



**2018 CITYWIDE
ENGINEERING AND TRAFFIC SURVEY (E&TS)**

FOR THE

**CITY OF ARROYO GRANDE
ENGINEERING DIVISION
COMMUNITY DEVELOPMENT DEPARTMENT
300 EAST BRANCH STREET
ARROYO GRANDE, CA 93420**

FINAL DRAFT

NOVEMBER 2018

PREPARED BY



Pavement Engineering Inc.

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CERTIFICATION

I, Sam Tsz Kin Ho, do hereby certify that this Engineering and Traffic Survey for the City of Arroyo Grande, California, was prepared under my direct supervision and is complete and accurate. The registered Civil Engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions and decisions are based. I also certify that I am duly registered as a Professional Civil Engineer in the State of California.



Nov 21, 2018

Sam Tsz Kin Ho

Date

Professional Registered Civil Engineer License Number: C79939
Expires September 30, 2020



INTRODUCTION

This Engineering and Traffic Survey is intended to be the basis for the establishment, revision, and enforcement of speed limits for selected streets within the City of Arroyo Grande. This Engineering and Traffic Survey presents recommended speed limits for 70 street segments in the City of Arroyo Grande. Engineering and Traffic Surveys are required by the State of California to establish intermediate speed limits on local streets and to enforce those limits using radar or other speed measuring devices. These surveys must be updated every 5 or 7 years to ensure the speeds reflect current conditions as dictated by the California Vehicle Code (CVC). The CVC also requires that the surveys be conducted based on the methodology required by The California Manual on Uniform Traffic Control Devices (CA MUTCD) dated November 2014.

The survey was requested by the City for the proper posting of speed limits and to enable the Police Department to utilize radar or other electronic speed measuring devices for speed enforcement. CVC Sections 40801 and 40802 require Engineering and Traffic Surveys that verify the prima facie speed limit before enforcement by such a device is legal. The law further specifies that these surveys be conducted every 5 years. The surveys can be extended to 7 years provided the City's police officer(s) have completed a 24-hour radar operator course (CVC Section 40802(c)(2)(B)(i)(I)). Additionally, some surveys may be extended to 10 years if a traffic engineer certifies that no changes in roadway or traffic conditions have occurred (CVC Section 40802(c)(2)(B)(i)(II)). These provisions assure that posted speed limits are kept reasonably current.

The Engineering and Traffic Surveys for the City were conducted in accordance with procedures outlined in the California Manual on Uniform Traffic Control Devices (California MUTCD) dated November 2014 and as required by Section 627 of the California Vehicle Code. The Code further describes three elements of an engineering and traffic survey:

1. Measurement of prevailing speed;
2. Accident history; and
3. Roadway characteristics not readily apparent to the motorist.

Posted speed limits are established primarily to protect the general public from the reckless and unpredictable behavior of dangerous drivers. They provide law enforcement with a clearly understood method to identify and apprehend violators of the basic speed law (CVC Section 22350). This law states that "No person shall drive a

vehicle on a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of the highway, and in no event at a speed which endangers the safety of persons or property." The posted speed limit gives motorists a clear warning of the maximum speed that is reasonable and prudent under typical driving conditions.

The basic fundamentals for establishing speed limits recognize that the majority of drivers behave in a safe and reasonable manner, and therefore, the normally careful and competent actions of a reasonable driver should be considered legal. Speed limits established on these fundamentals conform to the consensus that those who drive the highway determine what speed is reasonable and safe, not on the judgment of one or a few individuals. A radar speed study is usually used to record the prevailing speed of reasonable drivers.

Speed limits are also established to advise drivers of conditions which may not be readily apparent to a reasonable driver. For this reason, accident history, roadway conditions, traffic characteristics, and land use must also be analyzed before determining speed limits. Speed limit changes are usually made in coordination with physical changes in roadway conditions or roadside developments. Unusually short zones of less than one-half mile in length should be avoided to reduce driver confusion.

Additionally, it is generally accepted that speed limits cannot be successfully enforced without voluntary compliance by a majority of drivers. Consequently, only the driver whose behavior is clearly out of line with the normal flow of traffic is usually targeted for enforcement.

ELEMENTS OF THE ENGINEERING AND TRAFFIC SURVEY

The California Manual on Uniform Traffic Control Devices (California MUTCD) dated November 2014 specifies the methodology to be used for completing Engineering and Traffic Surveys. This methodology includes an evaluation of current vehicle speeds, accident history and conditions not readily apparent to motorists. The basic elements of the Engineering and Traffic Survey are discussed in more detail as follows:

Speed Sampling

Existing vehicle speeds are surveyed by a certified radar operator with a calibrated radar unit in an unmarked vehicle. Speed samples are taken for each segment

representing a statistically significant sample of current traffic. This data is then evaluated to identify the distribution of speeds. A key element in the evaluation is the identification of the 85th percentile speed. The 85th percentile speed is the speed at or below which 85 percent of the traffic travels. This threshold represents what is historically found to be a safe and reasonable speed for most drivers based on common roadway conditions. Therefore, a speed limit is established at the nearest 5-mile per hour (mph) increment to the 85th percentile speed, except as shown in the two options below.

Options:

1. The posted speed may be reduced by 5 mph from the nearest 5 mph increment of the 85th percentile speed, in compliance with CVC Section 627 and 22358.5.
2. 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 reduction is used. Refer to CVC Section 21400(f).

If the speed limit to be posted has had the 5 mph reduction applied, then an E&TS shall document in writing the conditions and justification for the lower speed limit. The reasons for the lower speed limit shall be in compliance with CVC Section 627 and 22358.5

The following examples are provided to explain the application of these speed limit criteria:

- A. Using Option 1 above and first step is to round down: If the 85th percentile speed in a speed survey for a location was 37 mph, then the speed limit would be established at 35 mph since it is the closest 5 mph increment to the 37 mph speed. As indicated by the option, this 35 mph established speed limit could be reduced by 5 mph to 30 mph if conditions and justification for using this lower speed limit are documented in the E&TS.
- B. Using Option 1 above and first step is to round up: If the 85th percentile speed in a speed survey for a location was 33 mph, then the speed limit would be established at 35 mph since it is the closest 5 mph increment to the 33 mph speed. As indicated by the option, this 35 mph speed limit could be reduced by 5 mph to 30 mph if the conditions and justification for using this lower speed limit are documented in the E&TS.

- C. Using Option 2 above and first step is to round up: If the 85th percentile speed in a speed survey for a location was 33 mph, instead of rounding up to 35 mph, the speed limit can be established at 30 mph, but no further reduction can be applied.

Collision History

Reported collisions are reviewed for each street segment to determine if there is a higher than average rate of collisions. A segment that has an above-average collision rate typically suggests conditions that are not readily apparent to motorists.

A summary of the collision rates for the 70 surveyed street segments is provided in Appendix B [ON FILE AT THE CITY].

Conditions Not Readily Apparent To Motorists

Each street segment is field inspected to identify roadway conditions that may not be readily apparent to motorists. A determination is made whether any conditions are significant and warrant the recommendation of the speed limit 5 mph or more below the basic speed limit. It is important to note that The California Manual on Uniform Traffic Control Devices (California MUTCD) dated November 2014 recommends exercising great care when establishing speed limits 5 mph or more below the basic speed limit.

SURVEY CONDITIONS

SURVEY LOCATIONS

The procedures below describe the criteria and methods used to survey selected streets within the City of Arroyo Grande. The specific location of the radar speed survey for each street segment was selected after considering the following:

1. Minimum stop sign and traffic signal influence.
2. Minimum visibility restrictions.
3. Non-congested traffic flow away from intersections and driveways.
4. Minimum influence from curves or other roadway conditions that would affect the normal operation of a vehicle.

DATA COLLECTION

Data of existing conditions was obtained including prevailing speed of vehicles, traffic collisions, visibility restrictions, and roadway conditions within the community. Speed data and field reviews were conducted at 70 locations during the years of 2016 and 2018. Three locations were used as samples to verify that driver behavior has not changed over the time period.

Speed Data

Radar speed measurements were conducted at 70 locations during the months of November-May of 2015-2016 and July-September 2018. All surveys were conducted in good weather conditions, during off-peak hours on weekdays. The radar unit was operated from an unmarked vehicle to minimize any influence on driver behavior. Typically, a minimum sample size of 100 vehicles or the total samples during a maximum period of 2 hours were obtained for each segment. Traffic speeds in both/each directions were recorded for individual segments.

Collision Data

Collision data was obtained from the City's SWITRS electronic collision database. For this study, collision data was used from the latest 4 years of reported accidents from January 1, 2014 to December 31, 2017. The collision rates for the 70 segments are expressed in accidents per million vehicle miles (A/MVM). To calculate these rates, 24-

hour traffic volumes were collected for each street segment. This information was then entered into the following formula to determine the collision rate:

$$R = A \times 1,000,000 \times \frac{A \times 1,000,000}{t \times 365 \frac{\text{days}}{\text{year}} \times l \times v}$$

A = Number of midblock collisions over time period

R = Collision Rate (accidents/million vehicle miles)

t = Time Period Covered (in years)

l = Length of Segment (miles)

v = Traffic Volume (average daily traffic)

The segment collision rate was then compared to the average statewide collision rate. The average statewide collision rates were obtained from 2015 Collision Data on California State Highways published by Caltrans.

Field Review Data

A field review was conducted for each of the selected street segments in the City with consideration for the following factors:

1. Street width and alignment (design speed);
2. Pedestrian activity and traffic flow characteristics;
3. Number of lanes and other channelization and striping patterns;
4. Frequency of intersections, driveways, and on-street parking;
5. Location of stop signs and other regulatory traffic control devices;
6. Visibility obstructions;
7. Land use and proximity to schools;
8. Pedestrian and bicycle usage;
9. Uniformity with existing speed zones and those in adjacent jurisdictions; and
10. Any other unusual condition not readily apparent to the driver.

ANALYSIS

CRITERIA

Survey data was compiled and analyzed to determine the recommended speed limit in accordance with several criteria contained in The California Manual on Uniform Traffic Control Devices (California MUTCD) dated November 2014. Some of the criteria used are:

- A. The critical speed or 85th percentile speed is that speed at or below which 85 percent of the traffic is moving. This speed is the baseline value in determining what the majority of drivers believe is safe and reasonable. Speed limits set higher than the critical speed are not considered reasonable and safe. Speed limits set lower than the critical speed make a large number of reasonable drivers "unlawful," and do not facilitate the orderly flow of traffic. The "basic speed limit" is the nearest 5 mph increment to the 85th percentile speed.
- B. The 10 mile per hour (mph) pace speed is the 10 mph increment that contains the highest percentage of vehicles. It is a measure of the dispersion of speeds across the range of the samples surveyed. An accepted practice is to keep the speed limit within the 10 mph pace while considering the critical speed and other factors that might require a speed lower than the critical speed.
- C. The collision rate for each street segment is compared to average collision rates that can be reasonably expected to occur on streets and highways in other jurisdictions, in proportion to the volume of traffic per lane mile. These average collision rates have been developed by the State of California and are considered reasonable for use in the City of Arroyo Grande.

RESULTS AND RECOMMENDATIONS

The Engineering and Traffic Survey Forms, presented in Appendix A [ON FILE AT THE CITY], illustrate results of a thorough evaluation of the available data and recommend a speed limit for each street segment surveyed. A complete summary of all recommendations is shown in Table 2. In each case, the recommended speed limit was consistent with the prevailing behavior as demonstrated by the radar speed measurements. Typically, a speed limit in the upper range of the 10-mile pace was selected unless a collision rate significantly higher than expected was discovered or roadway conditions not readily apparent to the driver were identified. Any segments with recommended speed limits 5 mph or more below the basic speed limit are fully explained later in this report.

The Legislature, in adopting Section 22358.5 of the California Vehicle Code (CVC), has made it clear that physical conditions, such as width, curvature, grade and surface conditions, or any other condition readily apparent to a driver, in the absence of other factors, would not be the basis for special downward speed zoning. In these cases, the basic speed law (CVC Section 22350) is sufficient to regulate such conditions.

The recommendations contained in this Report are intended to establish prima facie speed limits. They are not intended to be absolute for all prevailing conditions. All prima facie speed violations are actually violations of the basic speed law (Section 22350 of California Vehicle Code). This statute states that a person shall not drive a vehicle at a speed greater than is safe having regard for traffic, roadway, and weather conditions. A prima facie limit is intended to establish a maximum safe speed under normal conditions.

Table 1 identifies the street segments with recommended changes in posted speed limits and Table 2 summarizes the recommendations for all surveyed segments.

Table 1: Street Segments with Recommended Speed Changes

#	STREET	FROM	TO	DIR	POSTED SPEED (MPH)	85TH %ILE	RECOMMENDED SPEED (MPH)
1	ASHST	City Limits	S. Elm St	EB	35	33.88	30
		City Limits	S. Elm St	WB	35		
6	CAMINO MERCADO	Via Las Aguilas	Rancho Parkway	EB	N/A	37.56	35
		Via Las Aguilas	Rancho Parkway	WB	30		
8	CORBETT CANYON RD	Paseo St	Printz Rd	NB	N/A	44.01	40
		Paseo St	Printz Rd	SB	N/A		
9	CORBETT CANYON RD	Huasna Rd	Wildwood Dr	NB	40	37.65	35
		Huasna Rd	Wildwood Dr	SB	40		
14	E CHERRY AVE	Traffic Way	Pacific Coast Railway Pl	EB	N/A	35.22	30
		Traffic Way	Pacific Coast Railway Pl	WB	25		
24	FAIR OAKS AVE	Orchard Ave	Traffic Way	EB	N/A	29.21	30
		Orchard Ave	Traffic Way	WB	35		
28	FARROLL AVE	Bakeman Ln	S Elm St	EB	35	30.34	30
		Bakeman Ln	S Elm St	WB	35		
34	JAMES WAY	Rancho Pkwy	Hidden Oak Rd	EB	40	36.02	35
		Rancho Pkwy	Hidden Oak Rd	WB	40		
36	LE POINT ST	N Mason St	Via La Barranca	EB	N/A	33.22	30
		N Mason St	Via La Barranca	WB	N/A		
40	N MASON ST	Le Point St	E Branch St	NB	N/A	25.36	25
		Le Point St	E Branch St	SB	N/A		
47	S COURTLAND ST	E Grand Ave	Blueberry Ave	NB	25	32.72	30
		E Grand Ave	Blueberry Ave	SB	N/A		
59	THE PIKE	S Elm St	Gaynfair Tr	EB	40	37.79	35
		S Elm St	Gaynfair Tr	WB	40		
63	VALLEY RD	Fair Oaks Ave	Sunrise Tr	NB	N/A	41.48	40
		Fair Oaks Ave	Sunrise Tr	SB	N/A		
66	W BRANCH ST	E Grand Ave	Vernon St	EB	N/A	32.29	30
		E Grand Ave	Vernon St	WB	N/A		

Table 2: Summary of Recommendations

#	STREET	FROM	TO	DIR	POSTED SPEED (MPH)	85TH %ILE	RECOMMENDED SPEED (MPH)
1	ASHST	City Limits	S. Elm St	EB	35	33.88	30
		City Limits	S. Elm St	WB	35		
2	BRANCH MILL RD	E Cherry Ave	Newsom Springs Rd	EB	40	43.38	40
		E Cherry Ave	Newsom Spring Rd	WB	40		
3	BRISCO RD	Linda Dr	El Camino Real	NB	35	35.15	35
		Linda Dr	El Camino Real	SB	35		
4	BRISCO RD	E Grand Ave	Linda Dr	NB	30	29.11	30
		E Grand Ave	Linda Dr	SB	30		
5	CAMINO MERCADO	W Branch St	Via Las Aguilas	EB	30	33.34	30
		W Branch St	Via Las Aguilas	WB	N/A		
6	CAMINO MERCADO	Via Las Aguilas	Rancho Parkway	EB	N/A	37.56	35
		Via Las Aguilas	Rancho Parkway	WB	30		



#	STREET	FROM	TO	DIR	POSTED SPEED (MPH)	85TH %ILE	RECOMMENDED SPEED (MPH)
7	CORBETT CANYON RD	Printz Rd	City Limits	NB	45	50.31	45
		Printz Rd	City Limits	SB	45		
8	CORBETT CANYON RD	Paseo St	Printz Rd	NB	N/A	44.01	40
		Paseo St	Printz Rd	SB	N/A		
9	CORBETT CANYON RD	Huasna Rd	Wildwood Dr	NB	40	37.65	35
		Huasna Rd	Wildwood Dr	SB	40		
10	EBRANCH ST	Garden St	Huasna Rd	EB	N/A	32.33	30
		Garden St	Huasna Rd	WB	30		
11	EBRANCH ST	Garden St	Paulding Cir	EB	30	35.24	30
		Garden St	Paulding Cir	WB	30		
12	EBRANCH ST	Bridge St	Mason St	EB	25	22.25	25
		Bridge St	Mason St	WB	25		
13	ECHERRY AVE	Pacific Coast Railway Pl	Branch Mill Rd	EB	N/A	34.78	35
		Pacific Coast Railway Pl	Branch Mill Rd	WB	35		
14	ECHERRY AVE	Traffic Way	Pacific Coast Railway Pl	EB	N/A	35.22	30
		Traffic Way	Pacific Coast Railway Pl	WB	25		
15	EGRAND AVE	Oak St	101 North Off-Ramp	EB	35	37.64	35
		Oak St	101 North Off-Ramp	WB	35		
16	EGRAND AVE	Alpine St	Oak St	EB	35	37.71	35
		Alpine St	Oak St	WB	35		
17	EGRAND AVE	Brisco Rd	Alder St	EB	35	39.88	35
		Brisco Rd	Alder St	WB	35		
18	EGRAND AVE	Courtland St	Elm St	EB	35	38.98	35
		Courtland St	Elm St	WB	35		
19	EL CAMINO REAL	Oak Park Blvd	Robles Rd	EB	45	46.26	45
		Oak Park Blvd	Robles Rd	WB	45		
20	EL CAMINO REAL	Robles Rd	Stonecrest Dr	EB	N/A	41.59	40
		Robles Rd	Stonecrest Dr	WB	40		
21	EL CAMINO REAL	Stonecrest Dr	Brisco Rd	EB	40	43.58 (41.59)	40
		Stonecrest Dr	Brisco Rd	WB	N/A		
22	EL CAMINO REAL	N Halcyon Rd	Bennett Ave	EB	35	37.79	35
		N Halcyon Rd	Bennett Ave	WB	35		
23	EL CAMINO REAL	Bennett Ave	Cornwall Ave	NB	35	35.63	35
		Bennett Ave	Cornwall Ave	SB	35		
24	FAIR OAKS AVE	Orchard Ave	Traffic Way	EB	N/A	29.21	30
		Orchard Ave	Traffic Way	WB	35		
25	FAIR OAKS AVE	Valley Rd	California St	EB	35	35.73	35
		Valley Rd	California St	WB	35		
26	FAIR OAKS AVE	Valley Rd	S Halcyon Rd	EB	40	43.09	40
		Valley Rd	S Halcyon Rd	WB	40		
27	FARROLL AVE	S Elm St	Victorian Ct	EB	30	35.06 (36.31)	30
		S Elm St	Victorian Ct	WB	30		
28	FARROLL AVE	Bakeman Ln	S Elm St	EB	35	30.34	30
		Bakeman Ln	S Elm St	WB	35		
29	GRACE LN	N Rodeo Dr	S Rodeo Dr	NB	35	37.17 (38.95)	35
		N Rodeo Dr	S Rodeo Dr	SB	35		
30	HUASNA RD	Corbett Canyon Rd	Stagecoach Rd	EB	40	40.43	40
		Corbett Canyon Rd	Stagecoach Rd	WB	40		



#	STREET	FROM	TO	DIR	POSTED SPEED (MPH)	85TH %ILE	RECOMMENDED SPEED (MPH)
31	HUASNA RD	Stagecoach Rd	City Limits	EB	45	45.39	45
		Stagecoach Rd	City Limits	WB	45		
32	JAMES WAY	Oak Park Blvd	Equestrian Way	EB	40	40.73	40
		Oak Park Blvd	Equestrian Way	WB	40		
33	JAMES WAY	Equestrian Way	Rancho Pkwy	EB	40	43.84	40
		Equestrian Way	Rancho Pkwy	WB	40		
34	JAMES WAY	Rancho Pkwy	Hidden Oak Rd	EB	40	36.02	35
		Rancho Pkwy	Hidden Oak Rd	WB	40		
35	JAMES WAY	Hidden Oak Rd	Tally Ho Rd	EB	35	38.58	35
		Hidden Oak Rd	Tally Ho Rd	WB	35		
36	LE POINT ST	N Mason St	Via La Barranta	EB	N/A	33.22	30
		N Mason St	Via La Barranta	WB	N/A		
37	N COURTLANDST	E Grand Ave	Brighton St	NB	25	30.06	25
		E Grand Ave	Brighton St	SB	25		
38	N ELM ST	E Grand Ave	End of Cul de Sac	NB	25	28.42	25
		E Grand Ave	End of Cul de Sac	SB	25		
39	N HALCYON RD	E Grand Ave	Bennett Ave	NB	35	33.8	35
		E Grand Ave	Bennett Ave	SB	N/A		
40	N MASON ST	Le Point St	E Branch St	NB	N/A	25.36	25
		Le Point St	E Branch St	SB	N/A		
41	OAK PARK BLVD	Farroll Ave	Naples St	NB	35	37.88	35
		Farroll Ave	Naples St	SB	35		
42	OAK PARK BLVD	W Branch St	James Way	NB	40	42.04	40
43	OAK PARK BLVD	James Way	Meadowlark Dr	NB	40	41.1	40
44	RANCHO PKWY	W Branch St	Camino Mercado	NB	35	36.87	35
		W Branch St	Camino Mercado	SB	35		
45	RANCHO PKWY	Camino Mercado	Palos Secos	NB	40	43.57	40
		Camino Mercado	Palos Secos	SB	40		
46	RANCHO PKWY	Palos Secos	Refugio Pl	NB	40	43.27	40
		Palos Secos	Refugio Pl	SB	40		
47	S COURTLANDST	E Grand Ave	Blueberry Ave	NB	25	32.72	30
		E Grand Ave	Blueberry Ave	SB	N/A		
48	S COURTLANDST	Blueberry Ave	Ash St	NB	25	27.97	25
		Blueberry Ave	Ash St	SB	25		
49	S ELM ST	E Grand Ave	Maple St	NB	35	38.27	35
		E Grand Ave	Maple St	SB	35		
50	S ELM ST	Ash St	Fair Oaks Ave	NB	25	29.87	25
		Ash St	Fair Oaks Ave	SB	25		
51	S ELM ST	Fair Oaks Ave	Farroll Ave	NB	30	31.53	30
		Fair Oaks Ave	Farroll Ave	SB	30		
52	S ELM ST	The Pike	City Limits	NB	35	37.39	35
		The Pike	City Limits	SB	35		
53	S HALCYON RD	Park Way	Dodson Way	NB	35	37.84	35
		Park Way	Dodson Way	SB	35		
54	S HALCYON RD	Dodson Way	Fair Oaks Ave	NB	40	38.23	35
		Dodson Way	Fair Oaks Ave	SB	40		
55	S HALCYON RD	Fair Oaks Ave	The Pike	NB	40	40.36	40
		Fair Oaks Ave	The Pike	SB	40		
56	TALLY HO RD	Printz Rd	James Way	NB	35	35.99	35
		Printz Rd	James Way	SB	35		
57	TALLY HO RD	James Way	Via La Barranta	NB	30	31.14	30
		James Way	Via La Barranta	SB	30		



#	STREET	FROM	TO	DIR	POSTED SPEED (MPH)	85TH %ILE	RECOMMENDED SPEED (MPH)
58	THE PIKE	Del Sol St	S Elm St	EB	35	34.75	35
		Del Sol St	S Elm St	WB	35		
59	THE PIKE	S Elm St	Gaynfair Tr	EB	40	37.79	35
		S Elm St	Gaynfair Tr	WB	40		
60	THE PIKE	Gaynfair Tr	S Halcyon Rd	EB	40	42.91	40
		Gaynfair Tr	S Halcyon Rd	WB	40		
61	TRAFFIC WAY	W Branch St	Fair Oaks Ave	NB	N/A	35.66	35
		W Branch St	Fair Oaks Ave	SB	35		
62	TRAFFIC WAY	Fair Oaks Ave	SB HWY 101 On Ramp	NB	35	38.2	35
		Fair Oaks Ave	SB HWY 101 On Ramp	SB	35		
63	VALLEY RD	Fair Oaks Ave	Sunrise Tr	NB	N/A	41.48	40
		Fair Oaks Ave	Sunrise Tr	SB	N/A		
64	VALLEY RD	Sunrise Tr	Tiger Tail Dr	NB	40	43.3	40
		Sunrise Tr	Tiger Tail Dr	SB	40		
65	W BRANCH ST	101 North Off-Ramp	Bridge St	EB	25	26.25	25
		101 North Off-Ramp	Bridge St	WB	N/A		
66	W BRANCH ST	E Grand Ave	Vernon St	EB	N/A	32.29	30
		E Grand Ave	Vernon St	WB	N/A		
67	W BRANCH ST	Vernon St	Old Ranch Rd	EB	40	41.99	40
		Vernon St	Old Ranch Rd	WB	40		
68	W BRANCH ST	Old Ranch Rd	Rodeo Dr	EB	40	42.73	40
		Old Ranch Rd	Rodeo Dr	WB	N/A		
69	W BRANCH ST	Rancho Pkwy	Camino Mercado	EB	40	40.36	40
		Rancho Pkwy	Camino Mercado	WB	40		
70	W BRANCH ST	Camino Mercado	N Oak Park Blvd	EB	40	42.37	40
		Camino Mercado	N Oak Park Blvd	WB	40		

SEGMENTS WITH SPECIAL CONDITIONS

The following segments surveyed had recommended speed limits that were 5 miles per hour or more below the critical speed due to conditions not readily apparent to the driver. Each segment is discussed in further detail.

Segment #7- Corbett Canyon Road – From Printz Road to To City Limits

- Current Posted Speed Limit : 45 MPH
- 85th Percentile Calculation: 50.31 MPH
- Recommended Speed Limit: 45 MPH

Justification: 5 MPH reduction applied. Low visibility on horizontal curve. Driveways to residential homes.

Segment #11- E Branch Street – From Garden Street to Paulding Circle

- Current Posted Speed Limit : 30 MPH
- 85th Percentile Calculation: 35.24 MPH
- Recommended Speed Limit: 30 MPH

Justification: 5 MPH reduction applied. Neighboring segments are 30 MPH going eastbound and 25 going westbound This will create potential problems for vehicles transitioning from a higher speed to a lower speed. Vertical curve is present.



Segment #14- E Cherry Avenue – From Traffic Way to Pacific Coast Railway

- Current Posted Speed Limit: 25 MPH
- 85th Percentile Calculation: 35.22 MPH
- Recommended Speed Limit: 30 MPH

Justification: 5 MPH reduction applied. Residential on Westbound side. Development on Eastbound side. Recommend monitoring “ROAD WORK” traffic control during construction. Once development is completed an E&TS is recommended to reflect change in travel patterns/behavior.

Segment #17- E Grand Avenue - From Brisco Road to Alder Street

- Current Posted Speed Limit: 35 MPH
- 85th Percentile Calculation: 39.88 MPH
- Recommended Speed Limit: 35 MPH

Justification: 5 MPH reduction applied. The adjacent segments shows travel behavior at 35 MPH, for consistency in travel flow it is recommended to maintain the same speed limit through this corridor.

Segment #27 Farroll Avenue - From S Elm Street to Victorian Court

- Current Posted Speed Limit: 30 MPH
- 85th Percentile Calculation: 35.06 MPH
- Recommended Speed Limit: 30 MPH

Justification: 5 MPH reduction applied. Residential driveways and sight distance due to parked vehicles. This leads to a segment of an existing 25 MPH zone adjacent to this segment.

Segment #33 James Way - From Equestrian Way to Rancho Parkway

- Current Posted Speed Limit: 40 MPH
- 85th Percentile Calculation: 43.84 MPH
- Recommended Speed Limit: 40 MPH

Justification: 5 MPH reduction applied. Horizontal and Vertical curves in this area. Will keep traffic consistent with Westbound and Eastbound existing speed limits. Class II Bike lane facility are present in this segment.

Segment #35 James Way - From Hidden Oak Road to Tally Ho Road

- Current Posted Speed Limit: 35 MPH
- 85th Percentile Calculation: 35.40 MPH (east) 40.79 MPH (west)
- Recommended Speed Limit: 35 MPH

Justification: 5 MPH reduction applied. Both directions have parking on both sides. Residential homes with driveways on both sides.

Segment #37 N Courtland Street - From E Grand Avenue to Brighton Street

- Current Posted Speed Limit: 25 MPH
- 85th Percentile Calculation: 30.06 MPH
- Recommended Speed Limit: 25 MPH

Justification: A senior apartment complex is located on the west side of the roadway. CVC Section 22352 allows adjustment for roadways adjacent to senior facilities when "SENIOR" warning signs are in place.

Segment #50 S Elm Street - From Ash Street to Fair Oaks Avenue

- Current Posted Speed Limit: 25 MPH
- 85th Percentile Calculation: 29.87 MPH
- Recommended Speed Limit: 25 MPH

Justification: A senior apartment complex is located on the east side of the roadway. CVC Section 22352 allows adjustment for roadways adjacent to senior facilities when "SENIOR" warning signs are in place.

Segment #62 Traffic Way - From Fair Oaks Avenue to 101 on Ramp

- Current Posted Speed Limit: 35 MPH
- 85th Percentile Calculation: 40.88 MPH (North) 32.07 (South)
- Recommended Speed Limit: 35 MPH

Justification: 5 MPH reduction applied. Development on north side. Recommend monitoring "ROAD WORK" traffic control during construction. A traffic signal is proposed at the intersection of Fair Oaks Ave after E Cherry Development. Once development is completed an E&TS is recommended to reflect change in travel patterns/behavior.

Segment #64 Valley Road - From Sunrise Terrace to Tiger Tail Drive

- Current Posted Speed Limit: 40 MPH
- 85th Percentile Calculation: 43.3 MPH
- Recommended Speed Limit: 40 MPH

Justification: 5 MPH reduction applied.

LEGISLATIVE REFERENCES

APPLICABLE SECTIONS OF CALIFORNIA VEHICLE CODE

SECTION 1. Section 627 of the Vehicle Code:
Section 627.

- a) "Engineering and traffic survey," as used in this code, means a survey of highway and traffic conditions in accordance with methods determined by the Department of Transportation for use by state and local authorities.
- b) An engineering and traffic survey shall include, among other requirements deemed necessary by the department, consideration of all of the following:
 - (1) Prevailing speeds as determined by traffic engineering measurements.
 - (2) Accident records.
 - (3) Highway, traffic, and roadside conditions not readily apparent to the driver.
- c) When conducting an engineering and traffic survey, local authorities, in addition to the factors set forth in paragraphs (1) to (3), inclusive, of subdivision (b) may consider all of the following:
 - (1) Residential density, if any of the following conditions exist on the particular portion of highway and the property contiguous thereto, other than a business district:
 - A. Upon one side of the 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.
 - B. Upon both sides of the 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.
 - C. The portion of highway is longer than one-quarter of a mile but has the ratio of separate dwelling houses or business structures to the length of the highway described in either subparagraph (A) or (B).
 - (2) Pedestrian and bicyclist safety.

Basic Speed Law

CVC Section 22350.

No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.

Speed Law Violations

CVC Section 22351.

- (a) The speed of any vehicle upon a highway not in excess of the limits specified in Section 22352 or established as authorized in this code is lawful unless clearly proved to be in violation of the basic speed law.

- (b) The speed of any vehicle upon a highway in excess of the prima facie speed limits in Section 22352 or established as authorized in this code is prima facie unlawful unless the defendant establishes by competent evidence that the speed in excess of said limits did not constitute a violation of the basic speed law at the time, place and under the conditions then existing.

Prima Facie Speed Limits

CVC Section 22352.

The prima facie limits are as follows and shall be applicable unless changed as authorized in this code and, if so changed, only when signs have been erected giving notice thereof:

- (a) Fifteen miles per hour:
 - (1) When traversing a railway grade crossing, if during the last 100 feet of the approach to the crossing the driver does not have a clear and unobstructed view of the crossing and of any traffic on the railway for a distance of 400 feet in both directions along such railway. This subdivision does not apply in the case of any railway grade crossing where a human flagman is on duty or a clearly visible electrical or mechanical railway crossing signal device is

installed but does not then indicate the immediate approach of a railway train or car.

(2) When traversing any intersection of highways, if during the last 100 feet of the driver's approach to the intersection, the driver does not have a clear and unobstructed view of the intersection and of any traffic upon all of the highways entering the intersection for a distance of 100 feet along all those highways, except at an intersection protected by stop signs or yield right-of-way signs or controlled by official traffic control signals.

(3) On any alley.

(b) Twenty-five miles per hour:

(1) On any highway other than a state highway, in any business or residence district unless a different speed is determined by local authority under procedures set forth in this code.

(2) When approaching or passing a school building or the grounds thereof, contiguous to a highway and posted with a standard "SCHOOL" warning sign, while children are going to or leaving the school either during school hours or during the noon recess period. The prima facie limit shall also apply when approaching or passing any school grounds which are not separated from the highway by a fence, gate or other physical barrier while the grounds are in use by children and the highway is posted with a standard "SCHOOL" warning sign. For purposes of this subparagraph, standard "SCHOOL" warning signs may be placed at any distance up to 500 feet away from school grounds.

(3) When passing a senior center or other facility primarily used by senior citizens, contiguous to a street other than a state highway and posted with a standard "SENIOR" warning sign. A local authority may erect a sign pursuant to this paragraph when the local agency makes a determination that the proposed signing should be implemented. A local authority may request grant funding from the Active Transportation Program pursuant to Chapter 8 (commencing with Section 2380) of Division 3 of the Streets and Highways Code, or any other grant funding available to it, and use that grant funding to pay for the erection of those signs, or may utilize any other funds available to it to pay for the

erection of those signs, including, but not limited to, donations from private sources.

Increase of Local Speed Limits to 65 Miles Per Hour

CVC Section 22357.

- (a) 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. The declared prima facie or maximum speed limit shall be effective when appropriate signs giving notice thereof are erected upon the street and shall not thereafter be revised except upon the basis of an engineering and traffic survey. This section does not apply to any 25-mile-per-hour prima facie limit which is applicable when passing a school building or the grounds thereof or when passing a senior center or other facility primarily used by senior citizens.

- (b) This section shall become operative on the date specified in subdivision (c) of Section 22366.

Downward Speed Zoning

CVC Section 22358.5.

It is the intent of the Legislature that physical conditions such as width, curvature, grade and surface conditions, or any other condition readily apparent to a driver, in the absence of other factors, would not require special downward speed zoning, as the basic rule of Section 22350 is sufficient regulation as to such conditions.

Boundary Line Streets

CVC Section 22359.

With respect to boundary line streets and highways where portions thereof are within different jurisdictions, no ordinance adopted under Sections 22357 and 22358 shall be effective as to any such portion until all authorities having jurisdiction of the portions of the street concerned have approved the same. This section shall not apply in the case of boundary line streets consisting of separate roadways within different jurisdictions.

Speed Trap Prohibition

CVC Section 40801.

No peace officer or other person shall use a speed trap in arresting, or participating or assisting in the arrest of, any person for any alleged violation of this code nor shall any speed trap be used in securing evidence as to the speed of any vehicle for the purpose of an arrest or prosecution under this code.

Speed Trap

CVC Section 40802.

(a) A "speed trap" is either of the following:

- (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 paragraph (1) of subdivision (b) 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 object. This paragraph does not apply to a local street, road, or school zone.

(b)(1) For purposes of this section, a local street or road is one that is functionally classified as "local" on the "California Road Systems 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 mile of an uninterrupted length. Interruptions shall include official traffic control devices 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.
- (c)(1) When all the following criteria are met, paragraph (2) of this subdivision shall be applicable and subdivision (a) shall not be applicable:
- (A) When radar is used, the arresting officer has successfully completed a radar operator course of not less than 24 hours on the use of police traffic radar, and the course was approved and certified by the Commission on Peace Officer Standards and Training.
 - (B) When laser or any other electronic device is used to measure the speed of moving objects, the arresting officer has successfully completed the training required in subparagraph (A) and an additional training course of not less than two hours approved and certified by the Commission on Peace Officer Standards and Training.
 - (C)(i) The prosecution proved that the arresting officer complied with subparagraphs (A) and (B) and that an engineering and traffic survey has been conducted in accordance with subparagraph (B) of paragraph (2). The prosecution proved that, prior to the officer

issuing the notice to appear, the arresting officer established that the radar, laser, or other electronic device conformed to the requirements of subparagraph (D).

(ii) The prosecution proved the speed of the accused was unsafe for the conditions present at the time of alleged violation unless the citation was for a violation of Section 22349, 22356, or 22406.

(D) The radar, laser, or other electronic device used to measure the speed of the accused meets or exceeds the minimal operational standards of the National Traffic Highway Safety Administration, and has been calibrated within the three years prior to the date of the alleged violation by an independent certified laser or radar repair and testing or calibration facility.

(2) A "speed trap" is either of the following:

(A) 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.

(B)(i) A particular section of a highway or state highway with a prima facie speed limit that is provided by this code or by local ordinance under paragraph (1) of subdivision (b) 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 one of the following time periods, prior to the date of the alleged violation, and enforcement of speed limit involves the use of radar or any other electronic device that measures the speed of moving objects:

(I) Except as specified in subclause (II), seven years.

(II) If an engineering and traffic survey was conducted more than seven years prior to the date of the alleged violation, and a registered engineer evaluates the section of the highway and determines that no significant changes in roadway or traffic conditions have occurred, including, but not limited to, changes in adjoining property or land use, roadway width, or

traffic volume, 10 years.

(ii) This subparagraph does not apply to a local street, road, or school zone.

Speed Trap Evidence

CVC Section 40803.

- a) No evidence as to the speed of a vehicle upon a highway shall be admitted in any court upon the trial of any person in any prosecution under this code upon a charge involving the speed of a vehicle when the evidence is based upon or obtained from or by the maintenance or use of a speedtrap.
- b) In any prosecution under this code of a charge involving the speed of a vehicle, where enforcement involves the use of radar or other electronic devices which measure the speed of moving objects, the prosecution shall establish, as part of its prima facie case, that the evidence or testimony presented is not based upon a speed trap as defined in paragraph (2) of subdivision (a) of Section 40802.
- c) When a traffic and engineering survey is required pursuant to paragraph (2) of subdivision (a) of Section 40802, evidence that a traffic and engineering survey has been conducted within five years of the date of the alleged violation or evidence that the offense was committed on a local street or road as defined in paragraph (2) of subdivision (a) of Section 40802 shall constitute a prima facie case that the evidence or testimony is not based upon a speed trap as defined in paragraph (2) subdivision (a) of Section 40802.

**City of Arroyo Grande
Engineering and Traffic Survey**

APPENDIX

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Radar Speed Distribution

APPENDIX B

Collision Rates

APPENDIX C

Average Daily Traffic (ADT) Volumes

APPENDIX D





Speed Survey Segments Map (Attachment 2) & (Attachment 3)

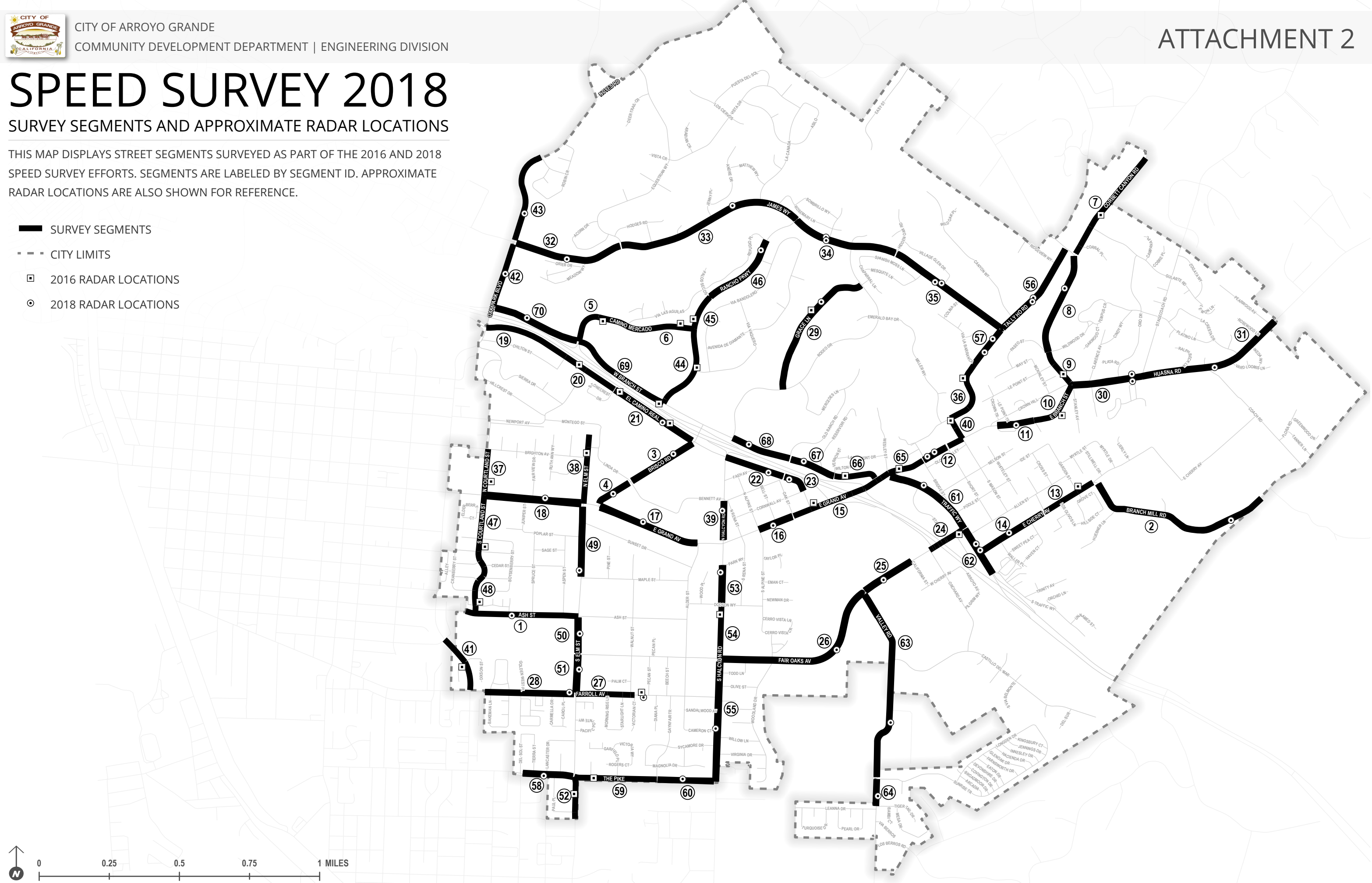


SPEED SURVEY 2018

SURVEY SEGMENTS AND APPROXIMATE RADAR LOCATIONS

THIS MAP DISPLAYS STREET SEGMENTS SURVEYED AS PART OF THE 2016 AND 2018 SPEED SURVEY EFFORTS. SEGMENTS ARE LABELED BY SEGMENT ID. APPROXIMATE RADAR LOCATIONS ARE ALSO SHOWN FOR REFERENCE.

-  SURVEY SEGMENTS
-  CITY LIMITS
-  2016 RADAR LOCATIONS
-  2018 RADAR LOCATIONS





SPEED SURVEY 2018

SURVEY SEGMENTS AND ADJACENT PARCEL LAND USE

THIS MAP DISPLAYS STREET SEGMENTS SURVEYED AS PART OF THE 2016 AND 2018 SPEED SURVEY EFFORTS. SEGMENTS ARE LABELED BY SEGMENT ID. ADJACENT PARCEL LAND USE FOR EACH SEGMENT IS ALSO SHOWN FOR REFERENCE.

- | | | |
|----------------------------|----------------------------------|--------------------------------|
| — SURVEY SEGMENTS | COMMUNITY FACILITIES | MULTI-FAMILY HIGH DENSITY |
| - - CITY LIMITS | SINGLE FAMILY VERY LOW DENSITY | MULTI-FAMILY VERY HIGH DENSITY |
| LAND USE CATEGORIES | | |
| AGRICULTURE | SINGLE FAMILY LOW DENSITY | MIXED-USE |
| CONSERVATION OPEN SPACE | SINGLE FAMILY LOW-MEDIUM DENSITY | VILLAGE CORE |
| | SINGLE FAMILY MEDIUM DENSITY | OFFICE PROFESSIONAL |
| | MULTI-FAMILY MEDIUM-HIGH DENSITY | REGIONAL COMMERCIAL |

