in Enrollment <sup>2</sup>	Projected # Change in Enrollment <sup>2</sup>	Number of TRAFFIX Routes <sup>3</sup>	# of Passes Sold <sup>3</sup> / % of Bus Capacity <sup>4</sup>
		LOS	%Delay	Observe					
9	Gale Ranch MS	5	5	4	1	-25.2%	-289	-	-
4	Golden View ES	5	3	4	2	-24.9%	-147	-	-
29	Rancho Romero ES	5	3	4	2	8.9%	35	-	-
11	Dougherty Valley HS	3	3	5	3	-22.9%	-770	-	-
16	<b>Pine Valley MS</b>	5	4	2	3	-11.6%	-103	6	216 / 69%
3	<b>Coyote Creek ES</b>	5	1	5	3	-28.5%	-171	2	80 / 63%
28	<b>Monte Vista HS</b>	5	3	2	4	-14.5%	-339	7	381 <sup>5</sup> / 101%
20	Sycamore Valley ES <sup>1</sup>	5	2	2	5	6.0%	34	-	-
15	Iron Horse MS	2	2	4	6	15.5%	161	-	-
14	Bella Vista ES	2	2	4	6	-7.9%	-30	-	-
30	Stone Valley MS	3	3	2	6	-3.9%	-22	-	-
12	Twin Creeks ES	2	5	1	6	5.6%	36	-	-
17	<b>California HS</b>	3	0	5	7	5.7%	152	1	49 / 91%
10	Windemere Ranch MS	2	1	4	7	-37.1%	-371	-	-
2	<b>Country Club ES</b>	1	4	2	7	-2.8%	-15	2	34 / 27%
23	Montair ES	1	4	2	7	-9.3%	-38	-	-
24	<b>San Ramon Valley HS</b>	2	1	4	7	-3.7%	-62	1	46 / 85%
5	Hidden Hills ES	3	3	0	8	-21.7%	-120	-	-
7	Montevideo ES	2	4	0	8	18.9%	101	-	-
13	<b>Walt Disney ES</b>	2	2	2	8	-6.2%	-29	1	25 / 39%
19	Diablo Vista MS	3	1	2	8	-11.4%	-89	-	-
32	Creekside ES	3	2	1	8	-16.2%	-74	-	-
26	<b>Green Valley ES</b>	5	0	1	8	-3.7%	-18	6	133 / 35%
8	Quail Run ES	2	2	1	9	-16.4%	-136	-	-
22	Charlotte Wood MS	1	2	2	9	3.0%	26	-	-
18	<b>Neil Armstrong ES</b>	5	0	0	9	-11.7%	-47	1	35 / 55%
27	<b>Los Cerros MS</b>	5	0	0	9	-1.2%	-6	9	207 / 43%
6	Live Oak ES	2	1	1	10	-31.1%	-150	-	-
31	Tassajara Hills ES	2	0	2	10	5.5%	27	-	-
33	Alamo ES	2	2	0	10	8.9%	29	-	-
1	Bollinger Canyon ES	2	1	1	10	-13.4%	-60	-	-
25	<b>Vista Grande ES</b>	2	0	1	11	-9.9%	-46	3	65 / 34%
21	John Baldwin ES	1	1	1	11	1.1%	5	-	-

<sup>1</sup>Improvements made to intersection after data collection may result in a lower priority score. See discussion below for details.

<sup>2</sup>Change between 2022/23 school year to projections for 2027/28 school year

<sup>3</sup>TRAFFIX data for 2023/24 school year. Number of TRAFFIX routes do not change from 2022/23 to 2023/24.

<sup>4</sup>Based on 54 students per bus for HS & MS and 64 for ES, total number of bus routes and total number of passes sold.

<sup>5</sup>Waitlist for Monte Vista High School is 268 students for 2023/24 school year.



It is important to note that schools with existing bus service have the benefit of reduced traffic congestion, and thus have lower scores using these metrics. Therefore, if bus service is removed from a school, the school would score higher as the traffic congestion would increase.

The school with the highest rank is Gale Ranch Middle School, which has an intersection that experiences LOS F, has a high level of observed congestion and the addition of school bus service would have a high percentage reduction of vehicle delay. However, as indicated on Table 12, student enrollment is projected to reduce by 25.2 percent by school year 2027/28. Additionally, it should be noted that the intersection with the LOS F near Gale Ranch Middle School is the exiting driveway of the passenger loading area. This intersection experiences an extremely high level of school pedestrian crossings which contribute to the degraded LOS. The level of service at this intersection can be improved to LOS C with a change in traffic control to an all-way stop control. However, Gale Ranch Middle School could be considered for school bus service.

Two schools, Golden View and Rancho Romero Elementary Schools, are ranked second with scores of 12. Both schools have intersections with LOS F in the vicinity as well as high levels of observed congestion. However, student enrollment at Golden View Elementary School is projected to decrease by nearly 25 percent while enrollment at Rancho Romero Elementary School is projected to increase by nearly nine percent over the next four years. Both Golden View and Rancho Romero Elementary Schools can be considered for school bus service in this cycle.

The next four schools ranked third and fourth are all expected to experience reductions in student enrollment through 2027. Three of these schools, **Pine Valley Middle School**, **Coyote Creek Elementary School** and **Monte Vista High School**, are currently serviced by TRAFFIX buses. It is highly recommended that these schools maintain TRAFFIX bus service since each of these school zones experience intersections with LOS F, and without bus service, these intersections would operate with even higher traffic delays. The bus routes should be evaluated to maximize ridership. Dougherty Valley could also be considered for school bus service in this cycle.

Sycamore Valley Elementary School is ranked fifth and student enrollment is expected to slightly increase six percent over the next four years. The signalized intersection that is the main entrance to this school along an arterial operates at LOS F and there is a high level of observed congestion. However, it should be noted that after the analysis was completed for this report, traffic congestion conditions improved around Sycamore Valley Elementary School at the beginning of school year 2023/24 due to implementation of signing and striping and circulation improvements, signal timing changes and bell time changes. Based on staff input, the LOS of the nearby intersection of Camino Tassajara at Holbrook Drive

appears to have improved from the calculated LOS F during the AM peak hour. This school could also be considered for bus route service.

The next four schools, Iron Horse Middle School, Bella Vista Elementary School, Stone Valley Middle School and Twin Creeks Elementary School, are tied for sixth place. None of these schools have an intersection in the vicinity with a LOS below D. Two schools, Iron Horse Middle School and Twin Creeks Elementary School are forecast to experience an increase in student enrollment, with 15.5 percent and 5.6 percent increases through 2027, respectively. Iron Horse Middle School has a high level of observed congestion. Of the schools that are tied for sixth place, Iron Horse Middle School could be considered for bus route service first, followed by Twin Creeks Elementary School, Bella Vista Elementary School and Stone Valley Middle School.

There are several schools that are currently served by TRAFFIX buses but are ranked low on the prioritization list.

There are 22 bus routes between four schools located within a 2-mile radius which all contribute to a reduced level of congestion in the Danville area. **Los Cerros Middle School** is served by nine bus routes, **Vista Grande Elementary School** is served by three bus routes and **Green Valley Elementary School** is served by 6 bus routes. These three schools are ranked in the bottom third of the prioritization list. **Monte Vista High School**, also within the 2-mile radius but ranked higher on the list, is served by seven bus routes. There are two intersections in the vicinity of these schools with poor level of service with LOS F at Green Valley Rd & Stone Valley Rd and at LOS E at Diablo Rd & Green Valley Rd/McCauley Rd. **Los Cerros Middle School** has a high participation rate in the school bus program with a majority of students using bus transportation, resulting in very low traffic volumes during drop-off and pick-up times. It must be acknowledged that these three schools are ranked low in the prioritization list due to reduced vehicle trips due to the high concentration of bus service. Therefore, it is not recommended that bus service be removed at these schools as doing so will exacerbate traffic congestion. It is recommended however, that the routes and stops serving the schools are evaluated to maximize ridership at the full capacity of the buses.

Although the observed congestion is very low and the percent delay reduction is also low at **Neil Armstrong Elementary School**, it is suggested that the one bus route that serves the school is maintained. If this bus route were eliminated, additional traffic would be travel through a LOS F intersection (Pine Valley Road at Davona Drive), thus having a direct impact on increasing traffic congestion. It is recommended that ridership and stops are evaluated to maximize ridership.

The following tiers summarize the suggested schools to be served by TRAFFIX:

### **Tier 1**

The following schools are currently served by TRAFFIX and are candidates to be considered for continued TRAFFIX service. The routes and stops for the schools can be re-evaluation to increase efficiency and ridership if the bus is operating below capacity:

- **Vista Grande Elementary School (#25)**
- **Los Cerros Middle School (#27)**
- **Green Valley Elementary School (#26)**
- **Neil Armstrong Elementary School (#18)**
- **Walt Disney Elementary School (#13)**
- **San Ramon Valley High School (#24)**
- **Country Club Elementary School (#2)**

### **Tier 2**

The following schools are currently served by TRAFFIX and are candidates to be considered for continued student bus service with potential expansion:

- **Pine Valley Middle School (#16)**
- **Coyote Creek Elementary School (#3)**
- **Monte Vista High School (#28)**
- **California High School (#17)**

### **Tier 3**

The following schools are candidates to be considered for new student bus service (listed in priority order):

- Gale Ranch Middle School (#9)
- Golden View Elementary School (#4)
- Rancho Romero Elementary School (#29)
- Dougherty Valley High School (#11)
- Sycamore Valley Elementary School (#20)<sup>1</sup>
- Iron Horse Middle School (#15)
- Windemere Ranch Middle School (#10)