

DATE: May 27, 2020

AGENDA ITEM # 4



TO: Complete Streets Commission

FROM: Jaime Rodriguez, Interim Staff Liaison

SUBJECT: State Street, All-Way Stop installations at 2nd Street and 3rd Street

RECOMMENDATION:

Information Item Only.

INTRODUCTION

The City's traffic consultant, Traffic Patterns, analyzed the intersections of State Street & 2nd Street and State Street & 3rd Street for All-Way STOP controls in response to resident requests for traffic operations improvements at both intersections. All-Way STOP controls are recommended at both intersections.

Minor signage & striping improvements are also recommended at the intersections of State Street & 4th Street and State Street & Main Street to provide STOP legends and CROSS TRAFFIC DOES NOT STOP signage.

BACKGROUND

The City of Los Altos received resident requests for traffic operations improvements along State Street, specifically consideration for the installation of All Way STOP controls or alternative improvements at the intersections of 2nd Street and 3rd Street. As part of evaluating both intersections, and the 4th Street and Main Street intersections along State Street were also analyzed for operations improvements.

The City previously analyzed both State Street and Main Street in 2017 for All-Way STOP improvement. While new All-Way STOPs were installed along Main Street at the time, State Street was not recommended for All-Way STOP improvements in efforts to implement focus traffic operations changes to Main Street only.

DISCUSSION

All-Way STOP Methodology

All-Way STOP Studies include evaluating roadway operations and characteristics against a set of predefined establishment criteria defined by the State of California – Department of Transportation (Caltrans) within their Manual of Uniform Traffic Control Devices (MUTCD) – California Supplement publishing. The MUTCD is prepared by the Federal Highway Administration (FHWA) and Caltrans adds additional traffic control elements including the subject Multi-Way STOP Methodologies.

The All-Way STOP Establishment Criteria aims to ensure that intersections are analyzed in a consistent method to help ensure that controls such as All-Way STOPs are implemented only where appropriate in efforts to avoid increased traffic congestion or other ancillary impacts when implemented otherwise. Elements analyzed as part of All-Way STOP Study include:

Operations Considerations

- Vehicle Volumes: To determine if volumes on either the major street or minor street approaches impact the ability for traffic to safely move through an intersection.
- Bike/Ped Volumes: To determine if the potential for conflicts with more vulnerable travel modes exists and should be proactively mitigated.
- Crash History: To determine if a trend of crashes exists and should be proactively corrected.
(Crash Data Not Evaluated as part of this Study).

Roadway Geometry Considerations

- Sight Distance: Considers the impact of motorist visibility to view roadway hazards ahead on the roadway.
- Roadway Characteristics: Considers the operational benefits of installing controls to improve the overall operation of a corridor and not just an isolated intersection, specifically Collector type streets.

Land Use

- Residential Environments: Considers benefits to residential environmental for installation of controls, specifically when high pedestrian generator type facilities exist or are planned.
-

Traffic Patterns also considered the City of Los Altos’ own Stop Sign Policy as part of this evaluation. The City’s Stop Sign Policy follows the MUTCD All-Way STOP basic criteria for evaluating intersections, it also further defines the some of the more qualitative measures within the MUTCD Multi-Way STOP measures including:

- **Volume Equilibrium**
Installation of STOP signs may be justified if the intersection approach volumes for the minor/major legs near equilibrium (45%/55%).
- **In Vicinity of High Pedestrian Generators**
Installation of a STOP sign may be justified at an intersection where any facility adjacent to the study intersection generates an unusually high concentration of pedestrian traffic. This may include the use of the intersection by school-aged children, elderly or physically challenged pedestrians; or the presence of a facility such as a school, playground, park, shopping center, fire station, etc.
- **Traffic Impacts**
Take into consideration area wide traffic impacts due to the installation of STOP signs, including impacts to traffic operations or cause in traffic delay.
- **Stopping Sight Distance**
The City defines preferred Stopping Sight Distance consistent with the AASHTO – A Policy on Geometric Design of Highway and Streets. Stopping Sight Distance is defined as the distance that should be maintained as clear as possible for motorists to identify roadway hazards ahead of them, sight distance based on posted speed limit.

Design Speed/ Posted Speed Limit	Stopping Sight Distance
25 MPH	155 Feet
30 MPH	200 Feet
35 MPH	250 Feet
40 MPH	305 Feet
45 MPH	360 Feet

- **Queuing Impact**
The City seeks to avoid the installation of STOP signs that will increase queues to adjacent intersections
- **City’s Neighborhood Traffic Management Program (NTMP) Improvement Options**
Consider other methods to slow traffic before the use of STOP signs to slow local traffic.

Traffic Data Collection Methodology

Traffic Patterns subcontracted Traffic Data Services (TDS) to help collect traffic data for the All-Way STOP studies as part of this project. The following types of traffic counts were conducted on Tuesday, February 25, 2020 followed by field observations:

- 12-Hour Turning Movement Counts

Using Image Sensors TDS collects raw video at each intersection and then transfers the buffered video files off-site through the cloud for processing. The processed data provides detailed Turning Movement Count information regarding the number of vehicles left, straight, and right turn movements for each approach of the intersections for the period between 7:00 am to 7:00 pm. Pedestrian and bicycle count data during the same period is also collected.

All-Way STOP Establishment Criteria

The All-Way STOP establishment criteria, described earlier in this report, includes both qualitative and quantitative factors that were analyzed for each intersection. Satisfaction of any single quantitative criteria automatically qualifies an intersection for installation of an All-Way STOP. When no single quantitative factor is satisfied, the qualitative factors that are met can also justify the All-Way STOP installation, but analysis should always be conducted by a licensed Traffic Engineer. All-Way STOP Warrant Forms for each study intersection are included in the Exhibits section.

The State Street & 2nd Street intersection satisfied both the qualitative and quantitative establishment criteria for installation of All-Way STOP controls. Specifically, the 8-Hour Minor Street Volume Warrant that considers auto, bicycle, and pedestrian data together was satisfied for 9-hours. Qualitative factors that were satisfied include sight distance visibility impacts, high pedestrian generator land uses, and traffic operations benefits.

The State Streets & 3rd Street intersection nearly satisfied quantitative establishment criteria. The 70% volumes were satisfied but this criterion is normally only considered vehicle speeds exceed 40-MPH. The 80% volumes were satisfied for 7 of 8 minimum hours of the day. The same qualitative factors were satisfied for this intersection and given the proximity of nearly satisfying the quantitative establishment criteria, installation of All-Way STOP controls is also recommended for this intersection.

Additional State Street Traffic Improvements

Traffic Patterns also recommends the following additional signage & striping improvements along State Street to help provide consistency with Best Practice signage & striping use.

State Street & 4th Street

- Install STOP pavement legend at existing STOP control on 4th Street
- Install CROSS TRAFFIC DOES NOT STOP sign placed below existing STOP sign on 4th Street

State Street & Main Street

- Install STOP pavement legend at existing STOP control on State Street (2 Total)
- Install CROSS TRAFFIC DOES NOT STOP sign placed below existing STOP sign on State Street

CONCLUSION

Traffic Patterns recommends that the City install All-Way STOP controls at the State Street & 2nd Street and State Street & 3rd Street intersections based on satisfying the State of California, All-Way STOP Establishment Criteria at both intersections.

ATTACHEMENT

Exhibit A – All-Way STOP Warrant Studies

Exhibit A
All-Way STOP Warrant Studies

TRAFFIC PATTERNS



Multi-Way STOP Analysis

City: **Los Altos, CA**
 Intersection: **State Street & 2nd Street**
 Study Date: **2/25/2020**

Multi-Way STOP Installation Criteria based on California MUTCD 2014 Edition - Rev 4, Section 2B.07

A. Interim Measure prior to Traffic Signal Installation

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.

Has a traffic signal warrant study been conducted for this intersection that recommends installation of a traffic control signal? Yes No

Temporary Multi-Way STOP Installation criteria satisfied? Yes No

B. 12-Month Crash History

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.

Total Number of crashes in 12-month period susceptible to correction by a Multi-Way STOP: Not Analyzed Crash(es)

Multi-Way STOP Installation criteria satisfied? Yes No

C. Minimum Volumes

- C1 The vehicle 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 the day; and
- C2 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 higher hours; but
- C3 If the 85-th percental approach speed of the major-street traffic exceeds 40 MPH, the minimum vehicular volume warrants are 70 percent of the values provided in Items C1 and C2.

Hour	Eastbound State Street				Westbound State Street				State Auto Totals	Northbound 2nd Street				Southbound 2nd Street				3rd All Mode Total
	Autos	Peds	Bikes	Total	Autos	Peds	Bikes	Total		Autos	Peds	Bikes	Total	Autos	Peds	Bikes	Total	
7:00 AM	62	17	1	80	52	18	5	75	114	67	23	1	91	23	13	0	36	127
8:00 AM	69	18	0	87	66	18	2	86	135	51	29	4	84	39	17	1	57	141
9:00 AM	75	30	3	108	63	32	2	97	138	74	42	1	117	34	23	0	57	174
10:00 AM	93	37	2	132	97	27	3	127	190	102	54	2	158	41	22	0	63	221
11:00 AM	111	49	0	160	91	47	0	138	202	108	70	1	179	59	57	0	116	295
12:00 PM	108	62	2	172	129	79	3	211	237	100	96	14	210	63	107	1	171	381
1:00 PM	78	45	1	124	106	75	0	181	184	79	89	4	172	48	54	0	102	274
2:00 PM	99	47	2	148	121	54	2	177	220	78	71	1	150	71	45	0	116	266
3:00 PM	99	50	0	149	94	62	3	159	193	98	73	1	172	54	49	0	103	275
4:00 PM	94	35	4	133	95	58	1	154	189	90	60	3	153	50	48	0	98	251
5:00 PM	100	40	1	141	112	38	1	151	212	84	80	0	164	63	41	0	104	268
6:00 PM	78	46	2	126	94	45	0	139	172	75	54	0	129	54	49	2	105	234

Major Street EB 85-th % Speed: 25 MPH (Speed Limit)
 Major Street WB 85-th % Speed: 25 MPH (Speed Limit)

- C1 8 Hour minimum volume on Major Street satisfied? Yes No (4 Hours Met)
- C2 8 Hour minimum volume on Minor Street satisfied? Yes No (9 Hours Met)
- C3 85-th percental approach speed on Major Street exceeds 40-MPH? Yes No
 70 Percent Values in C1 and C2 Satisfied? Yes No (9 Hours Satisfied at 70% on State St)
 (11 Hours Satisfied 70% on 2nd St)

TRAFFIC PATTERNS



Multi-Way STOP Analysis

City: **Los Altos, CA**
 Intersection: **State Street & 2nd Street**
 Study Date: **2/25/2020**

Multi-Way STOP Installation Criteria based on California MUTCD 2014 Edition - Rev 4, Section 2B.07

Multi-Way STOP Installation Criteria based on California MUTCD 2014 Edition - Rev 1

D. 80% Minimum Values

Where no single criterion is satisfied, but where Criterion B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition. **(Not Applicable)**

- B-80% Crash History satisfied to 80% of the minimum values: Yes No
- C1-80% Major Street (State Street) satisfied to 80% of the minimum values: Yes No
- C2-80% Minor Street (2nd Street) satisfied to 80% of the minimum values: Yes No

E. Other Engineering Study Factor for Multi-Way STOP Installation

Other criteria that may be considered in an engineering study for a Multi-Way STOP Installation 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
- 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.

A. Are majority of Crashes in Section B - 12 Month Crash History left-turn crashes or do field conditions require mitigations against left turn conflicts? Yes No

B. Identify the potential pedestrian generators near or adjacent to the study intersection:

- Downtown Core Area
- Los Altos High School
- Los Altos Library

Can installation of a Multi-Way STOP better control vehicle/pedestrian conflicts at the study intersection: Yes No

C. Are there sight distance or other geometric considerations that can be improved through installation of a Multi-Way STOP at the study intersection? Yes No

(Attach any additional study documentation)

- D. - Are the two streets of the study intersection predominantly residential land use? Yes No
- Are one or both of the streets classified as a Collector street? Yes No
- Would installation of a Multi-Way STOP improve traffic operational characteristics of the intersection or the Collector street? Yes No

MULTI-WAY STOP installation recommended at: State Street & 2nd Street
 Yes No

CERTIFICATION:

This Multi-Way STOP Analysis was determined in accordance with the recommendations set forth by the California - Manual on Uniform Traffic Control Devices (MUTCD) - 2014 Edition - Rev 4 and was conducted by a Registered Traffic Engineer within the State of California and Approved by the City of Los Altos.

Engineer's Stamp



Multi-Way STOP Analysis - Prepared by
 Jaime O. Rodriguez, T.E. - Traffic Patterns

TRAFFIC PATTERNS



Multi-Way STOP Analysis

City: **Los Altos, CA**
 Intersection: **State Street & 3rd Street**
 Study Date: **2/25/2020**

Multi-Way STOP Installation Criteria based on California MUTCD 2014 Edition - Rev 4, Section 2B.07

A. Interim Measure prior to Traffic Signal Installation

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.

Has a traffic signal warrant study been conducted for this intersection that recommends installation of a traffic control signal? Yes No

Temporary Multi-Way STOP Installation criteria satisfied? Yes No

B. 12-Month Crash History

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.

Total Number of crashes in 12-month period susceptible to correction by a Multi-Way STOP: Not Analyzed Crash(es)

Multi-Way STOP Installation criteria satisfied? Yes No

C. Minimum Volumes

- C1 The vehicle 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 the day; and
- C2 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 higher hours; but
- C3 If the 85-th percental approach speed of the major-street traffic exceeds 40 MPH, the minimum vehicular volume warrants are 70 percent of the values provided in Items C1 and C2.

Hour	Eastbound State Street				Westbound State Street				State Auto Totals	Northbound 3rd Street				Southbound 3rd Street				3rd All Mode Total
	Autos	Peds	Bikes	Total	Autos	Peds	Bikes	Total		Autos	Peds	Bikes	Total	Autos	Peds	Bikes	Total	
7:00 AM	52	8	0	60	51	2	4	57	103	36	11	0	47	22	5	0	27	74
8:00 AM	47	23	0	70	69	2	2	73	116	44	15	0	59	21	5	0	26	85
9:00 AM	77	19	4	100	84	3	2	89	161	47	25	0	72	27	17	0	44	116
10:00 AM	69	23	2	94	100	11	4	115	169	57	45	2	104	29	14	1	44	148
11:00 AM	117	36	1	154	105	15	2	122	222	60	43	2	105	43	41	0	84	189
12:00 PM	103	62	3	168	124	19	2	145	227	63	73	0	136	53	51	2	106	242
1:00 PM	76	45	1	122	116	26	0	142	192	49	38	0	87	36	29	0	65	152
2:00 PM	86	58	2	146	112	12	2	126	198	59	48	1	108	39	29	0	68	176
3:00 PM	96	44	2	142	105	8	6	119	201	54	31	1	86	49	41	2	92	178
4:00 PM	82	34	3	119	95	8	1	104	177	60	44	0	104	46	31	0	77	181
5:00 PM	116	40	2	158	95	15	1	111	211	59	41	0	100	41	52	1	94	194
6:00 PM	97	29	1	127	104	9	1	114	201	44	26	0	70	54	22	0	76	146

Major Street EB 85-th % Speed: 25 MPH (Speed Limit)
 Major Street WB 85-th % Speed: 25 MPH (Speed Limit)

C1 8 Hour minimum volume on Major Street satisfied? Yes No

C2 8 Hour minimum volume on Minor Street satisfied? Yes No

C3 85-th percental approach speed on Major Street exceeds 40-MPH? Yes No

70 Percent Values in C1 and C2 Satisfied? Yes No (8 Hours Satisfied at 70% on State St)
 (9 Hours Satisfied at 70% on 3rd St)

TRAFFIC PATTERNS



Multi-Way STOP Analysis

City: **Los Altos, CA**
 Intersection: **State Street & 3rd Street**
 Study Date: **2/25/2020**

Multi-Way STOP Installation Criteria based on California MUTCD 2014 Edition - Rev 4, Section 2B.07

D. 80% Minimum Values

Where no single criterion is satisfied, but where Criterion B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition. **(7 Hours of 8 Minimum are Satisfied at 80% Volumes)**

- B-80% Crash History satisfied to 80% of the minimum values: Yes No
- C1-80% Major Street (State Street) satisfied to 80% of the minimum values: Yes No
- C2-80% Minor Street (3rd Street) satisfied to 80% of the minimum values: Yes No

E. Other Engineering Study Factor for Multi-Way STOP Installation

Other criteria that may be considered in an engineering study for a Multi-Way STOP Installation 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
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- Los Altos High School
- Los Altos Library

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C. Are there sight distance or other geometric considerations that can be improved through installation of a Multi-Way STOP at the study intersection? Yes No
 (Attach any additional study documentation)

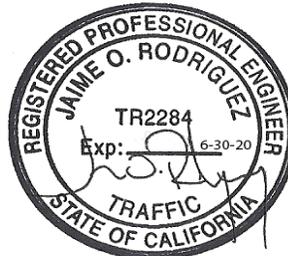
D. - Are the two streets of the study intersection predominantly residential land use? Yes No
 - Are one or both of the streets classified as a Collector street? Yes No
 - Would installation of a Multi-Way STOP improve traffic operational characteristics of the intersection or the Collector street? Yes No

MULTI-WAY STOP installation recommended at:	State Street & 3rd Street
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

CERTIFICATION:

This Multi-Way STOP Analysis was determined in accordance with the recommendations set forth by the California - Manual on Uniform Traffic Control Devices (MUTCD) - 2014 Edition - Rev 4 and was conducted by a Registered Traffic Engineer within the State of California and Approved by the City of Los Altos.

Engineer's Stamp



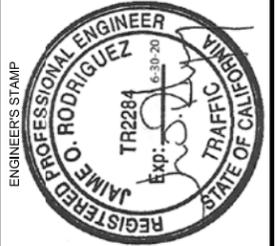
Multi-Way STOP Analysis - Prepared by
 Jaime O. Rodriguez, T.E. - Traffic Patterns

Sight Distance Triangle Evaluations
State Street at 2nd Street and 3rd Street



PROJECT NO.	
SCALE:	
SHEET NO.	1
DRAWN BY:	J. RODRIGUEZ
REVIEWED BY:	CITY OF LOS ALTOS
APPROVED BY:	CITY OF LOS ALTOS

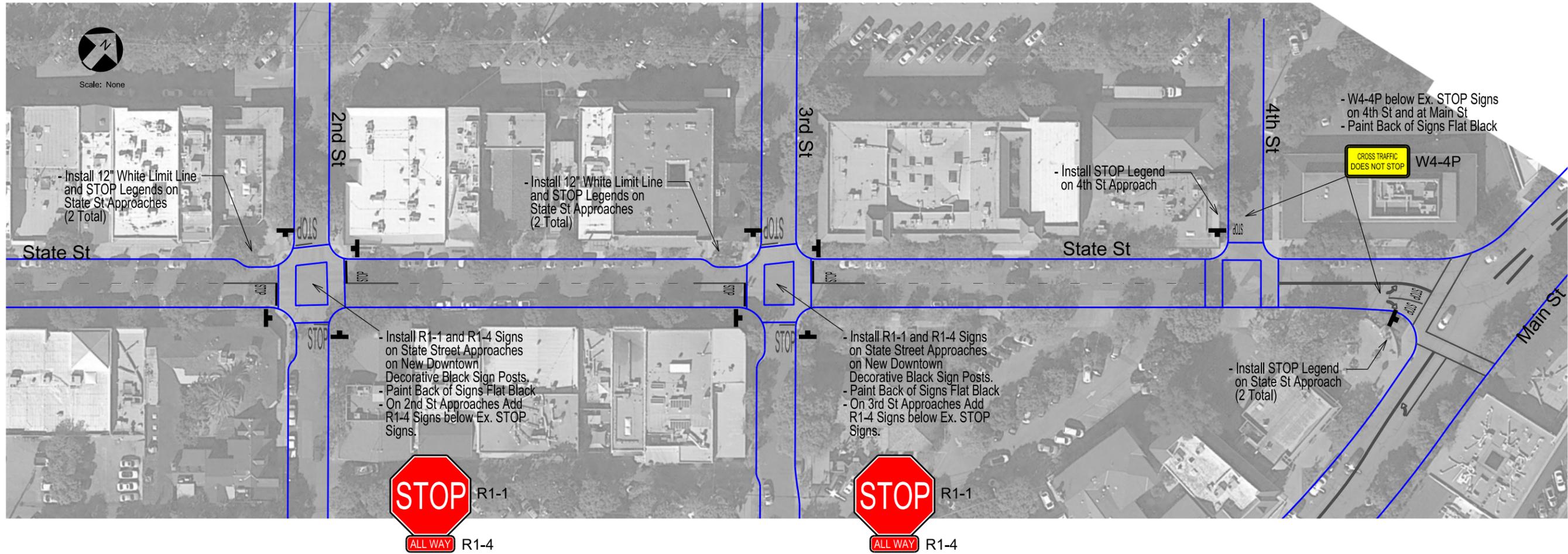
CITY OF LOS ALTOS
STATE STREET
ALL-WAY STOP STUDIES
AT 2ND ST AND 3RD ST
SIGHT DISTANC EVALUATIONS



NO.	REVISIONS DESCRIPTION	DATE

Traffic Patterns
 P.O. Box 25
 Danville, CA 94526
 O: (408) 916-8141
www.trafficpatterns.net
Info@trafficpatterns.net

Signage and Striping Plan
State Street - 2nd Street to Main Street



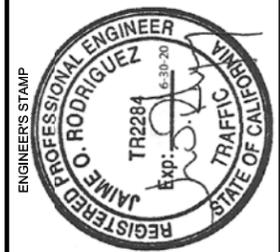
- W4-4P below Ex. STOP Signs on 4th St and at Main St
- Paint Back of Signs Flat Black

CROSS TRAFFIC DOES NOT STOP

W4-4P

PROJECT NO.	
SCALE:	
SHEET NO.	2
DRAWN BY:	J. RODRIGUEZ
REVIEWED BY:	CITY OF LOS ALTOS
APPROVED BY:	CITY OF LOS ALTOS

CITY OF LOS ALTOS
STATE STREET
ALL-WAY STOP STUDIES
AT 2ND ST AND 3RD ST
SIGNAGE & STRIPING PLAN



NO.	REVISIONS DESCRIPTION	DATE

Traffic Patterns
 P.O. Box 25
 Danville, CA 94526
 O: (408) 916-8141
 www.trafficpatterns.net
 Info@trafficpatterns.net

Exhibit B
Raw Traffic Count Data

Traffic Data Service

San Jose, CA
(408) 622-4787
tdsbay@cs.com

File Name : 1 FINAL
Site Code : 00000001
Start Date : 2/25/2020
Page No : 1

Groups Printed- Vehicles

Start Time	2ND ST Southbound					STATE ST Westbound					2ND ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	1	1	3	5	0	6	1	2	9	2	9	3	6	20	6	11	2	5	24	58
07:15 AM	0	6	0	5	11	0	9	3	6	18	5	2	4	2	13	3	5	4	2	14	56
07:30 AM	3	3	1	1	8	1	15	1	5	22	10	8	9	11	38	5	8	1	2	16	84
07:45 AM	1	6	1	4	12	3	11	2	5	21	7	6	2	4	19	6	9	2	8	25	77
Total	4	16	3	13	36	4	41	7	18	70	24	25	18	23	90	20	33	9	17	79	275
08:00 AM	2	5	1	2	10	1	7	6	3	17	1	6	2	6	15	4	3	3	4	14	56
08:15 AM	2	4	4	3	13	3	13	4	6	26	5	7	4	4	20	5	12	3	1	21	80
08:30 AM	1	10	0	4	15	2	8	5	4	19	3	5	3	10	21	10	10	1	8	29	84
08:45 AM	2	6	2	8	18	4	9	4	5	22	5	7	3	9	24	4	10	4	5	23	87
Total	7	25	7	17	56	10	37	19	18	84	14	25	12	29	80	23	35	11	18	87	307
09:00 AM	3	5	3	4	15	3	11	4	6	24	4	7	5	6	22	5	5	4	5	19	80
09:15 AM	0	9	1	10	20	1	11	2	4	18	8	10	6	15	39	3	11	3	10	27	104
09:30 AM	1	4	1	7	13	1	7	3	6	17	5	6	3	11	25	6	13	2	10	31	86
09:45 AM	3	2	2	2	9	4	11	5	16	36	4	14	2	10	30	6	16	1	5	28	103
Total	7	20	7	23	57	9	40	14	32	95	21	37	16	42	116	20	45	10	30	105	373
10:00 AM	1	8	0	4	13	4	18	5	5	32	7	16	7	5	35	10	9	6	8	33	113
10:15 AM	0	4	2	6	12	3	17	4	7	31	8	13	5	18	44	10	11	2	10	33	120
10:30 AM	2	12	1	6	21	0	13	7	9	29	3	10	6	12	31	10	10	3	11	34	115
10:45 AM	3	5	3	6	17	3	12	11	6	32	8	14	5	19	46	8	10	4	8	30	125
Total	6	29	6	22	63	10	60	27	27	124	26	53	23	54	156	38	40	15	37	130	473
11:00 AM	6	4	1	10	21	3	13	5	9	30	5	11	7	21	44	8	16	2	8	34	129
11:15 AM	6	7	5	14	32	2	11	3	15	31	14	11	6	14	45	3	19	9	13	44	152
11:30 AM	2	11	5	14	32	6	15	4	10	35	6	14	8	18	46	9	16	3	13	41	154
11:45 AM	3	7	2	19	31	9	11	9	13	42	10	11	5	17	43	11	15	0	15	41	157
Total	17	29	13	57	116	20	50	21	47	138	35	47	26	70	178	31	66	14	49	160	592
12:00 PM	5	7	1	34	47	11	16	9	26	62	9	11	11	20	51	8	14	5	14	41	201
12:15 PM	6	10	4	18	38	6	21	7	19	53	7	14	2	28	51	13	20	4	12	49	191
12:30 PM	2	8	2	30	42	5	16	4	13	38	8	11	4	18	41	6	16	0	20	42	163
12:45 PM	5	9	4	25	43	3	25	6	21	55	6	14	3	30	53	8	10	4	16	38	189
Total	18	34	11	107	170	25	78	26	79	208	30	50	20	96	196	35	60	13	62	170	744
01:00 PM	2	4	2	8	16	3	24	6	20	53	8	15	4	22	49	4	11	0	19	34	152
01:15 PM	1	5	2	14	22	4	14	6	21	45	3	9	3	24	39	8	13	3	14	38	144
01:30 PM	3	7	2	15	27	2	12	7	16	37	6	6	2	25	39	5	10	4	5	24	127
01:45 PM	4	13	3	17	37	2	19	7	18	46	7	10	6	18	41	11	6	3	7	27	151
Total	10	29	9	54	102	11	69	26	75	181	24	40	15	89	168	28	40	10	45	123	574
02:00 PM	4	10	4	20	38	4	20	4	19	47	7	9	4	11	31	7	8	5	16	36	152
02:15 PM	5	15	4	12	36	7	20	4	12	43	6	12	4	20	42	10	13	3	10	36	157
02:30 PM	5	9	1	4	19	2	30	5	9	46	4	9	4	25	42	6	19	2	16	43	150
02:45 PM	7	4	1	9	21	4	13	8	14	39	3	13	3	15	34	9	11	6	5	31	125
Total	21	38	10	45	114	17	83	21	54	175	20	43	15	71	149	32	51	16	47	146	584
03:00 PM	3	5	0	19	27	1	20	1	16	38	7	13	9	15	44	6	19	0	15	40	149
03:15 PM	2	5	2	11	20	1	19	8	9	37	9	12	4	20	45	5	14	0	13	32	134
03:30 PM	5	12	2	6	25	2	14	5	19	40	3	9	2	22	36	3	20	3	13	39	140
03:45 PM	3	14	1	13	31	4	16	3	18	41	6	15	9	16	46	8	14	7	9	38	156
Total	13	36	5	49	103	8	69	17	62	156	25	49	24	73	171	22	67	10	50	149	579
04:00 PM	2	7	1	9	19	2	11	6	9	28	4	9	7	12	32	10	12	3	6	31	110
04:15 PM	5	11	5	15	36	2	18	5	10	35	5	12	4	17	38	7	12	4	13	36	145

Traffic Data Service

San Jose, CA
 (408) 622-4787
 tdsbay@cs.com

File Name : 1 FINAL
 Site Code : 00000001
 Start Date : 2/25/2020
 Page No : 2

Groups Printed- Vehicles

Start Time	2ND ST Southbound					STATE ST Westbound					2ND ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:30 PM	3	6	0	14	23	2	16	5	22	45	10	14	4	19	47	4	13	1	7	25	140
04:45 PM	2	7	1	10	20	3	20	5	17	45	4	11	6	12	33	8	18	2	9	37	135
Total	12	31	7	48	98	9	65	21	58	153	23	46	21	60	150	29	55	10	35	129	530
05:00 PM	6	12	6	13	37	2	25	6	12	45	8	9	4	11	32	5	27	3	13	48	162
05:15 PM	1	6	3	12	22	4	19	5	7	35	6	12	3	29	50	5	14	1	9	29	136
05:30 PM	3	9	2	9	23	4	15	3	9	31	12	7	3	20	42	8	10	3	3	24	120
05:45 PM	4	6	5	7	22	3	17	9	10	39	7	7	6	20	40	7	15	2	15	39	140
Total	14	33	16	41	104	13	76	23	38	150	33	35	16	80	164	25	66	9	40	140	558
06:00 PM	2	13	6	10	31	5	10	9	17	41	7	5	0	22	34	8	11	3	28	50	156
06:15 PM	3	7	2	8	20	4	13	7	12	36	8	8	5	15	36	6	10	3	7	26	118
06:30 PM	1	10	1	19	31	4	12	6	8	30	11	11	5	9	36	5	11	0	8	24	121
06:45 PM	1	5	3	12	21	2	14	8	8	32	8	5	2	8	23	2	18	1	3	24	100
Total	7	35	12	49	103	15	49	30	45	139	34	29	12	54	129	21	50	7	46	124	495
Grand Total	136	355	106	525	1122	151	717	252	553	1673	309	479	218	741	1747	324	608	134	476	1542	6084
Apprch %	12.1	31.6	9.4	46.8		9	42.9	15.1	33.1		17.7	27.4	12.5	42.4		21	39.4	8.7	30.9		
Total %	2.2	5.8	1.7	8.6	18.4	2.5	11.8	4.1	9.1	27.5	5.1	7.9	3.6	12.2	28.7	5.3	10	2.2	7.8	25.3	

Start Time	2ND ST Southbound					STATE ST Westbound					2ND ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 10:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 10:00 AM																					
10:00 AM	1	8	0	9		4	18	5	27		7	16	7	30		10	9	6	25		91
10:15 AM	0	4	2	6		3	17	4	24		8	13	5	26		10	11	2	23		79
10:30 AM	2	12	1	15		0	13	7	20		3	10	6	19		10	10	3	23		77
10:45 AM	3	5	3	11		3	12	11	26		8	14	5	27		8	10	4	22		86
Total Volume	6	29	6	41		10	60	27	97		26	53	23	102		38	40	15	93		333
% App. Total	14.6	70.7	14.6			10.3	61.9	27.8			25.5	52	22.5			40.9	43	16.1			
PHF	.500	.604	.500	.683		.625	.833	.614	.898		.813	.828	.821	.850		.950	.909	.625	.930		.915

Traffic Data Service

San Jose, CA
 (408) 622-4787
 tdsbay@cs.com

File Name : 1 FINAL
 Site Code : 00000001
 Start Date : 2/25/2020
 Page No : 2

Groups Printed- Bikes

Start Time	2ND ST Southbound					STATE ST Westbound					2ND ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
Total	0	0	0	0	0	0	1	0	0	1	0	3	0	0	3	1	2	1	0	4	8
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
06:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	4
Grand Total	0	4	0	0	4	4	18	0	0	22	4	25	3	0	32	4	13	1	0	18	76
Apprch %	0	100	0	0		18.2	81.8	0	0		12.5	78.1	9.4	0		22.2	72.2	5.6	0		
Total %	0	5.3	0	0	5.3	5.3	23.7	0	0	28.9	5.3	32.9	3.9	0	42.1	5.3	17.1	1.3	0	23.7	

Start Time	2ND ST Southbound					STATE ST Westbound					2ND ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 10:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	3
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	4
09:00 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
Total Volume	0	1	0	0	1	0	3	0	0	3	1	4	0	0	5	0	1	0	0	1	10
% App. Total	0	100	0	0		0	100	0	0		20	80	0	0		0	100	0	0		
PHF	.000	.250	.000	.000	.250	.000	.375	.000	.000	.375	.250	.500	.000	.000	.625	.000	.250	.000	.000	.250	.625

Traffic Data Service

San Jose, CA
 (408) 622-4787
 tdsbay@cs.com

File Name : 2 FINAL
 Site Code : 00000002
 Start Date : 2/25/2020
 Page No : 1

Groups Printed- Vehicles

Start Time	3RD ST Southbound					STATE ST Westbound					3RD ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	4	0	1	5	2	5	1	0	8	0	2	2	3	7	5	8	2	2	17	37
07:15 AM	1	2	0	3	6	0	9	1	2	12	5	5	2	4	16	2	6	0	3	11	45
07:30 AM	1	2	0	0	3	0	13	1	0	14	1	5	2	2	10	0	13	2	2	17	44
07:45 AM	0	11	1	1	13	5	12	2	0	19	2	8	2	2	14	3	8	3	1	15	61
Total	2	19	1	5	27	7	39	5	2	53	8	20	8	11	47	10	35	7	8	60	187
08:00 AM	1	5	1	2	9	2	10	3	2	17	0	8	3	4	15	2	3	1	11	17	58
08:15 AM	1	1	3	1	6	1	15	4	0	20	4	5	2	2	13	4	8	1	4	17	56
08:30 AM	2	3	0	2	7	4	11	3	0	18	1	10	3	4	18	2	7	2	3	14	57
08:45 AM	2	1	1	0	4	3	11	2	0	16	1	4	3	5	13	4	11	2	5	22	55
Total	6	10	5	5	26	10	47	12	2	71	6	27	11	15	59	12	29	6	23	70	226
09:00 AM	1	4	0	2	7	2	14	3	0	19	0	8	2	7	17	8	7	3	4	22	65
09:15 AM	0	4	2	8	14	9	11	3	2	25	1	6	2	9	18	2	13	4	2	21	78
09:30 AM	1	5	0	4	10	7	8	2	1	18	3	4	4	6	17	6	14	2	10	32	77
09:45 AM	1	4	5	3	13	3	19	3	0	25	3	11	3	3	20	5	10	3	3	21	79
Total	3	17	7	17	44	21	52	11	3	87	7	29	11	25	72	21	44	12	19	96	299
10:00 AM	3	2	1	3	9	6	15	2	2	25	2	6	6	5	19	4	10	2	5	21	74
10:15 AM	1	3	0	6	10	3	22	5	4	34	0	4	2	9	15	3	11	5	4	23	82
10:30 AM	5	3	2	3	13	3	10	4	2	19	6	6	3	15	30	1	11	2	7	21	83
10:45 AM	0	9	0	2	11	3	20	7	3	33	8	9	5	16	38	2	15	3	7	27	109
Total	9	17	3	14	43	15	67	18	11	111	16	25	16	45	102	10	47	12	23	92	348
11:00 AM	1	4	1	11	17	3	17	1	3	24	0	5	5	12	22	6	17	3	5	31	94
11:15 AM	4	7	2	4	17	4	10	4	3	21	3	10	4	6	23	14	21	2	8	45	106
11:30 AM	3	5	3	8	19	6	18	8	5	37	5	7	4	16	32	5	14	4	13	36	124
11:45 AM	0	11	2	18	31	6	23	5	4	38	9	2	5	9	25	10	18	3	10	41	135
Total	8	27	8	41	84	19	68	18	15	120	17	24	18	43	102	35	70	12	36	153	459
12:00 PM	4	5	1	9	19	4	27	6	5	42	2	4	5	23	34	6	14	3	13	36	131
12:15 PM	4	11	3	13	31	3	24	5	3	35	5	5	4	13	27	5	17	10	22	54	147
12:30 PM	4	5	2	19	30	3	16	6	5	30	8	6	8	14	36	5	19	3	6	33	129
12:45 PM	3	9	2	10	24	3	25	2	6	36	8	2	6	23	39	1	19	1	21	42	141
Total	15	30	8	51	104	13	92	19	19	143	23	17	23	73	136	17	69	17	62	165	548
01:00 PM	2	4	3	8	17	4	27	4	9	44	3	6	3	10	22	6	15	2	12	35	118
01:15 PM	5	6	2	7	20	0	17	7	5	29	2	4	2	9	17	5	12	1	9	27	93
01:30 PM	4	1	0	6	11	3	13	6	7	29	4	7	4	6	21	4	8	3	15	30	91
01:45 PM	1	6	2	8	17	4	25	6	5	40	7	4	3	13	27	3	13	4	9	29	113
Total	12	17	7	29	65	11	82	23	26	142	16	21	12	38	87	18	48	10	45	121	415
02:00 PM	3	1	3	6	13	2	18	5	2	27	3	7	6	13	29	3	13	3	14	33	102
02:15 PM	7	4	0	9	20	4	21	5	3	33	6	9	6	22	43	0	21	1	9	31	127
02:30 PM	4	6	2	5	17	1	28	4	4	37	6	7	2	10	25	5	19	2	19	45	124
02:45 PM	2	3	4	9	18	2	15	7	3	27	2	2	3	3	10	3	13	3	16	35	90
Total	16	14	9	29	68	9	82	21	12	124	17	25	17	48	107	11	66	9	58	144	443
03:00 PM	1	8	1	11	21	1	17	5	2	25	2	3	4	3	12	4	17	2	3	26	84
03:15 PM	3	9	1	4	17	0	19	4	1	24	3	5	5	9	22	8	20	0	2	30	93
03:30 PM	2	9	0	12	23	0	17	8	2	27	6	6	5	9	26	5	15	2	30	52	128
03:45 PM	2	11	2	14	29	7	21	6	3	37	4	7	4	10	25	6	16	1	9	32	123
Total	8	37	4	41	90	8	74	23	8	113	15	21	18	31	85	23	68	5	44	140	428
04:00 PM	0	16	0	7	23	1	15	5	1	22	2	6	3	11	22	8	7	2	7	24	91
04:15 PM	2	5	1	10	18	2	20	4	5	31	3	9	6	9	27	2	17	2	7	28	104

Traffic Data Service

San Jose, CA
(408) 622-4787
tdsbay@cs.com

File Name : 2 FINAL
Site Code : 00000002
Start Date : 2/25/2020
Page No : 2

Groups Printed- Vehicles

Start Time	3RD ST Southbound					STATE ST Westbound					3RD ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:30 PM	0	7	1	6	14	3	18	1	2	24	3	8	4	16	31	5	14	2	9	30	99
04:45 PM	3	8	3	8	22	2	21	3	0	26	6	7	3	8	24	6	14	3	11	34	106
Total	5	36	5	31	77	8	74	13	8	103	14	30	16	44	104	21	52	9	34	116	400
05:00 PM	2	3	1	16	22	1	26	5	5	37	3	11	2	8	24	7	27	6	11	51	134
05:15 PM	3	8	1	18	30	2	14	2	6	24	7	8	9	11	35	2	15	6	17	40	129
05:30 PM	2	4	2	10	18	1	19	2	0	22	4	1	1	8	14	4	16	4	5	29	83
05:45 PM	4	8	3	8	23	3	17	3	4	27	2	4	7	14	27	3	17	9	7	36	113
Total	11	23	7	52	93	7	76	12	15	110	16	24	19	41	100	16	75	25	40	156	459
06:00 PM	1	9	2	11	23	4	22	4	4	34	3	4	2	13	22	7	16	3	7	33	112
06:15 PM	4	9	1	2	16	2	15	9	0	26	3	5	5	8	21	6	11	2	8	27	90
06:30 PM	2	15	5	7	29	3	18	5	3	29	1	7	7	3	18	7	14	2	8	31	107
06:45 PM	4	2	0	2	8	4	16	2	2	24	2	4	1	2	9	3	17	9	6	35	76
Total	11	35	8	22	76	13	71	20	9	113	9	20	15	26	70	23	58	16	29	126	385
Grand Total	106	282	72	337	797	141	824	195	130	1290	164	283	184	440	1071	217	661	140	421	1439	4597
Apprch %	13.3	35.4	9	42.3		10.9	63.9	15.1	10.1		15.3	26.4	17.2	41.1		15.1	45.9	9.7	29.3		
Total %	2.3	6.1	1.6	7.3	17.3	3.1	17.9	4.2	2.8	28.1	3.6	6.2	4	9.6	23.3	4.7	14.4	3	9.2	31.3	

Start Time	3RD ST Southbound					STATE ST Westbound					3RD ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 10:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 10:00 AM																					
10:00 AM	3	2	1	6		6	15	2	23		2	6	6	14		4	10	2	16		59
10:15 AM	1	3	0	4		3	22	5	30		0	4	2	6		3	11	5	19		59
10:30 AM	5	3	2	10		3	10	4	17		6	6	3	15		1	11	2	14		56
10:45 AM	0	9	0	9		3	20	7	30		8	9	5	22		2	15	3	20		81
Total Volume	9	17	3	29		15	67	18	100		16	25	16	57		10	47	12	69		255
% App. Total	31	58.6	10.3			15	67	18			28.1	43.9	28.1			14.5	68.1	17.4			
PHF	.450	.472	.375	.725		.625	.761	.643	.833		.500	.694	.667	.648		.625	.783	.600	.863		.787

Traffic Data Service

San Jose, CA
 (408) 622-4787
 tdsbay@cs.com

File Name : 2 FINAL
 Site Code : 00000002
 Start Date : 2/25/2020
 Page No : 2

Groups Printed- Bikes

Start Time	3RD ST Southbound					STATE ST Westbound					3RD ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	4
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Grand Total	3	3	0	0	6	0	26	1	0	27	0	5	1	0	6	4	17	0	0	21	60
Apprch %	50	50	0	0		0	96.3	3.7	0		0	83.3	16.7	0		19	81	0	0		
Total %	5	5	0	0	10	0	43.3	1.7	0	45	0	8.3	1.7	0	10	6.7	28.3	0	0	35	

Start Time	3RD ST Southbound					STATE ST Westbound					3RD ST Northbound					STATE ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 10:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 09:45 AM																					
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
10:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
10:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total Volume	0	1	0	0	1	0	2	0	0	2	0	2	0	0	2	1	3	0	0	4	9
% App. Total	0	100	0	0		0	100	0	0		0	100	0	0		25	75	0	0		
PHF	.000	.250	.000	.000	.250	.000	.250	.000	.000	.250	.000	.500	.000	.000	.500	.250	.750	.000	.000	.500	.750