City of San Marcos
1 Civic Center Drive
San Marcos, CA 92069

AGENDA REPORT

Meeting of the San Marcos Traffic Commission

MEETING DATE:	July 6, 2022
AGENDA ITEM NO:	7A
SUBMITTED BY:	Peter Kuey, P.E. – Principal Civil Engineer-Special Projects
APPROVED BY:	Isaac Etchamendy, P.E. – City Engineer
SUBJECT:	Discovery Street/La Sombra Drive Multi-Way Stop Control

BACKGROUND:

The City has received reports of speeding from residents along La Sombra Drive. As shown in Attachment A, La Sombra Drive extends southerly from its intersection with Discovery Street and is primarily a 2-lane roadway with a posted speed limit of 25 mph. Parking is generally present on both sides of La Sombra Drive.

Discovery Street is primarily a 2-lane roadway with a posted speed limit of 25 mph. Parking and buffered bike lanes are generally present on both sides of Discovery Street, between West San Marcos Boulevard and La Sombra Drive. After its intersection with La Sombra Drive, Discovery Street makes a left hand bend and continues easterly with a posted speed limit of 40 mph.

Attachment B depicts the current Discovery Street/La Sombra Drive intersection. Northbound La Sombra Drive vehicles are subject to a stop control at the intersection before they can proceed onto northbound Discovery Street. Southbound Discovery Street vehicles may freely proceed through the intersection and continue southerly onto La Sombra Drive or enter the left turn pocket and proceed easterly on Discovery Street. An existing median on Discovery Street restricts westbound vehicles to only right turns as they then continue northerly along Discovery Street.

As depicted in Attachment C, the City of San Marcos/County of San Diego jurisdictional boundary locations vary along Discovery Street and La Sombra Drive. Any proposed traffic calming or traffic control measures along this segment of Discovery Street and La Sombra Drive requires the close cooperation of these two agencies.

After evaluating the speeding reports, a speed feedback trailer was deployed along La Sombra Drive, between December 2, 2021, and December 9, 2021. The data from the feedback trailer showed that while the 85th percentile speed is 33 mph in the northbound direction and 32 mph in the southbound direction, there are a significant number of vehicles that exceed the 25 mph posted speed limit. In investigating possible solutions to the area, a major constraint are the jurisdictional boundaries which limit City control over the intersection at Discovery Street and La Sombra Drive as well as further south of the intersection. City staff reached out to the County to investigate possible coordination options.

INTER-AGENCY COORDINATION AND FINDINGS:

In late 2021 and early 2022 the City and County staff corresponded on the issues at La Sombra. Subsequently, City and County staff had a meeting on April 22, 2022, in which the community's speeding concerns along Discovery Street and La Sombra Drive were discussed. The County, having received similar concerns on Discovery Street, had plan to reduce the speed limit on Discovery Street, north of La Sombra Drive, from 40 mph to 25 mph. The County has implemented that plan and Discovery Street north of La Sombra Drive now has a posted speed limit of 25 mph. Due to the need to improve traffic circulation, improve pedestrian accessibility, and reduce traffic speeds along this Discovery/La Sombra segment, all parties agreed that a multi-way stop control at the intersection of La Sombra Drive and Discovery Street could be the most appropriate treatment for that intersection. After agreeing on the treatment, a multi-way stop control warrant was conducted by Mr. Zoubir A. Ouadah, the County of San Diego Traffic Engineer and is included in this report as Attachment D.

As part of the multi-way stop project, the County proposes to remove the existing median which currently restricts westbound Discovery Street users from turning left onto southbound La Sombra Drive. In addition, the County proposes to construct enhanced crosswalks at this intersection. A conceptual design of the future intersection is depicted in Attachment E.

The jurisdictional boundaries vary along this segment of Discovery Street and La Sombra Drive. In order to clarify and define where the infrastructure maintenance and replacement areas are for each jurisdiction, the City and County have agreed to execute a Joint Facility

Maintenance Agreement. As proposed, the County will design and construct the multi-way stop control improvements and maintain the Discovery Street/La Sombra Drive intersection.

As this intersection is within the jurisdiction of both agencies, the appropriate approving bodies will need to consider the proposed multi-way stop. After discussion with County staff, the order of approvals has been determined to be: the City of San Marcos Traffic Commission, the County of San Diego Traffic Advisory Committee, and finally, the County of San Diego Board of Supervisors.

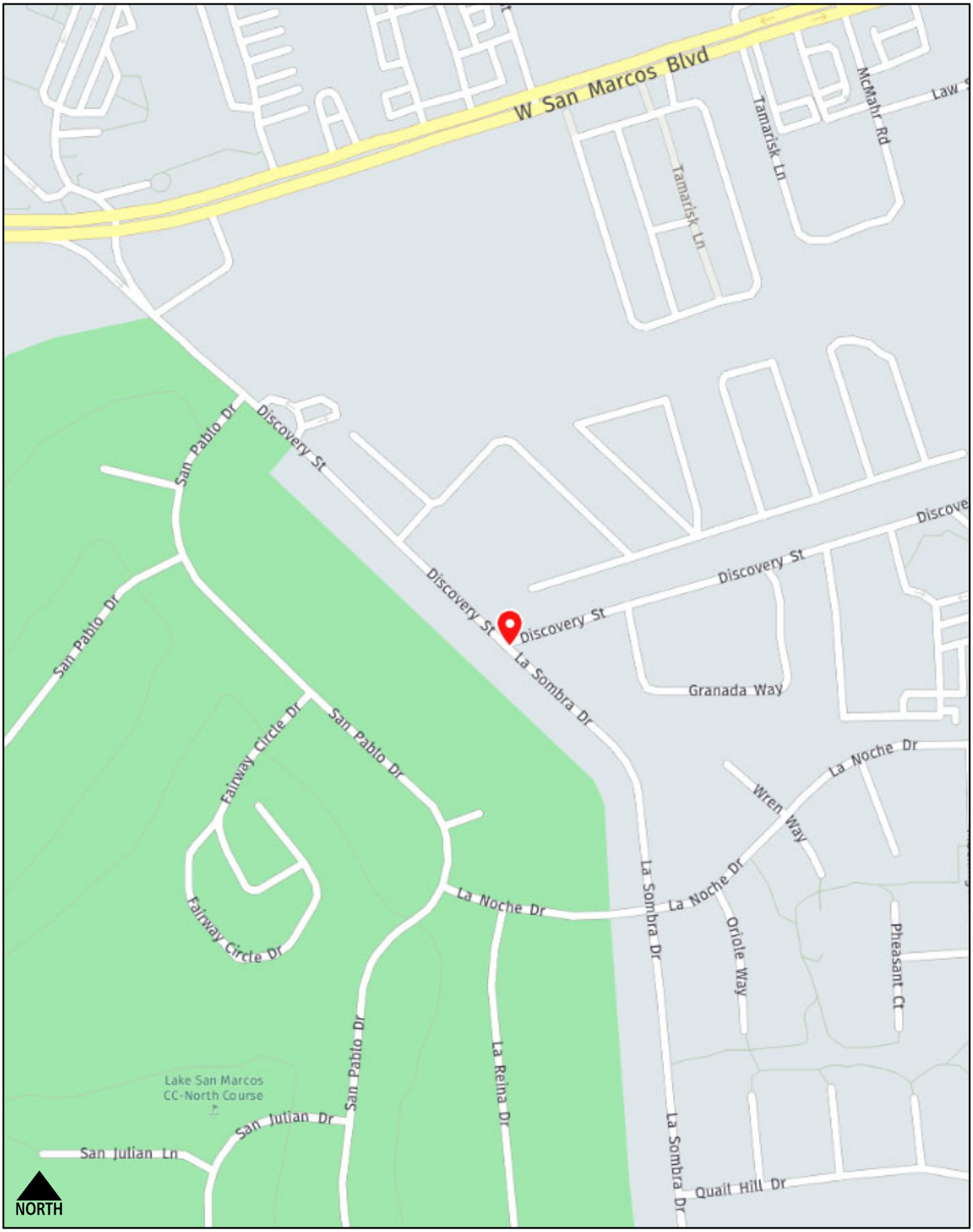
Once the County has approved the implementation of a new intersection control at Discovery and La Sombra, the City will continue to monitor La Sombra for excessive speeds. If excessive speeds are observed after the County's project, City staff may propose future action and additional coordination with the County.

RECOMMENDATIONS:

Engineering staff recommends the Traffic Commissioners recommend the County of San Diego Traffic Advisory Commission and Board of Supervisors approve a multi-way stop controlled intersection at Discovery Street and La Sombra Drive.

Attachments:

A. Vicinity Map
B. Existing Intersection Configuration
C. Jurisdictional Boundary Map
D. Multi-Way Stop Control Warrant
E. Conceptual Intersection Layout



La Sombra Multi-Way Stop Control

Vicinity Map

C+R

Attachment B - Existing Intersection Configuration

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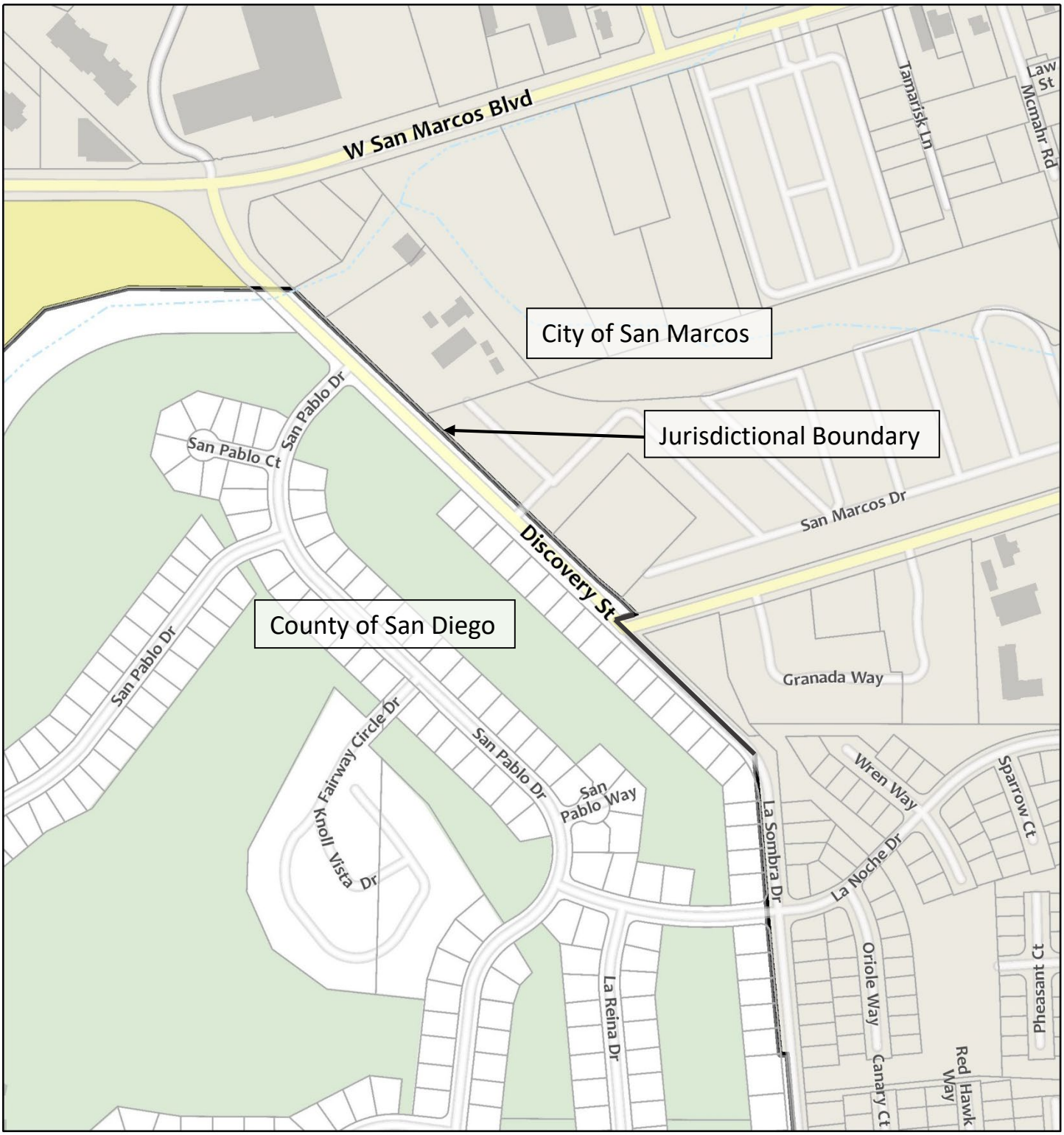
Attachment C- Jurisdictional Boundary



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ATTACHMENT D

DISCOVERY & LA SOMBRA STOP CTE

County of San Diego

DEPARTMENT OF PUBLIC WORKS
5510 OVERLAND AVENUE, SUITE 410
SAN DIEGO, CA 92123-1237
(858) 694-2212
www.sdcounty.ca.gov/dpw/

JEFF MONEDA
DIRECTOR

COUNTY TRAFFIC ENGINEER RECOMMENDATION

Date:	June 13, 2022
Item Title:	All-Way Stop Controls
Location:	Discovery Street and La Sombra Drive
Recommendation:	**Install All-Way Stop Controls**

Conditions:

- Section 21354 "Stop Signs on Local Highways" of the California Vehicle Code (CVC) authorizes local agencies to designate any intersection under its exclusive jurisdiction as a stop intersection.

- Section 2B.07 "Multi-Way Stop Applications" of the California MUTCD, provides four optional criteria that may be considered in an engineering study when evaluating an intersection for an all-way stop control.

- Section 2B.07 - Option A, the need to control left-turn conflicts provides the County with the option to install an all-way stop control at the subject intersection and allowing all movements with no restrictions. The existing raised island for the westbound approach was installed to restrict the westbound left turns and will be removed with this intersection all-way stop controls.

- Section 2B.07 – Option B, the need to control vehicular/pedestrian conflicts near locations that generate high pedestrian volumes; provides the County with the option to install an all-way stop control at an intersection near schools. Just north of the subject intersection, San Marcos High School which generates a high number of walking students in the area. The intersection will be marked with an enhanced crosswalk.

- Pursuant to CVC section 21354 coupled with traffic conditions noted above as well as the desire of the community for a safe pedestrian crossing at the subject intersection, it is my recommendation that an All-Way Stop Control is appropriate and safe for the intersection of Discovery Street and La Sombra Drive.

Zoubir A. Ouadah

Zoubir A. Ouadah, PE. TE.
County Traffic Engineer

06/13/2022

Date

Prepared by National Data & Surveying Services

VOLUME

La Sombra Dr & Discovery St

Day: Tuesday
Date: 6/8/2021

City: San Marcos
Project #: CA21_040099_001

DAILY TOTALS	NB	SB	EB	WB	Total
	1,218	5,104	0	3,639	9,961

AM Period	NB		SB		EB	WB		TOTAL	
00:00	0		8		0	2		10	
00:15	0		4		0	1		5	
00:30	0		1		0	3		4	
00:45	0		1	14	0	0	6	1	20
01:00	0		2		0	4		6	
01:15	0		1		0	2		3	
01:30	0		2		0	1		3	
01:45	0		1	6	0	1	8	2	14
02:00	2		4		0	2		8	
02:15	0		0		0	0		0	
02:30	0		0		0	1		1	
02:45	0	2	3	7	0	2	5	5	14
03:00	1		4		0	3		8	
03:15	0		1		0	0		1	
03:30	1		0		0	1		2	
03:45	0	2	0	5	0	1	5	1	12
04:00	2		2		0	2		6	
04:15	0		0		0	4		4	
04:30	1		2		0	7		10	
04:45	3	6	1	5	0	6	19	10	30
05:00	1		3		0	3		7	
05:15	3		4		0	13		20	
05:30	3		1		0	19		23	
05:45	6	13	8	16	0	22	57	36	86
06:00	6		3		0	14		23	
06:15	4		14		0	20		38	
06:30	7		18		0	30		55	
06:45	10	27	25	60	0	34	98	69	185
07:00	13		33		0	50		96	
07:15	16		29		0	62		107	
07:30	21		27		0	89		137	
07:45	21	71	67	156	0	134	335	222	562
08:00	29		74		0	158		261	
08:15	28		89		0	120		237	
08:30	31		77		0	124		232	
08:45	22	110	63	303	0	150	552	235	965
09:00	10		70		0	65		145	
09:15	11		40		0	61		112	
09:30	25		57		0	46		128	
09:45	24	70	58	225	0	53	225	135	520
10:00	22		78		0	76		176	
10:15	16		47		0	59		122	
10:30	24		74		0	41		139	
10:45	33	95	65	264	0	77	253	175	612
11:00	23		95		0	55		173	
11:15	31		82		0	74		187	
11:30	29		122		0	60		211	
11:45	28	111	88	387	0	64	253	180	751
TOTALS		507		1448			1816		3771
SPLIT %		13.4%		38.4%			48.2%		37.9%

PM Period	NB		SB		EB	WB		TOTAL	
12:00	30		59		0	56		145	
12:15	31		73		0	72		176	
12:30	44		66		0	56		166	
12:45	29	134	77	275	0	39	223	145	632
13:00	31		61		0	41		133	
13:15	30		84		0	55		169	
13:30	22		83		0	45		150	
13:45	24	107	86	314	0	57	198	167	619
14:00	23		114		0	56		193	
14:15	24		117		0	57		198	
14:30	28		125		0	70		223	
14:45	25	100	139	495	0	67	250	231	845
15:00	25		131		0	69		225	
15:15	31		157		0	43		231	
15:30	31		113		0	56		200	
15:45	32	119	120	521	0	52	220	204	860
16:00	29		132		0	58		219	
16:15	9		145		0	53		207	
16:30	15		134		0	67		216	
16:45	19	72	175	586	0	58	236	252	894
17:00	10		147		0	62		219	
17:15	16		158		0	55		229	
17:30	14		146		0	65		225	
17:45	16	56	110	561	0	53	235	179	852
18:00	9		95		0	55		159	
18:15	13		83		0	41		137	
18:30	9		65		0	21		95	
18:45	4	35	67	310	0	28	145	99	490
19:00	5		67		0	39		111	
19:15	12		53		0	31		96	
19:30	14		52		0	44		110	
19:45	15	46	51	223	0	26	140	92	409
20:00	7		46		0	20		73	
20:15	7		53		0	25		85	
20:30	3		50		0	14		67	
20:45	6	23	29	178	0	13	72	48	273
21:00	4		34		0	17		55	
21:15	2		25		0	17		44	
21:30	1		18		0	11		30	
21:45	1	8	22	99	0	6	51	29	158
22:00	5		23		0	11		39	
22:15	2		10		0	10		22	
22:30	0		8		0	4		12	
22:45	2	9	18	59	0	6	31	26	99
23:00	0		10		0	5		15	
23:15	1		11		0	10		22	
23:30	1		9		0	3		13	
23:45	0	2	5	35	0	4	22	9	59
TOTALS		711		3656			1823		6190
SPLIT %		11.5%		59.1%			29.5%		62.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	1,218	5,104	0	3,639	9,961

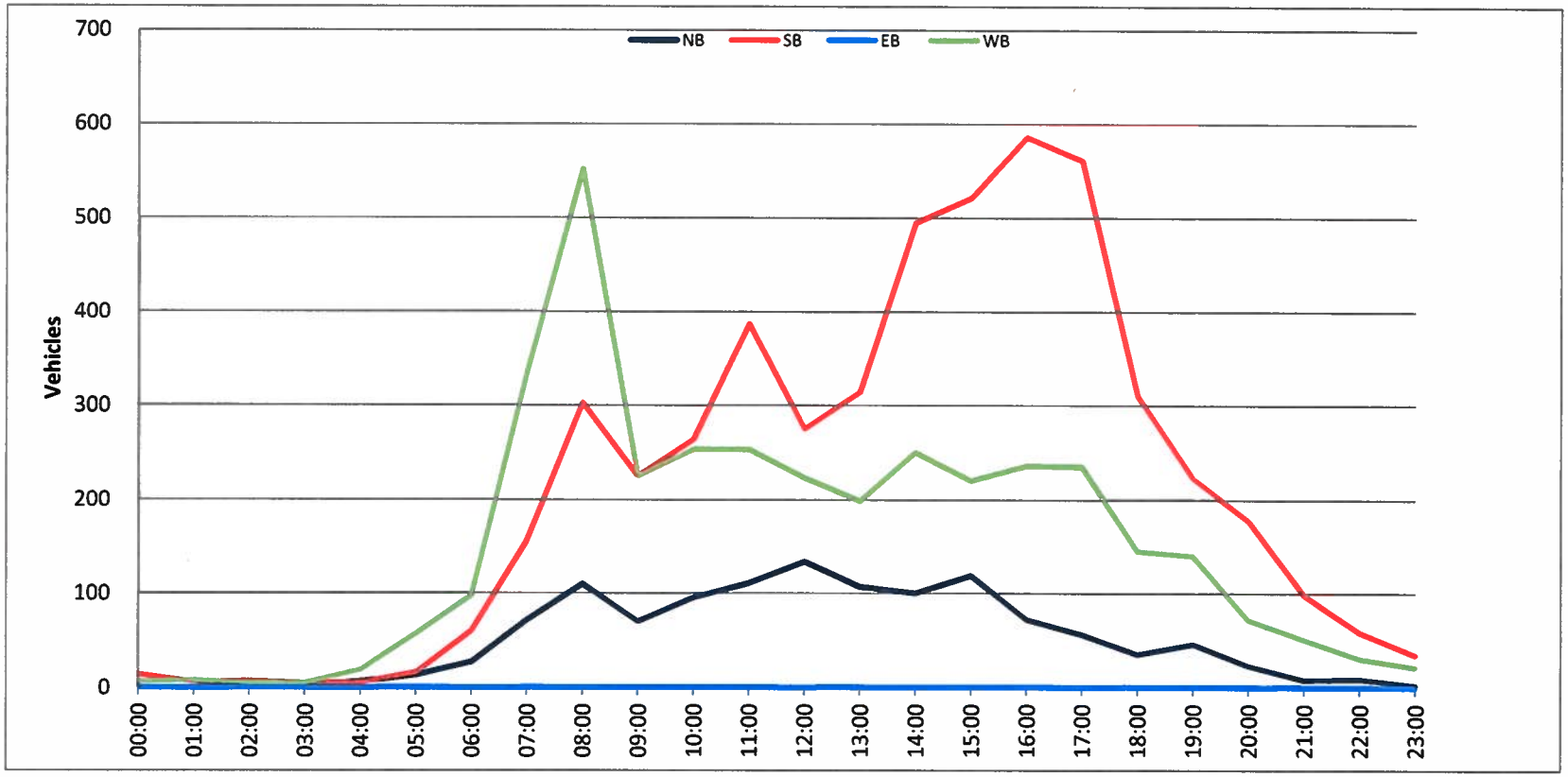
AM Peak Hour	11:45	11:00	08:00	08:00
AM Pk Volume	133	387	552	965
Pk Hr Factor	0.756	0.793	0.873	0.924
7 - 9 Volume	181	459	887	1527
7 - 9 Peak Hour	08:00	07:45	08:00	08:00
7 - 9 Pk Volume	110	307	552	965
Pk Hr Factor	0.887	0.862	0.873	0.924

PM Peak Hour	12:15	16:45	14:15	16:45
PM Pk Volume	135	626	263	925
Pk Hr Factor	0.767	0.894	0.939	0.918
4 - 6 Volume	128	1147	471	1746
4 - 6 Peak Hour	16:00	16:45	16:30	16:45
4 - 6 Pk Volume	72	626	242	925
Pk Hr Factor	0.621	0.894	0.903	0.918

Prepared by National Data & Surveying Services

Project #: CA21_040099_001 **City:** San Marcos

Location: La Sombra Dr & Discovery St **Date:** 6/8/2021



California Manual on Uniform Traffic Control Devices

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

2014 Edition

Revision 6 (March 30, 2021)

State of California
California State Transportation Agency
Department of Transportation

Caltrans

CalSTA
CALIFORNIA STATE TRANSPORTATION AGENCY

D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

Section 2B.08 YIELD Sign (R1-2)

Standard:

01 **The YIELD (R1-2) sign (see Figure 2B-1) shall be a downward-pointing equilateral triangle with a wide red border and the legend YIELD in red on a white background.**

Support:

02 The YIELD sign assigns right-of-way to traffic on certain approaches to an intersection. Vehicles controlled by a YIELD sign need to slow down to a speed that is reasonable for the existing conditions or stop when necessary to avoid interfering with conflicting traffic.

Section 2B.09 YIELD Sign Applications

Option:

01 YIELD signs may be installed:

A. On the approaches to a through street or highway where conditions are such that a full stop is not always required.

B. At the second crossroad of a divided highway, where the median width at the intersection is 30 feet or greater. In this case, a STOP or YIELD sign may be installed at the entrance to the first roadway of a divided highway, and a YIELD sign may be installed at the entrance to the second roadway.

C. For a channelized turn lane that is separated from the adjacent travel lanes by an island, even if the adjacent lanes at the intersection are controlled by a highway traffic control signal or by a STOP sign.

D. At an intersection where a special problem exists and where engineering judgment indicates the problem to be susceptible to correction by the use of the YIELD sign.

E. Facing the entering roadway for a merge-type movement if engineering judgment indicates that control is needed because acceleration geometry and/or sight distance is not adequate for merging traffic operation.

Standard:

02 **A YIELD (R1-2) sign shall be used to assign right-of-way at the entrance to a roundabout. YIELD signs at roundabouts shall be used to control the approach roadways and shall not be used to control the circulatory roadway.**

03 **Other than for all of the approaches to a roundabout, YIELD signs shall not be placed on all of the approaches to an intersection.**

Section 2B.10 STOP Sign or YIELD Sign Placement

Standard:

01 **The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.36) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.36) shall be installed in advance of the YIELD sign.**

02 **The STOP or YIELD sign shall be located as close as practical to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.**

02a YIELD signs shall not be erected upon the approaches to more than one of the intersecting streets. Refer to CVC 21356.

03 **STOP signs and YIELD signs shall not be mounted on the same post.**

04 **No items other than inventory stickers, sign installation dates, and bar codes shall be affixed to the fronts of STOP or YIELD signs, and the placement of these items shall be in the border of the sign.**

05 **No items other than official traffic control signs, inventory stickers, sign installation dates, anti-vandalism stickers, and bar codes shall be mounted on the backs of STOP or YIELD signs.**

06 **No items other than retroreflective strips (see Section 2A.21) or official traffic control signs shall be mounted on the fronts or backs of STOP or YIELD signs supports.**

Support:

17 Caltrans will grant such permission only when an investigation indicates that the STOP (R1-1) sign will benefit traffic.

Section 2B.06 STOP Sign Applications

Guidance:

01 *At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs (see Sections 2B.08 and 2B.09).*

02 *The use of STOP signs on the minor-street approaches should be considered if engineering judgment indicates that a stop is always required because of one or more of the following conditions:*

A. The vehicular traffic volumes on the through street or highway exceed 6,000 vehicles per day;

B. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway; and/or

C. Crash records indicate that three or more crashes that are susceptible to correction by the installation of a STOP sign have been reported within a 12-month period, or that five or more such crashes have been reported within a 2-year period. Such crashes include right-angle collisions involving road users on the minor-street approach failing to yield the right-of-way to traffic on the through street or highway.

Support:

03 The use of STOP signs at grade crossings is described in Sections 8B.04 and 8B.05.

Section 2B.07 Multi-Way Stop Applications

Support:

01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

03 *The decision to install multi-way stop control should be based on an engineering study.*

04 *The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*

A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.

C. Minimum volumes:

1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and

2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but

3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Option:

05 Other criteria that may be considered in an engineering study include:

A. The need to control left-turn conflicts;

B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;

C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and

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ATTACHMENT E

LA SOMBRA CONCEPTUAL PLAN

La Sombra Multi-Way Stop Control

Conceptual Plan

C+R