



TRAFFIC AND ENGINEERING REPORT

November 2022



County of Santa Cruz

Department of Community Development and Infrastructure

701 Ocean Street, Fourth Floor, Santa Cruz, CA 95060
Planning (831) 454-2580 Public Works (831) 454-2160
sccoplanning.com dpw.co.santa-cruz.ca.us

Matt Machado - Deputy CAO / Director

Carolyn Burke
Assistant Director
Permit Division

Stephanie Hansen
Assistant Director
Housing & Policy

Kent Edler
Assistant Director
Special Services

Steve Wiesner
Assistant Director
Transportation

Travis Cary
Director
Capital Projects

Kim Moore
Assistant Director
Administration

SUBJECT: TRAFFIC AND ENGINEERING REPORT NOVEMBER 2022

To Whom It May Concern:

The Traffic and Engineering Report was prepared for the purpose of complying with Section 40802(a) of the California Vehicle Code and the national Uniform Vehicle Code to allow the use of radar for speed enforcement purposes. The recommended safe speeds were determined utilizing the prevailing 85th percentile speeds, combined with traffic engineering judgement, to match existing conditions with the traffic safety needs of the community. Collision statistics indicate that unsafe speed is the highest primary collision factor on roadways and adherence to safe speeds should result in substantial reduction in vehicle collisions.

Yours truly,

STEVEN B. WIESNER

Assistant Director of Community Development
and Infrastructure

RC:jv

Traffic and Engineering Report November 2022.docx



ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS

Final Report

November 30, 2022

Prepared for:



Prepared by:



CERTIFICATION

I, Nikita Petrov, do hereby certify that this Engineering and Traffic Survey for the County of Santa Cruz was performed under my supervision. I certify that I am experienced in performing surveys of this type and duly registered in the State of California as a professional Civil Engineer.



Nikita Petrov
RCE# 80570
Exp. 03/31/2023

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1.0 INTRODUCTION

This Engineering and Traffic Survey is intended to serve as the basis for the establishment and enforcement of speed limits for selected streets within the County of Santa Cruz. This survey was authorized by the County and independently conducted by the private consulting firm Kimley-Horn and Associates, Inc (Kimley-Horn).

Engineering and traffic surveys for speed limits are regularly conducted once every five (5) years by governing municipalities for the purpose of complying with Section 40802(a) of the *California Vehicle Code (CVC)* and the national *Uniform Vehicle Code*. Engineering and traffic surveys may be extended to every seven (7) years if criteria is met, or every ten (10) years if a registered engineer evaluates the section of the highway and determines that no significant changes in roadway or traffic conditions have occurred as specified in Section 40802(c) of the *California Vehicle Code (CVC)*. In addition, an engineering and traffic survey should be conducted on newly constructed roadways or roadways where the roadway conditions have significantly changed. The latest Assembly Bill (AB)-43-Traffic Safety would extend the period that a speed limit justified by a traffic and engineering survey conducted more the 7 years ago remains valid, for purposes of speed enforcement, if evaluated by a registered engineer, as specified, to 14 years.

The original 'Engineering and Traffic Survey report was completed by Kimley-Horn in August 2019 and submitted to the County of Santa Cruz. Due to recent changes to the California Vehicle Code as part of 'Assembly Bill (AB) 43-Traffic Safety', the County of Santa Cruz directed Kimley-Horn to update the previously submitted report.

The California Governor's office approved AB 43 on 8 October 2021, which included amendments to Sections 627, 21400, 22352, 22354, 22358, and 40802 of, and to add Sections 22358.6, 22358.7, 22358.8, and 22358.9 to, the California Vehicle Code (CVC), relating to traffic safety.

1.1 Regulations and Guidelines

Division 11, Chapter 7, of the 2019 California Vehicle Code defines the California Speed Laws. Section 22352 of the CVC indicates that prima facie speed limits are 15 miles per hour (mph) at unprotected railroad grade crossings, highway intersections with site restrictions, and on any alley. In addition, the prima facie speed limit is 25 mph in residential and business districts, when approaching or passing a school building or grounds thereof or when passing a senior center or other facility primarily used by

senior citizens. Division 1 of the CVC defines a business district and residence district in Section 235 and 515, respectively.

"A "business district" is that portion of a highway and the property contiguous thereto (a) upon one side of which highway, for a distance of 600 feet, 50 percent or more of the contiguous property fronting thereon is occupied by buildings in use for business, or (b) upon both sides of which highway, collectively, for a distance of 300 feet, 50 percent or more of the contiguous property fronting thereon is so occupied. A business district may be longer than the distances specified in this section if the above ratio of buildings in use for business to the length of the highway exists."¹

"A "residence district" is that portion of a highway and the property contiguous thereto, other than a business district, (a) upon one side of which highway, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 13 or more separate dwelling houses or business structures, or (b) upon both sides of which highway, collectively, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 16 or more separate dwelling houses or business structures. A residence district may be longer than one-quarter of a mile if the above ratio of separate dwelling houses or business structures to the length of the highway exists."²

Section 22357(a) permits the establishment of speed limits greater than 25 mph based on the following text:

"Whenever a local authority determines upon the basis of an engineering and traffic survey that a speed greater than 25 miles per hour would facilitate the orderly movement of vehicular traffic and would be reasonable and safe upon any street other than a state highway otherwise subject to a prima facie limit of 25 miles per hour, the local authority may by ordinance determine and declare a prima facie speed limit of 30, 35, 40, 45, 50, 55, or 60 miles per hour or a maximum speed limit of 65 miles per hour, whichever is found most appropriate to facilitate the orderly movement of traffic and is reasonable and safe."³

Therefore, the CVC allows local authorities to increase or decrease the prima facie limits by ordinance or resolution to appropriate limits as determined by an engineering and

¹ California Legislative Information, California Law, [Vehicle Code](#), Division 1, Section 235, 2019.

² California Legislative Information, California Law, [Vehicle Code](#), Division 1, Section 515, 2019.

³ California Legislative Information, California Law, [Vehicle Code](#), Division 11, Chapter 7, Section 22357(a), 2019.

traffic survey. Posted speed limits not defined in the CVC or established by ordinance are not valid. The CVC requires that speed surveys must be performed with the use of radar or other electronic devices at locations where speed limits are to be enforced with the use of radar. The current survey must be completed within five years as specified in Section 40802(a); seven years as specified in Section 40802(c), or fourteen years as specified in Section 40802(c), of the date of the preceding survey. A survey allowed to expire passed the valid duration of the previous survey would constitute a speed trap as defined in Sections 40802(a) and 40802(b) of the CVC (with added amendments as per AB-43):

“(1) A particular section of a highway measured as to distance and with boundaries marked, designated, or otherwise determined in order that the speed of a vehicle may be calculated by securing the time it takes the vehicle to travel the known distance.

(2) A particular section of a highway with a prima facie speed limit that is provided by this code or by local ordinance under subparagraph (A) of paragraph (2) of subdivision (a) of Section 22352, or established under Section 22354, 22357, 22358, or 22358.3, if that prima facie speed limit is not justified by an engineering and traffic survey conducted within five years prior to the date of the alleged violation, and enforcement of the speed limit involves the use of radar or any other electronic device that measures the speed of moving objects. This paragraph does not apply to a local street, road, or school zone, senior zone, or business activity district.

(b) (1) For purposes of this section, a local street or road is one that is functionally classified as "local" on the "California Road System Maps," that are approved by the Federal Highway Administration and maintained by the Department of Transportation. When a street or road does not appear on the "California Road System Maps," it may be defined as a "local street or road" if it primarily provides access to abutting residential property and meets the following three conditions:

(A) Roadway width of not more than 40 feet.

(B) Not more than one-half of a mile of uninterrupted length. Interruptions shall include official traffic control signals as defined in Section 445.

(C) Not more than one traffic lane in each direction.

(2) For purposes of this section "school zone" means that area approaching or passing a school building or the grounds thereof that is contiguous to a

highway and on which is posted a standard "SCHOOL" warning sign, while children are going to or leaving the school either during school hours or during the noon recess period. "School zone" also includes the area approaching or passing any school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children if that highway is posted with a standard "SCHOOL" warning sign."⁴

(3) For purposes of this section, "senior zone" means that area approaching or passing a senior center building or other facility primarily used by senior citizens, or the grounds thereof that is contiguous to a highway and on which is posted a standard "SENIOR" warning sign, pursuant to Section 22352.

(4) For purposes of this section, "business activity district" means a section of highway described in subdivision(b) of Section 22358.9 in which a standard 25 miles per hour or 20 miles per hour speed limit sign has been posted pursuant to paragraph (1) of subdivision (a) of that section.

Assembly Bill 43 added Section 22358.8 to the CVC to read:

- (a) If a local authority, after completing an engineering and traffic survey, finds that the speed limit is still more than is reasonable or safe, the local authority may, by ordinance, retain the current speed limit or restore the immediately prior speed limit if that speed limit was established with an engineering and traffic survey and if a registered engineer has evaluated the section of highway and determined that no additional general purpose lanes have been added to the roadway since completion of the traffic survey that established the prior speed limit.
- (b) This section does not authorize a speed limit to be reduced by any more than five miles per hour from the current speed limit nor below the immediately prior speed limit.
- (c) A local authority shall issue only warning citations for violations of exceeding the speed limit by 10 miles per hour or less for the first 30 days that a lower speed limit is in effect as authorized by this section.

⁴ California Legislative Information, California Law, [Vehicle Code](#), Division 17. Chapter 3, Section 40802, 2019.

1.2 Requirements and Methodology of an Engineering and Traffic Study

Speed zones are primarily established to protect the public from the unreasonable behavior of reckless, unreliable, or otherwise dangerous drivers. Speed limits are generally established at or near the 85th percentile speed, which is defined as the speed at or below which 85 percent of traffic is moving. Speed limits established on this basis conform to the consensus of those who drive on the roadways as to what speed is reasonable and safe, and are not dependent on the judgment of one or a few individuals.

The Engineering and Traffic Survey, as defined in Section 627 of the CVC, must consider the prevailing speeds, collision records, pedestrian and bicycle activity, and roadway traffic and roadside conditions not readily apparent to the driver. Speed zones are also established to advise motorists of road conditions or hazards, which may not be readily apparent to a reasonable driver. For this reason, a field review of related road/traffic variables is conducted which is considered in combination with the statistical data and collision history of a particular roadway segment to determine a safe and reasonable speed limit. The specific procedures used in the performance of an Engineering and Traffic Study are outlined in the *2014 California MUTCD*. The statistical factors used to analyze the collected speed survey data and additional factors as noted in the *2014 California MUTCD* to consider are defined in the following section.

2.0 SPEED SURVEY EVALUATION

Twenty-seven (27) locations were evaluated by Kimley-Horn and included in this report. These roadway sections and limits of the sections are listed in **Table 1**.

Table 1: Survey Locations and Limits Evaluated

NO	STREET	LIMIT 1	LIMIT 2	# of Data Collection Points
1a	Amesti Rd	Green Valley Rd	Pinto St	1
1b	Amesti Rd	Pinto St	0.40 miles north of Green Valley Rd	1
2	Amesti Rd	0.4 miles north of Green Valley Rd	E. Rianda Rd	1
3	Browns Valley Rd	Corralitos Rd	Amesti Rd	1
4	Browns Valley Rd	Amesti Rd	1600' north of Amesti Rd	1
5a	Buena Vista Dr	Bowker Rd	Freedom Blvd	1
5b	Buena Vista Dr	Manfre Rd	Bowker Rd	1
6	Casserly Rd	Green Valley Rd	State Route 152	3
7	East Zayante Rd	Graham Hill Rd	0.10 miles north of Lompico Rd	2
8	East Zayante Rd	0.10 miles north of Lompico Rd	0.20 miles northeast of Westwood Rd	2
9a	Empire Grade	Santa Cruz City Limits	1500' north of Ben Lomond Conservation Camp	7
9b	Empire Grade	1500' north of Ben Lomond Conservation Camp	End of road at Lockheed Facility	1
10	Glen Arbor Rd	0.30 miles north of Hwy 9	Newell Creek Bridge	1
11	Glen Canyon Rd	Branciforte Dr	Scotts Valley City Limits	2
12	Graham Hill Rd	Railroad Tracks	Hwy 9	1
13	Mar Monte Ave	San Andreas Rd	Just south of intersection of Alta Dr	1
14	San Andreas Rd	0.25 miles northwest of Mar Monte Ave	0.34 miles southeast of SPRR Underpass	1
15	Wheelock Rd	Green Valley Rd	Casserly Rd	2
16	Whiting Rd	Casserly Rd	0.63 miles southwest	1
17	Sims Rd	Graham Hill Rd	La Madrona Dr	1
18	Larkin Valley Rd	Airport Blvd	Buena Vista Dr	2
19	Larkin Valley Rd	Buena Vista Dr	Mar Monte Ave	2
21	Amesti Rd	E. Rianda Rd	Varni Rd	1
22	Paulsen Rd	Green Valley Rd	Trembly Ln	1
23	Paulsen Rd	Trembly Ln	Whiting Rd	1
24	Buena Vista Dr	San Andreas Rd	Buena Vista Landfill Dwy	1
25	Buena Vista Dr	Buena Vista Landfill Dwy	Hwy 1	1

2.1 Field Review

Speed data was collected using manual radar surveys performed by a sub-consultant to Kimley-Horn, IDAX Data Solutions (IDAX). Each of the radar speed checks were made from an inconspicuously parked, unmarked vehicle or by a technician standing on the

side of the road. An effort was made to ensure that the presence of the vehicle or technician in no way affected the speed of the traffic being surveyed. Field information from these speed surveys and other roadway characteristics were recorded on field data forms and later coded into engineering software for analysis purposes. Chapter 2B of the *2014 California MUTCD* indicates that it is desirable to have a minimum sample of 100 vehicles for a speed zone survey for an arterial street. This may result in excessive survey periods for low volume roadways, but a survey should not contain less than 50 vehicles. In addition, average daily traffic volumes (ADT) and roadway widths were collected at all the locations.

Examples of the field data collected for the purposes of analyzing related roadway characteristics as they pertain to the determination of appropriate speed limits are listed below. The results of the field review for related roadway and traffic variables are summarized in the Engineering and Traffic Survey forms included in the **Appendix**.

1. Segment length, width and alignment;
2. Level of pedestrian, bicycle, and truck activity
3. Traffic flow characteristics;
4. Number of lanes and other channelization/striping factors;
5. Frequency of intersections, driveways, on-street parking, bike lanes;
6. Locations of stop signs, traffic signals, and other regulatory traffic control devices;
7. Pavement condition;
8. Obstructions to driver/pedestrian visibility;
9. Land use and proximity of schools, parks/recreation areas and senior centers;
10. Uniformity with existing speed zones in adjacent jurisdictions; and,
11. Any other unusual conditions or hazards not readily apparent to the driver.

2.2 Statistical Analysis Factors

Significant factors used to analyze the collected survey data are summarized below:

1. **85th Percentile Speed.** The Critical Speed, or the 85th percentile speed, is defined as that speed at or below which 85 percent of the traffic is moving. This factor is the primary guide in determining what speeds the majority of safe and reasonable drivers are traveling. Therefore, the practice is to set the speed limit to the nearest 5 mph increment from the critical speed unless other factors require a lower limit. Speed limits set on this basis provide law enforcement officials with a means of controlling reckless or unreliable drivers who will not conform to what the majority finds reasonable.

2. **The 10-mph Pace.** The 10-mph Pace is the 10-mph increment range, which contains the largest number of recorded vehicles. The pace is a measure of the dispersion of speeds within the sample surveyed. Speed limits should normally be set to fall within the 10-mph pace. However, conditions not readily apparent to the driver or adhering to State mandated limits such as in Residence Districts may require setting speed limits below the 10-mph pace.
3. **50th Percentile Speed.** The Median Speed, or 50th Percentile Speed, represents the mid-point value within the range of recorded speeds for a particular roadway location. In other words, 50 percent of the vehicles travel faster than and 50 percent travel slower than, the median speed. This value is another measure of the central tendency of the vehicle speed distribution. Typically speed limits should not be set below the 50th Percentile Speed, since it would result in greater than 50-percent of the drivers exceeding the speed limit.
4. **15th Percentile Speed.** The 15th Percentile Speed is that speed at or below which 15 percent of the vehicles are traveling. This value is important in determining the minimum allowable speed limit, given that the vehicles traveling below this speed tend to obstruct the flow of traffic, thereby increasing the collision potential.
5. **Percent of Vehicles in Pace Speed.** The percent of vehicles in the 10-mph pace speed is an indication of the grouping of vehicular speeds. Ideally, if all vehicles were traveling at or about the same speed, there would be a reduced likelihood of vehicular collisions. In speed limit analysis, the higher the percent of vehicles within the pace speed, the more favorable the speed distribution. The percent of the 10-mph pace is often between 60 and 90 percent.

2.3 2014 California MUTCD and CVC Guidance

Based on the *2014 California MUTCD*, speed limits "shall be established at the nearest 5 mph increment of the 85th-percentile speed of free-flowing traffic."⁵ In matching existing conditions with the traffic safety needs of the community, engineering judgment may indicate the need for a reduction of the posted speed limit by 5 mph due to specific factors such as road characteristics, the pace speed, roadside development and environment, pedestrian activity, and collision history. Alternatively, the *2014 California MUTCD* states that "for cases in which the nearest 5 mph increment of the 85th-percentile speed would require a rounding up, then the speed limit may be rounded down to the nearest 5 mph increment below the 85th-percentile speed, if no further

⁵ California Department of Transportation, 2014 California MUTCD, Chapter 2B, page 134, 7 November 2014.

reduction is used."⁵ The following are some other factors to consider when establishing speed limits between adjacent street segments:

1. **Avoid Short Segments.** Short speed zones of less than ½ mile should be avoided, except in transition areas.
2. **Change in Roadway Conditions or Roadside Development.** Speed zone changes should be coordinated with changes in roadway conditions or roadside development.
3. **Minimize Change in Speed between Adjacent Segments.** Speed zoning should be in 10 mph increments except in urban areas where 5 mph increments are preferable.
4. **Coordinate Speed Zoning with Adjacent Jurisdictions.**

2.4 Collision History

The Engineering and Traffic Survey forms summarize the available collision information for each of the street segments. The collision information was obtained from the Statewide Integrated Traffic Records System (SWITRS) from January 2017 to December 2019. The collisions were reviewed and corridor related collisions, those not related to signalized intersections, signs, or alcohol and drug influence, were summarized for each segment. Based on the number of total collisions studied over the 3-year period and ADT counts, a collision rate per million vehicle miles was calculated for each segment. To provide a general comparison of the collision rates on the segments to expected collisions rates for similar types of local roadways, the collision rates for each segment were compared to the statewide average rate listed in the 2019 Collision Data on California State Highways (road miles, travel, collisions, collision rates) as listed in **Table 2**.

Table 2: 2019 California State Highways Collision Rates

Lane Type	Total Collision Rate Per Million Vehicle Miles (3-year rates for 2017, 2018, and 2019)
2&3 Lanes	1.06
4 lanes (undivided highway)	1.03
4 lanes (divided highway)	0.82

3.0 RESULTS AND RECOMMENDATIONS

The recommendations contained in this report are intended to establish prima facie speed limits. Prima facie limits attempt to advise the motorist and enforcement of the reasonable speed for a particular section of roadway for the prevailing conditions. In many cases, the recommendations made produce a uniform speed limit along the road.

Note: Even though the speed surveys were conducted separately for each segment, Segments 1a – Amesti Road (between Green Valley Road and Pinto Street) and 1b – Amesti Road (between Pinto Street and 0.40 miles north of Green Valley Road) were combined due to short length of these segments and similar characteristics.

The Engineering and Traffic Survey forms, presented in the **Appendix**, illustrate the results of a thorough evaluation of the available data and indicate a recommended speed limit for each of the street segments surveyed. A summary of the data analysis, along with recommended speed limits can be found in **Table 3**. The recommended speed limit for each segment is shown in **Figure 1**.

Table 3: Speed Survey Recommendations

No.	Street Segment	Existing Speed Limit (mph)	Recom. Speed Limit (mph)	85% Speed (mph)	Median Speed (mph)	10 mph Pace Range (mph)	% of Veh. In Pace	Justification
1a &1 b	Amesti Road between Green Valley Road and Pinto Street & between Pinto Road and 0.40 miles north of Green Valley Road	25	25	36.4 43.6	30.3 37.5	26 – 35 32 - 41	67.5 64.0	The segments accident rate of 3.42 is higher than the statewide average rate of 1.06. The higher collision rate, proximity to Amesti Elementary School, multiple residential driveways along the segment, and the unsignalized pedestrian crossing at the school, maintaining the existing posted speed limit is justified per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25 mph.
2	Amesti Road between 0.4 miles north of Green Valley Road to E. Rianda Road	40	40	44.4	39.4	35 – 44	69.5	Per CA MUTCD Section 2B, Paragraph 12a, Option 2, the 85 th -percentile speed limit can be rounded down to the nearest 5 mph increment below the 85 th -percentile speed. It is recommended that the posted speed limit remain at 40 mph.
3	Browns Valley Road between Corralitos Road and Amesti Road	30	30	33.7	28.6	25 – 34	72.5	Per CA MUTCD Section 2B, Paragraph 12a, Option 2, the 85 th -percentile speed limit can be rounded down to the nearest 5 mph increment below the 85 th -percentile speed. It is recommended that the posted speed limit remain at 30 mph.

No.	Street Segment	Existing Speed Limit (mph)	Recom. Speed Limit (mph)	85% Speed (mph)	Median Speed (mph)	10 mph Pace Range (mph)	% of Veh. In Pace	Justification
4	Browns Valley Road between Amesti Road to 1600' north of Amesti Road	30	30	41.9	36.4	32 – 41	65.5	The segment accident rate of 6.46 is higher than the statewide average rate of 1.06. The higher collision rate and presence of vertical curves justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.
5a	Buena Vista Drive between Bowker Road to Freedom Boulevard	30	30	35.8	30.9	27 – 36	73.5	The segment accident rate of 4.05 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and multiple driveways justify maintaining the existing posted limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.
5b	Buena Vista Drive between Manifre Road to Bowker Road	30	30	41.0	35.5	32 – 41	66	The segment accident rate of 2.36 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves, multiple driveways and uncontrolled crosswalk justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.
6	Cassery Road between Green Valley Road to State Route 152	35	35	44.0	38.6	34 – 43	67.3	The segment accident rate of 1.85 is higher than the statewide average rate of 1.06. The higher collision rate and presence of horizontal/vertical curves justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35 mph.

No.	Street Segment	Existing Speed Limit (mph)	Recom. Speed Limit (mph)	85% Speed (mph)	Median Speed (mph)	10 mph Pace Range (mph)	% of Veh. In Pace	Justification
7	E Zayante Road between Graham Hill Road to 0.10 miles north of Lompico Road	40	40	46.4	41.6	37 – 46	74.3	The segment accident rate of 1.23 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and driveways justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 40 mph.
8	E Zayante Road between 0.10 miles north of Lompico Road to 0.20 miles northeast of Westwood Road	25	25	31.2	27.1	23 – 32	84.0	The segment accident rate of 2.95 is higher than the statewide average rate of 1.06. The higher collision rate and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25 mph.
9a	Empire Grade between Santa Cruz City Limits to 1500' north of Ben Lomond Conservation Camp	40	40	50.5	44.0	41 - 50	63.5	The segment accident rate of 1.74 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 40 mph.
9b	Empire Grade between 1500' north of Ben Lomond Conservation Camp to End of road at	40	40	49.1	42.0	40 – 49	59.0	The segment accident rate of 2.31 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed

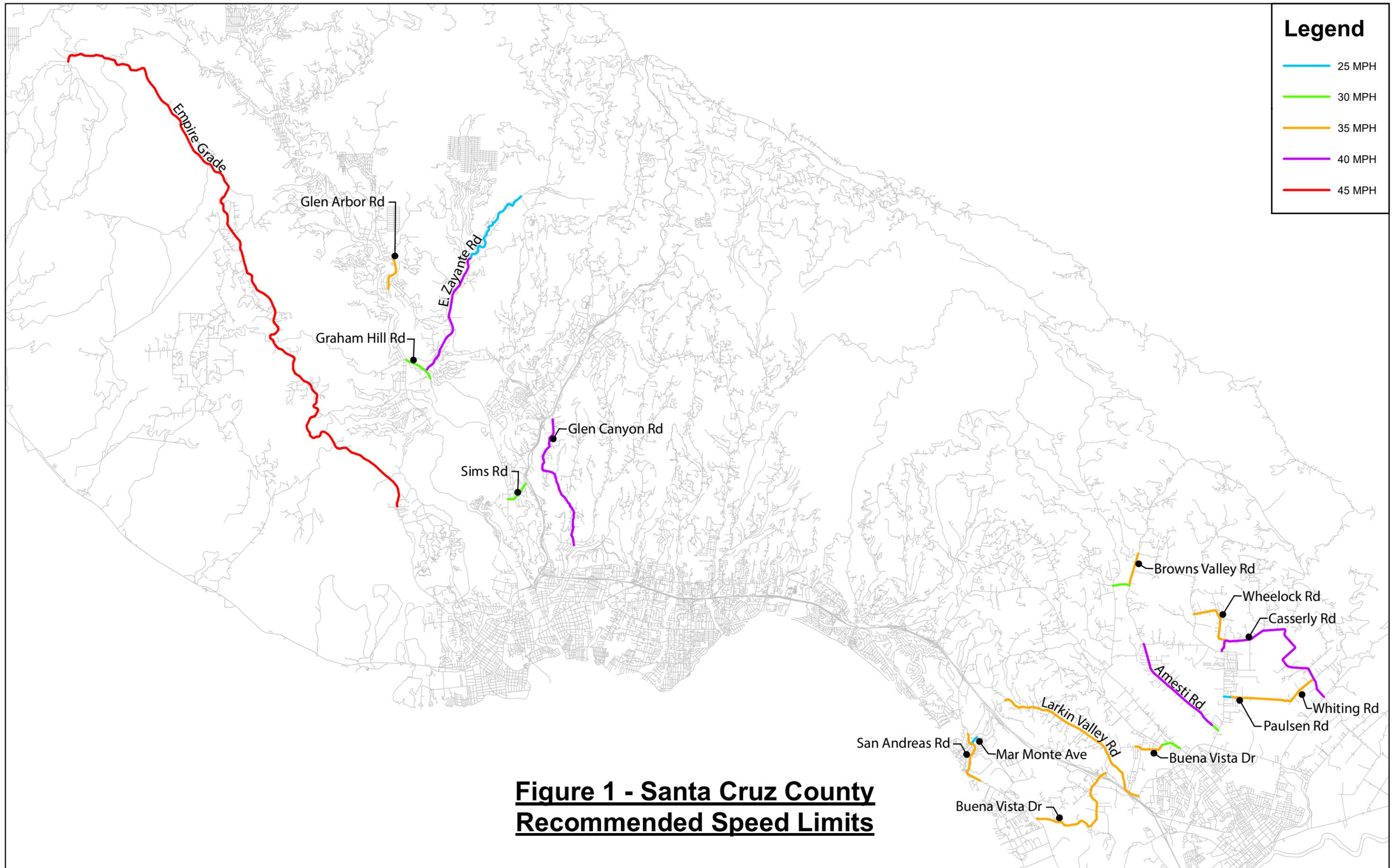
No.	Street Segment	Existing Speed Limit (mph)	Recom. Speed Limit (mph)	85% Speed (mph)	Median Speed (mph)	10 mph Pace Range (mph)	% of Veh. In Pace	Justification
	Lockheed Facility							limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 40 mph.
10	Glen Arbor Road between 0.30 miles north of Highway 9 to Newell Creek Bridge	30	30	39.4	34.9	31 – 40	71.5	The segment accident rate of 1.77 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and multiple residential driveways justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.
11	Glen Canyon Road between Branciforte Drive to Scotts Valley City Limits	30	30	43.0	37.6	34 – 43	69.3	The segment accident rate of 2.59 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.
12	Graham Hill Road between Railroad Tracks to Highway 9	30	30	37.4	32.8	30 – 39	69.7	The segment accident rate of 3.29 is higher than the statewide average rate of 0.82 to 1.06. The higher collision rate, uncontrolled crosswalk, and proximity to a park justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.

No.	Street Segment	Existing Speed Limit (mph)	Recom. Speed Limit (mph)	85% Speed (mph)	Median Speed (mph)	10 mph Pace Range (mph)	% of Veh. In Pace	Justification
13	Mar Monte Avenue between San Andreas Road to just south of intersection of Alta Drive	25	25	30.6	26.4	22 – 31	76.0	The segment accident rate of 3.29 is higher than the statewide average rate of 1.06. The higher collision rate, uncontrolled crosswalk, presence of vertical curves and multiple residential driveways justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25 mph.
14	San Andreas Road between 0.25 miles northwest of Mar Monte Avenue to 0.34 miles southeast of SPRR Underpass	30/40	30	40.8	36.1	32 – 41	72.5	The segment accident rate of 1.83 is higher than the statewide average rate of 1.06. The higher collision rate, uncontrolled crosswalk, and multiple residential justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30/40 mph.
15	Wheelock Road between Green Valley Road to Casserly Road	35	35	40.3	34.7	30 – 39	64.0	The segment accident rate of 4.72 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves, and the proximity to a school justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit to remain at 35 mph.
16	Whiting Road between Casserly Road to 0.63 miles southwest	35	35	40.5	33.1	29 – 38	60.4	The segment accident rate of 1.82 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and proximity to

No.	Street Segment	Existing Speed Limit (mph)	Recom. Speed Limit (mph)	85% Speed (mph)	Median Speed (mph)	10 mph Pace Range (mph)	% of Veh. In Pace	Justification
								school justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35 mph.
17	Sims Road between Graham Hill Road to La Madrona Drive	25	25	33.3	29.6	25 – 34	85.0	The segment accident rate of 1.67 is higher than the statewide average rate of 1.06. The higher collision rate, uncontrolled crosswalk, proximity to Brook Knoll Elementary school, and multiple residential driveways for fronting residential justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25 mph.
18	Larkin Valley Road between Airport Boulevard to Buena Vista Drive	35	35	38.0	31.4	26 – 35	67.3	The segment accident rate of 15.69 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35 mph.
19	Larkin Valley Road between Buena Vista Drive to Mar Monte Avenue	35/40	35	42.1	36.1	32 – 41	67.3	The segment accident rate of 2.32 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal curve, and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35/40 mph.

No.	Street Segment	Existing Speed Limit (mph)	Recom. Speed Limit (mph)	85% Speed (mph)	Median Speed (mph)	10 mph Pace Range (mph)	% of Veh. In Pace	Justification
21	Amesti Road between E. Rianda Road to Varni Road	35	35	44.0	37.8	33 – 42	65.5	The segment accident rate of 1.01 is lower than the statewide average rate of 1.06. Multiple residential driveways and presence of horizontal/vertical curves justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended the speed limit remain at 35 mph.
22	Paulsen Road between Green Valley Road to Trembly Lane	25	25	31.0	25.0	21 – 30	64.5	The segment accident rate of 6.95 is higher than the statewide average rate of 1.06. The higher collision rate and multiple residential driveways justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit increase remain at 25 mph.
23	Paulsen Road between Trembly Lane to Whiting Road	25/35	25	40.3	35.8	32 – 41	72.5	The segment accident rate of 1.13 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves, and slow-moving farm vehicle crossings justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25/35 mph.
24	Buena Vista Drive between San Andreas Road to Buena Vista Landfill Driveway	35	35	41.8	36.5	34 – 43	73.0	The segment accident rate of 2.23 is higher than the statewide average rate of 1.06. The higher collision rate and presence of horizontal/vertical curves justify maintaining the

No.	Street Segment	Existing Speed Limit (mph)	Recom. Speed Limit (mph)	85% Speed (mph)	Median Speed (mph)	10 mph Pace Range (mph)	% of Veh. In Pace	Justification
								existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35 mph.
25	Buena Vista Drive between Buena Vista Landfill Driveway to Highway 1	35/40	35	39.4	34.9	31 – 40	76.5	The segment accident rate of 4.16 is higher than the statewide average rate of 1.06. The higher collision rate and presence of horizontal/vertical curves justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35/40 mph.



Appendix

Engineering and Traffic Survey Forms

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

1
a

STREET: Amesti Road
FROM: Green Valley Road

SURVEY DATE: 7/18/2019
TO: Pinto Street

SPEED DATA

Location of Speed Survey	200' south of Pinto Street	Posted Speed Limit	25 mph
Time of Speed Survey	10:54 AM - 12:23 PM	Recommended Speed Limit	25 mph
50th Percentile Speed (Mean Speed)	30.3 mph	Speed Limit Change	No
85th Percentile Speed	36.4 mph		
10 mph Pace Speed	26 - 35 mph		
Percentage of Vehicles in Pace	67.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	5
Collision Rate (ACC/MVM)	6.94
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	3,948
Type of Traffic Control	None
Pedestrian Traffic	Low (not observed during school, but school is located to the west of Green Valley Road)
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	880'
Width	48'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	Yes
Uncontrolled Crosswalks?	Yes
On-Street Parking?	Yes
Sidewalks?	Yes
Driveways?	Many
Vertical Curve	None
Horizontal Curve	None
Visibility	Good
Pavement Condition	Good
Adjacent Land Use	School, Residential, and Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 36.4 mph indicates a 35 mph speed limit. The 10 mph pace ranges from 26 mph to 35 mph and the suggested speed limit is within this range. The higher collision rate, proximity to Amesti Elementary School, multiple residential driveways along the segment, and the unsignalized pedestrian crossing at the school, maintaining the existing posted speed limit is justified per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

1b

STREET: Amesti Road
FROM: Pinto Street

SURVEY DATE: 5/28/2019
TO: 0.4 miles north of Green Valley Road

SPEED DATA

Location of Speed Survey	100' north of Pinto Street	Posted Speed Limit	25 mph
Time of Speed Survey	11:00 AM - 12:34 PM	Recommended Speed Limit	25 mph
50th Percentile Speed (Mean Speed)	37.5 mph	Speed Limit Change	No
85th Percentile Speed	43.6 mph		
10 mph Pace Speed	32 - 41 mph		
Percentage of Vehicles in Pace	64.0%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	1
Collision Rate (ACC/MVM)	0.96
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	4,176
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	1200'
Width	25'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
 Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	None
Horizontal Curve	None
Visibility	Good
Pavement Condition	Good
Adjacent Land Use	Residential, and Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 43.6 mph indicates a 45 mph speed limit. The 10 mph pace ranges from 32 mph to 41 mph and the suggested speed limit is above this range. The higher collision rate, proximity to Amesti Elementary School, multiple residential driveways along the segment, and the unsignalized pedestrian crossing at the school, maintaining the existing posted speed limit is justified per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

2

STREET: Amesti Road
FROM: 0.4 miles north of Green Valley Road

SURVEY DATE: 5/28/2019
TO: E Rianda Road

SPEED DATA

Location of Speed Survey	200' south of Mann Ave	Posted Speed Limit	40 mph
Time of Speed Survey	2:50 PM - 3:50 PM	Recommended Speed Limit	40 mph
50th Percentile Speed (Mean Speed)	39.4 mph	Speed Limit Change	No
85th Percentile Speed	44.4 mph		
10 mph Pace Speed	35 - 44 mph		
Percentage of Vehicles in Pace	69.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	4
Collision Rate (ACC/MVM)	1.16
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	3,159
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	5280'
Width	25'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Moderate
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

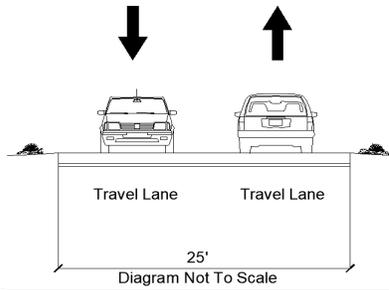
The 85th-percentile speed of 44.4 mph indicates a 45 mph speed limit. The 10 mph pace ranges from 35 mph to 44 mph and the suggested speed limit is above this range. The collision rate is above the expected rate. The higher collision rate, presence of horizontal/vertical curves and driveways, Per CA MUTCD Section 2B, Paragraph 12a, Option 2, the 85th-percentile speed limit can be rounded down to the nearest 5 mph increment below the 85th-percentile speed. Therefore, it is recommended that the posted speed limit remain at 40 mph.

**County of Santa Cruz
Transportation Engineering Division**

Street Name: Amesti Road

Limits: 0.4 miles north of Green Valley Road to E Rianda Road

**Typical
Cross-section**



Radar Survey Sheet

X = East / = West

	5	10	15	20	25	30			
60							0		
							0		
							0		
							0		
	X						1	0.5%	100.0%
55							0		
							0		
							0		
	/	/					2	1.0%	99.5%
	X	X	/				3	1.5%	98.5%
50	X	/	/				3	1.5%	97.0%
	X	X					2	1.0%	95.5%
	X	/					2	1.0%	94.5%
	X	/					2	1.0%	93.5%
	X	X	X	X	/	/	10	5.0%	92.5%
45	X	X	X	X	/	/	8	4.0%	87.5%
	X	X	X	X	/	/	14	7.0%	83.5%
	X	X	X	X	X	/	10	5.0%	76.5%
	X	X	X	X	X	X	19	9.5%	71.5%
	X	X	X	X	X	X	15	7.5%	62.0%
40	X	X	X	X	X	X	15	7.5%	54.5%
	X	X	X	X	X	X	16	8.0%	47.0%
	X	X	X	X	/	/	14	7.0%	39.0%
	X	X	X	X	X	X	14	7.0%	32.0%
	X	X	X	X	/	/	13	6.5%	25.0%
35	X	X	X	X	/	/	9	4.5%	18.5%
	X	X	X	/	/		5	2.5%	14.0%
	/	/	/				3	1.5%	11.5%
	X	X	/	/	/		5	2.5%	10.0%
	X	/	/				3	1.5%	7.5%
30	X	X	X	X	/		5	2.5%	6.0%
	/						1	0.5%	3.5%
	X	/					2	1.0%	3.0%
	/	/					2	1.0%	2.0%
	/						1	0.5%	1.0%
25							0		
							0		
							0		
	X						1	0.5%	0.5%
20							0		
							0		
							0		
							0		
15							0		
							0		
							0		
							0		
10							0		
							0		

Total Samples = 200

85th Percentile Speed: 44.4 mph
50th Percentile Speed: 39.4 mph
15th Percentile Speed: 34.2 mph
10 MPH Pace: 35 - 44
Number in Pace: 139
Percent in Pace: 69.5%

Date of Survey: 5/28/19
Weather: Sunny
Pavement Condition: Moderate
Street Class.: Collector
Field Study by: IDAX / KHA

Start Time: 2:50 PM
End Time: 3:50 PM
Posted Speed: 40 mph

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

3

STREET: Browns Valley Road
FROM: Corralitos Road

SURVEY DATE: 6/7/2019
TO: Amesti Road

SPEED DATA

Location of Speed Survey	26 Browns Valley Road	Posted Speed Limit	30 mph
Time of Speed Survey	10:27 AM - 11:39 AM	Recommended Speed Limit	30 mph
50th Percentile Speed (Mean Speed)	28.6 mph	Speed Limit Change	No
85th Percentile Speed	33.7 mph		
10 mph Pace Speed	25 - 34 mph		
Percentage of Vehicles in Pace	72.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	1
Collision Rate (ACC/MVM)	0.86
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	3,067
Type of Traffic Control	All-way stop control at Corralitos Rd
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	1837'
Width	28'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	Yes - Discontinuous (Parallel parking and 90 degree parking available on the western end of segment)
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes - Few
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Moderate
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 33.7 mph indicates a 35 mph speed limit. The 10 mph pace ranges from 25 mph to 34 mph and the suggested speed limit is above this range. The collision rate is below the expected rate. Per CA MUTCD Section 2B, Paragraph 12a, Option 2, the 85th-percentile speed limit can be rounded down to the nearest 5 mph increment below the 85th-percentile speed. Therefore, it is recommended that the posted speed limit remains at 30 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

4

STREET: Browns Valley Road
FROM: Amesti Road

SURVEY DATE: 6/7/2019
TO: 1600 ft north of Amesti Road

SPEED DATA

Location of Speed Survey	730' North of Amesti Rd / Browns Valley Rd	Posted Speed Limit	30 mph
Time of Speed Survey	12:21 PM - 2:15 PM	Recommended Speed Limit	30 mph
50th Percentile Speed (Mean Speed)	36.4 mph	Speed Limit Change	No
85th Percentile Speed	41.9 mph		
10 mph Pace Speed	32 - 41 mph		
Percentage of Vehicles in Pace	65.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	4
Collision Rate (ACC/MVM)	6.46
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	1,866
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	1600'
Width	25'
Number of Lanes	NB - 1 SB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes - Few
Horizontal Curve	None
Visibility	Good
Pavement Condition	Moderate
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 41.9 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 32 mph to 41 mph and the suggested speed limit is within this range. The segment accident rate of 6.46 is higher than the statewide average rate of 1.06. The higher collision rate and presence of vertical curves justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

5a

STREET: Buena Vista Drive
FROM: Bowker Road

SURVEY DATE: 5/28/2019
TO: Freedom Boulevard

SPEED DATA

Location of Speed Survey	Between Calabasas Rd & Miller Rd	Posted Speed Limit	30 mph
Time of Speed Survey	9:35 AM - 10:30 AM	Recommended Speed Limit	30 mph
50th Percentile Speed (Mean Speed)	30.9 mph	Speed Limit Change	No
85th Percentile Speed	35.8 mph		
10 mph Pace Speed	27 - 36 mph		
Percentage of Vehicles in Pace	73.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	17
Collision Rate (ACC/MVM)	4.05
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	6,173
Type of Traffic Control	None
Pedestrian Traffic	Moderate
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	3275'
Width	25'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	Yes (Bike path located adjacent to the shoulder where parking is allowed)
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	Yes - Discontinuous
Sidewalks?	Yes - Discontinuous
Driveways?	Many
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Moderate
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

The average 85th-percentile speed of 35.8 mph indicates a 35 mph speed limit. The 10 mph pace ranges from 27 mph to 36 mph and the suggested speed limit is within this range. The segment accident rate of 4.05 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and multiple driveways justify maintaining the existing posted limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

5b

STREET: Buena Vista Drive
FROM: Manfre Road

SURVEY DATE: 5/28/2019
TO: Bowker Road

SPEED DATA

Location of Speed Survey	400' west of Valdez Ln	Posted Speed Limit	30 mph
Time of Speed Survey	8:15 AM - 9:15 AM	Recommended Speed Limit	30 mph
50th Percentile Speed (Mean Speed)	35.5 mph	Speed Limit Change	No
85th Percentile Speed	41.0 mph		
10 mph Pace Speed	32 - 41 mph		
Percentage of Vehicles in Pace	66.0%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	5
Collision Rate (ACC/MVM)	2.36
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	4,599
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	2215'
Width	25'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	Yes
On-Street Parking?	No
Sidewalks?	No
Driveways?	Many
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Moderate
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

The average 85th-percentile speed of 41.0 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 32 mph to 41 mph and the suggested speed limit is within this range. The segment accident rate of 2.36 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves, multiple driveways and uncontrolled crosswalk justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

6

STREET: Casserly Rd
FROM: Green Valley Road

SURVEY DATE: 5/29/2019
TO: State Route 152

SPEED DATA

Location of Speed Survey	See Comments	Posted Speed Limit	35 mph
Time of Speed Survey	9:15 AM - 11:13 AM, 11:36 AM - 12:36 PM, 1:05 PM - 2:14 PM	Recommended Speed Limit	35 mph
50th Percentile Speed (Mean Speed)	38.6 mph	Speed Limit Change	No
85th Percentile Speed	44.0 mph		
10 mph Pace Speed	34 - 43 mph		
Percentage of Vehicles in Pace	67.3%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	24
Collision Rate (ACC/MVM)	1.85
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	3,260
Type of Traffic Control	All-way stop control at Whiting Road and Highway 152
Pedestrian Traffic	Moderate (not observed during school times, school located at Whiting road)
Truck Traffic	Moderate

ROADWAY CHARACTERISTICS

Length of Segment	19219'
Width	21'-23'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Poor
Adjacent Land Use	School, Residential and Rural

COMMENTS & JUSTIFICATION

For this segment, the speed survey was conducted at three locations (903 Casserly Road, 400' east of Smith Road, and 1800' north of Dias Lane). The average 85th-percentile speed of 44.0 mph indicates a 45 mph speed limit. The 10 mph pace ranges from 34 mph to 43 mph and the suggested speed limit is above this range. The segment accident rate of 1.85 is higher than the statewide average rate of 1.06. The higher collision rate and presence of horizontal/vertical curves justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

7

STREET: East Zayante Road
FROM: Graham Hill Road

SURVEY DATE: 6/3/2019
TO: 0.10 miles north of Lompico Road

SPEED DATA

Location of Speed Survey	See Comment	Posted Speed Limit	40 mph
Time of Speed Survey	9:38 AM - 10:34 AM, 2:40 PM - 3:33 PM	Recommended Speed Limit	40 mph
50th Percentile Speed (Mean Speed)	41.6 mph	Speed Limit Change	No
85th Percentile Speed	46.4 mph		
10 mph Pace Speed	37 - 46 mph		
Percentage of Vehicles in Pace	74.3%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	18
Collision Rate (ACC/MVM)	1.23
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	4,938
Type of Traffic Control	Signal at Graham Hill Road
Pedestrian Traffic	Low
Truck Traffic	Low (some delivery trucks)

ROADWAY CHARACTERISTICS

Length of Segment	14256'
Width	22' - 24;
Number of Lanes	NB - 1 SB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	No
Horizontal Curve	Yes
Visibility	Moderate
Pavement Condition	Good
Adjacent Land Use	Rural

COMMENTS & JUSTIFICATION

For this segment, the speed survey was conducted at two locations (8454 E Zayante Rd and 7535 E Zayante Rd). The average 85th-percentile speed of 46.4 mph indicates a 45 mph speed limit. The 10 mph pace ranges from 37 mph to 46 mph and the suggested speed limit is within this range. The segment accident rate of 1.23 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and driveways justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 40 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

8

STREET: East Zayante Road
FROM: 0.10 miles north of Lompico Road

SURVEY DATE: 6/3/2019
TO: 0.20 miles northeast of Westwood Road

SPEED DATA

Location of Speed Survey	See Comment	Posted Speed Limit	25 mph
Time of Speed Survey	12:25 PM - 2:25 PM, 3:43 PM - 5:43 PM	Recommended Speed Limit	25 mph
50th Percentile Speed (Mean Speed)	27.1 mph	Speed Limit Change	No
85th Percentile Speed	31.2 mph		
10 mph Pace Speed	23 - 32 mph		
Percentage of Vehicles in Pace	84.0%		
Number of Survey Samples	107		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	5
Collision Rate (ACC/MVM)	2.95
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	878
Type of Traffic Control	All-way stop control at Valley View Avenue
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	9293'
Width	20' - 22'
Number of Lanes	NB - 1 SB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Many
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Poor
Pavement Condition	Moderate, Poor within the northern segment
Adjacent Land Use	Rural

COMMENTS & JUSTIFICATION

For this segment, the speed survey was conducted at two locations (9566 E Zayante Rd and 250' south of 10300 E Zayante Rd). The average 85th-percentile speed of 31.2 mph indicates a 30 mph speed limit. The 10 mph pace ranges from 23 mph to 32 mph and the suggested speed limit is within this range. The segment accident rate of 2.95 is higher than the statewide average rate of 1.06. The higher collision rate and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

9a

STREET: Empire Grade
FROM: Santa Cruz City Limits

SURVEY DATE: 5/24/2019
TO: 1500 ft north of Ben Lomond Conservation Camp

SPEED DATA

Location of Speed Survey	See Comments	Posted Speed Limit	40 mph
Time of Speed Survey	8:15 AM - 10:15 AM, 12:00 AM - 12:00 AM, 3:50 PM - 12:00 AM, 5:20 PM - 12:00 AM, 11:45 AM - 12:00 AM, 12:00 AM - 12:00 AM, 3:55 PM - 12:00 AM	Recommended Speed Limit	40 mph
50th Percentile Speed (Mean Speed)	44.0 mph	Speed Limit Change	No
85th Percentile Speed	50.5 mph		
10 mph Pace Speed	41 - 50 mph		
Percentage of Vehicles in Pace	63.5%		
Number of Survey Samples	154		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	46
Collision Rate (ACC/MVM)	1.87
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	1,855
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	64576'
Width	23' - 30'
Number of Lanes	NB - 1 SB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Poor
Pavement Condition	Moderate
Adjacent Land Use	Rural and School (located near the south end of the segment)

COMMENTS & JUSTIFICATION

For this segment, the speed survey was conducted at seven locations (200' south of the crosswalk at Chinquapin Trail Head, 3000' south of Smith Grade, 50' north of McGivern Way, 200' south of Feather Ln, 9255 Empire Grade, 12200 Empire Grade, and at the Ben Lomond Conservation Camp #45). The average 85th-percentile speed of 50.5 mph indicates a 50 mph speed limit. The 10 mph pace ranges from 40 mph to 49 mph and the suggested speed limit is above this range. The segment accident rate of 1.74 is higher than the statewide average rate of 1.06. The higher collision rate, presence of horizontal/vertical curves and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 40 mph.

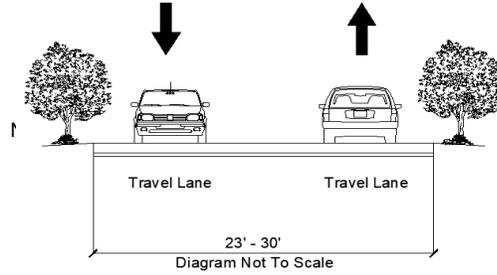
**County of Santa Cruz
Transportation Engineering Division**

Santa Cruz City Limits to 1500 ft north of Ben Lomond

Street Name: Empire Grade

Limits: Conservation Camp

**Typical
Cross-section**



Radar Survey Sheet

X = East / = West

	5	10	15	20	25	30			
60	/						1	0.5%	100.0%
	/						1	0.5%	99.5%
	X /						2	1.1%	98.4%
	X /						2	1.1%	97.4%
	X						1	0.5%	96.3%
55	X / / /						4	2.1%	95.8%
	X / /						3	1.6%	93.7%
	X X						2	1.1%	92.1%
	X / / /						4	2.1%	91.1%
	X / / / /						6	3.2%	88.9%
50	X X / / / / /						8	4.2%	85.8%
	X X X X / / / / / / / / /						13	6.8%	81.6%
	X / / / / / / /						7	3.7%	74.7%
	X X / / / / / / / / / / /						13	6.8%	71.1%
	X X / / / / / / /						7	3.7%	64.2%
45	X X X / / / / / / / / / / /						13	6.8%	60.5%
	X X X X X X X X / /						11	5.8%	53.7%
	X X X X X X / / / / /						10	5.3%	47.9%
	X X X X X X X X / / / / / / /						16	8.4%	42.6%
	X X X X X X X X / /						10	5.3%	34.2%
40	X X X X X X X / / / / / / / /						16	8.4%	28.9%
	X X X X / /						6	3.2%	20.5%
	X X X X X X X X X / /						12	6.3%	17.4%
	X / / /						4	2.1%	11.1%
	X X X X / / /						7	3.7%	8.9%
35	X X X X /						5	2.6%	5.3%
	X						1	0.5%	2.6%
	X						1	0.5%	2.1%
	X X						2	1.1%	1.6%
							0		
30							0		
							0		
							0		
							0		
							0		
25	X						1	0.5%	0.5%
							0		
							0		
							0		
20							0		
							0		
							0		
							0		
15							0		
							0		
							0		
							0		
10							0		

Total Samples = 190

85th Percentile Speed: 49.8 mph
50th Percentile Speed: 43.4 mph
15th Percentile Speed: 37.6 mph
10 MPH Pace: 40 - 49
Number in Pace: 116
Percent in Pace: 60.8%

Date of Survey: 5/24/19
Weather: Cloudy
Pavement Condition: Moderate
Street Class.: Collector
Field Study by: IDAX / KHA

Start Time: 8:15 AM
End Time: 10:15 AM
Posted Speed: 40 mph

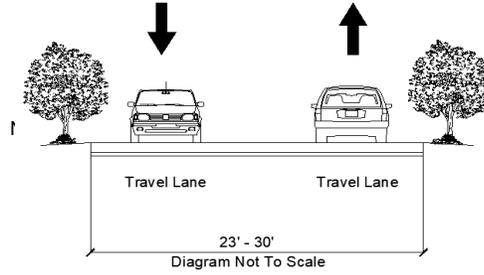
**County of Santa Cruz
Transportation Engineering Division**

Santa Cruz City Limits to 1500 ft north of Ben Lomond

Street Name: Empire Grade

Limits: Conservation Camp

Typical
Cross-section



Radars Survey Sheet

X = East / = West

	5	10	15	20	25	30			
							1	0.5%	100.0%
							0		
							1	0.5%	99.5%
60	/						1	0.5%	99.0%
	X /						2	1.0%	98.5%
	X X X X X / /						7	3.6%	97.4%
	/ /						2	1.0%	93.9%
	X X X / / / /						7	3.6%	92.9%
55	X X X X X						5	2.6%	89.3%
	X X X / / /						6	3.1%	86.7%
	X X /						3	1.5%	83.7%
	X X X X / / / /						8	4.1%	82.1%
	X X X /						4	2.0%	78.1%
50	X X X X X X X / / / / / / / /						15	7.7%	76.0%
	X X X X X / / / / /						10	5.1%	68.4%
	X X X X X / / / /						9	4.6%	63.3%
	X X X X X X X X / / / / / /						15	7.7%	58.7%
	X X X X X / / / / /						10	5.1%	51.0%
45	X X X X X X X / / / / / / / / / /						16	8.2%	45.9%
	X X X X X X X / / / / / / / / / /						16	8.2%	37.8%
	X X X X X X X / / / / / / / / / /						15	7.7%	29.6%
	X X X / / / / /						8	4.1%	21.9%
	X X X X X / / / / /						9	4.6%	17.9%
40	X X X X / / / / /						8	4.1%	13.3%
	X X / / /						5	2.6%	9.2%
	X X / /						4	2.0%	6.6%
	X X / /						4	2.0%	4.6%
							0		
35	/						1	0.5%	2.6%
	/						1	0.5%	2.0%
	/ /						2	1.0%	1.5%
	/						1	0.5%	0.5%
							0		
30							0		
							0		
							0		
							0		
25							0		
							0		
							0		
							0		
							0		
							0		
							0		
							0		
							0		
							0		
15							0		
							0		
							0		
							0		
							0		
							0		
							0		
							0		
10							0		
							0		

Total Samples = 196

85th Percentile Speed: 53.4 mph
 50th Percentile Speed: 45.8 mph
 15th Percentile Speed: 40.4 mph
 10 MPH Pace: 41 - 50
 Number in Pace: 123
 Percent in Pace: 62.8%

Date of Survey: 5/24/19
 Weather: Sunny
 Pavement Condition: Moderate
 Street Class.: Collector
 Field Study by: IDAX / KHA

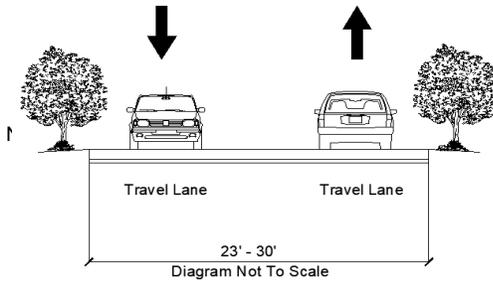
Start Time: 11:28 AM
 End Time: 1:28 PM
 Posted Speed: 40 mph

**County of Santa Cruz
Transportation Engineering Division**
Santa Cruz City Limits to 1500 ft north of Ben Lomond

Street Name: Empire Grade

Limits: Conservation Camp

**Typical
Cross-section**



Radar Survey Sheet

X = East / = West

	5	10	15	20	25	30			
60	/								0
									1
									0
	/								1
	/	/							2
55									0
	/								1
	/	/							2
	/								1
									0
50	X	X	X	/	/	/	/		8
	X	X	/	/					4
	X	X	X	X	X	X	X	/	13
	X	X	X	/	/	/	/		9
	X	X	X	X	X	X	/	/	12
45	X	X	X	X	/	/	/	/	12
	X	X	X	X	X	X	/	/	12
	X	X	X	X	X	X	/	/	16
	X	X	X	X	X	X	X	X	25
	X	X	X	X	X	X	/	/	18
40	X	X	X	X	X	X	X	X	18
	X	X	X	/	/	/			8
	X	X	X	/	/	/	/	/	12
	/	/							2
	X	X	X	/	/				6
35	X	X	/						3
	X	/	/						3
	X								1
	X	X							2
	/								1
30									0
	X	X	/						3
	/								1
									0
	X	/							2
25									0
	/								1
									0
									0
20									0
									0
									0
15									0
									0
									0
10									0

Total Samples = 200

85th Percentile Speed: 47.2 mph
50th Percentile Speed: 41.8 mph
15th Percentile Speed: 37.4 mph
10 MPH Pace: 39 - 48
Number in Pace: 143
Percent in Pace: 71.5%

Date of Survey: 5/24/19
Weather: Sunny
Pavement Condition: Moderate
Street Class.: Collector
Field Study by: IDAX / KHA

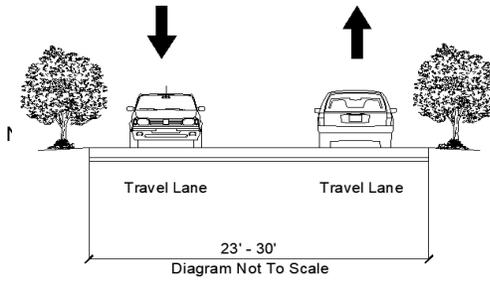
Start Time: 2:20 PM
End Time: 3:50 PM
Posted Speed: 40 mph

**County of Santa Cruz
Transportation Engineering Division**
Santa Cruz City Limits to 1500 ft north of Ben Lomond

Street Name: Empire Grade

Limits: Conservation Camp

**Typical
Cross-section**



Radar Survey Sheet

X = East / = West

	5	10	15	20	25	30					
60	/								1	0.6%	100.0%
									0		
									0		
									0		
									0		
55	/	/	/	/					4	2.3%	99.4%
									0		
	/	/	/						3	1.7%	97.1%
	/	/							2	1.1%	95.4%
	X	X	/	/					5	2.9%	94.3%
50	X	X							2	1.1%	91.4%
	X	X	/	/	/	/	/		7	4.0%	90.2%
	X	X	/	/	/	/	/		8	4.6%	86.2%
	X	X	X	X	X	X	/	/	11	6.3%	81.6%
	X	/	/	/	/	/	/	/	7	4.0%	75.3%
45	X	X	X	X	X	X	X	X	12	6.9%	71.3%
	X	X	X	X	X	X	/	/	13	7.5%	64.4%
	X	X	/	/	/	/	/	/	8	4.6%	56.9%
	X	X	X	X	X	X	X	/	18	10.3%	52.3%
	X	X	X	/	/	/			6	3.4%	42.0%
40	X	X	X	X	/	/	/	/	10	5.7%	38.5%
	X	X	X	/	/	/	/	/	8	4.6%	32.8%
	X	X	X	/	/	/	/	/	7	4.0%	28.2%
	X	X	X	X	/				5	2.9%	24.1%
	X	X	/	/	/	/	/	/	7	4.0%	21.3%
35	X	X	X	X	X				5	2.9%	17.2%
	X	X	/	/	/				5	2.9%	14.4%
	X	/	/	/					4	2.3%	11.5%
	X	X	/	/	/	/	/	/	7	4.0%	9.2%
	X	/							2	1.1%	5.2%
30	/								1	0.6%	4.0%
									0		
	X	X	X	/					4	2.3%	3.4%
	/	/							2	1.1%	1.1%
									0		
25									0		
									0		
									0		
									0		
									0		
									0		
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15									0		
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									0		
									0		
									0		
									0		
10									0		

Total Samples = 174

85th Percentile Speed: 47.7 mph
50th Percentile Speed: 41.8 mph
15th Percentile Speed: 34.2 mph
10 MPH Pace: 39 - 48
Number in Pace: 101
Percent in Pace: 58.0%

Date of Survey: 6/4/19
Weather: Sunny
Pavement Condition: Moderate
Street Class.: Collector
Field Study by: IDAX / KHA

Start Time: 9:45 AM
End Time: 11:45 AM
Posted Speed: 40 mph

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

9b

STREET: Empire Grade
FROM: 1500 ft north of Ben Lomond Conservation Camp

SURVEY DATE: 6/4/2019
TO: End of road at Lockheed Facility

SPEED DATA

Location of Speed Survey	2400' E/O Bertoli Dr	Posted Speed Limit	40 mph
Time of Speed Survey	4:00 PM - 6:00 PM	Recommended Speed Limit	40 mph
50th Percentile Speed (Mean Speed)	42.0 mph	Speed Limit Change	No
85th Percentile Speed	49.1 mph		
10 mph Pace Speed	40 - 49 mph		
Percentage of Vehicles in Pace	59.0%		
Number of Survey Samples	78		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	2
Collision Rate (ACC/MVM)	2.31
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	357
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	11700'
Width	23'
Number of Lanes	NB - 1 SB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Poor
Pavement Condition	Moderate
Adjacent Land Use	Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 49.1 mph indicates a 50 mph speed limit. The 10 mph pace ranges from 40 mph to 49 mph and the suggested speed limit is above this range. The higher collision rate, presence of horizontal/vertical curves and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 40 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

10

STREET: Glen Arbor Road
FROM: 0.30 miles north of Highway 9

SURVEY DATE: 6/3/2019
TO: Newell Creek Bridge

SPEED DATA

Location of Speed Survey	8935 Glen Arbor Rd	Posted Speed Limit	30 mph
Time of Speed Survey	10:56 AM - 11:55 AM	Recommended Speed Limit	30 mph
50th Percentile Speed (Mean Speed)	34.9 mph	Speed Limit Change	No
85th Percentile Speed	39.4 mph		
10 mph Pace Speed	31 - 40 mph		
Percentage of Vehicles in Pace	71.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	5
Collision Rate (ACC/MVM)	1.77
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	3,744
Type of Traffic Control	All-way stop control at Hihn Road
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	3643'
Width	26'
Number of Lanes	NB - 1 SB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	Yes. On-street parking on the shoulder (not designated parking). Used seldom.
Sidewalks?	No
Driveways?	Many
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Moderate
Pavement Condition	Good
Adjacent Land Use	Residential

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 39.4 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 31 mph to 40 mph and the suggested speed limit is within this range. The higher collision rate, presence of horizontal/vertical curves and multiple residential driveways justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

11

STREET: Glen Canyon Road
FROM: Branciforte Drive

SURVEY DATE: 5/20/2019
TO: Scotts Valley City Limits

SPEED DATA

Location of Speed Survey	See Comment	Posted Speed Limit	30 mph
Time of Speed Survey	11:45 AM - 1:45 AM, 2:30 PM - 4:30 PM	Recommended Speed Limit	30 mph
50th Percentile Speed (Mean Speed)	37.6 mph	Speed Limit Change	No
85th Percentile Speed	43.0 mph		
10 mph Pace Speed	34 - 43 mph		
Percentage of Vehicles in Pace	69.3%		
Number of Survey Samples	164.5		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	14
Collision Rate (ACC/MVM)	2.59
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	1,648
Type of Traffic Control	All-way stop control at Green Hills Road
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	15840'
Width	20'
Number of Lanes	NB - 1 SB - 1
Street Classification	Local
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Poor
Pavement Condition	Moderate
Adjacent Land Use	Rural

COMMENTS & JUSTIFICATION

For this segment, the speed survey was conducted at two locations (752 Glen Canyon Rd and 1400 Glen Canyon Rd). The average 85th-percentile speed of 43 mph indicates a 45 mph speed limit. The 10 mph pace ranges from 34 mph to 43 mph and the suggested speed limit is above this range. The higher collision rate, presence of horizontal/vertical curves and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

12

STREET: Graham Hill Road
FROM: Railroad Tracks

SURVEY DATE: 6/3/2019
TO: Highway 9

SPEED DATA

Location of Speed Survey	150' south of Park Ave	Posted Speed Limit	30 mph
Time of Speed Survey	8:48 AM - 9:14 AM	Recommended Speed Limit	30 mph
50th Percentile Speed (Mean Speed)	32.8 mph	Speed Limit Change	No
85th Percentile Speed	37.4 mph		
10 mph Pace Speed	30 - 39 mph		
Percentage of Vehicles in Pace	69.7%		
Number of Survey Samples	198		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	34
Collision Rate (ACC/MVM)	3.29
Expected Collisions (ACC/MVM)	0.82-1.06

TRAFFIC FACTORS

Average Daily Traffic	14,984
Type of Traffic Control	Traffic signal at Graham Hill Road and E Zayante Road
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	3326'
Width	25' -65'
Number of Lanes	EB - 1-2 WB - 1-2
Street Classification	Arterial
Divided Median?	Yes - Discontinuous (Raised/TWLTL)
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	Yes
On-Street Parking?	No
Sidewalks?	Yes - Discontinuous
Driveways?	Many
Vertical Curve	None
Horizontal Curve	None
Visibility	Good
Pavement Condition	Good
Adjacent Land Use	Commercial and Park/Recreation Area

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 37.4 mph indicates a 35 mph speed limit. The 10 mph pace ranges from 30 mph to 39 mph and the suggested speed limit is within this range. The higher collision rate, uncontrolled crosswalk, and proximity to a park justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

13

STREET: Mar Monte Avenue
FROM: San Andreas Road

SURVEY DATE: 5/31/2019
TO: Just south of intersection of Alta Drive

SPEED DATA

Location of Speed Survey	200' south of Altivo Ave	Posted Speed Limit	25 mph
Time of Speed Survey	8:30 AM - 10:30 AM	Recommended Speed Limit	25 mph
50th Percentile Speed (Mean Speed)	26.4 mph	Speed Limit Change	No
85th Percentile Speed	30.6 mph		
10 mph Pace Speed	22 - 31 mph		
Percentage of Vehicles in Pace	76.0%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	1
Collision Rate (ACC/MVM)	2.39
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	2,251
Type of Traffic Control	All-way stop control at San Andreas Road
Pedestrian Traffic	Moderate
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	898'
Width	24'
Number of Lanes	EB - 1 WB - 1
Street Classification	Local
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	Yes
On-Street Parking?	Yes - Discontinuous (parking on the shoulder but it is not designated parking)
Sidewalks?	No
Driveways?	Many
Vertical Curve	Yes
Horizontal Curve	None
Visibility	Good
Pavement Condition	Moderate
Adjacent Land Use	Residential

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 30.6 mph indicates a 30 mph speed limit. The 10 mph pace ranges from 22 mph to 31 mph and the suggested speed limit is within this range. The higher collision rate, uncontrolled crosswalk, presence of vertical curves and multiple residential driveways justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

14

STREET: San Andreas Road
FROM: 0.25 miles northwest of Mar Monte Avenue

SURVEY DATE: 5/31/2019
TO: 0.34 miles southeast of SPRR underpass

SPEED DATA

Location of Speed Survey	1520 San Andreas Rd	Posted Speed Limit	30 mph - 40 mph
Time of Speed Survey	10:50 AM - 11:53 AM	Recommended Speed Limit	30 mph
50th Percentile Speed (Mean Speed)	36.1 mph	Speed Limit Change	No
85th Percentile Speed	40.8 mph		
10 mph Pace Speed	32 - 41 mph		
Percentage of Vehicles in Pace	72.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	9
Collision Rate (ACC/MVM)	1.83
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	3,588
Type of Traffic Control	All-way stop control at Mar Monte Avenue
Pedestrian Traffic	Moderate
Truck Traffic	Moderate

ROADWAY CHARACTERISTICS

Length of Segment	6594'
Width	32'
Number of Lanes	EB - 1 WB - 1
Street Classification	Arterial
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	Yes
Uncontrolled Crosswalks?	Yes
On-Street Parking?	Yes - Discontinuous (angled parking)
Sidewalks?	No
Driveways?	Many
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Good
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 40.8 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 32 mph to 41 mph and the suggested speed limit is within this range. The higher collision rate, uncontrolled crosswalk, and multiple residential justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 30/40 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

15

STREET: Wheelock Road
FROM: Green Valley Road

SURVEY DATE: 5/29/2019
TO: Casserly Road

SPEED DATA

Location of Speed Survey	See Comment	Posted Speed Limit	35 mph
Time of Speed Survey	11:55 AM - 1:55 PM, 2:40 PM - 4:40 PM	Recommended Speed Limit	35 mph
50th Percentile Speed (Mean Speed)	34.7 mph	Speed Limit Change	No
85th Percentile Speed	40.3 mph		
10 mph Pace Speed	30 - 39 mph		
Percentage of Vehicles in Pace	64.0%		
Number of Survey Samples	86		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	5
Collision Rate (ACC/MVM)	4.72
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	786
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	6494'
Width	22' - 23'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Moderate
Pavement Condition	Poor
Adjacent Land Use	School, Residential and Rural

COMMENTS & JUSTIFICATION

For this segment, the speed survey was conducted at two locations (150' east of Country View Ln and 104 Wheelock Rd). The average 85th-percentile speed of 40.3 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 30 mph to 39 mph and the suggested speed limit is above this range. The higher collision rate, presence of horizontal/vertical curves, and the proximity to a school justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit to remain at 35 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

16

STREET: Whiting Road
FROM: Casserly Road

SURVEY DATE: 5/30/2019
TO: 0.63 miles southwest

SPEED DATA

Location of Speed Survey	650' north of Di Cicco Terrace	Posted Speed Limit	35 mph
Time of Speed Survey	9:00 AM - 11:00 AM	Recommended Speed Limit	35 mph
50th Percentile Speed (Mean Speed)	33.1 mph	Speed Limit Change	No
85th Percentile Speed	40.5 mph		
10 mph Pace Speed	29 - 38 mph		
Percentage of Vehicles in Pace	60.4%		
Number of Survey Samples	187		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	4
Collision Rate (ACC/MVM)	1.82
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	3,137
Type of Traffic Control	All-way stop control at Casserly Road/Highway 152
Pedestrian Traffic	Moderate (school located south of Casserly Road)
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	3379'
Width	21'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Moderate
Pavement Condition	Moderate
Adjacent Land Use	School, Residential and Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 40.5 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 29 mph to 38 mph and the suggested speed limit is above this range. The higher collision rate, presence of horizontal/vertical curves and proximity to school justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

17

STREET: Sims Road
FROM: Graham Hill Road

SURVEY DATE: 5/20/2019
TO: La Madrona Drive

SPEED DATA

Location of Speed Survey	190 Sims Rd	Posted Speed Limit	25 mph
Time of Speed Survey	11:15 AM - 12:20 PM	Recommended Speed Limit	25 mph
50th Percentile Speed (Mean Speed)	29.6 mph	Speed Limit Change	No
85th Percentile Speed	33.3 mph		
10 mph Pace Speed	25 - 34 mph		
Percentage of Vehicles in Pace	85.0%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	4
Collision Rate (ACC/MVM)	1.67
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	4,135
Type of Traffic Control	Signal at Graham Hill Road and all-way stop control at La Madrone Drive
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	2798'
Width	27'
Number of Lanes	EB - 1 WB - 1
Street Classification	Local
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	Yes
On-Street Parking?	No
Sidewalks?	No
Driveways?	Many
Vertical Curve	None
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Good
Adjacent Land Use	Residential

COMMENTS & JUSTIFICATION

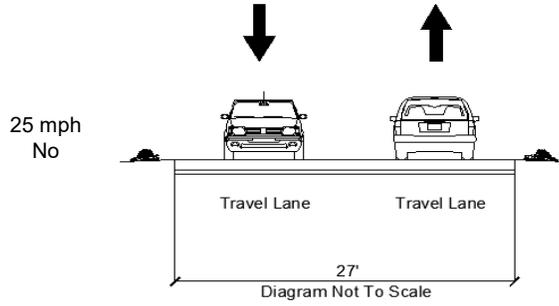
The 85th-percentile speed of 33.3 mph indicates a 35 mph speed limit. The 10 mph pace ranges from 25 mph to 34 mph and the suggested speed limit is above this range. The higher collision rate, uncontrolled crosswalk, proximity to Brook Knoll Elementary school, and multiple residential driveways for fronting residential justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit sign remain at 25 mph.

**County of Santa Cruz
Transportation Engineering Division**

Street Name: Sims Road

Limits: Graham Hill Road to La Madrona Drive

**Typical
Cross-section**



Radar Survey Sh 4

X = East / = West

	1.7	10	15	20	25	30			
60		1						0	
								0	
								0	
								0	
55								0	
								0	
								0	
50								0	
								0	
								0	
45								0	
								0	
								0	
	X							1	0.5%
	/							1	0.5%
	/							1	0.5%
40	/	/	/					2	1.0%
	/	/	/					2	1.0%
	X	/	/					2	1.0%
	X							1	0.5%
	X	X	X	/	X			5	2.5%
35	X	X	X	X	/	/		7	3.5%
	X	X	X	X	X	/	/	11	5.5%
	X	X	X	X	X	/	/	12	6.0%
	X	X	X	X	X	X	X	28	14.0%
	X	X	X	X	X	/	/	20	10.0%
30	X	X	X	X	X	X	/	18	9.0%
	X	X	X	X	X	X	X	29	14.5%
	X	X	X	X	X	X	/	21	10.5%
	X	X	X	X	X	X	/	12	6.0%
	X	X	X	X	X	X	/	9	4.5%
25	X	/	/	/	/	/	/	10	5.0%
	X	X	X	X	/			6	3.0%
								0	
								0	
	/							1	0.5%
20	X							1	0.5%
								0	
								0	
								0	
15								0	
								0	
								0	
								0	
10								0	

Total Samples = 200

85th Percentile Speed: 33.3 mph
50th Percentile Speed: 29.6 mph

Date of Survey: 5/20/19
Weather: Cloudy

Start Time: 11:15 AM
End Time: 12:20 PM

15th Percentile Speed: 26.3 mph
10 MPH Pace: 25 - 34
Number in Pace: 170
Percent in Pace: 85.0%

Pavement Condition: Good
Street Class.: Local
Field Study by: IDAX / KHA

Posted
Speed: 25 mph

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

18

STREET: Larkin Valley Road
FROM: Airport Boulevard

SURVEY DATE: 5/23/2019
TO: Buena Vista Drive

SPEED DATA

Location of Speed Survey	See Comment	Posted Speed Limit	35 mph
Time of Speed Survey	3:21 PM - 5:21 PM, 3:40 PM - 5:40 PM	Recommended Speed Limit	35 mph
50th Percentile Speed (Mean Speed)	31.4 mph	Speed Limit Change	No
85th Percentile Speed	38.0 mph		
10 mph Pace Speed	26 - 35 mph		
Percentage of Vehicles in Pace	67.3%		
Number of Survey Samples	57		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	8
Collision Rate (ACC/MVM)	15.7
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	409
Type of Traffic Control	All-way stop control at Buena Vista Drive and signal at Airport Boulevard
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	6019'
Width	17' - 19'
Number of Lanes	NB - 1 SB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Poor
Pavement Condition	Poor
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

For this segment, the speed survey was conducted at two locations (1800' south of Buena Vista Dr and 500' north of Growing Social School). The average 85th-percentile speed of 38 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 27 mph to 36 mph and the suggested speed limit is above this range. The higher collision rate, presence of horizontal/vertical curves and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

19

STREET: Larkin Valley Road
FROM: Buena Vista Drive

SURVEY DATE: 5/23/2019
TO: Mar Monte Avenue

SPEED DATA

Location of Speed Survey	See Comment	Posted Speed Limit	35 mph - 40 mph
Time of Speed Survey	10:40 AM - 12:40 PM, 1:25 PM - 3:25 PM	Recommended Speed Limit	35 mph
50th Percentile Speed (Mean Speed)	36.1 mph	Speed Limit Change	No
85th Percentile Speed	42.1 mph		
10 mph Pace Speed	32 - 41 mph		
Percentage of Vehicles in Pace	67.3%		
Number of Survey Samples	124		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	10
Collision Rate (ACC/MVM)	2.32
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	1,544
Type of Traffic Control	All-way stop control at Buena Vista Drive
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	13464'
Width	22'
Number of Lanes	NB - 1 SB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	None
Horizontal Curve	Yes
Visibility	Poor
Pavement Condition	Poor
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

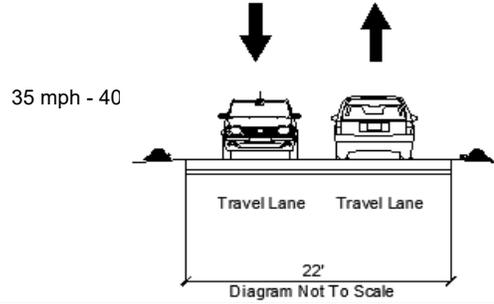
For this segment, the speed survey was conducted at two locations (438 Larkin Valley Rd and between Windsong Way & Travis Ln). The average 85th-percentile speed of 42.1 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 32 mph to 41 mph and the suggested speed limit is within this range. The higher collision rate, presence of horizontal curve, and sight distance constraints (per 2019 survey) justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35/40 mph.

**County of Santa Cruz
Transportation Engineering Division**

Street Name: Larkin Valley Road

Limits: Buena Vista Drive to Mar Monte Avenue

**Typical
Cross-section**



Radar Survey Sheet

X = East / = West

	5	10	15	20	25	30			
60							0		
							0		
							0		
							0		
							0		
55	X						1	0.7%	100.0%
							0		
							0		
							0		
50	X						1	0.7%	99.3%
							0		
	X						1	0.7%	98.6%
	/ /						2	1.4%	98.0%
45							0		
	/ /						2	1.4%	96.6%
	/ / /						3	2.0%	95.2%
	X X X X /						5	3.4%	93.2%
	X X X / / / / / /						9	6.1%	89.8%
40	X X X X X X / / / / /						10	6.8%	83.7%
	X / / / / /						5	3.4%	76.9%
	X X / /						4	2.7%	73.5%
	X X X X / / / / / /						9	6.1%	70.7%
	X X X X X / / / / / / / / /						14	9.5%	64.6%
35	X X / / / / / / / / / / / /						9	6.1%	55.1%
	X X X X X X X X / / / / / / / / /						15	10.2%	49.0%
	X X X X X X X / / / / / / / / /						13	8.8%	38.8%
	X X X X X X / / / / / / / / /						12	8.2%	29.9%
	X X X X X X / / / / /						9	6.1%	21.8%
30	X X X X X / / / / / / / / /						10	6.8%	15.6%
	X / /						3	2.0%	8.8%
	X X						2	1.4%	6.8%
	X X X						3	2.0%	5.4%
	X						1	0.7%	3.4%
25	/						1	0.7%	2.7%
	/						1	0.7%	2.0%
	X						1	0.7%	1.4%
							0		
							0		
20							0		
	/						1	0.7%	0.7%
							0		
							0		
15							0		
							0		
							0		
							0		
10							0		
							0		

Total Samples = 147

85th Percentile Speed: 40.2 mph
50th Percentile Speed: 34.2 mph
15th Percentile Speed: 29.9 mph
10 MPH Pace: 30 - 39
Number in Pace: 100
Percent in Pace: 68.0%

Date of Survey: 5/23/19
Weather: Cloudy
Pavement Condition: Poor
Street Class.: Collector
Field Study by: IDAX / KHA

Start Time: 1:25 PM
End Time: 3:25 PM
Posted Speed: 40 mph

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

21

STREET: Amesti Rd
FROM: E Rianda Road

SURVEY DATE: 5/28/2019
TO: Varni Road

SPEED DATA

Location of Speed Survey	250' S/O Bollinger Pl	Posted Speed Limit	35 mph
Time of Speed Survey	1:05 PM - 2:35 PM	Recommended Speed Limit	35 mph
50th Percentile Speed (Mean Speed)	37.8 mph	Speed Limit Change	No
85th Percentile Speed	44.0 mph		
10 mph Pace Speed	33 - 42 mph		
Percentage of Vehicles in Pace	65.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	3
Collision Rate (ACC/MVM)	1.01
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	2,704
Type of Traffic Control	All-way stop control at Varni Road
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	5280'
Width	24'
Number of Lanes	NB - 1 SB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	Yes - Discontinuous (not designated on-street parking and for a small portion of the corridor)
Sidewalks?	No
Driveways?	Many
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Moderate
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 44 mph indicates a 45 mph speed limit. The 10 mph pace ranges from 33 mph to 42 mph and the suggested speed limit is above this range. The collision rate is below the expected rate. Multiple residential driveways and presence of horizontal/vertical curves justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended the speed limit remain at 35 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

22

STREET: Paulsen Road
FROM: Green Valley Road

SURVEY DATE: 7/9/2019
TO: Trembly Lane

SPEED DATA

Location of Speed Survey	Between Trembly Ln and Green Valley Rd	Posted Speed Limit	25 mph
Time of Speed Survey	11:34 AM - 1:13 PM	Recommended Speed Limit	25 mph
50th Percentile Speed (Mean Speed)	25.0 mph	Speed Limit Change	No
85th Percentile Speed	31.0 mph		
10 mph Pace Speed	21 - 30 mph		
Percentage of Vehicles in Pace	64.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	4
Collision Rate (ACC/MVM)	6.95
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	3,758
Type of Traffic Control	Signal at Green Valley Road
Pedestrian Traffic	Low (school bus observed during field visit)
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	739'
Width	29'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	Yes - south side has designated parking, north side parked on shoulder
Sidewalks?	Yes - South side
Driveways?	Many
Vertical Curve	None
Horizontal Curve	None
Visibility	Good
Pavement Condition	Poor
Adjacent Land Use	Residential

COMMENTS & JUSTIFICATION

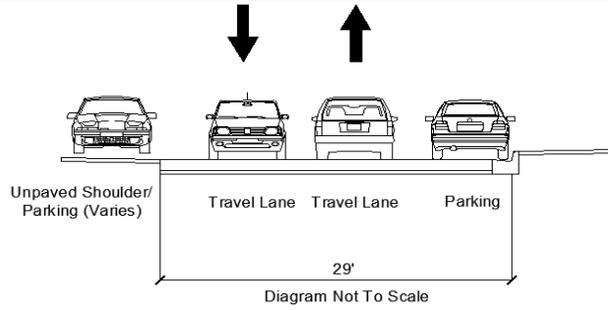
The 85th-percentile speed of 31 mph indicates a 30 mph speed limit. The 10 mph pace ranges from 21 mph to 30 mph and the suggested speed limit is within this range. The higher collision rate and multiple residential driveways justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit increase remain at 25 mph.

**County of Santa Cruz
Transportation Engineering Division**

Street Name: Paulsen Road

Limits: Green Valley Road to Trembly Lane

**Typical
Cross-section**



Radar Survey Sh 4

X = East / = West

	7	10	15	20	25	30			
60		1						0	
								0	
								0	
								0	
								0	
55								0	
								0	
								0	
								0	
								0	
50								0	
								0	
								0	
								0	
								0	
45								0	
X								1	0.5% 100.0%
								0	
								0	
40								0	
/								1	0.5% 99.5%
								0	
/ / /								3	1.5% 99.0%
X X X /								5	2.5% 97.5%
35	X X / /							5	2.5% 95.0%
X X X X / / /								7	3.5% 92.5%
X X /								3	1.5% 89.0%
X X / /								5	2.5% 87.5%
X X X X / / /								7	3.5% 85.0%
30	X X X X X X X X / / / / / / / /							15	7.5% 81.5%
X X / /								5	2.5% 74.0%
X X X X X X X X X X / / / / / / / / / /								19	9.5% 71.5%
X X X X / X / / / /								10	5.0% 62.0%
X X X X X X X / / / / / / / /								14	7.0% 57.0%
25	X X X X X X X X X / / / / / / / / / / / / / /							20	10.0% 50.0%
X X X X X X X X X / / / / / / / /								16	8.0% 40.0%
X X X X / / / / / / / /								10	5.0% 32.0%
X X X X / / / / / / / /								12	6.0% 27.0%
X X X / / / / / / /								8	4.0% 21.0%
20	X X X X / / / / / / / /							10	5.0% 17.0%
X X X X / / / / / / / /								9	4.5% 12.0%
X X X X X								6	3.0% 7.5%
X X / /								4	2.0% 4.5%
X /								2	1.0% 2.5%
15	/ / /							3	1.5% 1.5%
								0	
								0	
								0	
								0	
10								0	

Total Samples = 200

85th Percentile Speed: 31.0 mph
50th Percentile Speed: 25.0 mph
15th Percentile Speed: 19.6 mph
10 MPH Pace: 21 - 30

Date of Survey: 7/9/19
Weather: Sunny
Pavement Condition: Fair
Street Class.: Collector

Start Time: 11:34 AM
End Time: 1:13 PM
Posted Speed: 25 mph

Number in Pace: 129
Percent in Pace: 64.5%

Field Study by: IDAX / KHA

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

23

STREET: Paulsen Road
FROM: Trembly Lane

SURVEY DATE: 6/7/2019
TO: Whiting Road

SPEED DATA

Location of Speed Survey	195 Paulsen Rd	Posted Speed Limit	25 mph - 35 mph
Time of Speed Survey	3:00 PM - 4:05 PM	Recommended Speed Limit	25 mph
50th Percentile Speed (Mean Speed)	35.8 mph	Speed Limit Change	No
85th Percentile Speed	40.3 mph		
10 mph Pace Speed	32 - 41 mph		
Percentage of Vehicles in Pace	72.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	5
Collision Rate (ACC/MVM)	1.13
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	3,144
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low

ROADWAY CHARACTERISTICS

Length of Segment	6811'
Width	23'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	Yes - Discontinuous
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Moderate
Pavement Condition	Poor
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

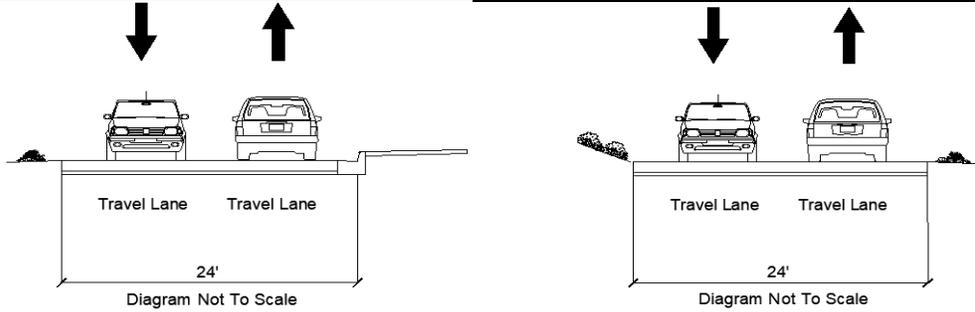
The 85th-percentile speed of 40.3 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 32 mph to 41 mph and the suggested speed limit is within this range. The higher collision rate, presence of horizontal/vertical curves, and slow-moving farm vehicle crossings justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 25/35 mph.

**County of Santa Cruz
Transportation Engineering Division**

Street Name: Paulsen Road

Limits: Trembly Lane to Whiting Road

Typical Cross-section



Radar Survey Sheet

X = East / = West

	5	10	15	20	25	30		
60							0	
							0	
							0	
							0	
							0	
55	X						1	0.5% 100.0%
							0	
							0	
	X						1	0.5% 99.5%
							0	
50	X						1	0.5% 99.0%
							0	
							0	
	X /						2	1.0% 98.5%
							0	
45	X X / /						4	2.0% 97.5%
	X X / /						3	1.5% 95.5%
	X / / /						4	2.0% 94.0%
	X X / / / / / / /						8	4.0% 92.0%
	X X / / / / / / /						9	4.5% 88.0%
40	X X X X X X X X / / / /						11	5.5% 83.5%
	X X X X X X X X X X / / / / / /						15	7.5% 78.0%
	X X X X X X X / / / / / / / /						15	7.5% 70.5%
	X X X X X X X X X X X X / / / / / / / / / / / /						23	11.5% 63.0%
	X X X X X X X X X X / / / / / / / /						16	8.0% 51.5%
35	X X X X X X X X X X / / / / / / / / / / / /						20	10.0% 43.5%
	X X X X / / / / / / / /						9	4.5% 33.5%
	X X X X X X X X / / / / / / / /						15	7.5% 29.0%
	X X X X X X X / / / / / /						12	6.0% 21.5%
	X / / / / / / / /						8	4.0% 15.5%
30	X X X X / /						6	3.0% 11.5%
	X /						2	1.0% 8.5%
	X X X /						4	2.0% 7.5%
							0	
	X / / /						3	1.5% 5.5%
25	/ /						2	1.0% 4.0%
	/						1	0.5% 3.0%
	/						1	0.5% 2.5%
							0	
	X						1	0.5% 2.0%
20							0	
							0	
							0	
	/						1	0.5% 1.5%
							0	
15	/						1	0.5% 1.0%
							0	
	X						1	0.5% 0.5%
							0	
							0	
10							0	

Total Samples = 200

85th Percentile Speed: 40.3 mph
50th Percentile Speed: 35.8 mph
15th Percentile Speed: 30.9 mph
10 MPH Pace: 32 - 41

Date of Survey: 6/7/19
Weather: Sunny
Pavement Condition: Poor
Street Class.: Collector

Start Time: 3:00 PM
End Time: 4:05 PM
Posted Speed: 25 mph

Number in Pace: 145
Percent in Pace: 72.5%

Field Study by: IDAX / KHA

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

24

STREET: Buena Vista Drive
FROM: San Andreas Road

SURVEY DATE: 5/31/2019
TO: Buena Vista Landfill Driveway

SPEED DATA

Location of Speed Survey	1700' east of Whiskey Hill Rd	Posted Speed Limit	35 mph
Time of Speed Survey	12:20 PM - 2:05 PM	Recommended Speed Limit	35 mph
50th Percentile Speed (Mean Speed)	36.5 mph	Speed Limit Change	No
85th Percentile Speed	41.8 mph		
10 mph Pace Speed	34 - 43 mph		
Percentage of Vehicles in Pace	73.0%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	5
Collision Rate (ACC/MVM)	2.23
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	1,778
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low (No trucks were observed, but segment is near a landfill)

ROADWAY CHARACTERISTICS

Length of Segment	6072'
Width	24'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Poor
Adjacent Land Use	Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 41.8 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 34 mph to 43 mph and the suggested speed limit is within this range. The higher collision rate and presence of horizontal/vertical curves justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35 mph.

COUNTY OF SANTA CRUZ

ENGINEERING AND TRAFFIC SURVEY

25

STREET: Buena Vista Drive
FROM: Buena Vista Landfill Driveway

SURVEY DATE: 5/31/2019
TO: Highway 1

SPEED DATA

Location of Speed Survey	300' south of Harkins Slough Rd	Posted Speed Limit	35 mph - 40 mph
Time of Speed Survey	2:15 PM - 2:56 PM	Recommended Speed Limit	35 mph
50th Percentile Speed (Mean Speed)	34.9 mph	Speed Limit Change	No
85th Percentile Speed	39.4 mph		
10 mph Pace Speed	31 - 40 mph		
Percentage of Vehicles in Pace	76.5%		
Number of Survey Samples	200		

COLLISION HISTORY

Number of Years Studied	3
Total Collisions	16
Collision Rate (ACC/MVM)	4.16
Expected Collisions (ACC/MVM)	1.06

TRAFFIC FACTORS

Average Daily Traffic	2,525
Type of Traffic Control	None
Pedestrian Traffic	Low
Truck Traffic	Low (No trucks were observed, but segment is near a landfill)

ROADWAY CHARACTERISTICS

Length of Segment	7339'
Width	26'
Number of Lanes	EB - 1 WB - 1
Street Classification	Collector
Divided Median?	No
Designated Bike Route?	No
Bike Lanes?	No
Uncontrolled Crosswalks?	No
On-Street Parking?	No
Sidewalks?	No
Driveways?	Few
Vertical Curve	Yes
Horizontal Curve	Yes
Visibility	Good
Pavement Condition	Poor
Adjacent Land Use	Residential and Rural

COMMENTS & JUSTIFICATION

The 85th-percentile speed of 39.4 mph indicates a 40 mph speed limit. The 10 mph pace ranges from 31 mph to 40 mph and the suggested speed limit is within this range. The higher collision rate and presence of horizontal/vertical curves justify maintaining the existing posted speed limit as per CVC Section 22358.8. Therefore, it is recommended that the speed limit remain at 35/40 mph.

