

AGENDA

Meeting of the San Marcos Traffic Commission

Meeting Date: March 4, 2020 | **Meeting Time:** 6:00 PM

Location: City Council Chambers, 1 Civic Center Drive, San Marcos CA 92069

Americans with Disabilities Act: If you need special assistance to participate in this meeting, please contact the City Clerk Department at (760) 744-1050, ext. 3105. Notification 48 hours in advance will enable the City to make reasonable arrangements to ensure accessibility to this meeting. Assisted listening devices are available for the hearing impaired. Please see the City Clerk if you wish to use this device.

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Agenda-related writings or documents provided to a majority of the Commission after distribution of the agenda packet will be available for public inspection at the time of distribution at the Information Desk counter located on the first floor of City Hall, 1 Civic Center Drive, San Marcos, CA, during normal business hours.

1. CALL TO ORDER - 6:00 P.M.

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL

Anyone wishing to speak to the Commission on any item must first complete a Request to Speak form and turn it in to the secretary

4. ORAL COMMUNICATIONS

Persons wishing to speak on a matter not on the agenda may be heard at this time; however, no action will be taken until placed on a future agenda.

5. APPROVAL OF MINUTES

February 5, 2020

6. OLD BUSINESS

- a. Intersection of Cox Road and Savannah Way – Traffic Safety Alternatives

7. NEW BUSINESS

a. None

8. REPORTS AND INFORMATION ITEMS

- a. Engineering Staff Updates – San Marcos Creek Project Presentation (City staff, JPW)
- b. San Diego County Sheriff's Department Traffic Collision Summary And Accident Investigation Log
- c. Traffic Commission Commentary
- d. Staff Commentary

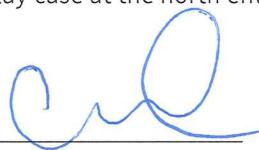
ADJOURNMENT

AFFIDAVIT OF POSTING

STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO) ss.
CITY OF SAN MARCOS)

I, Aurelia Velasquez, Secretary, San Marcos Traffic Commission, hereby certify that I caused the posting on February 26, 2020 of this agenda in the glass display case at the north entrance of City Hall.

DATED: February 26, 2020



Aurelia Velasquez,
Traffic Commission Secretary

MINUTES

Meeting of the San Marcos Traffic Commission

WEDNESDAY, FEBRUARY 5, 2020 | 6:00 PM

City Council Chambers, 1 Civic Center Drive, San Marcos, CA 92069

CALL TO ORDER:

Chairman Rico called the Traffic Commission Meeting to order at 6:00 p.m.

SELECTION OF NEW CHAIRMAN AND VICE CHAIRMAN:

CHAIRMAN ELECTION:

Commissioner Collins makes a motion to elect Commissioner Arturo Rico as Chairman. Commissioner Hoaglin seconds the motion. No other nominations were made. New 2020 Chairman: Arturo Rico

VICE CHAIRMAN ELECTION:

Commissioner Schellenger makes a motion to elect Commissioner Gregory Hoaglin as Vice Chairman. Commissioner Collins seconds the motion. New 2020 Vice Chairman: Gregory Hoaglin

PLEDGE OF ALLEGIANCE:

Led by Commissioner Ed Collins

INTRODUCTION OF NEW COMMISSIONERS:

Arturo Rico and Mike Hansen (Re-appointed), Kirk Erickson (New commissioner), Gregory Hoaglin (New regular member), Josephine Carroll and Rosemary Schellenger (New Alternates)

ROLL CALL:

PRESENT: COMMISSIONERS: RICO, COLLINS, HOAGLIN, MASTERSON, ERICKSON, SCHELLENGER, AND CARROLL

ABSENT: COMMISSIONERS: BRIDGE, HANSEN

ALSO PRESENT:

Senior Traffic Engineer, Mike Rafael; Principal Traffic Engineer, Nicholas Abboud; Traffic Sergeant, Nicholas Maryn; and Traffic Commission Secretary, Aurelia Velasquez & Danielle Norris.

ORAL COMMUNICATIONS:

Charles Buckley, who resides at 3535 Linda Vista Drive, former Traffic Commissioner, would like to request new truck route signs to be installed on the traffic signal poles at Grand Avenue and Rancho Santa Fe Road. The new signs would help prevent truck drivers on using westbound Grand Avenue through the residential district as cut-through traffic to Vista.

APPROVAL OF MINUTES – DECEMBER 4, 2019

Commissioner Collins makes a motion to accept the minutes as recorded. Commissioner Hoaglin seconds the motion. Motion carries.

AYES: COMMISSIONERS: COLLINS, HOAGLIN, ERICKSON, SCHELLENGER, CARROLL, And
MASTERSON

NOES: COMMISSIONERS:

ABSTAINS: COMMISSIONERS:

OLD BUSINESS

None

NEW BUSINESS

A. Proposed ALL-WAY STOP control at the intersection of Cox Road and Savannah Way.

A request was received from Mr. John Jacob, a San Marcos resident, to have Engineering staff conduct a traffic safety evaluation on Cox Road between Sycamore Drive and Mulberry Drive. Mr. Jacobs was involved in a broadside collision at the intersection of Cox Road and Savannah Way in November 2018. He is concerned about the speed of traffic on Cox Road and the lack of visibility at the intersection of Cox Road and Savannah Way for eastbound traffic.

The study area for this report is at the intersection of Cox Road and Savannah Way. Cox Road between Sycamore Drive and Mulberry Drive is classified as a local collector street. Camden Place and Savannah Way are private streets that intersect with Cox Road and provide access to several single family homes. There are not posted speed limits on the roadway. There is an existing unpaved trail along the south side of this roadway segment. There are no existing sidewalks.

An Engineering study was conducted to determine the feasibility of installing an ALL WAY STOP control at the intersection of Cox Road and Savannah Way to address Mr. Jacob's traffic safety concern. ALL

WAY STOP controls at intersections are intended to assign right-of-way at locations where traffic volumes are typically equal from all approaches

John Jacob, who resides at 1789 Savannah Way, was the motorist involved in the reported collision on Cox Road at Savannah Way. Mr. Jacob is concerned that without an ALL WAY STOP control at the intersection, there might be similar situations.

Hans Liebscher, who resides at 1692 Marilyn Lane, travels Cox Road at least 2-3 times per day. He states that there are very low traffic volumes on the street. Mr. Liebscher suggests that a 20-25 mph speed limit sign would be sufficient. He is concerned about the wear and tear of his vehicle if a stop sign were to be installed. He also feels that the volume of traffic and collisions on Cox Road doesn't warrant a stop sign.

Rob O'Carroll, who resides at 1786 Savannah Way, has been a resident of San Marcos since 2001. Mr. O'Carroll is not in favor of installing a stop sign on Cox Road. He feels that there is limited sight distance for eastbound traffic that would need to stop which would make the intersection more dangerous and create a safety issue for drivers traveling over the hill.

CONCLUSION AND RECOMMENDATIONS:

Engineering staff recommends the installation of an ALL WAY STOP control at the intersection of Cox Road and Savannah Way based on satisfying criteria for a multi-way STOP per the CA MUTCD. The recommendation includes the installation of new STOP signs, new STOP pavement legends, limit lines, "ALL WAY" plaques, and "STOP AHEAD" signs.

Engineering staff also recommends installation of new speed limit signs (30 MPH) based on the latest Engineering and Traffic Survey on Cox Road.

Commissioner Collins makes a motion to decline the proposed recommendations by Engineering staff and propose other alternatives. Commissioner Erickson seconds the motion. Motion carries as follow: Decline Engineering staff's recommendation for an ALL WAY STOP control at the intersection of Cox

Road and Savannah Way. Request Engineering staff to evaluate other traffic safety alternatives and present recommendations at a future meeting.

AYES: COMMISSIONERS: HOAGLIN, SCHELLENGER, CARROLL, MASTERSON, RICO, COLLINS and ERICKSON

NOES: COMMISSIONERS:

ABSTAINS: COMMISSIONERS:

REPORTS AND INFORMATION ITEMS

A. Engineering Staff Updates:

1. Traffic signal operation changes were implemented at Schoolhouse Way and San Elijo Road to improve school traffic conditions.
2. Development Project updates

B. San Diego County Sheriff's Department Traffic Collision Summary And Accident Investigation Log:

- (8) DUI/Alcohol Arrests
- (10) Injury Collisions
- (15) Non injury Collisions
- (13) Persons Injured
- (1) Pedestrian Collisions
- (1) Pedestrian Injured
- (1) Bicyclist Collision
- (1) Bicyclist Injury

C. Traffic Commission Commentary: None

D. Staff Commentary: None



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

ADJOURNMENT:

Chairman Rico adjourned the meeting at 7:13 pm.

Arturo Rico, Chairman
Traffic Commission

ATTEST:

Aurelia Velasquez, Secretary
Traffic Commission

AGENDA REPORT

Meeting of the San Marcos Traffic Commission

MEETING DATE: March 4, 2020
AGENDA ITEM NO: 6A
SUBMITTED BY: Michael Rafael, P.E. – Senior Civil Engineer *MR*
APPROVED BY: Nic Abboud, P.E. – Principal Civil Engineer *nna*
SUBJECT: Intersection of Cox Road and Savannah Way – Traffic Safety Alternatives

BACKGROUND:

Traffic Commission voted to disapprove staff's recommendations for installation of an ALL WAY STOP control (AWSC) at the intersection of Cox Road and Savannah Way last month. Traffic Commission directed City staff to evaluate alternative countermeasures to enhance traffic safety at the intersection. This updated report presents the staff's findings in response to the direction from the Commission, especially in relation to the line of sight constraints at the intersection and the recommended alternative traffic safety measures.

EXISTING CONDITIONS:

The study area addressed in this report is the intersection of Cox Road and Savannah Way. Cox Road between Sycamore Drive and Mulberry Drive is classified as a local collector street. The roadway segment consists of two (2) lanes, 0.4 miles in length, and varies in paved width between 22 and 28 feet. Savannah Way is a private street that intersects with Cox Road and provides the main access to approximately (9) single family homes. There is an existing equestrian trail along the south side of this roadway segment, but no existing sidewalks. The posted speed limit per the latest Engineering and Traffic Survey is 30 MPH.

There is an existing vertical curve (crest) on Cox Road approximately 240 feet west of the intersection of Savannah Way. East of the crest, the roadway slopes down toward Savannah Way at a descending grade of up to 8 percent. There is an existing traffic calming feature (median chicane) constructed west of the intersection that deflects eastbound Cox Road traffic to the right, away from the centerline, then back toward the centerline prior to intersecting with Cox Road. The chicane consists of a landscaped median island that narrows the travel roadway width to 12 feet in each direction. The intent of the chicane design was to discourage speeding for eastbound traffic on Cox Road along the vertical curve. There are also existing warning signs and 20 MPH advisory speed limit signs posted in both directions of Cox Road in advance of the vertical roadway curve and chicane, alerting motorists to the roadway conditions.

DISCUSSION:

As mentioned previously, the AWSC at the intersection was recommended by City staff and rejected by the Traffic Commission last month. Staff has recommended the AWSC at the intersection based on the existing restriction to the line of sight where motorists could not see conflicting traffic, a condition identified in the CAMUTCD as one of the considerations of AWSC, and where the recommended intersectional sight distance of 200 feet per the current Highway Design Manual (HDM) was not satisfied for the 30 MPH posted speed limit. The Commission directed staff to evaluate other traffic measures aimed at reducing travel speeds on Cox Road as an alternative to AWSC, citing low traffic volumes and lack of collision history. Also, some commissioners expressed concerns with possible increase in rear-end collisions that may result from the STOP condition. As directed, City staff reevaluated the available line of sight at the intersection and determined that additional sight distance could be attained by having motorists "creep" beyond the STOP bar, closer to the edge of the travel way, a maneuver observed in the field and is allowable in the California Vehicle Code (CVC). This condition would put the driver's position approximately 7-feet back from the edge of the southerly curb line, thus avoiding the line of sight obstruction by the existing trees and lodge pole fencing. In addition, City staff identified the obstruction to the line of sight by the existing landscaping (Agapanthus plants) in the planter area between the lodge pole fencing and the southern curb line, and the improvement to the line of sight that could be gained by substituting the landscaping for low-profile groundcover in the first 100 feet of the planter area just west of Savannah Way. With the changes to the existing landscaping, the resulting line of sight at the intersection would significantly improve to approximately 230 feet. The line of sight was previously calculated based on a 10-foot setback from the edge of the southerly curb line where the existing landscaping continued to restrict the available sight distance. The required minimum intersection sight distance for a posted speed limit of 30 MPH per the HDM is 200 feet, which could be increased up to 240 feet to account for the effect of the downhill grade of the roadway.

Therefore, City staff concludes that replacement of the landscaping with ground cover of no more than six (6) inches in height, combined with driver behavior of "creeping" toward the edge of the road, would provide sufficient line of sight for the posted 30-MPH speed limit.

To help reduce vehicle speeds on Cox Road and improve overall traffic safety operations, City staff researched the use of several traffic calming devices available for use on City streets. The following devices were considered and evaluated:

- 1) Rumble strips - A rumble strip is an alteration to the paved street surface by various techniques to draw the driver's attention to a roadway condition. These devices are not acceptable in a residential neighborhood due to the noise level and vibration created when a vehicle is driven over the rumble strip, especially at night.
- 2) Speed cushions/Speed bumps - Prefabricated rubber or field formed asphalt approximately three (3) inches in height and 7-12 feet in width installed in a series across a roadway. Transverse cuts across the cushion allow some emergency vehicles to pass without vertical deflection. These devices are not recommended on steep slopes since they may cause vehicles to launch and lose control causing hazardous driving conditions.

- 3) Traffic warning signs/roadway striping - Low cost improvements inform motorists of roadway conditions in advance and may help reduce vehicle speeds. Relatively easy to implement.

City staff recommends the installation of traffic signing and striping improvements to heighten drivers' awareness of the roadway conditions and to enhance traffic safety operations at the intersection. Staff proposes the installation of new advance warning signs to alert drivers of the upcoming intersection and raised median, supplemented by advisory speed limit (20 MPH) plaques, in advance of Savannah Way in both directions of Cox Road. Staff also proposes the installation of new edge line roadway striping to help reduce vehicle speeds by narrowing the existing street width and to improve visibility of the raised median at night. After implementation of these recommended improvements, staff plans to intermittently monitor vehicular speeds for the next twelve (12) months to determine if the improvements have resulted in tangible speed reduction. If the desired speeds were not achieved by the end of the 12-month period, City staff may reevaluate this area for other traffic calming measures, including STOP signs, for possible implementation.

CONCLUSION AND RECOMMENDATIONS:

To improve the line of sight at the intersection and to meet current State standards for proper sight distance, engineering staff recommends the removal and replacement of the existing vegetation in the planter area between the lodge pole fencing and the southern curb line of Cox Road, with new low-profile groundcover for a distance of approximately 100 feet west of Savannah Way. Staff also recommends the installation of the following traffic signing and striping improvements to help reduce vehicle travel speeds on Cox Road.

- 1) Installation of new intersection and raised median warning signs with advisory speed limits (20 MPH) signs in both direction of Cox Road.
- 2) Installation of a 6-inch yellow left edge line adjacent to the raised center median for approximately 330 feet in length along both directions of Cox Road.
- 3) Installation of a 4-inch white right edge line, 2 feet from the existing southerly curb line for approximately 420 feet in length along both directions of Cox Road.



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

Traffic Data/Roadway Information:

2018 Traffic Volumes:

Cox Road (Mulberry Drive to Sycamore Road) – 200 VPD (vehicles per day)

Speed Limit:

New 30 MPH based on the latest Engineering and Traffic Survey

Accident History (last 5 years):

11/01/18 – 5:05 pm, broadside collision, V1 traveling eastbound hits V2 turning left from Savannah Way, injuries; Primary Collision Factor – improper driving, wrong side of road.

Unusual conditions:

Hilly street terrain, traffic calming feature.

Attachment(s)

Vicinity Map

Updated Sight Distance Exhibit

Highway Design Manual Sight Distance Standards

Proposed Traffic Signing and Striping Improvements

Photos

Traffic Commission Report (dated February 5, 2020)



VICINITY MAP
TC AGENDA #6A
MARCH 4, 2020



*NOT TO SCALE

SIGHT DISTANCE EXHIBIT

TC AGENDA #6A

MARCH 4, 2020

COX RD.

Line of Sight
SSD = 230'

Line of Sight
SSD = UNRESTRICTED

POSTED SPEED LIMIT
(DESIGN SPEED)

RECOMMENDED SIGHT
DISTANCE PER CALTRANS
HDM (TABLE 201.1) (FT)

30

200

Note: Driver's Position Is 7-Feet Back From
Edge of Roadway (Cox Rd.)

SAVANNAH WAY



*NOT TO SCALE

CHAPTER 200

GEOMETRIC DESIGN AND STRUCTURE STANDARDS

Topic 201 - Sight Distance

Index 201.1 - General

Sight distance is the continuous length of highway ahead, visible to the highway user. Four types of sight distance are considered herein: passing, stopping, decision, and corner. Passing sight distance is used where use of an opposing lane can provide passing opportunities (see Index 201.2). Stopping sight distance is the minimum sight distance for a given design speed to be provided on multilane highways and on 2-lane roads when passing sight distance is not economically obtainable. Stopping sight distance also is to be provided for all users, including motorists and bicyclists, at all elements of interchanges and intersections at grade, including private road connections (see Topic 504, Index 405.1, & Figure 405.7). Decision sight distance is used at major decision points (see Indexes 201.7 and 504.2). Corner sight distance is used at intersections (see Index 405.1, Figure 405.7, and Figure 504.3I).

Table 201.1 shows the minimum standards for stopping sight distance related to design speed for motorists. Stopping sight distances given in the table are suitable for Class II and Class III bikeways. The stopping sight distances are also applicable to roundabout design on the approach roadway, within the circulatory roadway, and on the exits prior to the pedestrian crossings. Also shown in Table 201.1 are the values for use in providing passing sight distance.

See Chapter 1000 for Class I bikeway sight distance guidance.

Chapter 3 of "A Policy on Geometric Design of Highways and Streets," AASHTO, contains a thorough discussion of the derivation of stopping sight distance.

201.2 Passing Sight Distance

Passing sight distance is the minimum sight distance required for the driver of one vehicle to pass another vehicle safely and comfortably. Passing must be

accomplished assuming an oncoming vehicle comes into view and maintains the design speed, without reduction, after the overtaking maneuver is started.

Table 201.1
Sight Distance Standards

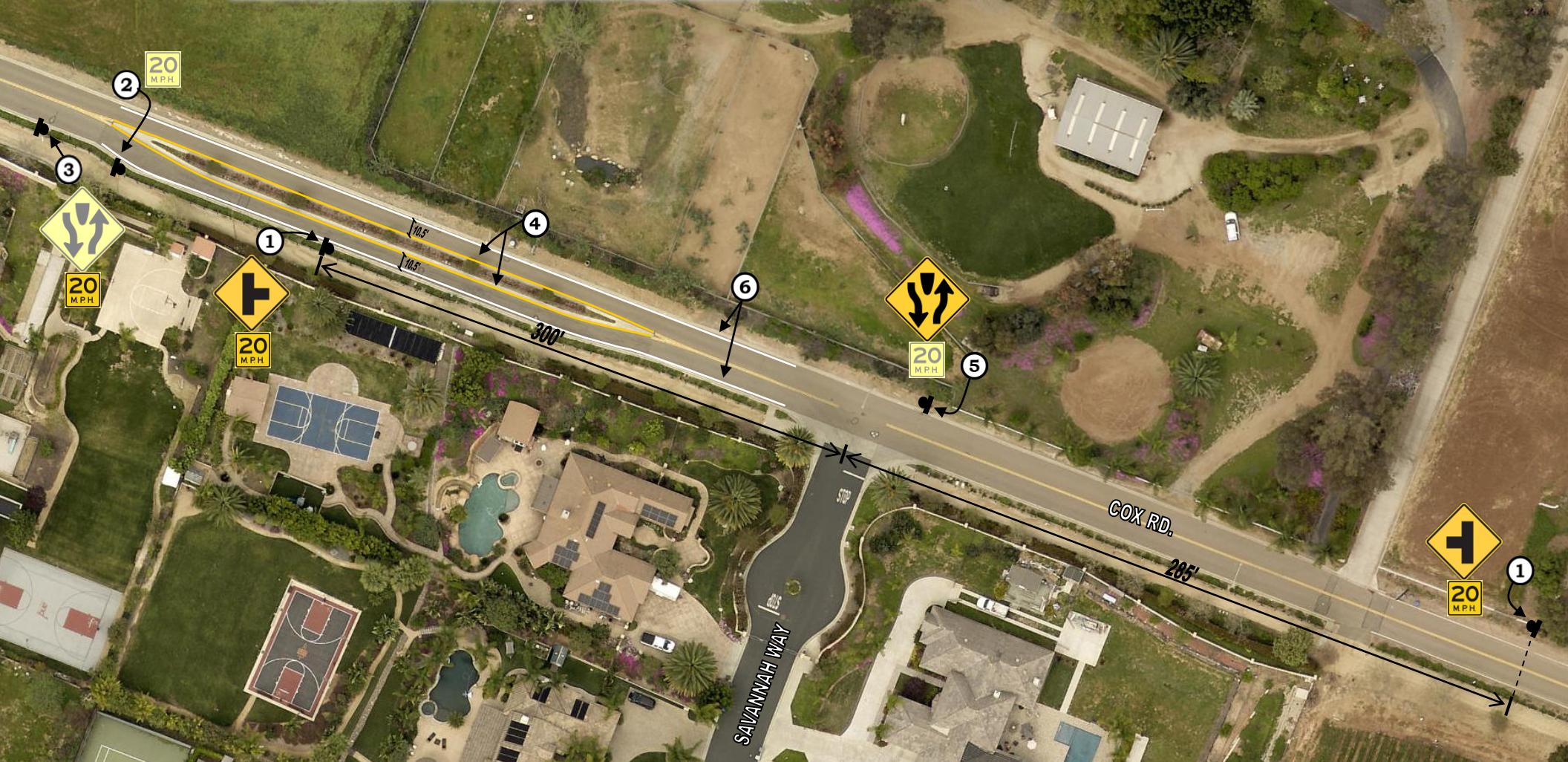
Design Speed ⁽¹⁾ (mph)	Stopping ⁽²⁾ (ft)	Passing (ft)
10	50	---
15	100	---
20	125	800
25	150	950
30	200	1,100
35	250	1,300
40	300	1,500
45	360	1,650
50	430	1,800
55	500	1,950
60	580	2,100
65	660	2,300
70	750	2,500
75	840	2,600
80	930	2,700

(1) See Topic 101 for selection of design speed.

(2) For sustained downgrades, refer to underlined standard in Index 201.3

The sight distance available for passing at any place is the longest distance at which a driver whose eyes are 3 1/2 feet above the pavement surface can see the top of an object 4 1/4 feet high on the road. See Table 201.1 for the calculated values that are associated with various design speeds.

In general, 2-lane highways should be designed to provide for passing where possible, especially those routes with high volumes of trucks or recreational vehicles. Passing should be done on tangent horizontal alignments with constant grades or a slight sag vertical curve. Not only are drivers reluctant to pass on a long crest vertical curve, but it is impracticable to design crest vertical curves to provide for passing sight distance because of high cost where crest cuts are involved. Passing sight



CONSTRUCTION NOTES:

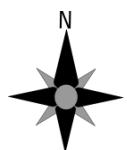
- ① INSTALL NEW W2-2 (30"X30", HI-INTENSITY) SIGN AND RELOCATE EXISTING W13-1P (18"X18", HI-INTENSITY) 20 MPH SPEED ADVISORY SIGN ON NEW BREAKAWAY POST.
- ② REMOVE/ SALVAGE EXISTING W13-1P (18"X18", HI-INTENSITY) 20 MPH SPEED ADVISORY SIGN.
- ③ INSTALL NEW W13-1P (18"X18", HI-INTENSITY) 20 MPH SPEED ADVISORY SIGN UNDER EXISTING W6-1 SIGN.
- ④ INSTALL NEW 6-INCH YELLOW LEFT EDGELINE (DETAIL 25) ALONG CENTER MEDIAN.
- ⑤ INSTALL NEW W6-1 (30"X30", HI-INTENSITY) SIGN ABOVE EXISTING W13-1P (18"X18", HI-INTENSITY) 20 MPH SPEED ADVISORY.
- ⑥ INSTALL NEW 4-INCH RIGHT WHITE EDGELINE (DETAIL 27B) (~420 FEET) 2 FEET OFFSET OF THE CURB.

PROPOSED TRAFFIC SIGNING AND STRIPING IMPROVEMENTS

COX ROAD & SAVANNAH WAY

TC AGENDA #6A

MARCH 4, 2020



*NOT TO SCALE



Looking westbound on Cox Road from Savannah Way

Existing landscaping (Agapanthus plants) obstructing line of sight at intersection for eastbound Cox Rd. traffic

Driver's position – 7-feet back from edge of roadway



Looking eastbound on Cox Road towards Savannah Way,
approximately 230 feet from intersection

Existing landscaping (Agapanthus plants) on south side of Cox
Road obstructing line of sight at Savannah Way intersection



Looking westbound on Cox Road towards Savannah Way

Existing STOP limit line setback from equestrian trail

Vehicles allowed to creep past limit line after stopping to improve sight distance of incoming traffic

AGENDA REPORT

Meeting of the San Marcos Traffic Commission

MEETING DATE: February 5, 2020

AGENDA ITEM NO: 10A

SUBMITTED BY: Michael Rafael, P.E. – Senior Civil Engineer *MR*

APPROVED BY: Nic Abboud, P.E. – Principal Civil Engineer *ma*

SUBJECT: Proposed All-Way STOP Control at the Intersection of Cox Road and Savannah Way

BACKGROUND:

A request was received from Mr. John Jacob, a San Marcos resident, to have Engineering staff conduct a traffic safety evaluation on Cox Road between Sycamore Drive and Mulberry Drive. Mr. Jacob was involved in a broadside collision at the intersection of Cox Road and Savannah Way in November 2018. He is concerned about the speed of traffic on Cox Road and the lack of visibility at the intersection of Cox Road and Savannah Way for eastbound traffic.

EXISTING CONDITIONS:

The study area for this report is at the intersection of Cox Road and Savannah Way. Cox Road between Sycamore Drive and Mulberry Drive is classified as a local collector street. The roadway segment consists of two lanes, 0.4 miles long, and varies in paved width between 22 and 28 feet. Camden Place and Savannah Way are private streets that intersect with Cox Road and provide access to several single family homes. There are no posted speed limits on the roadway. There is an existing unpaved trail along the south side of this roadway segment. There are no existing sidewalks.

There is an existing vertical curve on Cox Road approximately 240 feet west of the intersection of Savannah Way. The vertical roadway curve slopes to Savannah Way at a descending grade of 8 percent. There are existing traffic calming features (Chicanes) constructed west of the intersection. The chicanes consist of a landscaped median island that narrows the roadway width to 12-feet in each direction and requires vehicles to deflect horizontally and follow a curvilinear path. The intent of the chicane design was to discourage speeding for eastbound traffic on Cox Road along the vertical curve. There are also existing 20 MPH speed advisory speed limit signs posted on both directions of Cox Road in advance of the vertical roadway curve to inform motorists of the roadway conditions.

DISCUSSION:

An engineering study was conducted to determine the feasibility of installing an ALL WAY STOP control at the intersection of Cox Road and Savannah Way to address Mr. Jacob's traffic safety concerns. ALL WAY STOP controls at intersections are intended to assign right-of-way at locations where traffic

volumes are typically equal from all approaches. Installation of unwarranted stop signs is discouraged for it has been shown to result in higher speeds between STOP-controlled intersections, rolling stops through intersections, and increased noise pollution resulting from acceleration and braking.

An ALL WAY STOP control may be implemented based on criteria established per the California Manual on Uniform Traffic Control Devices (CA MUTCD). Following are the criteria considered in an engineering study for an ALL WAY STOP control implementation: five (5) or more reported crashes in a 12-month period that are correctible by multi-way stop control; vehicular volumes entering the intersection from the major street average at least 300 vehicles per hour; combined vehicular, pedestrian, and bicycle volumes entering the intersection from the minor street amounts to at least 200 units per hour; and average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour. Other criteria that may also be considered include: the need to control left turn conflicts, the need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes, the need to account for line of sight restrictions at locations where road user cannot see conflicting traffic, and the need to improve traffic operations at two residential neighborhood collector (through) streets.

An Engineering and Traffic was recently conducted in July 2019. Based on traffic speeds collected for a 24-hour period, the 85th percentile was determined to be 36 MPH which, based on the collision rate and roadway conditions, was reduced to a 30-MPH posted speed limit.

Low turning traffic volume counts were observed during the AM and PM peak periods (weekday) at the intersection of Cox Road and Savannah Way. Staff researched the collision history at the intersection within the last 5 years. There was one collision reported at the intersection which involved Mr. Jacob. Based on the collision report, the primary collision factor was attributed to improper driving by the other party in which the other party tried to avoid Mr. Jacob's vehicle by driving on the opposite side of the street on Cox Road. Mr. Jacob attempted to turn left from Savannah Way. Excessive speed may have also contributed to the collision.

A 24-hour speed and volume tube count conducted along Cox Road, just west of Savannah Way, indicated an 85th percentile travel speed of 34 MPH eastbound and 39 MPH westbound. Sight distances were measured to determine if there were line of sight limitations at the intersection. Per the Caltrans' Highway Design Manual (HDM), a stopping sight distance of approximately 250 feet for a 34 MPH speed (85th percentile) is recommended. Due to the existing roadway vertical curvature, an available stopping sight distance was measured at approximately 137 feet to the west from Savannah Way, which is appropriate for speeds of 25 MPH or less, and therefore, insufficient for the 34 MPH prevailing speed.

Based on the findings of this study, it is concluded that the subject intersection meets the criteria for ALL WAY STOP control per the CA MUTCD based on insufficient sight distance at the intersection caused by the existing vertical roadway curve and prevailing travel speeds. A new ALL WAY STOP control would be expected to improve the traffic operations and pedestrian safety at the intersection, and reduce the overall travel speeds on Cox Road since the intersection is located midblock of the roadway segment.

CONCLUSION AND RECOMMENDATIONS:

Engineering staff recommends the installation of an ALL WAY STOP control at the intersection of Cox Road and Savannah Way based on satisfying criteria for a multi-way STOP per the CA MUTCD. The recommendation includes the installation of new STOP signs, new STOP pavement legends, limit lines, "ALL WAY" plaques, and "STOP AHEAD" signs.

Engineering staff also recommends installation of new speed limit signs (30 MPH) based on the latest Engineering and Traffic Survey on Cox Road.

Traffic Data/Roadway Information:

2018 Traffic Volumes:

Cox Road (Mulberry Drive to Sycamore Road) – 200 VPD (vehicles per day)

Speed Limit:

None posted.

Accident History (last 5 years):

11/01/18 – 5:05 pm, broadside collision, V1 traveling eastbound hits V2 turning left from Savannah Way, injuries, Primary Collision Factor – improper driving, wrong side of road.

Unusual conditions:

Hilly street terrain, traffic calming features.

Attachment(s)

Vicinity Map

Sight Distance Exhibit

Speed/Traffic Volume Data Collection

Engineering and Traffic Survey – July 2019

Proposed ALL WAY STOP Exhibit

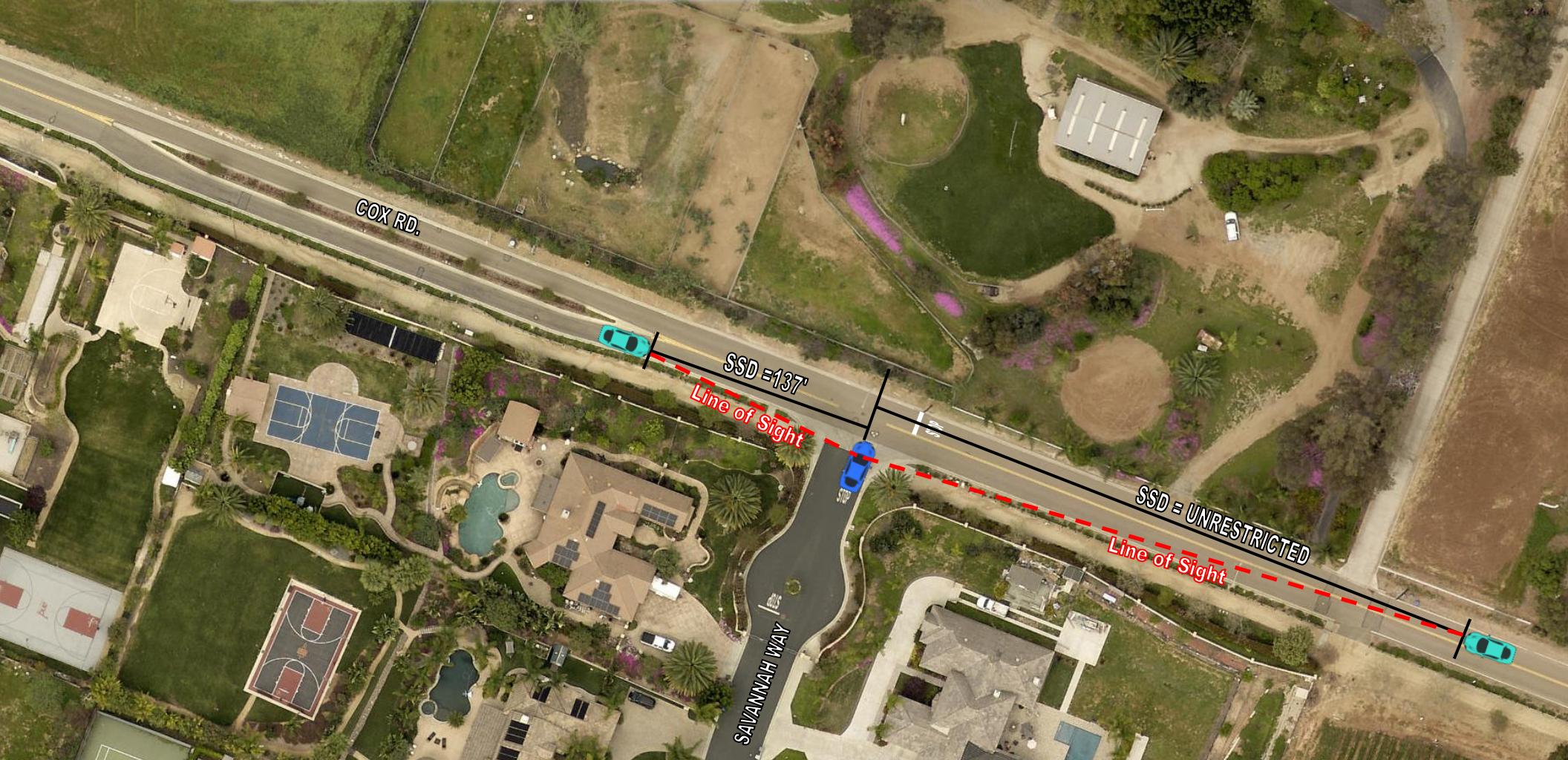
Photos



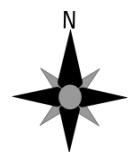
VICINITY MAP
TC AGENDA #10A
FEBRUARY 5, 2020



*NOT TO SCALE



85 TH Percentile Speed (MPH)	Recommended Sight Distance Per CalTrans HDM (ft)
36	250



*NOT TO SCALE

SIGHT DISTANCE EXHIBIT
TC AGENDA #10A
FEBRUARY 5, 2020

SPEED

Cox Rd Bet. Mulberry Dr & Sycamore Dr

Day: Thursday

Date: 7/18/2019

City: San Marcos

Project #: CA19 4291 001e

East Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
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7:00	0	0	0	3	1	0	0	0	0	0	0	0	0	4
8:00	0	0	0	0	3	0	0	0	0	0	0	0	0	3
9:00	1	2	3	1	2	2	0	0	0	0	0	0	0	11
10:00	0	1	0	3	3	0	0	0	0	0	0	0	0	7
11:00	0	0	2	1	1	1	0	0	0	0	0	0	0	5
12:00 PM	0	1	1	2	3	0	0	0	0	0	0	0	0	7
13:00	0	1	2	3	0	1	0	0	0	0	0	0	0	7
14:00	0	0	1	5	3	0	0	0	0	0	0	0	0	9
15:00	0	0	2	3	3	0	0	0	0	0	0	0	0	8
16:00	0	1	4	1	4	0	1	0	0	0	0	0	0	11
17:00	0	1	3	2	2	0	1	0	0	0	0	0	0	9
18:00	2	1	0	0	1	0	0	0	0	0	0	0	0	4
19:00	1	0	1	1	3	0	0	0	0	0	0	0	0	6
20:00	0	0	2	1	1	0	0	0	0	0	0	0	0	4
21:00	0	1	0	1	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Totals	5	10	22	27	32	4	2							102
% of Totals	5%	10%	22%	26%	31%	4%	2%							100%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Cox Rd	East Bound	20	28	27	34	36	102
Cox Rd	West Bound	24	32	32	39	43	97

VOLUME

Cox Rd Bet. Mulberry Dr & Sycamore Dr

Day: Thursday
Date: 7/18/2019City: San Marcos
Project #: CA19_4291_001

DAILY TOTALS				NB 0	SB 0	EB 102	WB 97					Total 199
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL	
0:00	0	0	0	0		12:00	0	0	2	1	3	
0:15	0	0	0	0		12:15	0	0	1	5	6	
0:30	0	0	0	0		12:30	0	0	3	2	5	
0:45	0	0	0	0		12:45	0	0	1	7	4	
1:00	0	0	0	0		13:00	0	0	0	1	1	
1:15	0	0	0	0		13:15	0	0	3	1	4	
1:30	0	0	0	0		13:30	0	0	2	1	3	
1:45	0	0	0	1	1	13:45	0	0	2	7	3	
2:00	0	0	0	0		14:00	0	0	3	1	4	
2:15	0	0	1	0		14:15	0	0	2	4	6	
2:30	0	0	0	0		14:30	0	0	4	1	5	
2:45	0	0	0	1	0	14:45	0	0	0	9	1	
3:00	0	0	0	0		15:00	0	0	2	1	3	
3:15	0	0	0	0		15:15	0	0	4	5	9	
3:30	0	0	0	0		15:30	0	0	1	2	3	
3:45	0	0	0	0		15:45	0	0	1	8	1	
4:00	0	0	0	0		16:00	0	0	3	2	5	
4:15	0	0	1	2	3	16:15	0	0	2	2	4	
4:30	0	0	0	0		16:30	0	0	2	3	5	
4:45	0	0	0	1	0	16:45	0	0	4	11	6	
5:00	0	0	1	2	3	17:00	0	0	2	0	2	
5:15	0	0	0	0		17:15	0	0	3	1	4	
5:30	0	0	0	1	1	17:30	0	0	3	1	4	
5:45	0	0	1	2	0	17:45	0	0	1	9	0	
6:00	0	0	0	0		18:00	0	0	1	3	4	
6:15	0	0	0	0		18:15	0	0	0	2	2	
6:30	0	0	0	3	3	18:30	0	0	1	3	4	
6:45	0	0	0	0	3	18:45	0	0	2	4	11	
7:00	0	0	2	2	4	19:00	0	0	1	0	1	
7:15	0	0	1	1	2	19:15	0	0	3	0	3	
7:30	0	0	0	2	2	19:30	0	0	1	0	1	
7:45	0	0	1	4	3	19:45	0	0	1	6	6	
8:00	0	0	0	2	2	20:00	0	0	1	0	1	
8:15	0	0	0	1	1	20:15	0	0	2	1	3	
8:30	0	0	1	2	3	20:30	0	0	1	0	1	
8:45	0	0	2	3	2	20:45	0	0	0	4	0	
9:00	0	0	4	2	6	21:00	0	0	0	0		
9:15	0	0	3	2	5	21:15	0	0	0	0		
9:30	0	0	4	2	6	21:30	0	0	1	0	1	
9:45	0	0	0	11	0	21:45	0	0	1	2	2	
10:00	0	0	2	1	3	22:00	0	0	0	0		
10:15	0	0	1	0	1	22:15	0	0	0	0		
10:30	0	0	3	1	4	22:30	0	0	0	1	1	
10:45	0	0	1	7	3	22:45	0	0	0	1	2	
11:00	0	0	1	2	3	23:00	0	0	0	0		
11:15	0	0	2	2	4	23:15	0	0	0	0		
11:30	0	0	1	1	2	23:30	0	0	1	1	2	
11:45	0	0	1	5	1	23:45	0	0	0	1	2	
TOTALS		34	41		75	TOTALS			68	56	124	
SPLIT %		45.3%	54.7%		37.7%	SPLIT %			54.8%	45.2%	62.3%	

DAILY TOTALS				NB 0	SB 0	EB 102	WB 97					Total 199
AM Peak Hour		8:45	11:45	8:45				PM Peak Hour		16:45	12:00	16:00
AM Pk Volume		13	9	21				PM Pk Volume		12	11	20
Pk Hr Factor		0.813	0.450	0.875				Pk Hr Factor		0.750	0.550	0.833
7 - 9 Volume	0	0	7	15	22	4 - 6 Volume	0	0	20	11	31	
7 - 9 Peak Hour			7:00	7:00	7:00	4 - 6 Peak Hour			16:45	16:00	16:00	
7 - 9 Pk Volume	0	0	4	8	12	4 - 6 Pk Volume	0	0	12	9	20	
Pk Hr Factor	0.000	0.000	0.500	0.667	0.750	Pk Hr Factor	0.000	0.000	0.750	0.750	0.833	

SAN MARCOS

DISCOVER LIFE's Possibilities

CITY OF SAN MARCOS

ENGINEERING AND TRAFFIC SURVEY

STREET: COX RD
LIMITS: SYCAMORE DR/ MULBERRY DR

DATE OF SURVEY: 7/18/19
PREPARED BY: A. JARAMILLO
REVIEWED BY: M.RAFAEL

A. PREVAILING DATA:

DIRECTIONS: : EAST/WEST
WEATHER CONDITION: : CLEAR, DRY
LOCATION OF SURVEY: : ~35' EAST OF SAVANNAH WAY
85TH PERCENTILE: : 36 MPH
10 MPH PACE: : 23-32 MPH
PERCENT IN PACE: : 54%
POSTED SPEED LIMIT (ON DATE OF SURVEY) : None
SPEED LIMIT CHANGE: : YES
RECOMMENDED SPEED LIMIT: : 30 MPH

B. ACCIDENT HISTORY:

NO. OF MONTHS COVERED: : 36
TOTAL ACCIDENTS: : 1
COLLISION RATE: : 11.77 ACCIDENTS/MILLION VEHICLE MILES (MVM)
CALIFORNIA STATEWIDE COLLISION RATE: 1.03 ACCIDENTS/MVM
(2010, DISTRICT 11, URBAN, 2 AND 3 LANES DIVIDED)

C. TRAFFIC FACTORS:

AVERAGE DAILY TRAFFIC: : 199 VEHICLES PER DAY (VPD)
LENGTH OF SEGMENT: : 0.39 MILES
LANE CONFIGURATION: : 2 LANE DIVIDED

D. EXISTING ROAD CONDITIONS:

X-WALKS - CNTRL/UNCNRL: : NO/ NO HORIZONTAL ALIGNMENT: LOW
PEDESTRIANS/BICYCLES: : LOW/LOW VERTICAL ALIGNMENT: HIGH
SIDEWALKS/BIKE LANES: : YES/NO INTERSECTIONS: LOW
ON-STREET PARKING: : NO DRIVEWAYS: LOW

E. ADJACENT LAND USE:

SINGLE- FAMILY RESIDENCES

F. TRAFFIC ENGINEER'S RECOMMENDATION (EXPLANATION):

THIS SPEED ZONE SATISFIES THE CONDITIONS OF SECTION 627 OF THE CALIFORNIA VEHICLE CODE AND HAS BEEN PREPARED AND EVALUATED IN ACCORDANCE WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2014), SECTION 2B.13. DUE TO THE HIGH COLLISION RATE AND ROADWAY CONDITIONS, IT IS RECOMMENDED THAT DOWNWARD SPEED ZONING APPLY FOR THIS ROAD SEGMENT IN COMPLIANCE WITH CVC SECTION 627 AND 22358.5. THEREFORE, THE POSTED SPEED LIMIT SHALL BE REDUCED TO 30 MPH.

APPROVED AND CERTIFIED BY:

Edwin A. Lane
CITY ENGINEER, MATT LITTLE

1/23/2020
DATE
for



Spot Speed Study

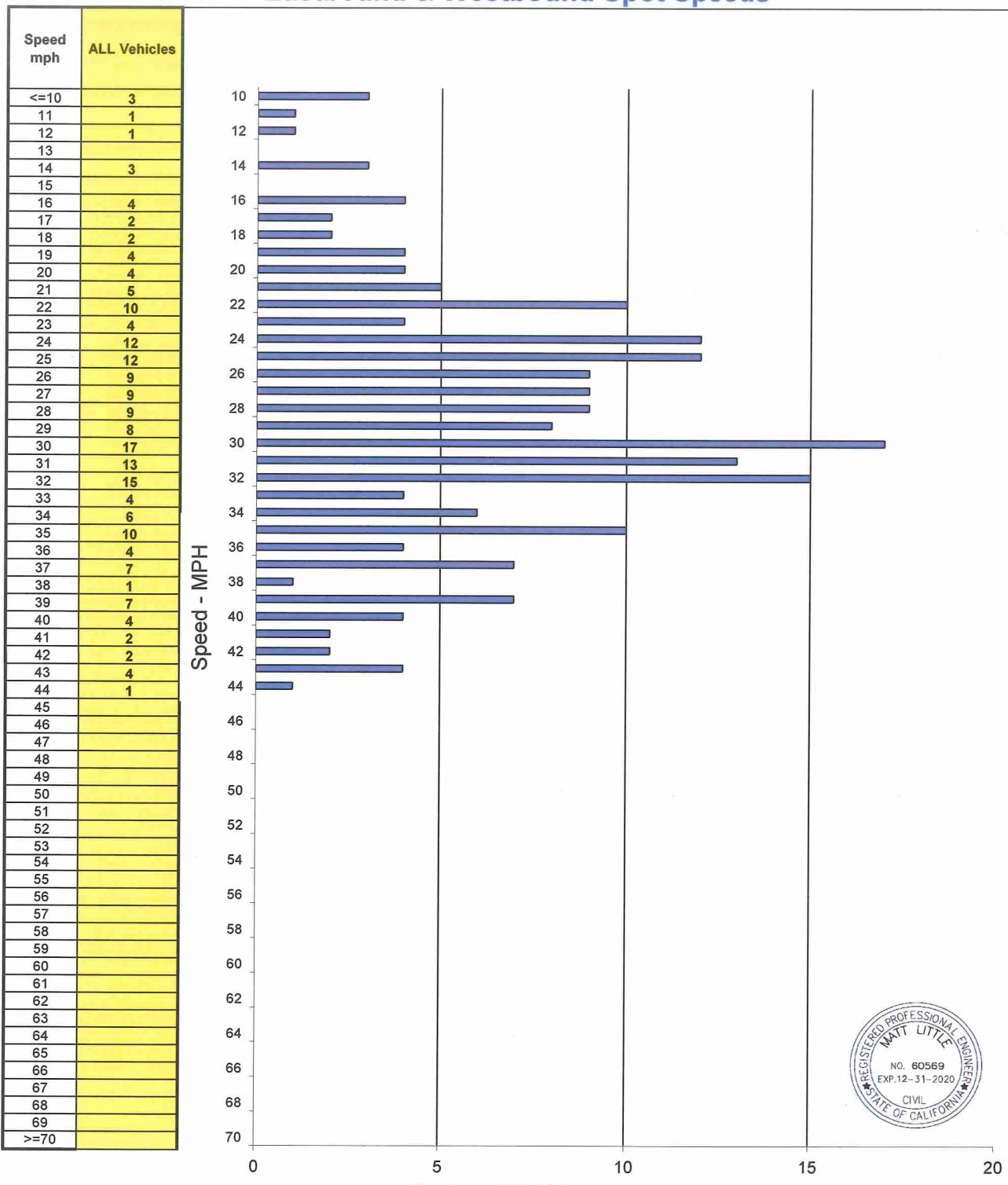
Prepared by: National Data & Surveying Services

City of San Marcos

DATE: 7/18/2019
TIME: 12:00-11:00

Location: Cox Dr ~35' E/O Savannah Way
Posted Speed: None Clear/Dry 0

Eastbound & Westbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	199	11 - 44	29 mph	36 mph	23 - 32	108	54%	19% / 39	27% / 52



STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO) SS.
CITY OF SAN MARCOS)

I, Phillip Scollick, City Clerk, for the City of San Marcos, California, hereby certify, under penalty of perjury, that the attached and foregoing is a true and correct copy of the ENGINEERING AND TRAFFIC SURVEY SUMMARY, dated July 18, 2019 for COX ROAD, FROM SYCAMORE DRIVE TO MULBERRY DRIVE.

Philip Scollick
City Clerk
City of San Marcos

1/28/2020



CONSTRUCTION NOTES:

- ① INSTALL NEW R1-1 (30"x30", HI-INTENSITY) 'STOP' SIGN AND R1-3P (18"x6", HI-INTENSITY) 'ALL WAY' SIGN ON BREAKAWAY POST ALONG WITH STOP BAR AND STOP LEGENDS.
- ② GRIND/SANDBLAST EXCESS CENTER LINE BEYOND STOP BAR.
- ③ INSTALL NEW R1-3P (18"x6", HI-INTENSITY) 'ALL WAY' SIGN ON EXISTING BREAKAWAY POST.
- ④ INSTALL NEW W3-1 (30"x30", HI-INTENSITY) 'STOP AHEAD' SIGN ON BREAKAWAY POST AND SUPPLEMENTAL 'STOP AHEAD' PAVEMENT LEGEND 375 FEET FROM SAVANNAH WAY INTERSECTION.

PROPOSED ALL WAY STOP EXHIBIT
TC AGENDA #10A
FEBRUARY 5, 2020



*NOT TO SCALE



CONSTRUCTION NOTES:

① INSTALL NEW R2-1 (30 MPH, 24"X30", HI-INTENSITY) SIGN
ABOVE EXISTING R26 CA ON NEW BREAKAWAY POST.

PROPOSED ROADWAY STRIPING EXHIBIT
TC AGENDA #10A
FEBRUARY 5, 2020



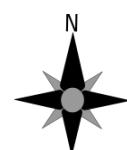
*NOT TO SCALE



CONSTRUCTION NOTES:

- ① INSTALL NEW R2-1 (30 MPH, 24"X30", HI-INTENSITY) SIGN ON NEW BREAKAWAY POST.
- ② REPLACE EXISTING OM1-3 WITH OM2-1V (12"X6", HI-INTENSITY) OBJECT MARKER 3 FEET FROM BOTTOM OF SIGN TO THE GROUND SURFACE.

PROPOSED ROADWAY STRIPING EXHIBIT
TC AGENDA #10A
FEBRUARY 5, 2020



*NOT TO SCALE



Looking westbound on Cox Road from Mulberry Drive



Looking westbound on Cox Road towards Savannah Way



Looking eastbound on Cox Road from Sycamore Drive



Looking eastbound on Cox Road towards Savannah Way

