



TECHNICAL MEMORANDUM

DATE: August 31, 2017

TO: Pamela Dalcin-Walling/Dokken Engineering

FROM: Daniel Yau and Victor Baltazar/Y&C

SUBJECT: Del Rio Trail Crossings

Introduction

Y&C Transportation has prepared this technical memorandum to summarize the analysis and recommendation for crossing treatments at locations proposed in the Del Rio Trail project.

The proposed Del Rio Trail project will construct a 4.5-mile Class 1 pathway through South Land Park and neighboring areas between Interstate 5 and Freeport Boulevard. The new multi-use trail will run north to south and be constructed in place of the inactive Sacramento Southern Railroad line. See Figure 1 for Location Map.

The new multi-use trail will cross adjacent roadways at the following 8 locations:

1. Sutterville Rd
2. South Land Park Dr
3. Del Rio Rd
4. Fruitridge Rd
5. 35th Ave
6. 43rd Ave/Blair Ave
7. Florin Rd
8. Meadowview Rd/Pocket Rd

Appropriate crossing treatments are determined at each location based on City's guidelines and site specific conditions.

Methodology

The *City of Sacramento Pedestrian Crossing Guidelines*, dated October 2014, is used to determine the appropriate crossing treatment at each location.

The City's evaluation of crossing treatments is organized into a progressive three-phase procedure. Using a flowchart, the first phase screens the uncontrolled location to determine whether or not it is a potential candidate for marked crossing. Criteria in this flowchart include pedestrian volumes, distance from the next nearest crossing, sight distance, and other considerations. See Exhibit 1: Uncontrolled Crosswalk Assessment Flowchart from *City of Sacramento Pedestrian Crossing Guidelines* in Appendix I.

If the uncontrolled location meets the requirements in Phase 1, the next phase is to categorize the location using Table 2 in the City's guidelines. This table considers the



location’s posted speed limit, lane configuration, and average daily traffic volume to classify it under different categories of candidate sites for marked crosswalks at uncontrolled locations. See Section 7.1.2.2 in the City’s guidelines for details. See Table 2: Recommended Pedestrian Crossing Enhancement Treatments for Marked Crosswalks at Uncontrolled Locations from the *City of Sacramento Pedestrian Crossing Guidelines* in Appendix II.

The final phase in the analysis procedure is to assign a crossing treatment to the uncontrolled location using both Table 1 and Table 2 in the City’s guidelines. Principal treatments vary from basic markings to a full traffic signal. Additional supplemental treatments are also included to accommodate site specific conditions. See Table 1: Pedestrian Crossing Enhancement Treatments for Marked Crosswalks at Uncontrolled Locations from the *City of Sacramento Pedestrian Crossing Guidelines* in Appendix III.

In addition to these guidelines, the engineer must use his/her engineering judgement of site conditions at each location to determine the appropriate crossing treatment.

Analysis Results

Phase 1: Initial Location Screening

The first phase in the analysis procedure is to determine whether or not the uncontrolled location can be considered a candidate for marked crossing. The criteria analyzed in this phase are crossing demand, vehicle stopping sight distance, and distance to next nearest crosswalk.

Pedestrian and bicycle demand along the proposed trail is projected using both the average adjusted peak-hour forecast method and the average adjusted 4-hour peak forecast method. The minimum peak hour demands for each method are 100 pedestrians/bikes per hour and 88.75 pedestrians/bikes per hour, respectively. These forecasts apply to all locations along the trail. Both of these crossing demand projections are higher than the City’s guideline of 20 pedestrians/bikes per hour. See Forecasted Trail Volumes in Appendix IV.

Stopping sight distance was measured in the field for all locations requiring analysis. The design speed is assumed to be 5 mph higher than the posted speed limit in accordance with City’s Project Delivery Manual. See Stopping Sight Distance Field Measurements in Table A below.

Table A. Stopping Sight Distance Field Measurements					
Location	Posted Speed	Design Speed	Measured Sight Distance (West Leg)	Measured Sight Distance (East Leg)	Required Stopping Sight Distance**
1 Sutterville Road	35	40	325'	500' +	305'
2 South Land Park Drive	25	30	180'	480'	200'
3 Del Rio Road	30	35	130'	No East Leg	250'
4 Fruitridge Road	40	45	450'	500' +	360'
5 35 th Avenue	35	40	400'	500' +	305'
6 43 rd Avenue	30	35	340'	500' +	250'
7 Florin Road	40	45	500+	500' +	360'
8 Meadowview/Pocket Road	40	45	500+	500' +	360'

** See AASHTO Green Book Chapter 3.2.2 for derivation of stopping sight distance.

■ = does not meet required stopping sight distance



All measured locations have adequate sight distance with the exception of South Land Park Dr and Del Rio Rd. For both locations, a horizontal curve on the west leg limits the vehicle’s view. We still consider both locations for further evaluation in Phase 2 and Phase 3. See Recommendation section for mitigation measures and enhancement treatments at these locations.

With the exception of the stopping sight distance at South Land Park Dr and Del Rio Rd, the 5 northernmost locations in Table A meet the criteria in Phase 1 and are considered candidates for marked crossings. All 5 locations meet demand criteria, serve a trail, and are greater than 300’ from the next nearest marked crossing.

Trail crossings at the 3 southernmost locations (43rd Ave/Blair Ave, Florin Rd, Meadowview/Pocket Rd) have adequate sight distance but are all within 300’ of the next nearest marked crossing.

According to the City’s guidelines, these 3 locations are not candidates for marked crossings under normal circumstances. However, since these crossings serve a trail, further investigation regarding the marked crossings were performed consistent with City’s guidelines.

After further study, we recommend 43rd Ave/Blair Ave as an exception to the 300’ guideline. This location satisfies sight distance requirements, serves a trail, and is approximately 230’ from the next nearest marked crossing. As mentioned in Section 5.3.2.1 in the City’s guideline, exceptions can be made to the 300’ requirement if the proposed location serves a trail.

The other 2 locations, Florin Rd and Meadowview/Pocket Rd, are not considered candidates for marked crossings. Trail users at these locations are expected to use the existing crosswalks on the west leg of the existing signalized intersection (within 100’ of the proposed trail). FHWA recommends not to install marked crosswalks in close proximity of signalized intersections and to encourage pedestrians to cross at the traffic signal. See Summary of Initial Screening in Table B below.

Table B. Summary of Initial Screening			
Location	Adequate Sight Distance	Location is ≥ 300' from the nearest crossing	Recommended for Marked Crossing
1 Sutterville Road	YES	YES	YES
2 South Land Park Drive	NO	YES	YES*
3 Del Rio Road	NO	YES	YES*
4 Fruitridge Road	YES	YES	YES
5 35 th Avenue	YES	YES	YES
6 43 rd Avenue	YES	NO	YES*
7 Florin Road	YES	NO	NO
8 Meadowview/Pocket Road	YES	NO	NO

*Location does not meet sight distance requirements and/or is less than 300’ to next nearest crossing but is still recommended for further evaluation consistent with City’s guidelines.



Phase 2: Additional Data Collection and Categorization of the Crossing Site

The next phase in the analysis procedure is to categorize the crossing location using Table 2 in the *City of Sacramento Pedestrian Crossing Guidelines*.

Traffic counts were conducted on Tuesday, March 7, 2017 for the 6 northernmost locations being analyzed. Speed limit data was provided by the City. See Appendix V for Traffic Count Data and Appendix VI for copies of City’s Engineering and Traffic Surveys (E&TS). The Summary of Location Categorization is shown in Table C below.

Table C. Summary of Location Categorization							
	Location	Speed Limit	No. Lanes	Median Yes/No	ADT	Category	Posted Treatment Level
1	Sutterville Road	35	4	No	14623	N	L2/L3
2	South Land Park Drive	25	2	No	4932	C	BASIC
3	Del Rio Rd	30	2	No	2395	C	BASIC
4	Fruitridge Road	40	4	No	16967	N	L3
5	35 th Avenue	35	2	No	3754	C	BASIC
6	43 rd Avenue	30	2	No	8447	C	BASIC

- C = Candidate sites for marked crosswalks*
- P = Possible candidate sites for marked crosswalks*
- N = Marked crosswalks alone are insufficient*
- BASIC = See Figure 3 in the City’s guideline for ‘Basic’ signing and marking treatment
- L1, L2, L3 = Recommended level of crossing treatment, see Table 1 in the City’s guidelines
- * Refer to Exhibit 3 in the City’s guidelines for description of category “C”, “P”, and “N”

Treatment levels ‘Basic’, L1, L2, and L3 are derived directly from Table 2 in the City’s guidelines (included in Appendix II of this tech memo) and are based on the location’s categorization. See Table 1 in the City’s guidelines (included in Appendix III of this technical memorandum) for details on crossing treatment levels.

Recommendation

Phase 3: Treatment Selection and Implementation

The final phase in the analysis procedure is to select an appropriate crossing treatment. Selection of enhancement treatments is based on the category of the crossing location as determined in Table C above. Principal and secondary enhancement treatments are assigned using the recommended treatment levels from Phase 2 of the analysis. See the Summary of Location Enhancement Treatments in Table D below.

1. Sutterville Rd

This location is classified as Category "N" with an "L3" treatment level. For this designation, a marked crossing alone is insufficient. A mid-block traffic signal is recommended at this location and is substantiated per Warrant 4 in Chapter 4C of the CA MUTCD. See Traffic Signal Warrant Analysis in Appendix VII.

2. South Land Park Dr

In addition to the City’s ‘Basic’ signing and marking treatments for mid-block crosswalks at uncontrolled locations, an overhead 4-RRFB or Pedestrian Hybrid Beacon (PHB) should be considered as the principal treatment for this location due to



inadequate sight distance for eastbound traffic on the west leg of this location. Inadequate sight distance is caused by the horizontal curve in the roadway. Further investigation indicates that the overhead 4-RRFB solution is more cost effective (installation costs for 4-RRFB and PHB are approximately \$35,000 and \$80,000, respectively). In addition, we recommend installing an advanced RRFB on South Land Park Dr, east of Parkside Ct for eastbound traffic.

3. Del Rio Rd

A geometric realignment and a conversion to an all-way stop-controlled intersection are proposed at this location. Although this intersection does not warrant an all-way stop control under the City's stop control guidelines, there is strong community support for all-way stop control during the public outreach process. Besides, the all-way stop control would enhance pedestrian and cyclist safety, especially for those on the trail approaching the crossing from the north while southbound motorists on Del Rio Rd are making right-turns. With the all-way stop control, the Del Rio Rd/ 27th Ave intersection would operate at LOS A, which is acceptable to the City's standard. The geometric realignment will correct the existing stopping sight distance deficiency on the West leg of Del Rio Rd. With these modifications, the City's 'Basic' signing and marking treatment is recommended as the principal treatment for this location. See Appendix VIII for City's Warrant for Three-way Stop Sign Locations and Appendix IX for Synchro Report.

4. Fruitridge Rd

This location is classified as Category "N" with an "L3" treatment level. For this designation, a marked crossing alone is insufficient. A mid-block traffic signal is recommended at this location and is substantiated per Warrant 4 in Chapter 4C of the CA MUTCD. Additionally, an advanced signal warning sign is recommended for the west leg of this location given both horizontal and vertical curves in the roadway. See Traffic Signal Warrant Analysis in Appendix VII.

5. 35th Ave

We recommend installing the City's 'Basic' signing and marking treatment as the principal treatment for this location. As secondary treatment, we recommend installing curb extensions to decrease crossing distance.

6. 43rd Ave/ Blair Ave

We recommend installing the City's 'Basic' signing and marking treatment as the principal treatment for this location. As secondary treatment, we recommend installing curb extensions to decrease crossing distance.



Table D. Summary of Location Enhancement Treatments					
LOCATION	Category	Treatment Level*	Recommended Enhancements		
			Principal Treatment	Secondary treatment	
1	Sutterville Road	N	L2/L3	Traffic Signal	
2	South Land Park Drive	C	BASIC	Overhead 4-RRFB	Advanced RRFB on West leg
3	Del Rio Road	C	BASIC	Basic Marked Crosswalk	
4	Fruitridge Road	N	L3	Traffic Signal	Advanced signal warning sign on West leg
5	35 th Avenue	C	BASIC	Basic Marked Crosswalk	Curb Extension
6	43 rd Avenue	C	BASIC	Basic Marked Crosswalk	Curb Extension

C = Candidate sites for marked crosswalks*

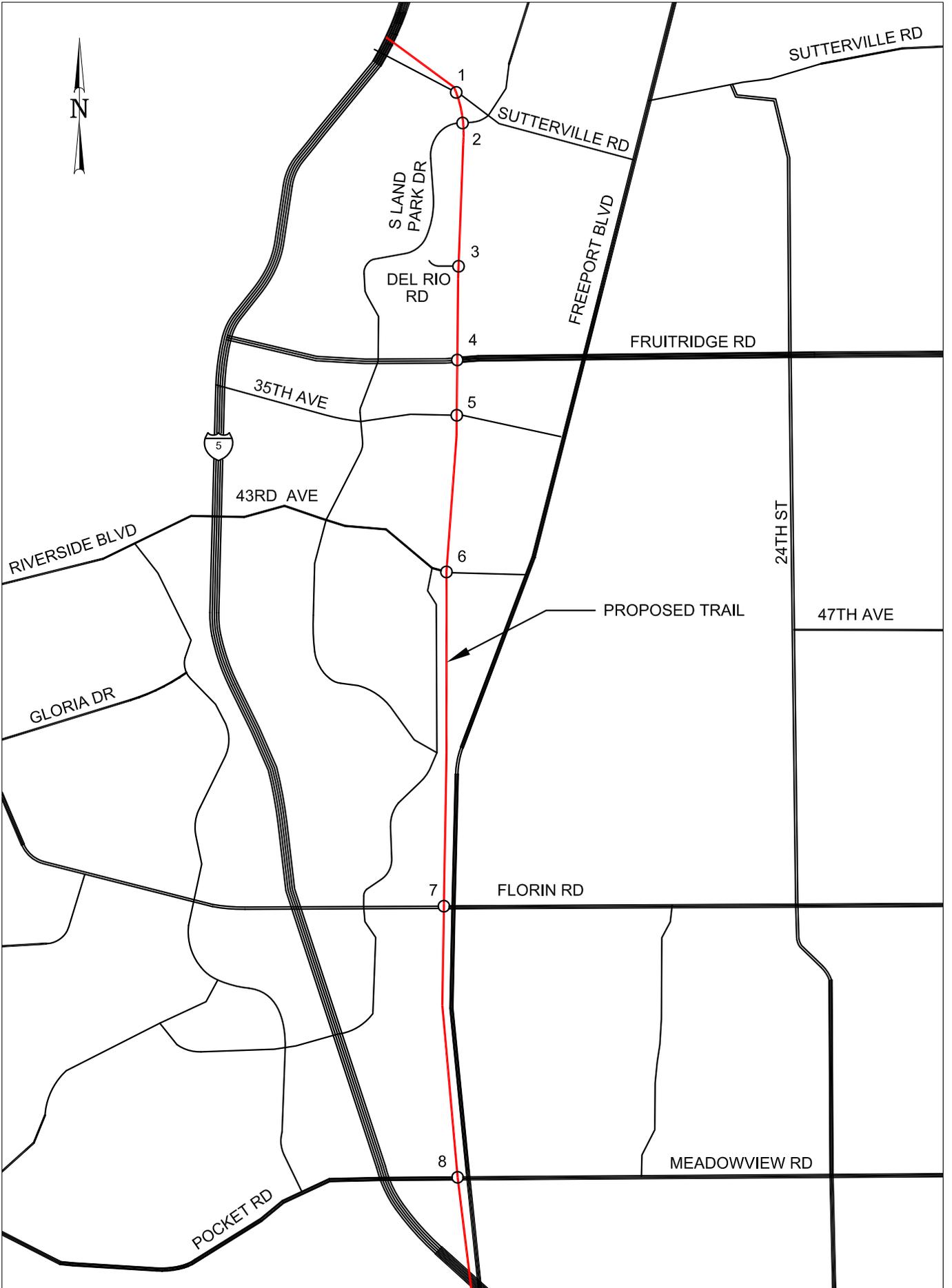
P = Possible candidate sites for marked crosswalks*

N = Marked crosswalks alone are insufficient*

BASIC = See Figure 3 in the City’s guideline for ‘Basic’ signing and marking treatment

L1, L2, L3 = Recommended level of crossing treatment, see Table 1 in the City’s guidelines

* Refer to Exhibit 3 in the City’s guidelines for description of category “C”, “P”, and “N”



DEL RIO TRAIL PROJECT
 FIGURE 1 - LOCATION MAP

APPENDIX I

Uncontrolled Crosswalk Assessment Flowchart

Exhibit 1: Uncontrolled Crosswalk Assessment Flowchart

(Sheet 1 of 2)

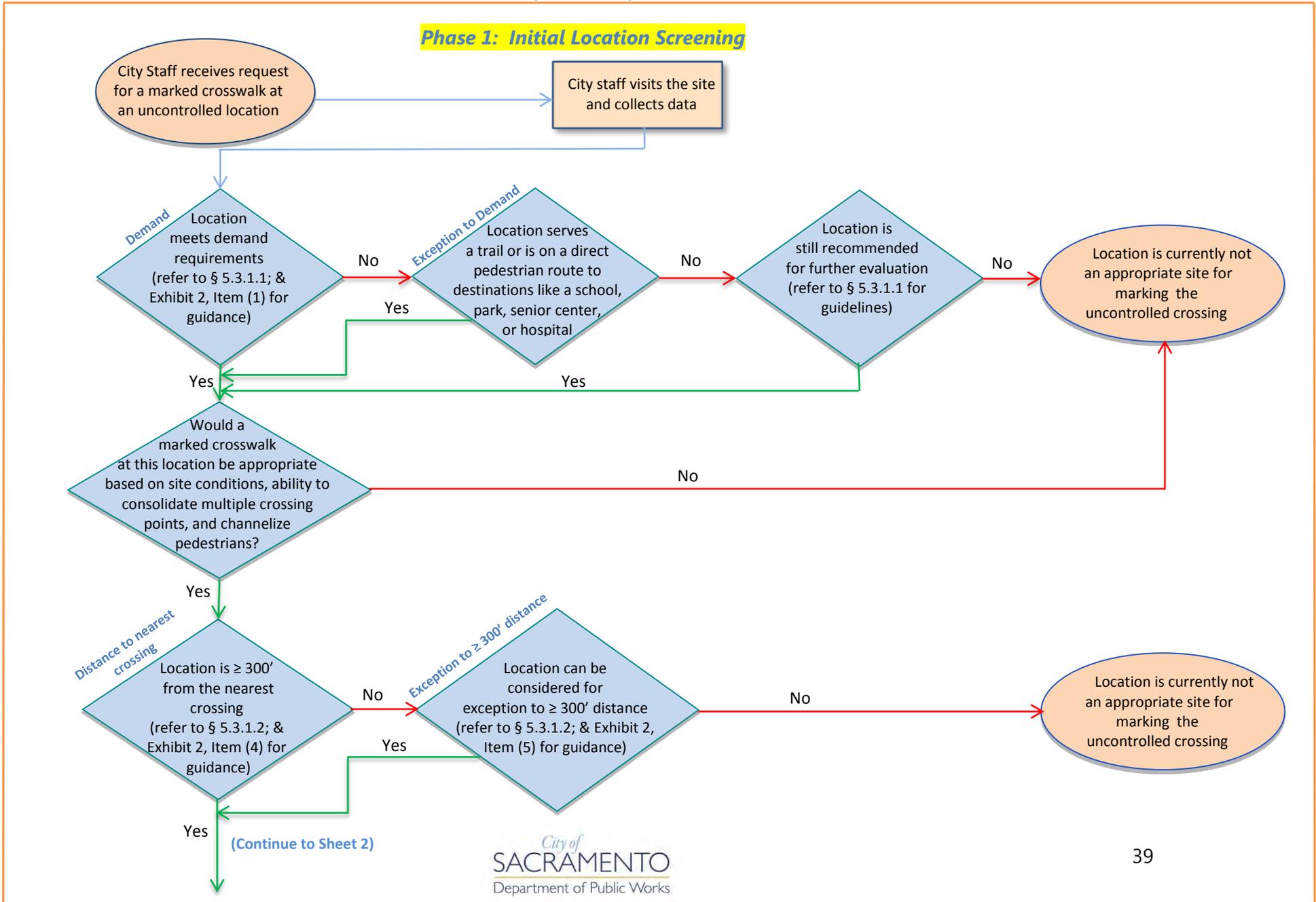
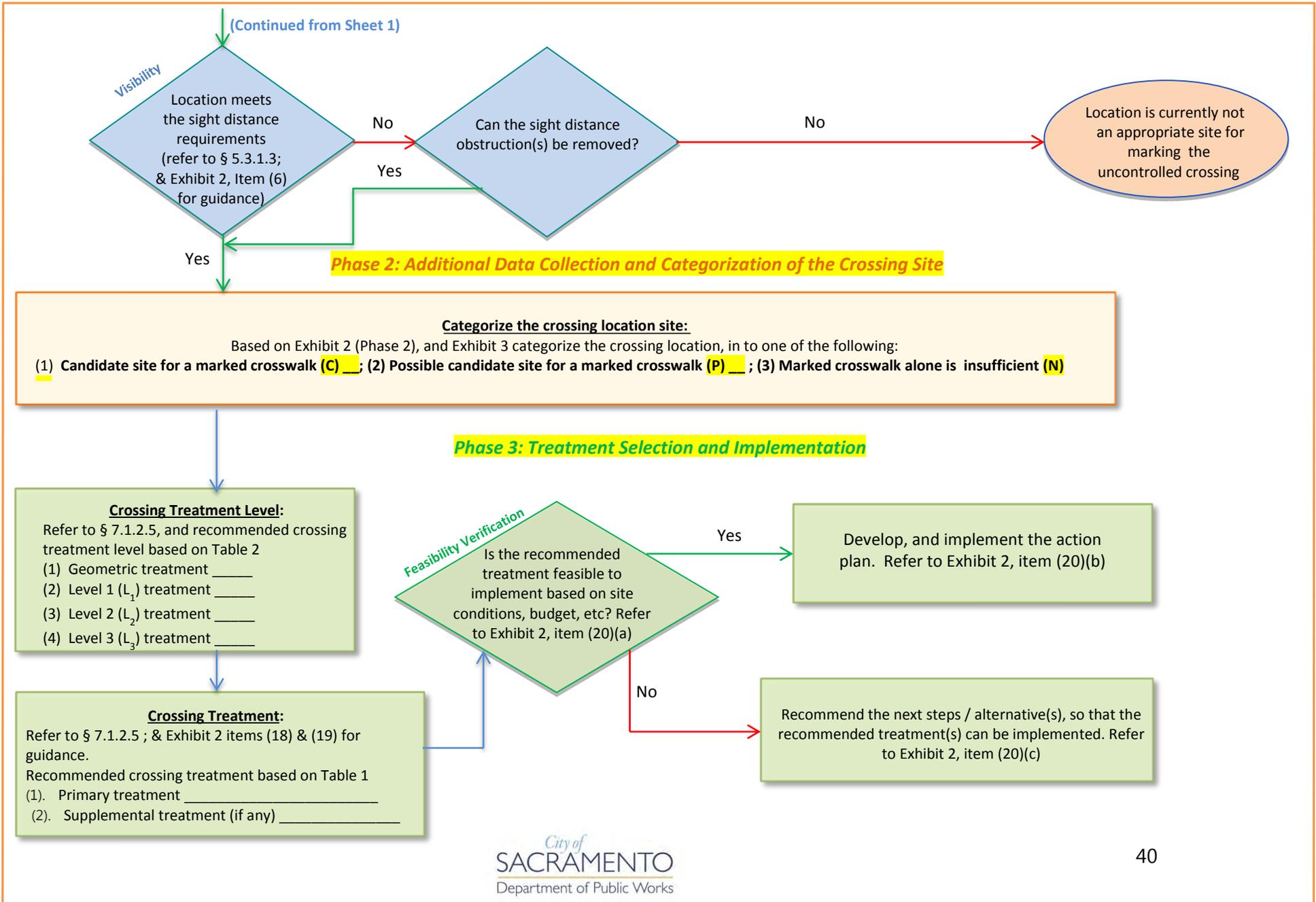


Exhibit 1: Uncontrolled Crosswalk Assessment Flowchart

(Sheet 2 of 2)



APPENDIX II

Recommended Pedestrian Crossing Enhancement Treatments for Marked Crosswalks at Uncontrolled Locations

Table 2: Recommended Pedestrian Crossing Enhancement Treatments for Marked Crosswalks at Uncontrolled Locations

	≤ 9,000 ADT				> 9,000 ADT to ≤ 12,000 ADT				> 12,000 to ≤ 15,000 ADT				> 15,000 ADT			
	≤ 30 mph	35 mph	40 mph	≥ 45 mph	≤ 30 mph	35 mph	40 mph	≥ 45 mph	≤ 30 mph	35 mph	40 mph	≥ 45 mph	≤ 30 mph	35 mph	40 mph	≥ 45 mph
2 Lanes	C	C	P (L ₁ ; See Note (1)) Or L ₂ /L ₃	N L ₃	C	C	P (L ₁ ; See Note (1)) Or L ₂ /L ₃	N L ₃	C	C	P (L ₁ ; See Note (1)) Or L ₂ /L ₃	N L ₃	C	P (L ₁ ; See Note (1)) Or L ₂ /L ₃	N L ₃	N L ₃
3 Lanes	C	C	P (L ₁ ; SEE Note (2)) Or L ₂ /L ₃	N L ₃	C	P (G) OR (L ₁ ; See Note (2)) Or L ₂ /L ₃	P (L ₁ ; See Note (2)) Or L ₂ /L ₃	N L ₃	P G OR (L ₁ ; See Note (2)) Or L ₂ /L ₃	P G OR (L ₁ ; See Note (2)) Or L ₂ /L ₃	P (L ₁ ; See Note (2)) Or L ₂ /L ₃	N L ₃	P G OR (L ₁ ; See Note (2)) Or L ₂ /L ₃	N (L ₃)	N L ₃	N L ₃
4 or More Lanes with Raised Median	C	C	P L ₂ /L ₃	N L ₃	C	P L ₂ /L ₃	N L ₂ /L ₃	N L ₃	P L ₂ /L ₃	P L ₂ /L ₃	N L ₂ /L ₃	N L ₃	N L ₂ /L ₃	N L ₃	N L ₃	N L ₃
4 or More Lanes No Raised Median	C	P G Or L ₂ / L ₃	N L ₂ /L ₃	N L ₃	P G Or L ₂ / L ₃	P L ₂ / L ₃	N L ₂ /L ₃	N L ₃	N L ₂ /L ₃	N L ₂ /L ₃	N L ₂ /L ₃	N L ₃	N L ₃	N L ₃	N L ₃	N L ₃

C = Candidate sites for marked crosswalks ^(*).

P = Possible candidate sites for marked crosswalks ^(*).

N = Marked crosswalks alone are insufficient ^(*).

^(*) = Refer to Exhibit 3 for description of category "C", "P", and "N".

G = Geometric treatment.

L₁, L₂, and L₃ = Recommended level of pedestrian crossing enhancement treatment; see Table 1 for details.

Notes:

- (1) 2-lanes: Possible treatment options using RRFBS:
 - a. 1-lane each direction: 2-RRFB.
 - b. 2-lanes, one-way: 2- RRFB (one on each side of the road).
 - c. If neither (a) or (b) is feasible / applicable, consider L₂ Or L₃.
- (2) 3 – lanes: Possible treatment options using RRFBS:
 - (i). 2- lanes + TWLTL or a raised median: 2-RRFB + Ped Island - if this combination is not feasible, consider L₂ Or L₃.
 - (ii). All other scenarios (for example, 2 - through lanes + a turn pocket; 3- Lanes, one-way) : L₂ Or L₃.

Instructions:

- (1). The design of marked pedestrian crossing facilities at uncontrolled locations should incorporate the following:
 - (a) City of Sacramento’s basic treatment – required for ALL marked crossings at uncontrolled locations. Refer to Section 7.1.1 for details.
 - (b) Pedestrian crossing enhancement treatment(s) – the recommended treatment levels corresponding to different site conditions as presented in the above Table; the list of different levels of treatments is presented in Table 1. Refer to Sections 7.1.2.4 and 7.1.2.5 for additional details.
- (2). The selected treatment / device shall meet the applicable requirements as mentioned in to Table 1 and the corresponding Appendix.
- (3). These are general recommendations; good engineering judgment should be used in all cases for deciding where to install crosswalks, and what treatment / combination of treatments to install.

APPENDIX III

Pedestrian Crossing Enhancement Treatments for Marked Crosswalks at Uncontrolled Locations

Table 1: Pedestrian Crossing Enhancement Treatments for Marked Crosswalks at Uncontrolled Locations

(Sheet 1 of 3)

CITY OF SACRAMENTO'S BASIC TREATMENT (*)

Treatment	Placement Requirements, and / or Guidance
High visibility marked triple-four crosswalk, and associated signs and pavement word markings.	(1) Required for all marked crossings at uncontrolled locations. (2) Refer to Section 7.1.1 for details.

PRINCIPAL TREATMENTS (*)

Geometric Enhancement Treatments (*)

Treatment	Placement Requirements, and / or Guidance
Raised Median / Pedestrian Median Refuge Island.	(1) Where roadway width can accommodate without negatively affecting bicycle and vehicle traffic. (2) Refer to Appendix A1 for further information.
Split Pedestrian Crossover Median Refuge Island.	(1) Where roadway width can accommodate without negatively affecting bicycle and vehicle traffic. (2) Refer to Appendix A2 for further information.

Level 1 Enhancement Treatments (L₁) (*)

Treatment	Placement Requirements, and / or Guidance
Rectangular Rapid Flashing Beacon (RRFB) – ‘two device’ treatment.	(1) A ‘two-device’ / ‘a side-mounted’ RRFB treatment refers to an installation with two RRFBs (one for each direction of an approach mounted at the right-hand side of the approach). (2) The installation of RRFBs shall comply with the FHWA’s <u>Conditions of Interim Approval</u> (FHWA IA-11); refer the subject interim approval memo at: http://mutcd.fhwa.dot.gov/resources/interim_approval/ia11/fhwamemo.htm (3) For crossings with obstructed visibility for side-mounted RRFB treatment, a median-mounted RRFB treatment (Level 2) or other appropriate treatment, such as Level 3 treatment (see below) shall be considered. (4) Refer to Appendix A3 for further information.

(*) NOTES:

- (1) These are general recommendations; good engineering judgment should be used in all situations for deciding where to install crosswalks, and what treatment / combination of treatments to install.
- (2) The treatments recommended in the guidelines reflect the more common treatments being used and may not include every treatment available.
- (3) Refer to Section 7.1.2.5 for further information on the recommended treatments.

Table 1: Pedestrian Crossing Enhancement Treatments for Marked Crosswalks at Uncontrolled Locations

(Sheet 2 of 3)

Level 2 Enhancement Treatments (L₂) (*)

Treatment	Placement Requirements, and / or Guidance
Rectangular Rapid Flashing Beacon (RRFB) – ‘four device’ treatment.	<ol style="list-style-type: none"> (1) A ‘four-device’ / a ‘median-mounted RRFB treatment’ refers to an installation of four RRFBs (two per approach with one on the roadway median / island and one on the right-hand side). (2) The installation of RRFBs shall comply with the FHWA’s Conditions of Interim Approval (FHWA IA-11); refer the subject interim approval memo at: http://mutcd.fhwa.dot.gov/resources/interim_approval/ia11/fhwamemo.htm (3) For locations where a median island RRFB treatment is not feasible, or there are more than two lanes in a direction, other appropriate treatments, such as Level 3 treatments (see below) shall be considered. Alternatively, the RRFBs may be considered for mounting overhead consistent with FHWA’s Interpretation Letter regarding RRFB Overhead mounting which is available at: http://mutcd.fhwa.dot.gov/resources/interpretations/4_376.htm (4) Refer to Appendix A4 for further information.

Level 3 Enhancement Treatments (L₃) (*)

Treatment	Placement Requirements, and / or Guidance
Pedestrian Hybrid Beacon (PHB) / High-intensity Activated Crosswalk (HAWK).	<ol style="list-style-type: none"> (1) Refer to CA MUTCD⁽¹⁾, Chapter 4F for applicable requirements, and installation guidance. (2) Refer to Appendix A5 for further information
Traffic Signal, where warranted.	<ol style="list-style-type: none"> (1) Refer to CA MUTCD⁽¹⁾, Part 4 for applicable traffic signal warrants, and other requirements. (2) It is recommended to install countdown pedestrian signal heads at all traffic signals, except where the pedestrian crossing is prohibited. Section 5.6 describes the conditions that may require pedestrian crossing prohibition. (3) Refer to Section 7.2.1 for recommended guidelines for marking crosswalks and limit lines at signalized intersections. (4) Refer to Appendix A6 for further information.
Grade Separation: Pedestrian Overcrossing or Undercrossing.	<ol style="list-style-type: none"> (1) According to FHWA study,⁽¹⁰⁾ grade-separated crossings are very expensive and should only be considered in extreme situations, such as where pedestrian crossings are essential (e.g., school children need to cross a six-lane arterial street), street – crossing at - grade is not feasible for pedestrians, and no other measures are considered to be appropriate. (2) Refer to Appendix A7 for further information.

(*) NOTES:

- (1) These are general recommendations; good engineering judgment should be used in all situations for deciding where to install crosswalks, and what treatment / combination of treatments to install.
- (2) The treatments recommended in the guidelines reflect the more common treatments being used and may not include every treatment available.
- (3) Refer to Section 7.1.2.5 for further information on the recommended treatments.

Table 1: Pedestrian Crossing Enhancement Treatments for Marked Crosswalks at Uncontrolled Locations

(Sheet 3 of 3)

SUPPLEMENTAL ENHANCEMENT TREATMENTS (*)

Treatment	Suggested Reference for Placement Requirements, and Guidance
In-Roadway Warning Lights (IRWLs)	Appendix B1.
Flashing Warning Beacon	Appendix B2.
“Road Diet” (Roadway Reconfiguration)	Appendix B3.
Curb Extension	Appendix B4.
Tighter Curb Return Radii	Appendix B5.
Improved Right - Turn Slip - Lane Design	Appendix B6.
Advanced Yield / Stop Lines	Appendix B7.
Advanced Stop Line / Limit Line at Traffic Signals	Appendix B8.
In-Street and Overhead Pedestrian Crossing Sign	Appendix B9.
Pedestrian-Activated Flashing (Embedded LED) Warning Sign	Appendix B10.
Traffic-calming Measures	Appendix B11.
Textured Pavement	Appendix B12.
Eliminate parking on the approach to uncontrolled crosswalks	Appendix B13.
Locate transit stops on the far side of the intersection	Appendix B14.
Hardware and Operational Treatments for Signalized Locations	Appendixes C1 – C10.

(*) NOTES:

- (1) These are general recommendations; good engineering judgment should be used in all situations for deciding where to install crosswalks, and what treatment / combination of treatments to install.
- (2) The treatments recommended in the guidelines reflect the more common treatments being used and may not include every treatment available.
- (3) Refer to Section 7.1.2.5 for further information on the recommended treatments.

APPENDIX IV
FORECASTED TRAIL VOLUMES

Table 7 - 3-Method Average Adjusted Peak Hour Forecast			
	Bike	Ped	Total
Max	164	184	286
Min	46	25	100
Ave	93	95	188

Table 8 - 3-Method Average Adjusted 4-Hour Peak Forecast			
	Bike	Ped	Total
Max	580	654	1015
Min	163	88	355
Ave	331	337	668

APPENDIX V
TRAFFIC COUNT DATA

Location: Sutterville Rd
Specific Location: Between Mulberry Ln and South Land Park Dr
Site Code: 01
Station ID:
Date Range: 3/7/2017 - 3/7/2017



Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	3/7/2017			3/8/2017			3/9/2017			3/10/2017			3/11/2017			3/12/2017			3/13/2017					
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	21	21	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	21	42
1:00 AM	8	15	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	15	23
2:00 AM	12	8	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	8	20
3:00 AM	8	12	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	12	20
4:00 AM	32	36	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	36	68
5:00 AM	65	76	141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	76	141
6:00 AM	256	216	472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256	216	472
7:00 AM	601	628	1,229	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	601	628	1,229
8:00 AM	701	567	1,268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	701	567	1,268
9:00 AM	594	374	968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	594	374	968
10:00 AM	506	419	925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	506	419	925
11:00 AM	485	430	915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	485	430	915
12:00 PM	660	573	1,233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	660	573	1,233
1:00 PM	510	507	1,017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	510	507	1,017
2:00 PM	601	612	1,213	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	601	612	1,213
3:00 PM	643	682	1,325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	643	682	1,325
4:00 PM	727	658	1,385	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	727	658	1,385
5:00 PM	439	314	753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	439	314	753
6:00 PM	263	201	464	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	263	201	464
7:00 PM	192	182	374	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	192	182	374
8:00 PM	145	184	329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	145	184	329
9:00 PM	94	158	252	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	158	252
10:00 PM	43	78	121	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	78	121
11:00 PM	25	41	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	41	66
Total	7,631	6,992	14,623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,631	6,992	14,623
Percent	52%	48%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52%	48%	100%
AM Peak	8:00	7:15	7:45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8:00	7:15	7:45
Volume	701	695	1,323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	701	695	1,323
PM Peak	16:15	15:30	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:15	15:30	16:00
Volume	760	727	1,385	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	760	727	1,385

1. Mid-week average includes data between Tuesday and Thursday.

Location: South Land Park Dr
Specific Location: Between Parkside Ct and Sutterville Rd
Site Code: 02
Station ID:
Date Range: 3/7/2017 - 3/7/2017



Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average					
	3/7/2017			3/8/2017			3/9/2017			3/10/2017			3/11/2017			3/12/2017			3/13/2017								
	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total			
12:00 AM	4	7	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	11
1:00 AM	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
2:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
3:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
4:00 AM	6	1	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	7
5:00 AM	32	14	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	14	46
6:00 AM	94	23	117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	23	117
7:00 AM	329	96	425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	329	96	425
8:00 AM	290	103	393	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	290	103	393
9:00 AM	142	83	225	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	142	83	225
10:00 AM	112	110	222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	112	110	222
11:00 AM	119	138	257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	119	138	257
12:00 PM	146	150	296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	150	296
1:00 PM	127	181	308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	127	181	308
2:00 PM	152	162	314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	152	162	314
3:00 PM	165	274	439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	165	274	439
4:00 PM	156	333	489	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	333	489
5:00 PM	175	371	546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	371	546
6:00 PM	111	220	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	111	220	331
7:00 PM	67	120	187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67	120	187
8:00 PM	67	86	153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67	86	153
9:00 PM	30	49	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	49	79
10:00 PM	21	29	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	29	50
11:00 PM	8	20	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	20	28
Total	2,358	2,574	4,932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,358	2,574	4,932
Percent	48%	52%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48%	52%	100%
AM Peak	7:30	11:45	7:30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7:30	11:45	7:30
Volume	390	155	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	155	505
PM Peak	16:45	16:45	16:45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:45	16:45	16:45
Volume	186	396	582	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	186	396	582

1. Mid-week average includes data between Tuesday and Thursday.



Location: Del Rio Rd
Specific Location: Between Alta Dr and Normandy Ln
Site Code: 03
Station ID:
Date Range: 3/7/2017 - 3/7/2017

Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average				
	3/7/2017			3/8/2017			3/9/2017			3/10/2017			3/11/2017			3/12/2017			3/13/2017							
	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total		
12:00 AM	1	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	4
1:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
2:00 AM	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3
3:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
4:00 AM	3	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	7
5:00 AM	9	1	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	1	10
6:00 AM	35	10	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	10	45
7:00 AM	128	41	169	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128	41	169
8:00 AM	133	100	233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133	100	233
9:00 AM	87	72	159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	72	159
10:00 AM	46	50	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	50	96
11:00 AM	75	80	155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75	80	155
12:00 PM	64	88	152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64	88	152
1:00 PM	51	68	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	68	119
2:00 PM	65	87	152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	87	152
3:00 PM	101	149	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101	149	250
4:00 PM	70	173	243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	173	243
5:00 PM	74	153	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74	153	227
6:00 PM	54	80	134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	80	134
7:00 PM	33	55	88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	55	88
8:00 PM	21	40	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	40	61
9:00 PM	11	36	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	36	47
10:00 PM	8	17	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	17	25
11:00 PM	4	7	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	11
Total	1,077	1,318	2,395	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,077	1,318	2,395
Percent	45%	55%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45%	55%	100%
AM Peak	7:15	8:15	8:15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7:15	8:15	8:15
Volume	154	120	243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154	120	243
PM Peak	15:00	16:30	16:30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	16:30	16:30
Volume	101	178	256	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101	178	256

1. Mid-week average includes data between Tuesday and Thursday.

Location: Del Rio Rd
Specific Location: Between Normandy Ln and 27th Ave
Site Code: 04
Station ID:
Date Range: 3/7/2017 - 3/7/2017



Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average				
	3/7/2017			3/8/2017			3/9/2017			3/10/2017			3/11/2017			3/12/2017			3/13/2017							
	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total		
12:00 AM	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2
1:00 AM	3	3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	6
2:00 AM	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
3:00 AM	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
4:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
5:00 AM	4	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	5
6:00 AM	16	4	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	4	20
7:00 AM	61	29	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	29	90
8:00 AM	105	56	161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	56	161
9:00 AM	42	46	88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	46	88
10:00 AM	35	40	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	40	75
11:00 AM	52	48	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	48	100
12:00 PM	59	72	131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	72	131
1:00 PM	43	50	93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	50	93
2:00 PM	59	64	123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	64	123
3:00 PM	73	113	186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	113	186
4:00 PM	59	112	171	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	112	171
5:00 PM	52	94	146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	94	146
6:00 PM	39	63	102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	63	102
7:00 PM	23	31	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	31	54
8:00 PM	14	31	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	31	45
9:00 PM	9	26	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	26	35
10:00 PM	6	15	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	15	21
11:00 PM	2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6	8
Total	760	905	1,665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	760	905	1,665
Percent	46%	54%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	100%
AM Peak	8:00	11:45	8:15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8:00	11:45	8:15
Volume	105	72	164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	72	164
PM Peak	14:30	15:15	14:45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:30	15:15	14:45
Volume	85	122	189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	122	189

1. Mid-week average includes data between Tuesday and Thursday.



Location: 27th Ave
Specific Location: Between Del Rio Rd and "The South Curve"
Site Code: 05
Station ID:
Date Range: 3/7/2017 - 3/7/2017

Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average					
	3/7/2017			3/8/2017			3/9/2017			3/10/2017			3/11/2017			3/12/2017			3/13/2017								
	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total			
12:00 AM	1	4	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	5
1:00 AM	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
2:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
3:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
4:00 AM	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5
5:00 AM	4	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	5
6:00 AM	19	6	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	6	25
7:00 AM	72	23	95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	23	95
8:00 AM	84	77	161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	77	161
9:00 AM	63	42	105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	42	105
10:00 AM	23	30	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	30	53
11:00 AM	39	40	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	40	79
12:00 PM	30	39	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	39	69
1:00 PM	22	36	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	36	58
2:00 PM	30	45	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	45	75
3:00 PM	78	73	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	73	151
4:00 PM	42	88	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	88	130
5:00 PM	48	81	129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	81	129
6:00 PM	30	36	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	36	66
7:00 PM	15	28	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	28	43
8:00 PM	11	12	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	12	23
9:00 PM	11	19	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	19	30
10:00 PM	8	9	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	9	17
11:00 PM	4	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	7
Total	640	699	1,339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	640	699	1,339
Percent	48%	52%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48%	52%	100%
AM Peak	8:15	8:15	8:15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8:15	8:15	8:15
Volume	90	93	183	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90	93	183
PM Peak	15:00	16:15	15:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	16:15	15:00
Volume	78	98	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	98	151

1. Mid-week average includes data between Tuesday and Thursday.



Location: Fruitridge Rd
Specific Location: Between South Land Park Dr and Gilgunn Way
Site Code: 06
Station ID:
Date Range: 3/7/2017 - 3/7/2017

Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average					
	3/7/2017			3/8/2017			3/9/2017			3/10/2017			3/11/2017			3/12/2017			3/13/2017								
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total			
12:00 AM	32	44	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	44	76
1:00 AM	38	21	59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	21	59
2:00 AM	14	19	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	19	33
3:00 AM	16	27	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	27	43
4:00 AM	26	49	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	49	75
5:00 AM	92	109	201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	109	201
6:00 AM	255	261	516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255	261	516
7:00 AM	653	699	1,352	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	653	699	1,352
8:00 AM	674	537	1,211	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	674	537	1,211
9:00 AM	443	455	898	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	443	455	898
10:00 AM	403	401	804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	403	401	804
11:00 AM	490	477	967	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	490	477	967
12:00 PM	478	573	1,051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	478	573	1,051
1:00 PM	455	547	1,002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	455	547	1,002
2:00 PM	667	635	1,302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	667	635	1,302
3:00 PM	622	810	1,432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	622	810	1,432
4:00 PM	614	852	1,466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	614	852	1,466
5:00 PM	638	795	1,433	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	638	795	1,433
6:00 PM	483	537	1,020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	483	537	1,020
7:00 PM	327	400	727	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	327	400	727
8:00 PM	210	289	499	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	210	289	499
9:00 PM	167	225	392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	167	225	392
10:00 PM	132	131	263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	132	131	263
11:00 PM	66	79	145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66	79	145
Total	7,995	8,972	16,967	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,995	8,972	16,967
Percent	47%	53%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47%	53%	100%
AM Peak	7:30	7:15	7:30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7:30	7:15	7:30
Volume	780	735	1,501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	780	735	1,501
PM Peak	14:15	16:15	16:15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:15	16:15	16:15
Volume	708	859	1,509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	708	859	1,509

1. Mid-week average includes data between Tuesday and Thursday.



Location: 35th Ave
Specific Location: Between 14th St and Park Village St
Site Code: 07
Station ID:
Date Range: 3/7/2017 - 3/7/2017

Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	3/7/2017			3/8/2017			3/9/2017			3/10/2017			3/11/2017			3/12/2017			3/13/2017					
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	10	7	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	7	17
1:00 AM	5	5	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	10
2:00 AM	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
3:00 AM	3	2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	5
4:00 AM	4	9	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	9	13
5:00 AM	15	18	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	18	33
6:00 AM	46	63	109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	63	109
7:00 AM	173	226	399	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	173	226	399
8:00 AM	158	173	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	158	173	331
9:00 AM	109	113	222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109	113	222
10:00 AM	73	100	173	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	100	173
11:00 AM	137	122	259	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	122	259
12:00 PM	103	140	243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103	140	243
1:00 PM	84	129	213	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	129	213
2:00 PM	146	160	306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	160	306
3:00 PM	150	164	314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	164	314
4:00 PM	147	163	310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	147	163	310
5:00 PM	137	148	285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	148	285
6:00 PM	81	89	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81	89	170
7:00 PM	43	72	115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	72	115
8:00 PM	44	45	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	45	89
9:00 PM	21	47	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	47	68
10:00 PM	15	18	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	18	33
11:00 PM	20	15	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	15	35
Total	1,725	2,029	3,754	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,725	2,029	3,754
Percent	46%	54%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46%	54%	100%
AM Peak	7:30	7:30	7:30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7:30	7:30	7:30
Volume	208	268	476	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	208	268	476
PM Peak	14:15	15:15	14:45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:15	15:15	14:45
Volume	156	174	323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	156	174	323

1. Mid-week average includes data between Tuesday and Thursday.

Location: 43rd Ave
Specific Location: Between 14th St and Park Village St
Site Code: 08
Station ID:
Date Range: 3/7/2017 - 3/7/2017

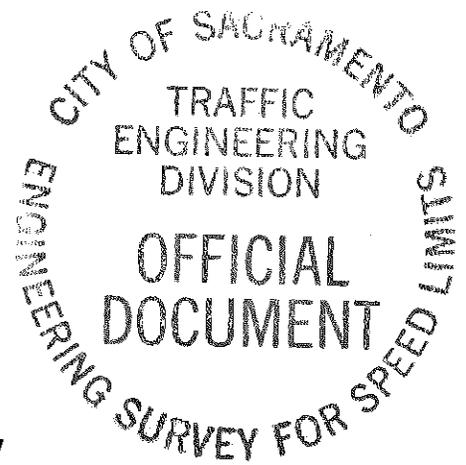


Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	3/7/2017			3/8/2017			3/9/2017			3/10/2017			3/11/2017			3/12/2017			3/13/2017					
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	13	21	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	21	34
1:00 AM	10	11	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	11	21
2:00 AM	9	7	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	7	16
3:00 AM	5	8	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	8	13
4:00 AM	15	19	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	19	34
5:00 AM	51	23	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	23	74
6:00 AM	132	57	189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	132	57	189
7:00 AM	411	271	682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	411	271	682
8:00 AM	392	241	633	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	392	241	633
9:00 AM	303	171	474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	303	171	474
10:00 AM	238	215	453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238	215	453
11:00 AM	289	261	550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	289	261	550
12:00 PM	255	255	510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255	255	510
1:00 PM	259	245	504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	259	245	504
2:00 PM	350	323	673	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	350	323	673
3:00 PM	365	328	693	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	365	328	693
4:00 PM	320	332	652	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	320	332	652
5:00 PM	358	372	730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	358	372	730
6:00 PM	254	315	569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254	315	569
7:00 PM	151	187	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	187	338
8:00 PM	114	153	267	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	114	153	267
9:00 PM	80	104	184	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	104	184
10:00 PM	36	48	84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	48	84
11:00 PM	33	37	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	37	70
Total	4,443	4,004	8,447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,443	4,004	8,447
Percent	53%	47%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53%	47%	100%
AM Peak	7:15	7:30	7:30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7:15	7:30	7:30
Volume	475	311	786	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	475	311	786
PM Peak	14:15	17:15	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14:15	17:15	17:00
Volume	377	379	730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	377	379	730

1. Mid-week average includes data between Tuesday and Thursday.

APPENDIX VI
CITY'S ENGINEERING AND TRAFFIC SURVEYS

	Location		No. of Crashes within 250'	Speed Limit
			(10/1/2011 - 10/1/2016)	See attached page #
1	Sutterville Road	intersecting with Freeport Boulevard	11	413
2	Sutterville Road	between Mulberry Lane & South Land Park Drive	0	413
3	South Land Park Drive	between Parkside Court & Sutterville Road	1	402
4	Del Rio Road	between Alta Drive & Normandy Lane	2	159
5	Del Rio Road	intersecting with Nomandy Lane	2	159
6	27th Avenue	between Del Rio Road & south curve	0	None
7	Fruitridge Road	intersecting with Freeport Boulevard	27	229
8	Fruitridge Road	between South Land Park Drive & Gilgunn Way	1	229
9	35th Avenue	intersecting with Freeport Boulevard	7	48
10	35th Avenue	between 14th Avenue & Park Village Street	1	48
11	Blair Avenue	intersecting with Freeport Boulevard	15	109
12	43rd Avenue	between 14th Avenue & Park Village Street	9	53
13	Florin Road	intersecting with Freeport Boulevard	27	201 & 202
14	Florin Road	between South Land Park Drive & Freeport Boulevard	27	201 & 202
15	Pocket Road/Meadowview Road	intersecting with Freeport Boulevard	21	328 & 364
16	Pocket Road	between Alma Vista Way & Freeport Boulevard	21	364
17	Water Utilities Site Driveway	intersecting with Freeport Boulevard	1	None



**City of Sacramento
Engineering and Traffic Survey**

Speed Zone: <u>SUTTERVILLE ROAD</u>	between <u>RIVERSIDE BOULEVARD</u>	and <u>FREEMPORT BOULEVARD</u>
Survey Location: <u>Between Francis Ct and Marion Ct</u>	Average Daily Traffic (ADT): <u>13,487</u>	
Survey Date: <u>2/23/2010</u>	Start Time: <u>10:05AM</u>	End Time: <u>10:35am</u>
Expiration Date: <u>2/23/2017</u>	Observer: <u>Jon Fitzpatrick</u>	Radar Serial No. <u>DS 13825</u>

Posted Speed Limit (mph): <u>35</u>	85 th % Speed (mph): <u>41.7</u>	Avg. Speed (mph): <u>36.4</u>	Weather: <u>Cloudy</u>
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SPOT SPEED DATA

LAND USE AND ROADWAY CONDITIONS

Speed mph	No. of Vehicles	Percent of Total	Cumulative Percentage
<=15	0	0.00%	0.00%
16	0	0.00%	0.00%
17	0	0.00%	0.00%
18	0	0.00%	0.00%
19	0	0.00%	0.00%
20	0	0.00%	0.00%
21	0	0.00%	0.00%
22	0	0.00%	0.00%
23	0	0.00%	0.00%
24	1	0.82%	0.82%
25	0	0.00%	0.82%
26	1	0.82%	1.64%
27	0	0.00%	1.64%
28	0	0.00%	1.64%
29	3	2.46%	4.10%
30	4	3.28%	7.38%
31	12	9.84%	17.21%
32	9	7.38%	24.59%
33	7	5.74%	30.33%
34	7	5.74%	36.07%
35	17	13.93%	50.00%
36	10	8.20%	58.20%
37	9	7.38%	65.57%
38	8	6.56%	72.13%
39	2	1.64%	73.77%
40	6	4.92%	78.69%
41	5	4.10%	82.79%
42	4	3.28%	86.07%
43	4	3.28%	89.34%
44	4	3.28%	92.62%
45	4	3.28%	95.90%
46	2	1.64%	97.54%
47	0	0.00%	97.54%
48	0	0.00%	97.54%
49	0	0.00%	97.54%
50	1	0.82%	98.36%
51	0	0.00%	98.36%
52	1	0.82%	99.18%
53	0	0.00%	99.18%
54	1	0.82%	100.00%
55	0	0.00%	100.00%
56	0	0.00%	100.00%
57	0	0.00%	100.00%
58	0	0.00%	100.00%
59	0	0.00%	100.00%
>=60	0	0.00%	100.00%
Total	122	100.00%	

Predominant Land Use

Single Family Residential Multi-Family Residential Commercial

Office Industrial Park

School

Notes: Some vacant. William Park btwn Land Park Dr & Freeport Blvd.

Roadway Characteristics

On Street Parking: No Parking

Notes: Some parking allowed between Land Park Dr & freeport Blvd

Roadway Geometry:

Segment Length (ft): 5,050 Width (ft): Varies 44-64

No. of Lanes: See Note Below Bikeways: On-Street Bike Lanes

Alignment: Straightaway Visibility: Fair

Median and/or Center Line Treatment: See Note Below

Notes:
Lanes: 4 (2 EB, 2 WB) btwn Riverside Blvd & Land Park Dr, 2 (1 EB, 1 WB) btwn Land Park Dr & Freeport Blvd. Medians: Solid Yellow btwn Riverside Blvd & Land Park Dr, Broken Yellow btwn Land Park Dr & Freeport Blvd.

Traffic Controls:
(Location of Signals, Stop Signs, and Roundabouts)
Signals at Land Park Dr, Freeport Blvd. RR Xing btwn Mulberry Ln & Land Park Dr.

Traffic Calming:
(Location of Traffic Calming Devices)
Marked & Posted 35 mph, Uncontrolled marked crosswalk + flashers @ Mead/17th Ave, Uncontrolled/unmarked crossings @ Babich, Marion, St. Francis, Parkridge, & Capri

Collision History		
Year	Total No. of Collisions	Collisions due to Speeding
2008	4	2
2009	3	1

Signature: Wade Brown

Certifying Engineer

Justification of Recommended Speed Limit:

The 85th percentile speed as indicated by an Engineering & Traffic Survey is 41.7 mph. This speed zone is characterized by pedestrian activity due to the Sacramento Zoo, William Land Park, Funderland, and Fairytale Town located along/near the corridor. Furthermore, there are uncontrolled and unmarked crossings at Capri Way, Parkridge Road, Francis Court, Marion Court and Babich Avenue. considering pedestrian safety, the City Council, on the recommendation of the City Traffic Engineer, approved to post this speed zone at 35 mph.



**City of Sacramento
Engineering and Traffic Survey**

Speed Zone: SOUTH LAND PARK DRIVE between SUTTERVILLE RD and FRUITRIDGE RD
 Survey Location: BETWEEN HILLVIEW WY & RIDGEWAY DRIVE. Average Daily Traffic (ADT): 3,022
 Survey Date: 6/24/2015 Start Time: 13:25 End Time: 13:55 Date of ADT: 5/12/2015
 Expiration Date: 6/24/2022 Observer: Tara Barretto Radar Serial No. KK 9124

Posted Speed Limit (mph): 25 85th % Speed (mph): 32.6 Avg. Speed (mph): 30.0 Weather: Dry

SPOT SPEED DATA

Speed mph	No. of Vehicles	Percent of Total	Cumulative Percentage
<=15	0	0.00%	0.00%
16	0	0.00%	0.00%
17	0	0.00%	0.00%
18	0	0.00%	0.00%
19	0	0.00%	0.00%
20	0	0.00%	0.00%
21	0	0.00%	0.00%
22	0	0.00%	0.00%
23	1	0.95%	0.95%
24	2	1.90%	2.86%
25	7	6.67%	9.52%
26	3	2.86%	12.38%
27	6	5.71%	18.10%
28	11	10.48%	28.57%
29	14	13.33%	41.90%
30	18	17.14%	59.05%
31	14	13.33%	72.38%
32	9	8.57%	80.95%
33	7	6.67%	87.62%
34	6	5.71%	93.33%
35	2	1.90%	95.24%
36	3	2.86%	98.10%
37	2	1.90%	100.00%
38	0	0.00%	100.00%
39	0	0.00%	100.00%
40	0	0.00%	100.00%
41	0	0.00%	100.00%
42	0	0.00%	100.00%
43	0	0.00%	100.00%
44	0	0.00%	100.00%
45	0	0.00%	100.00%
46	0	0.00%	100.00%
47	0	0.00%	100.00%
48	0	0.00%	100.00%
49	0	0.00%	100.00%
50	0	0.00%	100.00%
51	0	0.00%	100.00%
52	0	0.00%	100.00%
53	0	0.00%	100.00%
54	0	0.00%	100.00%
55	0	0.00%	100.00%
56	0	0.00%	100.00%
57	0	0.00%	100.00%
58	0	0.00%	100.00%
59	0	0.00%	100.00%
>=60	0	0.00%	100.00%
Total	105	100.00%	

LAND USE AND ROADWAY CONDITIONS

Predominant Land Use

Single Family Residential Multi-Family Residential Commercial
 Office Industrial Park
 School

Notes:

Roadway Characteristics

On Street Parking: Light

Notes:

Roadway Geometry:

Segment Length (ft): 6,500 Width (ft): 30-48
 No. of Lanes: 2 (1 N/B, 1 S/B) Bikeways: On-Street Bike Routes
 Alignment: Horizontal Curve Visibility: Fair
 Median and/or Center Line Treatment: See Note Below

Notes:
 UNMARKED UNCONTROLLED CROSSWALK @ NEVIS CT, LUCIO LN, KENNADY LN, CRESTWOOD WY, RIDGEWAY DR, MOSS DR; MARKED UNCONTROLLED CROSSWALK @ NEVIS CT, LUCIO LN, KENNADY LN, CRESTWOOD WY, RIDGEWAY DR, HILLVIEW WY, MOSS DR; MARKED UNCONTROLLED CROSSWALK @ PLEASANT DR, VOLZ DR, PARKSIDE CT; MEDIANS: DOUBLE YELLOW BTWN SUTTERVILLE RD & PLEASANT DR, SINGLE DASH BTWN PLEASANT DR & FRUITRIDGE RD. THERE ARE NO SIDEWALKS WITHIN SOME SECTIONS OF THIS SEGMENT.

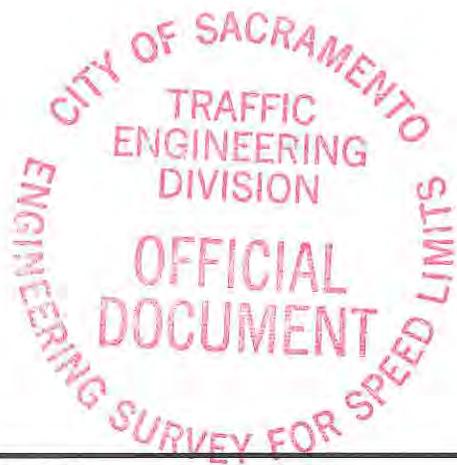
Traffic Controls:
 (Location of Signals, Stop Signs, and Roundabouts)
 SIGNAL @ SUTTERVILLE RD, FRUITRIDGE RD; STOP SIGN @ RIDGEWAY DR, PLEASANT DR, NOONAN DR.

Traffic Calming:
 (Location of Traffic Calming Devices)

Collision History		
Year	Total No. of Collisions	Collisions due to Speeding
2014	3	0
2015	3	0

Signature:
 Certifying Engineer

Justification of Recommended Speed Limit:
 The average 85th percentile speed as indicated by two E&TS (see page # 403 for other E&TS) is 31.4 mph. However, there are 6 unmarked uncontrolled crosswalks, 10 marked uncontrolled crosswalks, vertical curve alignment, horizontal curve alignment, numerous residential driveways, and no sidewalk on some locations within this speed zone. Therefore due to pedestrian safety, the City Council, on the recommendation of the City Traffic Engineer, approved to reduce the posted speed limit on this speed zone to 25 mph.



**City of Sacramento
Engineering and Traffic Survey**

Speed Zone: <u>DEL RIO ROAD</u>	between <u>SUTTERVILLE ROAD</u>	and <u>27th AVE</u>
Survey Location: <u>BETWEEN CAPRI WAY & BIRCHWOOD LANE</u>	Average Daily Traffic (ADT): <u>2,885</u>	
Survey Date: <u>11/15/2011</u>	Start Time: <u>10:35</u>	End Time: <u>11:20</u>
Expiration Date: <u>11/15/2018</u>	Observer: <u>Tara Barretto</u>	Radial Serial No. <u>DS 13639</u>

Posted Speed Limit (mph): <u>30</u>	85 th % Speed (mph): <u>30.0</u>	Avg. Speed (mph): <u>27.2</u>	Weather: <u>Dry</u>
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SPOT SPEED DATA

Speed mph	No. of Vehicles	Percent of Total	Cumulative Percentage
<=15	0	0.00%	0.00%
16	0	0.00%	0.00%
17	0	0.00%	0.00%
18	0	0.00%	0.00%
19	1	1.00%	1.00%
20	2	2.00%	3.00%
21	3	3.00%	6.00%
22	3	3.00%	9.00%
23	4	4.00%	13.00%
24	7	7.00%	20.00%
25	9	9.00%	29.00%
26	13	13.00%	42.00%
27	14	14.00%	56.00%
28	11	11.00%	67.00%
29	10	10.00%	77.00%
30	8	8.00%	85.00%
31	4	4.00%	89.00%
32	3	3.00%	92.00%
33	3	3.00%	95.00%
34	3	3.00%	98.00%
35	2	2.00%	100.00%
36	0	0.00%	100.00%
37	0	0.00%	100.00%
38	0	0.00%	100.00%
39	0	0.00%	100.00%
40	0	0.00%	100.00%
41	0	0.00%	100.00%
42	0	0.00%	100.00%
43	0	0.00%	100.00%
44	0	0.00%	100.00%
45	0	0.00%	100.00%
46	0	0.00%	100.00%
47	0	0.00%	100.00%
48	0	0.00%	100.00%
49	0	0.00%	100.00%
50	0	0.00%	100.00%
51	0	0.00%	100.00%
52	0	0.00%	100.00%
53	0	0.00%	100.00%
54	0	0.00%	100.00%
55	0	0.00%	100.00%
56	0	0.00%	100.00%
57	0	0.00%	100.00%
58	0	0.00%	100.00%
59	0	0.00%	100.00%
>=60	0	0.00%	100.00%
Total	100	100.00%	

LAND USE AND ROADWAY CONDITIONS

Predominant Land Use

Single Family Residential Multi-Family Residential Commercial

Office Industrial Park

School

Notes:

Roadway Characteristics

On Street Parking: Light

Notes:

Roadway Geometry:

Segment Length (ft): 3,200 Width (ft): 30-38

No. of Lanes: 2 (1 N/B, 1 S/B) Bikeways: None

Alignment: Straightaway Visibility: Good

Median and/or Center Line Treatment: See Note Below

Notes:
UNMARKED, UNCONTROLLED CROSSWALK @ ALTA DR, WENTWORTH AVE, CLAREMONT WY, SHERWOOD AVE, BIRCHWOOD LN, CAPRI WY; MEDIANS: SINGLE DASH BTWN SUTTERVILLE RD & ALTA DR, DOUBLE YELLOW BTWN ALTA DR & 27th AVE.

Traffic Controls:
(Location of Signals, Stop Signs, and Roundabouts)
SIGNAL @ SUTTERVILLE RD.

Traffic Calming:
(Location of Traffic Calming Devices)
UNDULATIONS BTWN BIRCHWOOD LN & SHERWOOD AVE, CLAREMONT WY & WENTWORTH AVE, ALTA DR & NORMANDY LN; SPEED HUMPS BTWN NORMANDY LN & 27th AVE.

Collision History		
Year	Total No. of Collisions	Collisions due to Speeding
2009	1	0
2010	0	0

Signature: Herbe Barretto

Certifying Engineer

Justification of Recommended Speed Limit:
Since the 85th percentile speed as indicated by an E&TS is 30 mph, the posted speed limit for this speed zone shall be re-established at 30 mph.



**City of Sacramento
Engineering and Traffic Survey**

Speed Zone: FRUITRIDGE RD between SOUTH LAND PARK DR and MARTIN LUTHER KING BLVD
 Survey Location: BETWEEN GILGUNN WY & MONTEREY WY. Average Daily Traffic (ADT): 14,994
 Survey Date: 8/13/2013 Start Time: 11:15 End Time: 11:45 Date of ADT: 1/14/2014
 Expiration Date: 8/13/2020 Observer: Tara Barretto Radar Serial No. DS 13639

Posted Speed Limit (mph): 40 85th % Speed (mph): 42.3 Avg. Speed (mph): 38.4 Weather: Dry

SPOT SPEED DATA

Speed mph	No. of Vehicles	Percent of Total	Cumulative Percentage
<=15	0	0.00%	0.00%
16	0	0.00%	0.00%
17	0	0.00%	0.00%
18	0	0.00%	0.00%
19	0	0.00%	0.00%
20	0	0.00%	0.00%
21	0	0.00%	0.00%
22	0	0.00%	0.00%
23	0	0.00%	0.00%
24	0	0.00%	0.00%
25	0	0.00%	0.00%
26	0	0.00%	0.00%
27	0	0.00%	0.00%
28	1	0.99%	0.99%
29	3	2.97%	3.96%
30	4	3.96%	7.92%
31	2	1.98%	9.90%
32	3	2.97%	12.87%
33	2	1.98%	14.85%
34	4	3.96%	18.81%
35	6	5.94%	24.75%
36	7	6.93%	31.68%
37	5	4.95%	36.63%
38	8	7.92%	44.55%
39	12	11.88%	56.44%
40	13	12.87%	69.31%
41	10	9.90%	79.21%
42	5	4.95%	84.16%
43	3	2.97%	87.13%
44	4	3.96%	91.09%
45	3	2.97%	94.06%
46	1	0.99%	95.05%
47	1	0.99%	96.04%
48	1	0.99%	97.03%
49	3	2.97%	100.00%
50	0	0.00%	100.00%
51	0	0.00%	100.00%
52	0	0.00%	100.00%
53	0	0.00%	100.00%
54	0	0.00%	100.00%
55	0	0.00%	100.00%
56	0	0.00%	100.00%
57	0	0.00%	100.00%
58	0	0.00%	100.00%
59	0	0.00%	100.00%
>=60	0	0.00%	100.00%
Total	101	100.00%	

LAND USE AND ROADWAY CONDITIONS

Predominant Land Use

Single Family Residential Multi-Family Residential Commercial
 Office Industrial Park
 School

Notes:

Roadway Characteristics

On Street Parking: No Parking

Notes:

Roadway Geometry:

Segment Length (ft): 13,400 Width (ft): 56-64
 No. of Lanes: 4 (2 E/B, 2 W/B) Bikeways: On-Street Bike Lanes
 Alignment: Straightaway Visibility: Good
 Median and/or Center Line Treatment: See Note Below

Notes:
 UNMARKED UNCONTROLLED CROSSWALK @ GILGUNN WY, RICKEY DR, ASHLAND WY, MICHAEL WY, LA CAMPANA WY, CAMELA WY, EL GRANERO WY, CAZADERO WY, NOLDER WY, BRADD WY, DANA WY, HAROLD WY, NORMAN WY, JOHNS DR, 23rd ST, JAMES WY, ST. JOSEPH'S (E/W LEGS); MEDIANS: RAISED BTWN S. LAND PARK DR & EAST END OF COOLEIDGE PARK, DOUBLE YELLOW BTWN EAST END OF COOLEIDGE PARK & 24th ST, TWLTL BTWN 24th ST & FRANKLIN BLVD, RAISED BTWN FRANKLIN BLVD & MLK BLVD.

Traffic Controls:
 (Location of Signals, Stop Signs, and Roundabouts)
 SIGNAL @ S. LAND PARK DR, MONTEREY WY, FREEPORT BLVD, HELEN WY, 24th ST, 28th ST, @ RR XING, FRANKLIN BLVD, MLK BLVD; RR XING BTWN 24th ST & 28th ST.

Traffic Calming:
 (Location of Traffic Calming Devices)

Collision History		
Year	Total No. of Collisions	Collisions due to Speeding
2011	34	13
2012	35	15

Signature: *Tara Barretto*
Certifying Engineer

Justification of Recommended Speed Limit:
 Since the average 85th percentile speed as indicated by three E&TS is 40.6 mph (see page numbers 230 and 231 for other E&TS), the posted speed limit for this speed zone shall be re-established at 40 mph.



**City of Sacramento
Engineering and Traffic Survey**

Speed Zone: <u>35th AVE</u>	between <u>14th STREET</u>	and <u>FREEPORT BLVD</u>
Survey Location: <u>BETWEEN BELLEAU WOOD LN & McLAREN AVE.</u>	Average Daily Traffic (ADT): <u>4,334</u>	
Survey Date: <u>2/16/2012</u>	Start Time: <u>10:05</u>	End Time: <u>10:40</u>
Expiration Date: <u>2/16/2019</u>	Observer: <u>Tara Barretto</u>	Radar Serial No. <u>DS 13639</u>

Posted Speed Limit (mph): <u>35</u>	85 th % Speed (mph): <u>38.2</u>	Avg. Speed (mph): <u>34.8</u>	Weather: <u>Dry</u>
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SPOT SPEED DATA

Speed mph	No. of Vehicles	Percent of Total	Cumulative Percentage
<=15	0	0.00%	0.00%
16	0	0.00%	0.00%
17	0	0.00%	0.00%
18	0	0.00%	0.00%
19	0	0.00%	0.00%
20	0	0.00%	0.00%
21	0	0.00%	0.00%
22	0	0.00%	0.00%
23	0	0.00%	0.00%
24	0	0.00%	0.00%
25	0	0.00%	0.00%
26	2	1.98%	1.98%
27	1	0.99%	2.97%
28	3	2.97%	5.94%
29	4	3.96%	9.90%
30	5	4.95%	14.85%
31	7	6.93%	21.78%
32	10	9.90%	31.68%
33	8	7.92%	39.60%
34	7	6.93%	46.53%
35	10	9.90%	56.44%
36	8	7.92%	64.36%
37	12	11.88%	76.24%
38	8	7.92%	84.16%
39	5	4.95%	89.11%
40	3	2.97%	92.08%
41	2	1.98%	94.06%
42	1	0.99%	95.05%
43	1	0.99%	96.04%
44	2	1.98%	98.02%
45	1	0.99%	99.01%
46	1	0.99%	100.00%
47	0	0.00%	100.00%
48	0	0.00%	100.00%
49	0	0.00%	100.00%
50	0	0.00%	100.00%
51	0	0.00%	100.00%
52	0	0.00%	100.00%
53	0	0.00%	100.00%
54	0	0.00%	100.00%
55	0	0.00%	100.00%
56	0	0.00%	100.00%
57	0	0.00%	100.00%
58	0	0.00%	100.00%
59	0	0.00%	100.00%
>=60	0	0.00%	100.00%
Total	101	100.00%	

LAND USE AND ROADWAY CONDITIONS

Predominant Land Use

Single Family Residential Multi-Family Residential Commercial

Office Industrial Park

School

Notes:

Roadway Characteristics

On Street Parking: Light

Notes:

Roadway Geometry:

Segment Length (ft): 2,350 Width (ft): 50

No. of Lanes: 2 (1 E/B, 1 W/B) Bikeways: On-Street Bike Lanes

Alignment: Straightaway Visibility: Good

Median and/or Center Line Treatment: See Note Below

Notes:
UNMARKED UNCONTROLLED CROSSWALK @ PARK VILLAGE ST, BELLEAU WOOD LN, McLAREN AVE; MEDIANS: DOUBLE YELLOW BTWN 14th ST & BELLEAU WOOD LN, SINGLE DASH BTWN BELLEAU WOOD LN & FREEPORT BLVD.

Traffic Controls:
(Location of Signals, Stop Signs, and Roundabouts)
SIGNAL @ FREEPORT BLVD.

Traffic Calming:
(Location of Traffic Calming Devices)

Collision History		
Year	Total No. of Collisions	Collisions due to Speeding
2010	4	1
2011	0	0

Signature: *Hester Poon*

Certifying Engineer

Justification of Recommended Speed Limit:
Since the 85th percentile speed as indicated by an E&TS is 38.2 mph, the posted speed limit for this speed zone shall be re-established at 35 mph.



**City of Sacramento
Engineering and Traffic Survey**

Speed Zone: <u>BLAIR AVE</u>	between <u>14th STREET</u>	and <u>FREEPORT BLVD</u>
Survey Location: <u>BETWEEN 14th STREET & BELLEAU WOOD LANE.</u>	Average Daily Traffic (ADT): <u>8,078</u>	
Survey Date: <u>3/6/2012</u>	Start Time: <u>10:35</u>	End Time: <u>11:10</u>
Expiration Date: <u>3/6/2019</u>	Observer: <u>Tara Barretto</u>	Radar Serial No. <u>DS 13639</u>

Posted Speed Limit (mph): <u>30</u>	85 th % Speed (mph): <u>34.7</u>	Avg. Speed (mph): <u>32.0</u>	Weather: <u>Dry</u>
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SPOT SPEED DATA

LAND USE AND ROADWAY CONDITIONS

Speed mph	No. of Vehicles	Percent of Total	Cumulative Percentage
<=15	0	0.00%	0.00%
16	0	0.00%	0.00%
17	0	0.00%	0.00%
18	0	0.00%	0.00%
19	0	0.00%	0.00%
20	0	0.00%	0.00%
21	0	0.00%	0.00%
22	1	0.90%	0.90%
23	1	0.90%	1.80%
24	2	1.80%	3.60%
25	1	0.90%	4.50%
26	2	1.80%	6.31%
27	1	0.90%	7.21%
28	5	4.50%	11.71%
29	9	8.11%	19.82%
30	11	9.91%	29.73%
31	12	10.81%	40.54%
32	12	10.81%	51.35%
33	13	11.71%	63.06%
34	17	15.32%	78.38%
35	10	9.01%	87.39%
36	7	6.31%	93.69%
37	5	4.50%	98.20%
38	1	0.90%	99.10%
39	1	0.90%	100.00%
40	0	0.00%	100.00%
41	0	0.00%	100.00%
42	0	0.00%	100.00%
43	0	0.00%	100.00%
44	0	0.00%	100.00%
45	0	0.00%	100.00%
46	0	0.00%	100.00%
47	0	0.00%	100.00%
48	0	0.00%	100.00%
49	0	0.00%	100.00%
50	0	0.00%	100.00%
51	0	0.00%	100.00%
52	0	0.00%	100.00%
53	0	0.00%	100.00%
54	0	0.00%	100.00%
55	0	0.00%	100.00%
56	0	0.00%	100.00%
57	0	0.00%	100.00%
58	0	0.00%	100.00%
59	0	0.00%	100.00%
>=60	0	0.00%	100.00%
Total	111	100.00%	

Predominant Land Use

Single Family Residential Multi-Family Residential Commercial

Office Industrial Park

School

Notes:

Roadway Characteristics

On Street Parking: Heavy

Notes:

Roadway Geometry:

Segment Length (ft): 1,800 Width (ft): 44

No. of Lanes: 2 (1 E/B, 1 W/B) Bikeways: On-Street Bike Lanes

Alignment: Straightaway Visibility: Good

Median and/or Center Line Treatment: Solid Yellow

Notes:
UNMARKED UNCONTROLLED CROSSWALK @ BELLEAU WOOD LN, 14th ST; MARKED UNCONTROLLED CROSSWALK @ PARK VILLAGE ST.

Traffic Controls:
(Location of Signals, Stop Signs, and Roundabouts)
SIGNAL @ FREEPORT BLVD.

Traffic Calming:
(Location of Traffic Calming Devices)

Collision History		
Year	Total No. of Collisions	Collisions due to Speeding
2010	1	0
2011	0	0

Signature: Heidi Posen

Certifying Engineer

Justification of Recommended Speed Limit:
This speed zone is characterized by a mix of residential and commercial uses. This zone is at close proximity to the Birney School Park, has two unmarked uncontrolled crosswalks and one marked uncontrolled crosswalk. Additionally, Blair Avenue is a bike route where a "share the road" legend is installed on the street pavement. The 85th percentile speed as indicated by an E&TS is 34.7 mph, therefore, the City Council, on the recommendation of the City Traffic Engineer, approved to reduce the posted speed limit along this speed zone to 30 mph.



**City of Sacramento
Engineering and Traffic Survey**

Speed Zone: <u>43rd AVE</u>	between <u>GLORIA DR</u>	and <u>14th STREET</u>
Survey Location: <u>BETWEEN LAKE CREST WY & S. LAND PARK DR.</u>	Average Daily Traffic (ADT): <u>7,213</u>	
Survey Date: <u>2/21/2012</u>	Start Time: <u>13:55</u>	End Time: <u>14:35</u>
Expiration Date: <u>2/21/2019</u>	Observer: <u>Tara Barretto</u>	Radar Serial No. <u>DS 13639</u>

Posted Speed Limit (mph): <u>30</u>	85 th % Speed (mph): <u>33.7</u>	Avg. Speed (mph): <u>30.2</u>	Weather: <u>Dry</u>
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SPOT SPEED DATA

Speed mph	No. of Vehicles	Percent of Total	Cumulative Percentage
<=15	0	0.00%	0.00%
16	0	0.00%	0.00%
17	0	0.00%	0.00%
18	0	0.00%	0.00%
19	0	0.00%	0.00%
20	0	0.00%	0.00%
21	0	0.00%	0.00%
22	1	0.95%	0.95%
23	1	0.95%	1.90%
24	2	1.90%	3.81%
25	5	4.76%	8.57%
26	5	4.76%	13.33%
27	8	7.62%	20.95%
28	10	9.52%	30.48%
29	17	16.19%	46.67%
30	12	11.43%	58.10%
31	10	9.52%	67.62%
32	8	7.62%	75.24%
33	6	5.71%	80.95%
34	6	5.71%	86.67%
35	8	7.62%	94.29%
36	2	1.90%	96.19%
37	3	2.86%	99.05%
38	1	0.95%	100.00%
39	0	0.00%	100.00%
40	0	0.00%	100.00%
41	0	0.00%	100.00%
42	0	0.00%	100.00%
43	0	0.00%	100.00%
44	0	0.00%	100.00%
45	0	0.00%	100.00%
46	0	0.00%	100.00%
47	0	0.00%	100.00%
48	0	0.00%	100.00%
49	0	0.00%	100.00%
50	0	0.00%	100.00%
51	0	0.00%	100.00%
52	0	0.00%	100.00%
53	0	0.00%	100.00%
54	0	0.00%	100.00%
55	0	0.00%	100.00%
56	0	0.00%	100.00%
57	0	0.00%	100.00%
58	0	0.00%	100.00%
59	0	0.00%	100.00%
>=60	0	0.00%	100.00%
Total	105	100.00%	

LAND USE AND ROADWAY CONDITIONS

Predominant Land Use

Single Family Residential Multi-Family Residential Commercial

Office Industrial Park

School

Notes:

Roadway Characteristics

On Street Parking: Light

Notes:

Roadway Geometry:

Segment Length (ft): 3,225 Width (ft): 40-50

No. of Lanes: 2 (1 E/B, 1 W/B) Bikeways: On-Street Bike Lanes

Alignment: Vertical Curve Visibility: Good

Median and/or Center Line Treatment: Solid Yellow

Notes:
UNMARKED UNCONTROLLED CROSSWALK @ LAKE CREST WY, FORDHAM WY, COLGATE CT, WYCLIFFE WY, HOLSTEIN WY, 14th ST.

Traffic Controls:
(Location of Signals, Stop Signs, and Roundabouts)
SIGNAL @ GLORIA DR, S. LAND PARK DR; STOP SIGN @ 13th ST.

Traffic Calming:
(Location of Traffic Calming Devices)

Collision History		
Year	Total No. of Collisions	Collisions due to Speeding
2010	10	4
2011	8	0

Signature: [Handwritten Signature]

Certifying Engineer

Justification of Recommended Speed Limit:

The Reichmuth Park is located at the corner of South Land Park Drive and the Alice Birney Elementary school is located at the corner of 13th Street. There is a high density of residential uses fronting along this segment. Furthermore, this segment has horizontal and vertical curve alignment, in addition to five unmarked uncontrolled crosswalks. Since the 85th percentile speed as indicated by an E&TS is 33.7 mph, the City Council, on the recommendation of the City Traffic Engineer, approved to reduce the posted speed limit along this speed zone to 30 mph.

APPENDIX VII
TRAFFIC SIGNAL WARRANT ANALYSIS

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

**WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)**

SATISFIED YES NO

Part 1 (Parts A or B must be satisfied)

Hours -->

A. Vehicles per hour for any 4 hours	1017	1213	1325	1385
Pedestrians per hour for any 4 hours	167	167	167	167

Figure 4C-5 or Figure 4C-6
SATISFIED YES NO

Hours -->

B. Vehicles per hour for any 1 hour	1385			
Pedestrians per hour for any 1 hour	188			

Figure 4C-7 or Figure 4C-8
SATISFIED YES NO

Part 2

SATISFIED YES NO

<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

**WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)**

SATISFIED YES NO

**Part A
Gap/Minutes and # of Children**

SATISFIED YES NO

Gaps vs Minutes	Minutes Children Using Crossing	Hour
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		

Gaps < Minutes YES NO

AND Children > 20/hr YES NO

<u>AND</u> , Consideration has been given to less restrictive remedial measures.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
--	------------------------------	-----------------------------

Part B

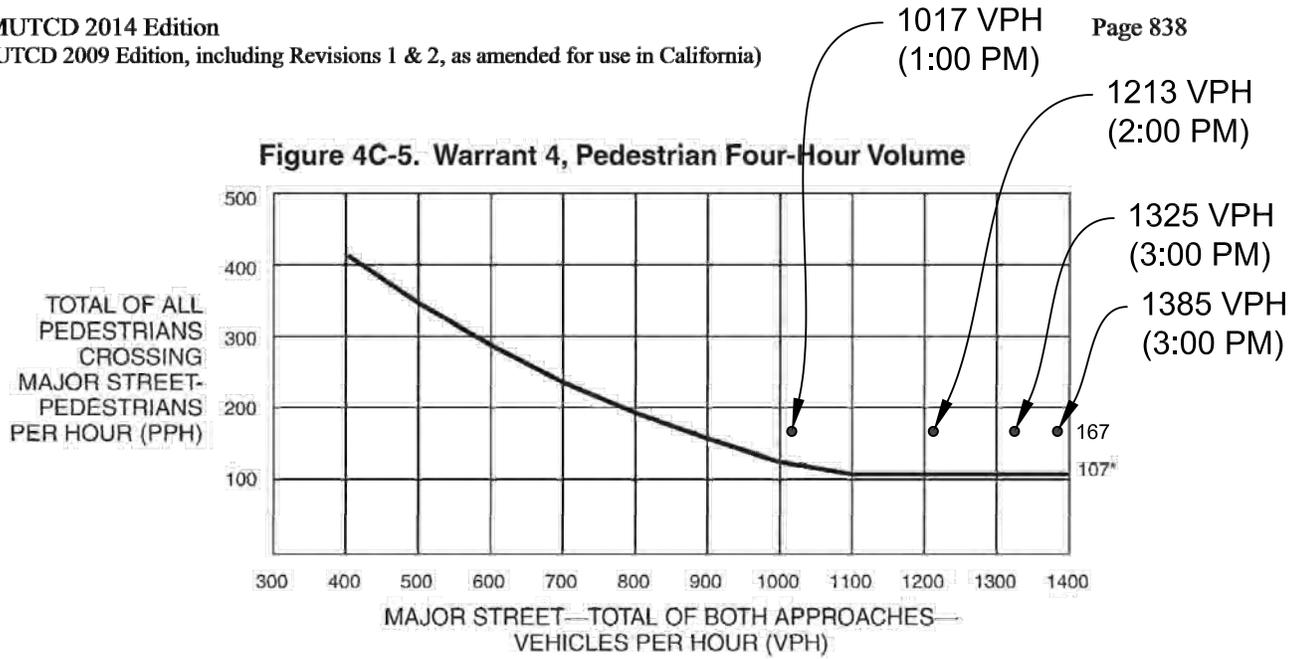
SATISFIED YES NO

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<u>OR</u> , The proposed signal will not restrict the progressive movement of traffic.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

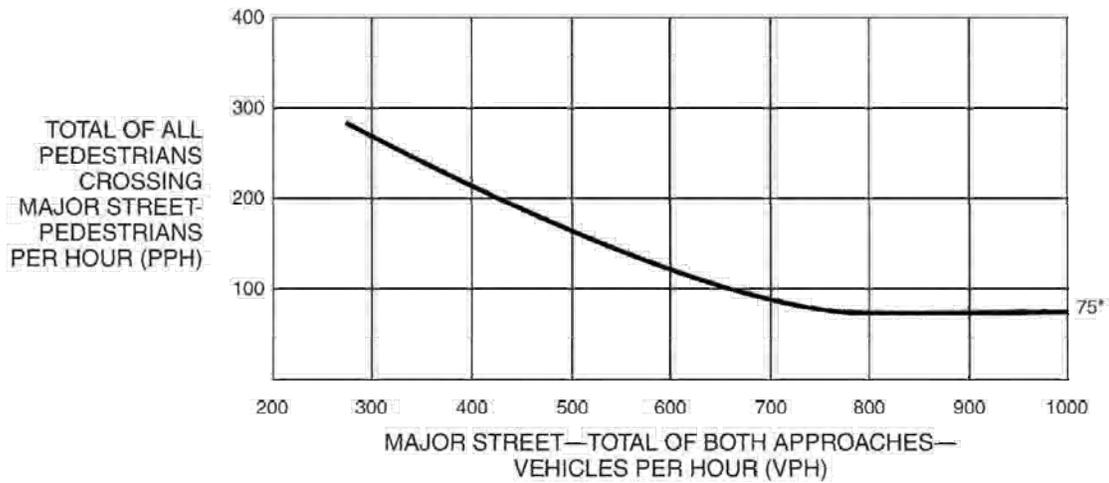
SUTTERVILLE RD

California MUTCD 2014 Edition
 (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California)



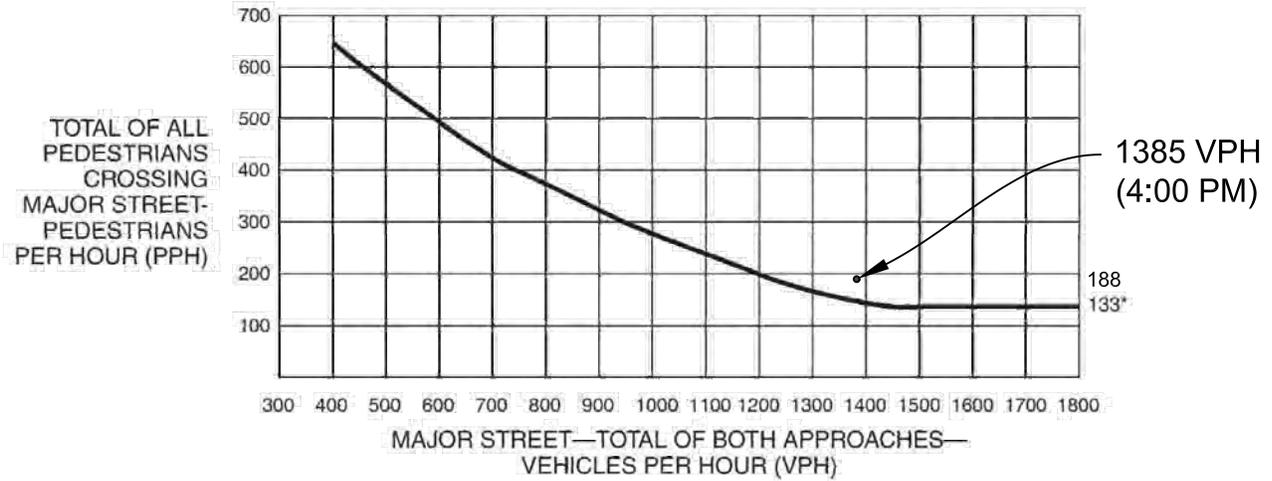
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

**WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)**

SATISFIED YES NO

Part 1 (Parts A or B must be satisfied)

Hours -->

A.	Vehicles per hour for any 4 hours	967	1051	1002	1302
	Pedestrians per hour for any 4 hours	167	167	167	167

Figure 4C-5 or Figure 4C-6
SATISFIED YES NO

Hours -->

B.	Vehicles per hour for any 1 hour	1509			
	Pedestrians per hour for any 1 hour	188			

Figure 4C-7 or Figure 4C-8
SATISFIED YES NO

Part 2

SATISFIED YES NO

<u>AND</u> , The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<u>OR</u> , The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

**WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)**

SATISFIED YES NO

**Part A
Gap/Minutes and # of Children**

SATISFIED YES NO

Gaps vs Minutes	Minutes Children Using Crossing		Hour
	Number of Adequate Gaps		
School Age Pedestrians Crossing Street / hr			

Gaps < Minutes YES NO
AND Children > 20/hr YES NO

<u>AND</u> , Consideration has been given to less restrictive remedial measures.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
--	------------------------------	-----------------------------

Part B

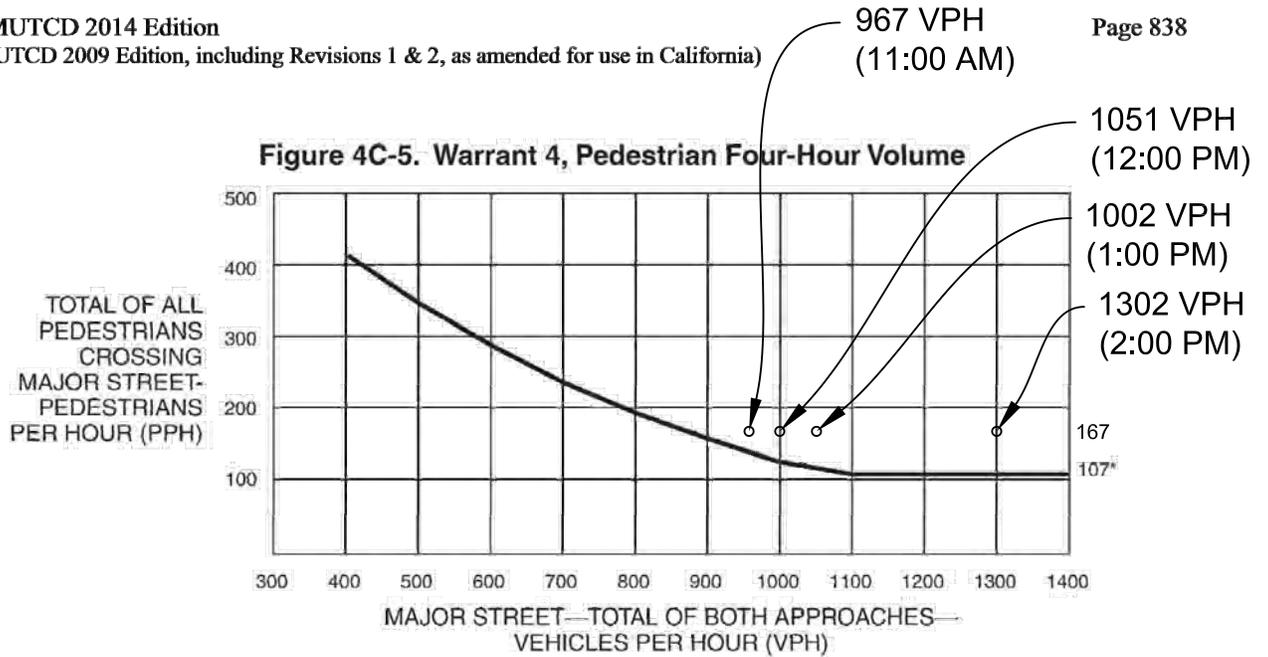
SATISFIED YES NO

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<u>OR</u> , The proposed signal will not restrict the progressive movement of traffic.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

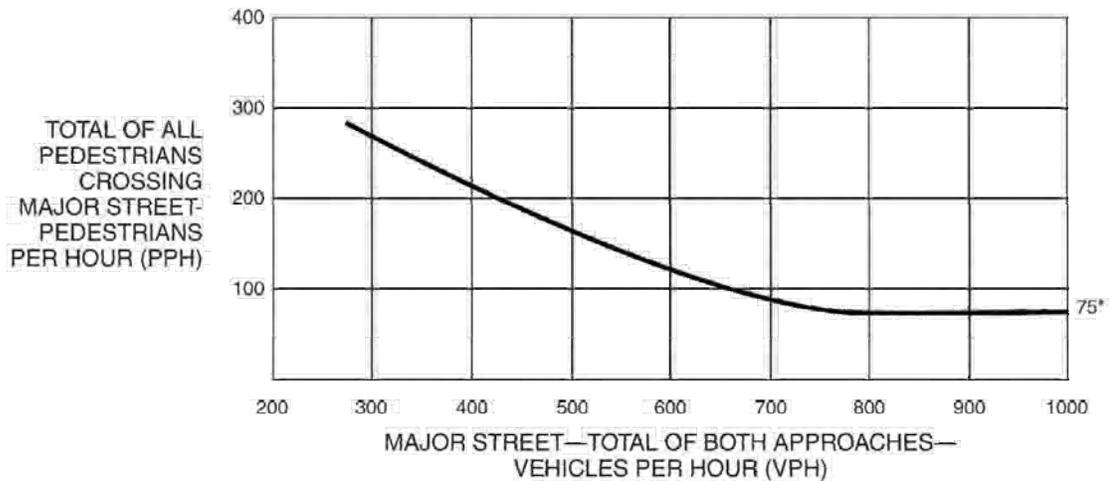
FRUITRIDGE RD

California MUTCD 2014 Edition
 (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California)



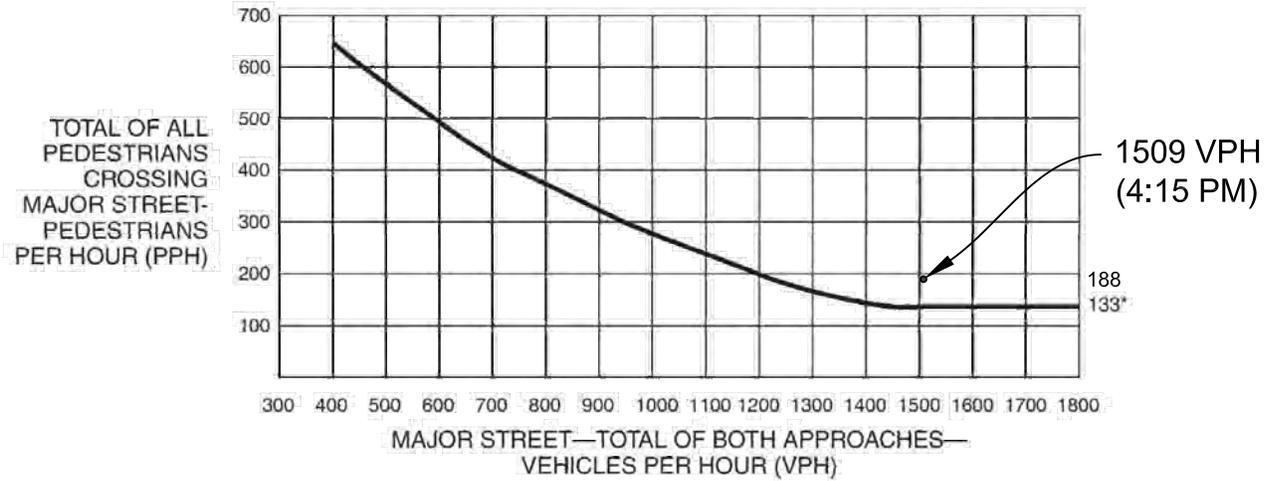
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

APPENDIX VIII
WARRANT FOR THREE-WAY STOP SIGN
LOCATIONS

WARRANTS FOR THREE-WAY STOP SIGN LOCATIONS

LOCATIONS WITH LESS THAN 10,000 VEHICLES PER DAY ON THE THROUGH STREET

Three-way stop signs may be considered at locations meeting all warrants (A-D) and one or more of warrants (1-3)

27 TH Avenue	Del Rio Rd
THROUGH STREET	MINOR STREET

	YES	NO								
A. A minimum uncontrolled approach distance on the through street of 750 feet from a stop or 1000 feet from a traffic signal. _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
B. Posted speed on the through street is 35 MPH or less. _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
C. Three way stops shall only be placed on two lane facilities.	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
D. A minimum of 25% of traffic is exceeding the speed limit on the through street. _____	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
<p><u>VOLUME</u></p> <p>1. The total volume entering the intersection from all approaches is a minimum of 150 units per hour for any two hours of an average day <u>and</u> the traffic volume entering the intersection from the through street compared to the minor street for the same two hours has a ratio of 10:1 or less. The volume of pedestrians* and bicyclists crossing the through street shall be added to the minor street volume.</p> <p style="text-align: center;">_____</p> <p><small>* Pedestrians shall be counted as 1.5 units. Children, elderly, and disabled shall count as 2.0 units.</small></p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
<p><u>ACCIDENTS</u></p> <p>2. There are three or more accidents within a 12 month period, susceptible to correction by the installation of stop signs. _____</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
<p><u>VISIBILITY**</u></p> <p>3. The sight distance from the stopped minor leg is less than the following:</p> <p style="text-align: center;">California State Highway Design Manual – Corner Sight Distance</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; border-bottom: 1px solid black;">THROUGH STREET SPEED (MPH)</th> <th style="text-align: center; border-bottom: 1px solid black;">DISTANCE (FT)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">25</td> <td style="text-align: center;">280</td> </tr> <tr> <td style="text-align: center;">30</td> <td style="text-align: center;">330</td> </tr> <tr> <td style="text-align: center;">35</td> <td style="text-align: center;">390</td> </tr> </tbody> </table> <p><small>** Only after less restrictive measures are unsuccessful, e.g., parking removal, etc.</small></p> <p>NOTES: _____</p>	THROUGH STREET SPEED (MPH)	DISTANCE (FT)	25	280	30	330	35	390	<input type="checkbox"/>	<input checked="" type="checkbox"/>
THROUGH STREET SPEED (MPH)	DISTANCE (FT)									
25	280									
30	330									
35	390									

COUNCIL DISTRICT _____

INTERSECTION QUALIFIES YES ___ NO

INVESTIGATOR

DATE

APPENDIX IX
SYNCHRO REPORT

HCM Unsignalized Intersection Capacity Analysis

3: Del Rio Rd & 27th Ave

Existing AM Peak Hour
07/12/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	9	5	40	15	21
Future Volume (Veh/h)	36	9	5	40	15	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	10	5	43	16	23
Pedestrians	16					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	96	44	55			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	96	44	55			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	886	1011	1526			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	49	48	39			
Volume Left	39	5	0			
Volume Right	10	0	23			
cSH	909	1526	1700			
Volume to Capacity	0.05	0.00	0.02			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	9.2	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.2	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization			17.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Del Rio Rd & 27th Ave

Existing + Project AM Peak Hour
 07/12/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	36	9	5	40	15	21
Future Volume (vph)	36	9	5	40	15	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	10	5	43	16	23

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	49	48	39
Volume Left (vph)	39	5	0
Volume Right (vph)	10	0	23
Hadj (s)	0.07	0.05	-0.32
Departure Headway (s)	4.2	4.1	3.7
Degree Utilization, x	0.06	0.05	0.04
Capacity (veh/h)	845	855	944
Control Delay (s)	7.4	7.3	6.9
Approach Delay (s)	7.4	7.3	6.9
Approach LOS	A	A	A

Intersection Summary			
Delay		7.2	
Level of Service		A	
Intersection Capacity Utilization		17.5%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

3: Del Rio Rd & 27th Ave

Existing PM Peak Hour

07/12/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	6	12	19	46	63
Future Volume (Veh/h)	31	6	12	19	46	63
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	7	13	21	50	68
Pedestrians	9					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	140	93	127			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	140	93	127			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	99			
cM capacity (veh/h)	838	956	1447			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	41	34	118			
Volume Left	34	13	0			
Volume Right	7	0	68			
cSH	856	1447	1700			
Volume to Capacity	0.05	0.01	0.07			
Queue Length 95th (ft)	4	1	0			
Control Delay (s)	9.4	2.9	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.4	2.9	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			18.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Del Rio Rd & 27th Ave

Existing + Project PM Peak Hour

07/12/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	31	6	12	19	46	63
Future Volume (vph)	31	6	12	19	46	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	7	13	21	50	68

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	41	34	118
Volume Left (vph)	34	13	0
Volume Right (vph)	7	0	68
Hadj (s)	0.10	0.11	-0.31
Departure Headway (s)	4.3	4.2	3.7
Degree Utilization, x	0.05	0.04	0.12
Capacity (veh/h)	805	831	953
Control Delay (s)	7.5	7.4	7.2
Approach Delay (s)	7.5	7.4	7.2
Approach LOS	A	A	A

Intersection Summary			
Delay		7.3	
Level of Service		A	
Intersection Capacity Utilization	18.5%		ICU Level of Service A
Analysis Period (min)		15	