



**Additional Documents List  
Mobility and Transportation  
Infrastructure Commission  
Meeting  
July 19, 2022**

<b>Item No.</b>	<b>Agenda Item Description</b>	<b>Distributor</b>	<b>Document</b>
2	<b>Project Status Update – PWD Gerber</b>	Ted Gerber, Public Works Director	Staff Report
3	<b>Meridian Avenue Traffic Safety Evaluation</b>	Ted Gerber, Public Works Director	Staff Report



# Mobility and Transportation Infrastructure Commission Agenda Report

ITEM NO. 2

**DATE:** July 19, 2022  
**FROM:** H. Ted Gerber, Director of Public Works  
**SUBJECT:** **Project Status Update**

## Recommendation

It is recommended that the Commission receive and file an update on the status of projects related to the City’s mobility and transportation infrastructure.

## Information

Public Works projects are generally divided into two areas: (1) Capital Improvement Program (CIP) projects and (2) routine or special Operations & Maintenance (O&M) projects. Ongoing or planned projects related to mobility and transportation infrastructure in both of these areas, along with their recent status, are listed in the tables below.

Capital Improvement Program (CIP) Projects	Project Status
Fair Oaks Traffic Signal Improvements Project	<p><u>Updated Status</u> This project installs fiber optic cable and devices along Fair Oaks, Huntington Drive, and Fremont Avenue, as well as a Traffic Management Center (TMC) at City Hall and Public Works offices at the Garfield Water Distribution Facility (WDF).</p> <p>Staff began training on the MaxView intelligent transportation systems. A meeting was held between the City and Metro to discuss the conversion of the existing radio-communication bus prioritization system to a wired system integrated into the new fiber optic network..</p>
Mission and Fremont Rectangular Rapid Flashing Beacons	<p><u>No Change from June Status</u> This project installs Rectangular Rapid Flashing Beacons (RRFBs) at Fremont Avenue and Lyndon Street, Mission Street and Diamond Avenue, and Mission Street and Fairview Avenue.</p> <p>The designer has completed the project plans. The project specifications require revisions, before the project can be bid for construction – which is expected to occur in Summer 2022.</p>

Capital Improvement Program (CIP) Projects	Project Status
Street Improvements	<p><u>Updated Status</u>            The existing consultant contract for the Fiscal Year 2019-2020 street improvements has been amended to recommence design work. On June 15<sup>th</sup>, Council approved a resolution to commit State Road Maintenance and Rehabilitation Account (RMRA) funding to the existing selection of streets from MTIC. Staff submitted the RMRA funding request package to the State, which followed up to confirm project scheduling. Along with the existing design efforts underway, Staff will be working to prioritize streets also needing near-term utility improvements, and developing a solicitation package for the next design package.</p>
Measure M Project Funding Requests	<p><u>Updated Status</u>            The modified project list was approved at the May 18<sup>th</sup> Council Meeting, submitted to the Arroyo Verdugo Committee Technical Advisory Committee the following day, and then submitted to the Arroyo Verdugo Committee Joint Powers Authority (AVCJPA) – which approved the list. Staff is working with the AVCJPA to support the submission of project to Metro for final funding approval by submitting additional supporting finance and schedule documents in late July. Upon submittal and approval by Metro, the programmed projects will be represented as separate line items in this list. A discussion on the project recommendation for the 2023 submittal is scheduled for late 2022.</p>
Columbia Avenue Striping & Signal Improvements	<p><u>No Change from June Status</u>            A Measure M Multi-Subregional Program (MSP) project funding request is being submitted to Metro, having been approved by Council and the AVCJPA. Both South Pasadena and Pasadena are in general agreement on the striping configuration, and a conceptual drawing for the Fremont/Pasadena intersection has been provided to Pasadena. In May, the City of Pasadena included this concept into their freeway relinquishment process, as Pasadena’s proposed funding source is Measure R Mobility Improvement Project (MIP) funds. Pasadena is presently working with a consultant to develop MIP recommendations for their City Council and Metro. Striping improvements to the Northwest corner of Columbia Avenue at Orange Grove Boulevard will be implemented earlier as an O&amp;M project jointly with Pasadena.</p>
Fremont/Huntington Mobility Active Transportation Project	<p><u>Updated Status</u>            Staff completed minor adjustments to the grant funding agreement and is routing the document for signatures. Once this process is complete, staff will complete solicitation for the initial phase of the project.</p>

Capital Improvement Program (CIP) Projects	Project Status
City of Pasadena 'Stub' Relinquishment & Transitional Project Development	<p><b><u>Updated Status</u></b>            Caltrans considered a Relinquishment Approval Report during the June 2022 meeting of the California Transportation Commission (CTC). Staff issued a City support letter for the relinquishment initiative and delivered a verbal public comment. Pasadena Mayor Gordo and State Senator Portantino were in attendance, and the Senator acknowledged South Pasadena's comment. After some discussion, the item was approved by the Commission. Staff is now collaborating with the City of Pasadena to ensure South Pasadena stakeholders are involved in the discussion of conceptual designs related to 'stub' transitional projects, which will be compiled later this year.</p>
Sidewalks Replacement & ADA Ramps Upgrades	<p><b><u>No Change from June Status</u></b>            On April 20<sup>th</sup>, staff brought an item to Council to program Community Development Block Grant (CDBG) program funds towards sidewalk replacement &amp; ADA ramps upgrades, which was approved. Existing funding is planned for up to twelve (12) intersection improvements along Meridian Avenue. Newly allocated funding is proposed for improvements in the Raymond Hill area. Total funding that has been allocated over fiscal years 2021-2022 and 2022-2023 is approximately \$300,000.</p>
North-South Corridor Intelligent Transportation Systems (ITS) Deployment Project	<p><b><u>No Change from June Status</u></b>            Staff is working with the design consultant to make minor refinements to the scope of work, and ensure the project work will continue to enhance traffic management along the Fair Oaks corridor, given the improvements installed during the current Fair Oaks fiber optic and signal devices project.</p>
Farmer's Market Bollard System	<p><b><u>No Change from June Status</u></b>            This future proposed project is listed in the 5-Year Capital Improvement Program (CIP) approved by City Council on June 1 2022. The project is scheduled for implementation in Fiscal Year 2023-2024. Staff will explore funding this project through a pedestrian improvement grant.</p>
Fair Oaks SR-110 Interchange Loop/Hook On-Ramp	<p><b><u>No Change from June Status</u></b>            Staff is facilitating the engagement of multiple professional services consultants to assist in the initial study work on this project. Staff received 66 proposals for the 29 types of services requested, including Traffic/Transportation Engineering Services, and is expecting to award contracts at the July 20, 2022 Council meeting. City staff is coordinating a meeting with Metro and Caltrans, assisted by the selected on-call consultant, to discuss near-term study work and future Measure R Mobility Improvement Project (MIP) funding.</p>

Capital Improvement Program (CIP) Projects	Project Status
Fair Oaks SR-110 Interchange Loop/Hook Grevelia Off-Ramp	<p><u>Updated Status</u>            See above "Fair Oaks SR-110 Interchange Loop/Hook On-Ramp" status.</p>
Mission Street at Arroyo Drive Pedestrian Improvements	<p><u>No Change from June Status</u>            A 60% design of this intersection has been completed as part of the Fiscal Year 2019-2020 Street Improvement Project. Staff are working to finalize the street design with the consultant.</p>

Operations & Maintenance (O&M) Projects	Project Status
2022 626 Golden Streets Mission to Mission Event	<p><u>No Change from June Status</u>            A debrief was held with members from each City and ActiveSGV reviewing survey data from the event and lessons learned. A final report from ActiveSGV is in development.</p>
2022 Slow Streets & Open Streets Program	<p><u>Updated Status</u>            After receiving scope recommendations from MTIC on May 17<sup>th</sup>, regarding a revised strategy for the 2022 Program, a proposed professional services agreement scope was drafted – and planned for Council approval. City staff have been working with other departments to facilitate an economic development meeting with Mission business owners to gather feedback on the project scope – which will take place on July 21. The Council agreement approval is planned for August 2022. The parklet and furniture equipment have been shipped and are also expected to arrive by August 2022.</p>
Neighborhood Traffic Management Program (NTMP) Implementation	<p><u>Updated Status</u>            Staff are planning to complete the functional implementation of this program, i.e. process infrastructure, and will bring the item to City Council for program adoption. Staff is facilitating the engagement of multiple professional services consultants to assist in traffic impact analysis work as part of this program. Staff received 66 proposals for the 29 types of services requested, including Traffic/Transportation Engineering Services, and is expecting to award contracts at the July 20, 2022 Council meeting.</p>

Operations & Maintenance (O&M) Projects	Project Status
<p>Ramona Avenue, Oak Street, Rollin Street, &amp; Fremont Avenue Traffic Management</p>	<p><u>No Change from June Status</u>            Public Works staff is working with Community Development staff to evaluate area specific plan documents in order to provide direction to Holy Family Church regarding traffic mitigation. Staff is coordinating with South Pasadena High School to implement a drop-off zone along Fremont Avenue, along with an edge line for southbound traffic. Other recommendations from MTIC include a potential exclusive phase for pedestrians at the Bank/Fremont street crossing, and traffic control modifications to the Fremont/Rollin intersection, Diamond/Lyndon/El Cerrito intersection, and Ramona Ave between Oak and Huntington.</p>
<p>Meridian Avenue Traffic Management &amp; Safety Measures</p>	<p><u>Updated Status</u>            Staff have evaluated the site conditions and traffic data to discuss potential improvements to Meridian Avenue. This information is being presented at tonight's July 2022 MTIC meeting.</p>
<p>Timing Improvements at the Metro Gold Line Mission &amp; Meridian</p>	<p><u>Updated Status</u>            Staff met with MTIC's Chair to review recommendations regarding the timing of signal lights and railway crossing gates at Mission and Meridian. Metro is determining the appropriate contact for timing issues to work with the City.</p>
<p>Timing Improvements at Orange Grove &amp; Monterey Signal</p>	<p><u>No Change from June Status</u>            Staff are working to implement an on-call professional services contract for traffic engineering services and an on-call maintenance services contract for signal maintenance and adjustment in order to implement recommended improvements at this location. Staff brought an item to City Council on June 15<sup>th</sup>, 2022 to resolve 18-months of past due invoices to the signal maintenance contractor, and authorized execution of a 3-month interim maintenance agreement to continue services. In addition, Staff received 66 proposals for the 29 types of on-call professional services requested, including Traffic/Transportation Engineering Services, and are expecting to award contracts at the July 20, 2022 Council meeting.</p>
<p>Timing Improvements at Mission &amp; Garfield</p>	<p><u>No Change from June Status</u>            Staff are working to implement an on-call professional services contract for traffic engineering services and an on-call maintenance services contract for signal maintenance and adjustment in order to implement recommended improvements at this location. Staff brought an item to City Council on June 15<sup>th</sup>, 2022 to resolve 18-months of past due invoices to the signal maintenance contractor, and authorized execution of a 3-month interim maintenance agreement to continue services. In addition, Staff received 66 proposals for the 29 types of on-call professional services requested, including Traffic/Transportation Engineering Services, and are expecting to award contracts at the July 20, 2022 Council meeting.</p>

Project Status Update

July 19, 2022

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Operations & Maintenance (O&M) Projects	Project Status
<p>Fremont Avenue Southbound Left Turn Pocket South of Huntington Drive Intersection</p>	<p><u>No Change from June Status</u>                      Staff have established a budget and conceptual layout for this improvement, and are working to implement an on-call professional services contract for traffic engineering design services to develop a plan document. Staff received 66 proposals for the 29 types of services requested, including Traffic/Transportation Engineering Services, and is expecting to award contracts at the July 20, 2022 Council meeting.</p>
<p>Traffic &amp; Parking Impacts along Glendon Way between El Centro Street and Meridian Avenue</p>	<p><u>No Change from June Status</u>                      City Council recently approved a new five-year agreement with the Chamber of Commerce that contains updated language to facilitate review of the Farmer's Market event Parking Management Plan. Public Works will work with the Chamber of Commerce to make adjustments with the goal of improving traffic and parking impacts along Glendon Way.</p>
<p>Replacement of Missing Orange Grove Street Lamps</p>	<p><u>Updated Status</u>                      Staff are working to recruit Public Works Operations positions to resume street light replacement work. A Public Works Operation Manager has been hired, and Maintenance Worker interviews are pending rater assignments, and expected to occur in June.</p>
<p>Measure R Projects</p>	<p><u>Updated Status</u>                      In addition to the Fair Oaks SR-110 Interchange Loop/Hook On-Ramp and Off-Ramp projects programmed with Measure R Mobility Improvement Project (MIP) funding, other projects are listed with Metro that could be accomplished utilizing MIP funds. The City previously referred to these as "SR-710 Early Action Projects". Staff recently discussed these projects with Metro and confirmed that they are not included in the Metro funding plan, as the City's Measure R appropriation is split between the Fair Oaks SR-110 Interchange Loop/Hook On/Off-Ramp and the Fremont/Huntington Mobility Active Transportation Project.</p>
<p>Installation of City Limit Signs at Various Locations</p>	<p><u>Updated Status</u>                      Staff are working to recruit Public Works Operations positions to resume sign replacement work. A Public Works Operation Manager has been hired, and Maintenance Worker interviews are pending rater assignments, and expected to occur in July. Staff are working to implement an on-call professional services contract for landscape and architectural design services in order to develop concepts and costs for City entrance signs, and is expecting to award contracts at the July 20, 2022 Council meeting.</p>

Operations & Maintenance (O&M) Projects	Project Status
Preferential Parking Policy	<p><b><u>No Change from June Status</u></b>            As a City Council Strategic Plan goal, Staff will work with Community Development in this area, considering recommendations provided by MTIC. Work will commence after the General Plan and Downtown Specific Plan are completed in Fall 2022.</p>
2023 626 Golden Streets Arroyo Fest	<p><b><u>No Change from June Status</u></b>            San Gabriel Valley Council of Governments (SGVCOG) is in the early planning stages for this event. SGVCOG met with SGV Metro Board Director, Caltrans, and ActiveSGV. Caltrans requested information on the 2003 event, specifically whether both north and south sides of the SR-110 were closed – ActiveSGV confirmed this. The event is tentatively scheduled to the last Sunday in October 2023 (10/29/23) – 21 days after cicLAvia's annual Heart of LA open streets event. This project is now updated to the 2023 626 Golden Streets Arroyo Fest.</p>

**Public Notification of Agenda Item**

The public was made aware that this item was to be considered this evening by virtue of its inclusion on the legally publicly noticed agenda, and posting of the same agenda and reports on the City's website.





# Mobility and Transportation Infrastructure Commission Agenda Report

ITEM NO. 3

**DATE:** July 19, 2022

**FROM:** H. Ted Gerber, Director of Public Works  
Tatevik Barakazyan, Associate Civil Engineer

**SUBJECT:** **Meridian Avenue Traffic Safety Evaluation**

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## Recommendation

It is recommended that the Commission receive information related to Meridian Avenue sight distances traffic data to discuss and provide feedback to City staff.

## Background

On July 21, 2021, in response to requests from residents and concerns of vehicular and pedestrian safety along Meridian Avenue, the City Council approved the installation of an all-way stop sign at the intersection of Meridian Avenue and Oak Street. Additionally, the Council directed staff to further assess the traffic and pedestrian safety conditions at the intersections of Meridian Avenue at Pine and Maple Streets, and in coordination with the MTIC, determine the implementation of feasible traffic calming measures along the corridor. Staff also included the intersections of Meridian Avenue at Bank, Rollin and Beech Streets to the safety analysis, as illustrated on the Exhibit A.

## Analysis

The 10-year traffic collision history obtained from Statewide Integrated Traffic Records System (SWITRS) was analyzed to highlight the areas of concern along the corridor. The data displayed a pattern of midblock accidents, primarily collisions with fixed objects and parked vehicles. The cause of the incidents may be as a result of excessive speeding along the corridor.

Midblock traffic calming measures may be a mitigating solution in these types of cases, including:

- Edgeline striping
- Speed feedback signs corridor entrances
- Pedestrian crossing devices such as Rectangular Rapid Flashing Beacons (RRBFs)

On May 18, 2022, the City Council prioritized the use of Measure M funds towards pedestrian safety improvements and the installation of pedestrian crossing devices. The locations and types of these devices have not yet been identified in the Measure M funding program, though several locations have been recommend by MTIC.

After multiple discussions with residents regarding pedestrian safety, it was brought to staff's attention a commonly used pathway located on the south end of Rollin Street known as the Snake Trail, as illustrated on the Exhibit G. The trail provides the South Pasadena High School students a shortcut to the Southwest Monterey Hills, therefore, making Meridian Avenue at Rollin Street a priority pedestrian crossing. Additionally, residents noted another pedestrian route, illustrated in the Exhibit H, that provides a pathway/stairway from Bonita Drive to Meridian Avenue, encouraging the residents to use the nearest existing midblock crossing at Maple Street.

For the analysis of Meridian Avenue intersections at Pine and Maple Streets, staff considered the components of a Multi-Way STOP Sign warrant analysis per the California Manual on Uniform Traffic Control Devices (CAMUTCD). According to Section 2B.07 of the CAMUTCD, the decision to install a multi-way stop should be based on an engineering study and the following criteria should be considered 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.*

After the review of the intersection vehicular volumes, major street volumes, and accident data, none of the intersections satisfy the conditions listed in Section 2B.07 of the CAMUTCD, however, Section 2B.07 of the CAMUTCD includes the following optional criteria that may be considered in an engineering study:

- 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 reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop; and*
- D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multiway stop control would improve traffic operational characteristics of the intersection.*

A corner sight distance analysis was performed in compliance with the Highway Design Manual (HDM) at the following intersections along Meridian Avenue:

- Bank Street
- Rollin Street
- Pine Street
- Beech Street
- Maple Street

Per Section 405.1 of the HDM, at unsignalized intersections, a substantially clear line of sight should be maintained between the driver of a vehicle, bicyclist, or pedestrian stopped on the minor road and the driver of an approaching vehicle on the major road. The line of sight for all users should be included in right of way, in order to preserve sight lines. Adequate time should be provided for the stopped vehicle on the minor road to either cross all lanes of through traffic, cross the near lanes and turn left, or turn right, without requiring through traffic to radically alter their speed.

The methodology used for the driver stopped on the minor road to complete the necessary maneuver, while the approaching vehicle travels at the design speed of the major road, is based on gap-acceptance behavior. The minimum corner sight distance (feet) is determined by the equation  $1.47 \times V_m \times T_g$ , where  $V_m$  is the design speed (mph) of the major road and  $T_g$  is the time gap (seconds) for the minor road vehicle to enter the major road. The time gap values obtained from Table 405.1A of the HDM are  $7\frac{1}{2}$  seconds for left-turns and  $6\frac{1}{2}$  seconds for right turns; and the posted speed limit along Meridian Avenue is 25 mph. The calculations yield a minimum corner sight distance of 276 feet for left-turns and 239 feet for right-turns.

The set back distance for the vehicle waiting on the minor road is measured from two points. The blue line illustrated in the exhibits measures the clear sight triangle from the STOP bar, which meets the minimum requirement of the 15 feet measured from the edge of the traveled way, as stated in the HDM. Additionally, clear sight triangles illustrated in green and red are measured approximately 6-8 feet beyond the STOP bar, following a more “practical” driving approach to the analysis, which is the practice of stopping at a limit line and then “creeping” forward to a point of visibility.

Exhibit B illustrates the corner sight distance at the intersection of Meridian Avenue and Bank Street. Adequate sight distance is provided on the south side of the intersection; however, insufficient red curb is present on the north side. Vehicles parked close to the existing red curb

on the north side may obstruct the view and limit the visibility of the southbound vehicles. Extension of the existing red curb may be a possible solution to improve the corner sight distance.

Exhibit C illustrates the corner sight distance at the intersection of Meridian Avenue and Rollin Street. Adequate sight distance is provided at the intersection.

Exhibit D illustrates the corner sight distance at the intersection of Meridian Avenue and Pine Street. The geometric configurations of the street (existing horizontal curve) limits the visibility of the northbound traffic, therefore, inadequate sight distance is present at the intersection.

Exhibit E illustrates the corner sight distance at the intersection of Meridian Avenue and Beech Street. The geometric configurations of the street (existing horizontal curve) limits the visibility of the southbound traffic, therefore, inadequate sight distance is present at the intersection. Extension of the existing red curb on the north side may be a possible solution to improve the corner sight distance.

Exhibit F illustrates the corner sight distance at the intersection of Meridian Avenue and Maple Street. In comparison to the neighboring intersections, Meridian Avenue at Maple Street does not have a significant change in roadway alignment and horizontal curves hindering the visibility of the north and southbound traffic. This evaluation yields that adequate sight distance is provided at the intersection.

### **Public Notification of Agenda Item**

The public was made aware that this item was to be considered this evening by virtue of its inclusion on the legally publicly noticed agenda, posting of the same agenda and reports on the City's website and/or notice in the *South Pasadena Review* and/or the *Pasadena Star-News*.

### **Exhibits**

- Exhibit A – Scope of the Study
- Exhibit B – Bank Street Corner Sight Distance
- Exhibit C – Rollin Street Corner Sight Distance
- Exhibit D – Pine Street Corner Sight Distance
- Exhibit E – Beech Street Corner Sight Distance
- Exhibit F – Maple Street Corner Sight Distance
- Exhibit G – Snake Trail at Rollin Street
- Exhibit H – Existing Pathway at Bonita Drive

### **Attachments**

1. SWITRS 2010-2022 Traffic Collision Data
2. 2020 W. G. Zimmerman STOP Sign Analysis

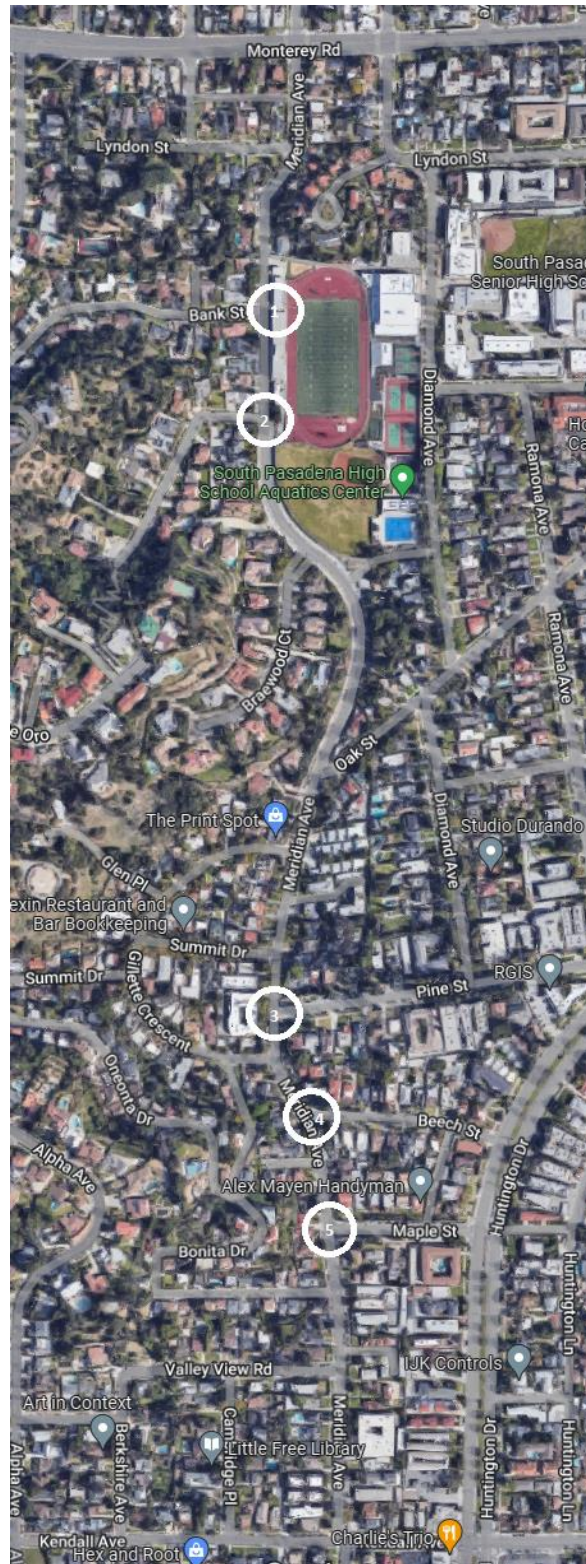


Exhibit A – Scope of the Study





Exhibit B – Bank Street Corner Sight Distance

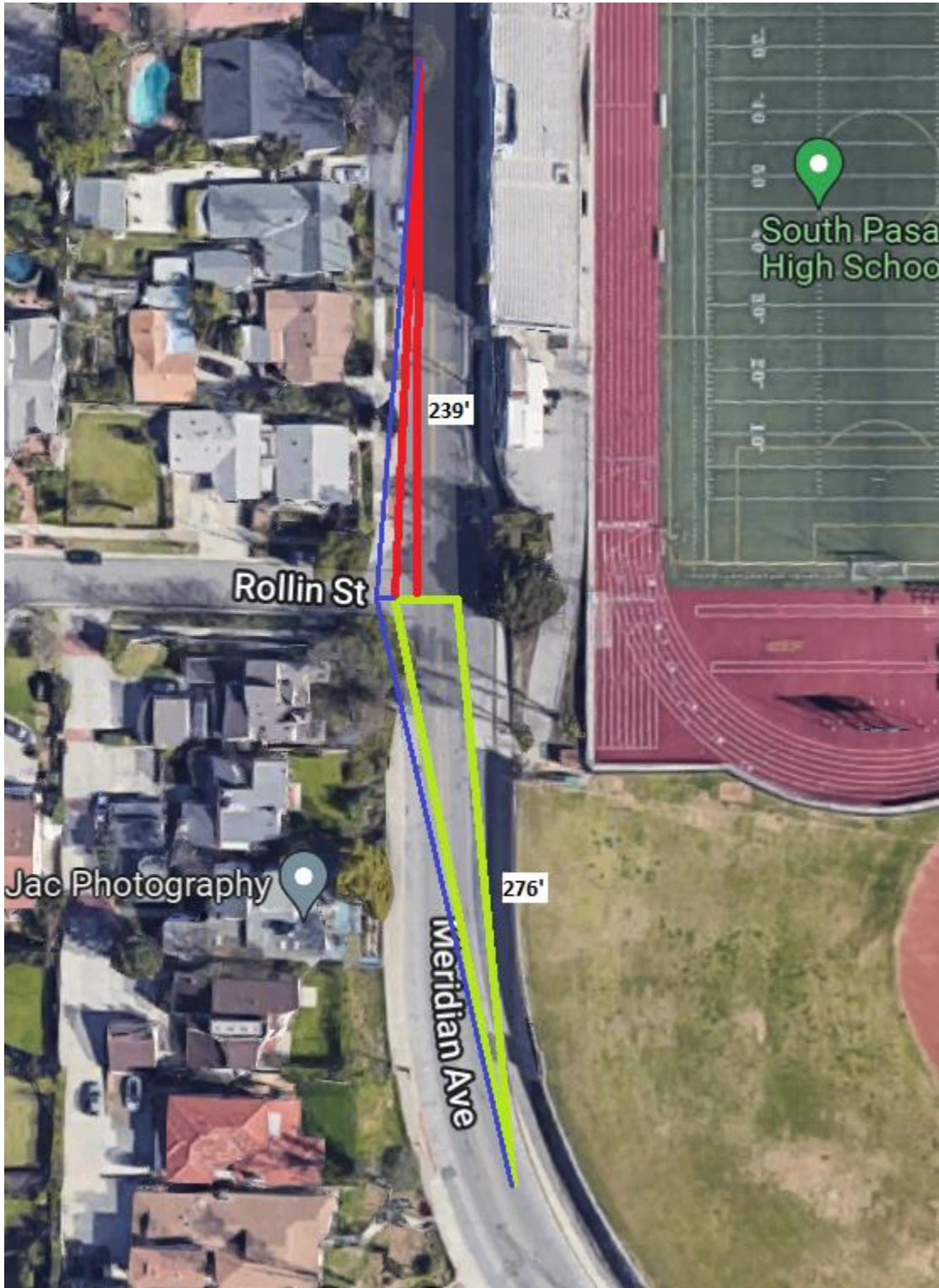


Exhibit C – Rollin Street Corner Sight Distance



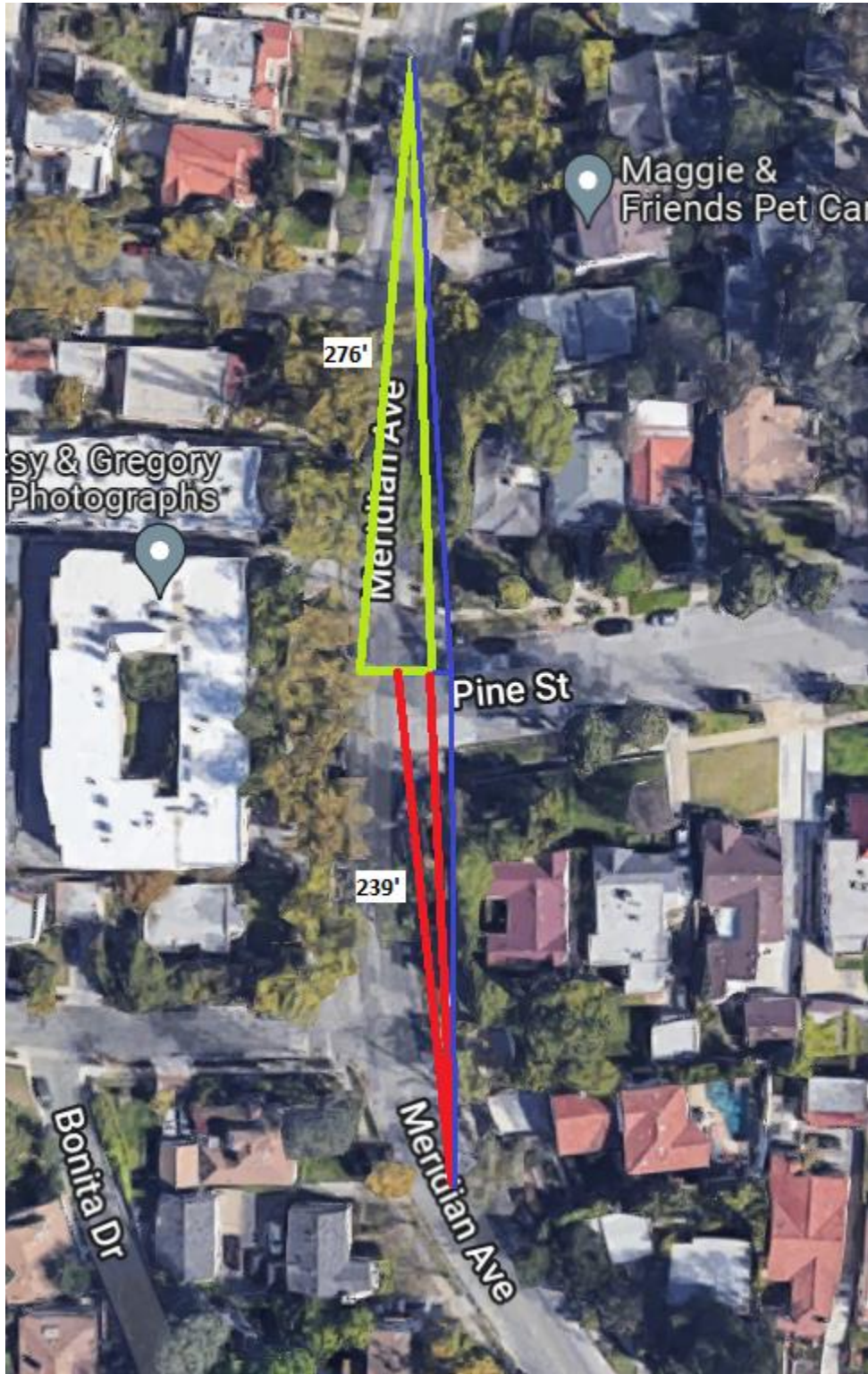


Exhibit D – Pine Street Corner Sight Distance





Exhibit E – Beech Street Corner Sight Distance



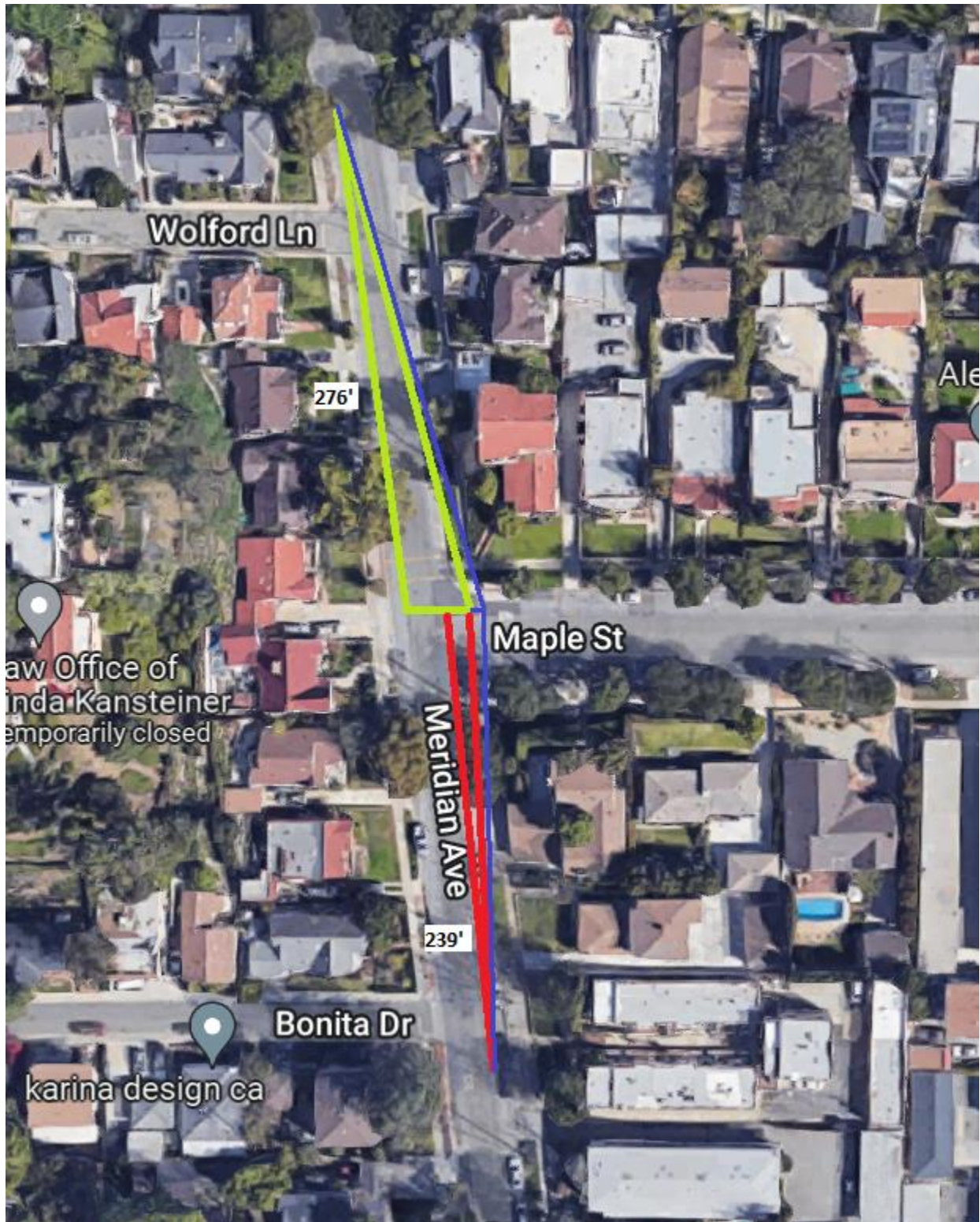


Exhibit F – Maple Street Corner Sight Distance



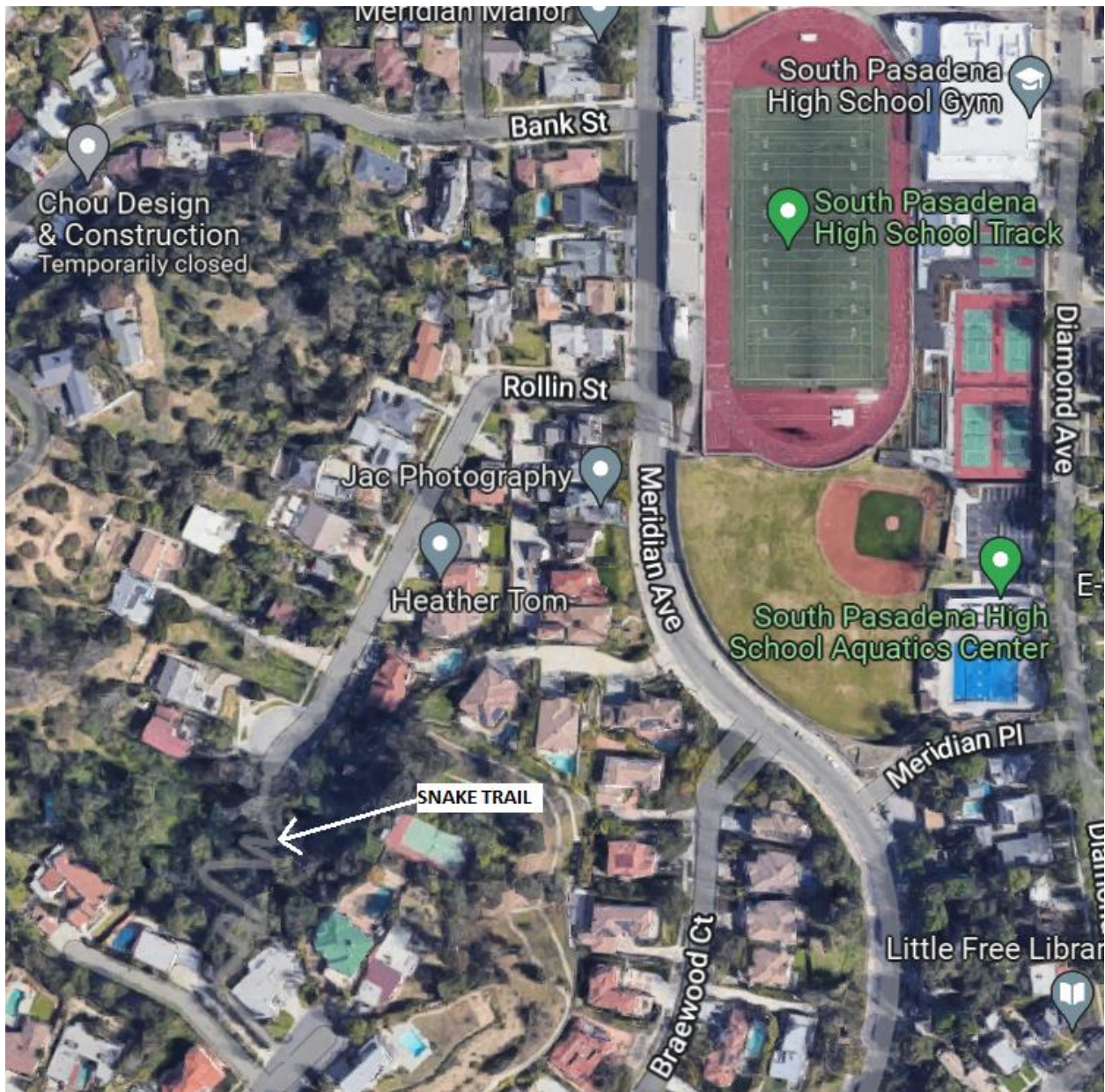


Exhibit G – Snake Trail



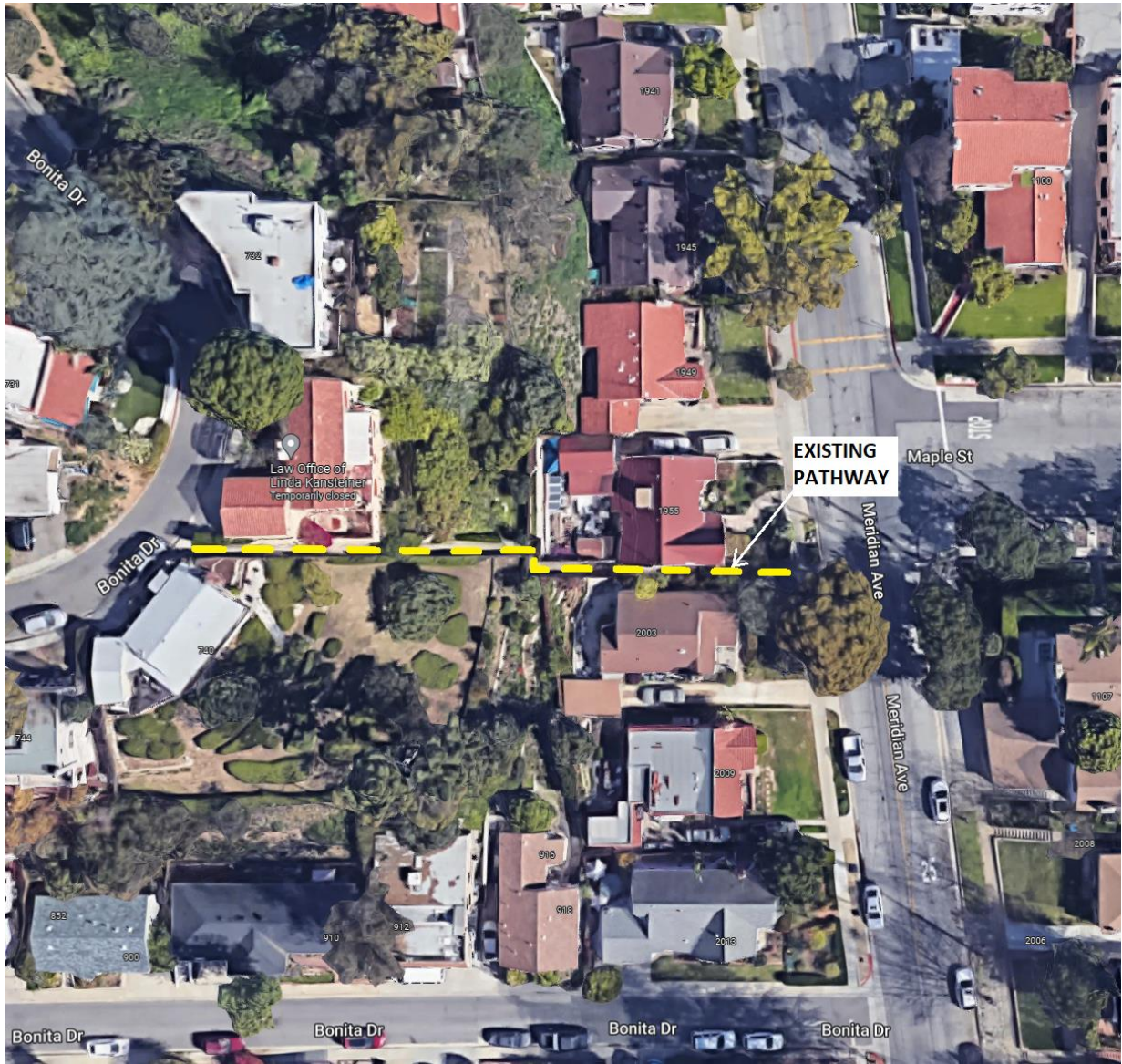


Exhibit H – Existing Pathway

**Item 3 Attachment 1**  
**SWITRS 2010-2022 Traffic Collision Data**

Row	CaseID	Year	PROC_DATE	Date	Time	MERIDIAN	Primary_Road	Secondary_Road	Distance	Direction	#_Parties	Collision_Type	Vehicle_Involved_With	1st Party Dir	1st Party Mvmnt	2nd Party Dir	2nd Party Mvmnt	3rd Party Dir	3rd Party Mvmnt
19	9423842	2022	2022-03-30	2022-02-24	16:04	X-BANK	MERIDIAN AV	BANK ST	231	North	2	Sideswipe	Parked Motor Vehicle	North	Proceeding Straight	North	Parked		
447	8665081	2018	2019-02-08	2018-05-05	13:10	X-BANK	MERIDIAN AV	BANK ST	15	North	1	Head-On	Fixed Object	North	Ran Off Road				
628	8532383	2017	2018-01-22	2017-09-21	19:26	X-BANK	MERIDIAN AV	BANK ST	378	North	1	Hit Object	Fixed Object	South	Stopped				
1280	6456322	2013	2014-07-09	2013-10-27	10:35	X-BANK	MERIDIAN AV	BANK ST	0	Not Stated, in l	2	Broadside	Other Motor Vehicle	East	Making Left Turn	South	Proceeding Straight		
1349	5898205	2012	2014-03-12	2012-09-18	14:22	X-BANK	MERIDIAN AV	BANK ST	110	North	2	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	South	Parked		
1412	6059146	2012	2014-06-04	2012-11-27	18:09	X-BANK	BANK ST	MERIDIAN AV	215	North	2	Sideswipe	Other Motor Vehicle	South	Proceeding Straight	South	Stopped		
104	9314616	2021	2021-08-26	2021-07-01	19:48	X-BEECH	MERIDIAN AV	BEECH ST	21	South	1	Hit Object	Fixed Object	North	Ran Off Road				
937	7198978	2015	2016-03-08	2015-12-23	16:49	X-BEECH	MERIDIAN AV	BEECH ST	66	South	2	Sideswipe	Parked Motor Vehicle	North	Proceeding Straight	North	Parked		
1202	6195629	2013	2014-09-12	2013-05-02	08:38	X-BEECH	MERIDIAN AV	BEECH ST	12	South	2	Sideswipe	Parked Motor Vehicle	South	Proceeding Straight	South	Parked		
40	9225646	2021	2021-03-10	2021-01-26	11:49	X-MAPLE	MERIDIAN AV	MAPLE ST	108	North	2	Sideswipe	Parked Motor Vehicle	South	Proceeding Straight	South	Not Stated		
88	9287539	2021	2021-07-28	2021-06-18	21:38	X-MAPLE	MERIDIAN AV	MAPLE ST	81	North	2	Rear End	Parked Motor Vehicle	North	Other Unsafe Turning	North	Not Stated		
622	8532368	2017	2018-01-23	2017-10-18	06:21	X-MAPLE	MERIDIAN AV	MAPLE ST	90	South	2	Rear End	Parked Motor Vehicle	South	Proceeding Straight	Not Stated	Parked		
1341	5876462	2012	2013-09-28	2012-06-19	17:33	X-MAPLE	MERIDIAN AV	MAPLE ST	0	Not Stated, in l	2	Vehicle/Pedestrian	Pedestrian	West	Making Right Turn	South	Proceeding Straight		
376	8983724	2019	2019-12-03	2019-09-22	12:30	X-OAK	MERIDIAN AV	OAK ST	406	North	2	Broadside	Bicycle	South	Entering Traffic	South	Proceeding Straight		
950	7199272	2015	2016-03-09	2015-11-18	17:36	X-OAK	MERIDIAN AV	OAK ST	461	North	2	Head-On	Other Motor Vehicle	South	Proceeding Straight	North	Proceeding Straight		
1015	6502381	2014	2015-03-12	2014-04-20	20:38	X-OAK	MERIDIAN AV	OAK ST	474	North	2	Rear End	Parked Motor Vehicle	North	Proceeding Straight	North	Parked		
169	9026124	2020	2020-02-25	2020-01-17	08:33	X-PINE	MERIDIAN AV	PINE ST	87	North	2	Rear End	Other Motor Vehicle	South	Backing	South	Stopped		
492	8840024	2018	2019-04-23	2018-11-12	23:20	X-ROLLIN	MERIDIAN AV	ROLLIN ST	15	South	2	Sideswipe	Other Motor Vehicle	East	Proceeding Straight	East	Proceeding Straight		
1277	6370818	2013	2014-12-30	2013-12-20	00:00	X-ROLLIN	MERIDIAN AV	ROLLIN ST	12	North	1	Hit Object	Fixed Object	North	Proceeding Straight				
1564	5489124	2011	2013-06-20	2011-12-25	00:25	X-ROLLIN	MERIDIAN AV	ROLLIN ST	537	South	1	Head-On	Fixed Object	South	Other Unsafe Turning				

**Item 3 Attachment 2**  
**2020 W. G. Zimmerman STOP Sign Analysis**

May 6, 2020

**MEMORANDUM**

Shahid Abbas  
Director of Public Works  
City of South Pasadena  
1414 Mission Street  
South Pasadena, CA 91030

**Stop Sign Analysis: Meridian Avenue at Oak Street, Pine Street, and Maple Street**

Dear Mr. Abbas:

The purpose of this memorandum is to present the findings of a Stop Sign Analysis related to the proposed installation of a Stop Sign at three (3) intersections along Meridian Avenue. The three intersections are at Oak Street, Pine Street, and Maple Street. An aerial map of the locations is provided as Exhibit A.

The stop sign analysis was based upon the Manual on Uniform Traffic Control Devices, 2009 Edition, produced by the Federal Highway Administration (FHWA) which was amended in 2014 by the California Department of Transportation and also considered street geometry, sight distance, safety, and traffic patterns.

**California Manual of Uniform Traffic Control and Devices (CA MUTCD) Criteria:**

The California Manual of Uniform Traffic Control Devices, 2014 Edition (CA MUTCD) provides guidance and criteria for Multi-Way STOP Applications in Section 2B.07. A stop sign should not be installed unless one or more of these criteria is met. Section 2B.07 of the CA MUTCD recommends that engineering judgment be used in the evaluation of the criteria to ensure that a stop sign will improve the overall safety and/or operation of the intersection. Typically, multi-way stop control is used where the volume of traffic on the minor road is approximately equal to the major road.

As per Section 2B.07 of the CA MUTCD, the decision to install a multi-way stop should be based on an engineering study and the following criteria should be considered 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.*

### **Methodology:**

The CAMUTCD provides guidance for stop sign applications for traffic volume, sight distance, and accident history. On Wednesday, January 22, 2020, National Data & Surveying Services (NDS) collected peak hour traffic data at each of the intersections (Oak Street, Pine Street, and Maple Street) along with traffic volumes just north of the Meridian Avenue and Oak Street intersection.

Intersection vehicular volumes, major street volumes, and accident data were reviewed for each of the intersections. After further review, none of the intersections satisfy the conditions presented in points A-D of Section 2B.07 Multi-Way STOP Applications of the CA MUTCD.

### **Conclusions:**

#### **Meridian Avenue and Oak Street**

The intersection of Meridian Avenue and Oak Street is a t-intersection as shown on the attached aerial photo. Approximately 150 feet north of Oak Street, Meridian Avenue is approximately 40 feet wide and then transitions to 35 feet. Prior to the transition, parking is allowed on both sides of Meridian north of the intersection, south of the intersection parking is allowed on both sides except for the easterly side of the street where there is 97 feet of red curb to prevent parked cars from blocking the line of sight for vehicles making a right turn onto Meridian from Oak. Along the west side of the intersection there is a driveway that serves a single-family residence. Oak Street is 30 feet wide which allows for parking along both sides of the street. Westbound Oak currently has a stop sign, while the north and southbound legs Meridian Avenue do not. The southerly leg of the intersection has a crosswalk with in-pavement lighting along with the appropriate signage.

Accident history obtained from SWITRS from January 31, 2019 – January 31, 2020 shows that there was only one (1) accident at the intersection which does not satisfy the requirement of five (5) accidents within a 12-month period. The summary of the accident(s) is presented in the Table 1 below:

Table 1: Meridian Avenue and Oak Street 12-Month Accident History			
Date of Collision	Type of Collision	Collision Severity	Motor Vehicle Involved With
9/22/2019	Broadside	Injury (Complaint of Pain)	Bicycle

Traffic volumes including pedestrian and bicycle volumes were analyzed for the intersection. Based on the data collected by NDS, the average daily volume (ADT) of Meridian Avenue is 9,620 vehicles per day where 4,767 vehicles head north and 4,853 vehicles go south. The data along Meridian Avenue shows that the vehicular volume from Meridian does average at least 300 vehicles per hour for any 8 hours of an average day. Although an ADT count was not conducted on Oak Street, the peak hours of the intersection was reviewed. Typically, the peak hour of an intersection experiences the heaviest amount of traffic during the day. The peak hour data which includes vehicles, pedestrians, and bicycles was tabulated for Oak Street is summarized in Table 2 below.

Table 2: Vehicles, Pedestrians, and Bicycles Entering from Oak Street During the Peak Hour(s)						
Intersection	AM Peak 7:30AM – 8:30AM		Noon Peak 11:30AM – 12:30PM		PM Peak 5:00PM – 6:00PM	
	Meridian Avenue and Oak Street	Vehicles	114	Vehicles	30	Vehicles
Pedestrian		36	Pedestrian	14	Pedestrian	31
Bicycles		0	Bicycles	0	Bicycles	0
<b>AM Total</b>		<b>150</b>	<b>Noon Total</b>	<b>44</b>	<b>PM Total</b>	<b>80</b>

Based on these numbers, this intersection does not satisfy the minimum of 200 units vehicular volume for a minor street. Therefore, this intersection does not meet the requirements for minimum volumes for a multi-way stop.

### Meridian Avenue and Pine Street

The intersection of Meridian Avenue and Pine Street is a t-intersection. At this intersection, Meridian Avenue is 35 feet wide which allows for parking on both sides of Meridian north and south of Pine. Along the westerly side of Meridian there is an apartment complex. Pine Street is 45 feet wide, has a downward slope which meets Meridian Avenue, and parking is allowed on both sides of Pine Street. The westbound leg of Pine Street has a stop sign, while the north and southbound legs of Meridian Avenue does not.

Accident history obtained from SWITRS from January 31, 2019 – January 31, 2020 shows that there was only one (1) accident at the Meridian Avenue and Pine Street intersection, which does not satisfy the requirement of five (5) accidents within a 12-month period.

Table 3: Meridian Avenue and Pine Street 12-Month Accident History			
Date of Collision	Type of Collision	Collision Severity	Motor Vehicle Involved With
01/17/2020	Rear End	Injury (Complaint of Pain)	Other Motor Vehicle



Traffic volumes including pedestrian and bicycle volumes were analyzed for the intersection. Based on the data collected by NDS, the average daily volume (ADT) of Meridian Avenue is 9,620 vehicles per day where 4,767 vehicles head north and 4,853 vehicles go south. The data along Meridian Avenue shows that the vehicular volume from Meridian does average at least 300 vehicles per hour for any 8 hours of an average day. Although an ADT count was not conducted on Pine Street, the peak hours of the intersection was reviewed. Typically, the peak hour of an intersection experiences the heaviest amount of traffic during the day. The peak hour data which includes vehicles, pedestrians, and bicycles was tabulated for Pine Street is summarized in Table 4 below.

**Table 4: Vehicles, Pedestrians, and Bicycles Entering from Pine Street During the Peak Hour(s)**

Intersection	AM Peak 7:30AM – 8:30AM		Noon Peak 11:30AM – 12:30PM		PM Peak 5:00PM – 6:00PM	
	Meridian Avenue and Pine Street	Vehicles	77	Vehicles	28	Vehicles
Pedestrian		17	Pedestrian	1	Pedestrian	15
Bicycles		0	Bicycles	0	Bicycles	0
<b>AM Total</b>		<b>94</b>	<b>Noon Total</b>	<b>29</b>	<b>PM Total</b>	<b>66</b>

Based on these numbers, this intersection does not satisfy the minimum of 200 units vehicular volume for a minor street. Therefore, this intersection does not meet the requirements for minimum volumes for a multi-way stop.

**Meridian Avenue and Maple Street**

The Meridian Avenue and Maple Street intersection is a t-intersection located south of the Pine Street intersection. Meridian Avenue is 36 feet wide while Maple Street is 48 feet wide which allows parking on both sides of the street. Maple Street slopes down to meet Meridian Avenue. The area surrounding the intersection consists mainly of single-family residences. On the north leg of the intersection there is a crosswalk. Maple Street is stop controlled while Meridian Avenue is not.

Accident history obtained from SWITRS from January 31, 2019 – January 31, 2020 shows that there were no accidents at the Meridian Avenue and Maple Street intersection, which does not satisfy the requirement of five (5) accidents within a 12-month period.

Traffic volumes including pedestrian and bicycle volumes were analyzed for the intersection. Based on the data collected by NDS, the average daily volume (ADT) of Meridian Avenue is 9,620 vehicles per day where 4,767 vehicles head north and 4,853 vehicles go south. The data along Meridian Avenue shows that the vehicular volume from Meridian does average at least 300 vehicles per hour for any 8 hours of an average day. Although an ADT count was not conducted on Maple Street, the peak hours of the intersection was reviewed. Typically, the peak hour of an intersection experiences the heaviest amount of traffic during the day. The peak hour data which includes vehicles, pedestrians, and bicycles was tabulated for Maple Street and present in Table 5 below.

Table 5: Vehicles, Pedestrians, and Bicycles Entering from Maple Street During the Peak Hour(s)						
Intersection	AM Peak 7:15AM – 8:15AM		Noon Peak 11:30AM – 12:30PM		PM Peak 5:00PM – 6:00PM	
	Meridian Avenue and Maple Street	Vehicles	251	Vehicles	88	Vehicles
Pedestrian		27	Pedestrian	13	Pedestrian	46
Bicycles		2	Bicycles	2	Bicycles	1
<b>AM Total</b>		<b>280</b>	<b>Noon Total</b>	<b>103</b>	<b>PM Total</b>	<b>304</b>

Although, the AM and PM peak reaches the required 200 unit threshold, the noon peak does not which indicates that during the non-peak hours the 200 unit minimum threshold is probably not met. Based on the data, any other 5 hours of the day of this intersection does not reach the minimum of 200 units needed to satisfy the minimum vehicular volume for a minor street. Therefore, this intersection does not meet the requirements for minimum volumes for a multi-way stop.

**Recommendations:**

**Meridian Avenue and Oak Street:** It is not recommended to install a STOP sign on the northbound and southbound leg of Meridian Avenue. It is recommended to continue to monitor the intersection for excessive speeds, pedestrians, and other traffic conditions. It is also recommended to install horizontal alignment warning signs (W1-4) with a 25 MPH speed advisory sign (W13-1P) along Meridian Avenue to help discourage speeding.

**Meridian Avenue and Pine Street:** It is not recommended to install a STOP sign on the northbound and southbound leg of Meridian Avenue. It is recommended to continue to monitor the intersection for excessive speeds, pedestrians, and other traffic conditions. It is also recommended to install horizontal alignment warning signs (W1-4) with a 25 MPH speed advisory sign (W13-1P) along Meridian Avenue to help discourage speeding along the corridor.

**Meridian Avenue and Maple Street:** It is not recommended to install a STOP sign on the northbound and southbound leg of Meridian Avenue. It is recommended to continue to monitor the intersection for excessive speeds, pedestrians, and other traffic conditions. It is also recommended to install a 25 MPH speed advisory sign (W13-1P) on the existing W1-5 sign on the northeast corner of the intersection to help discourage speeding along the corridor.

The existing crosswalk on the north leg of the intersection currently does not have adequate access for a pedestrian to enter the crosswalk. At the westerly side of the crosswalk, the crosswalk ends at the curb which forces the pedestrian to step up onto the sidewalk. On the easterly end of the crosswalk, the crosswalk ends at the north wing of the existing curb ramp. To enter the crosswalk, the pedestrian must step down into the crosswalk. This does not meet the minimum criteria for ADA access. Pedestrian data was collected during the AM, Noon, and PM peak hours to determine how many pedestrians use the crosswalk. During the peak hours there were 4 pedestrians in the morning, 4 at noon, and 4 during the PM peak. Based on the numbers and existing conditions, it is recommended to remove the crosswalk based on language provided in Section 21950.5 of the California Vehicle Code (CVC).

Sincerely,

**W.G. Zimmerman Engineering, Inc.**



Bill Zimmerman, PE, TE, PT/DE  
President



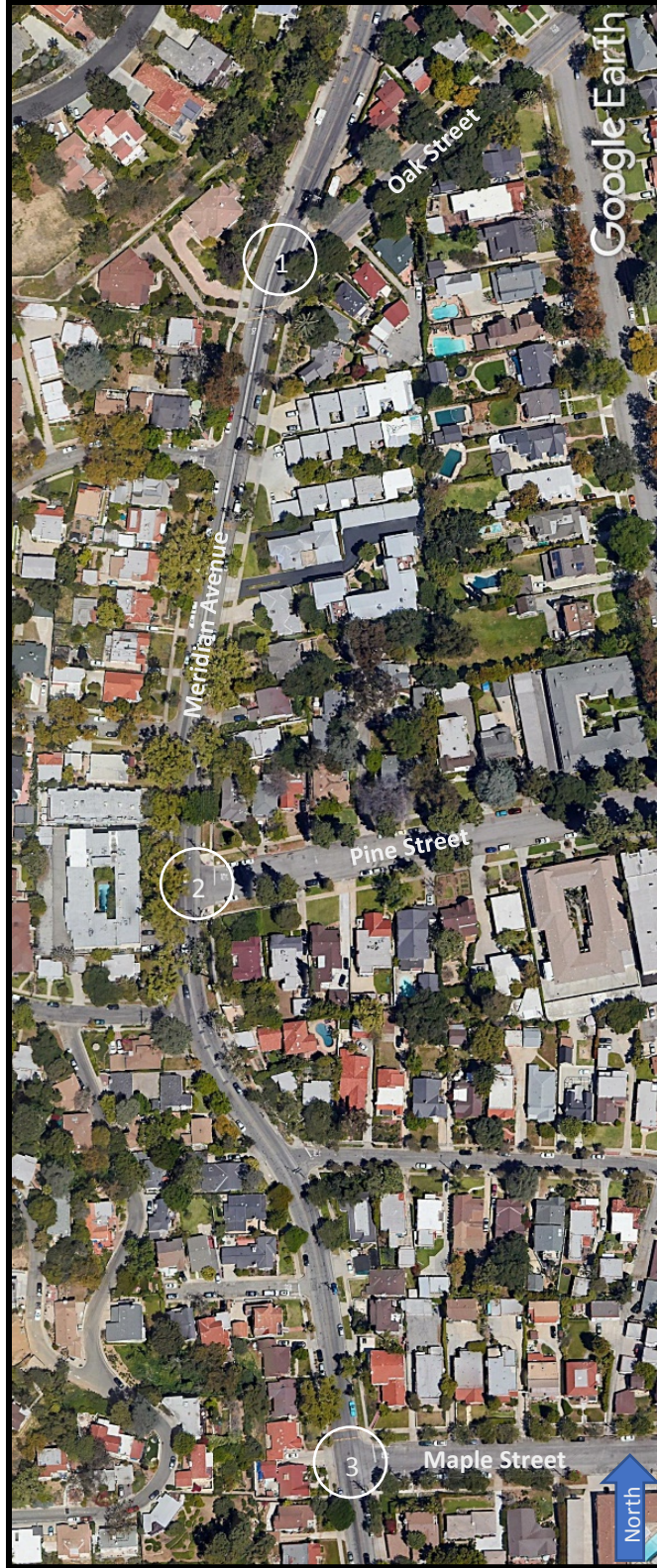


Exhibit A  
Aerial Photo

**DATA**

**CLASSIFICATION**  
Meridian Ave N/O Oak St

Day: Wednesday  
Date: 1/22/2020

City: South Pasadena  
Project #: CA20\_5029\_002n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
0:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
0:30	0	3	0	0	1	0	0	0	0	0	0	0	0	4
0:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:30	0	0	1	0	1	0	0	0	0	0	0	0	0	2
1:45	0	3	1	0	0	0	0	0	0	0	0	0	0	4
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5
4:45	0	6	2	0	0	0	0	0	0	0	0	0	0	8
5:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
5:15	0	11	1	0	0	0	0	0	0	0	0	0	0	12
5:30	0	13	3	0	0	0	0	0	0	0	0	0	0	16
5:45	0	13	3	0	0	0	0	0	0	0	0	0	0	16
6:00	0	26	4	0	0	0	0	0	0	0	0	0	0	30
6:15	0	32	6	0	0	0	0	0	0	0	0	0	0	38
6:30	0	36	9	0	0	0	0	0	0	0	0	0	0	45
6:45	0	55	11	0	1	0	0	0	0	0	0	0	0	67
7:00	0	70	8	0	1	0	0	0	0	0	0	0	0	79
7:15	0	125	15	0	0	0	0	0	0	0	0	0	0	140
7:30	0	129	22	0	1	0	0	0	0	0	0	0	0	152
7:45	0	137	24	1	3	0	0	0	0	0	0	0	0	165
8:00	0	100	13	0	1	0	0	0	0	0	0	0	0	114
8:15	0	78	9	0	0	0	0	0	0	0	0	0	0	87
8:30	1	98	17	0	2	0	0	0	0	0	0	0	0	118
8:45	0	85	17	0	0	0	0	0	0	0	0	0	0	102
9:00	0	83	5	0	1	0	0	0	0	0	0	0	0	89
9:15	0	60	11	0	0	0	0	0	0	0	0	0	0	71
9:30	0	54	14	0	1	0	0	0	0	0	0	0	0	69
9:45	0	55	19	0	2	0	0	0	0	0	0	0	0	76
10:00	0	39	15	0	0	0	0	0	0	0	0	0	0	54
10:15	0	47	7	0	0	0	0	0	0	0	0	0	0	54
10:30	0	38	8	0	0	0	0	0	0	0	0	0	0	46
10:45	1	49	9	0	3	0	0	0	0	0	0	0	0	62
11:00	0	43	8	0	1	0	0	0	0	0	0	0	0	52
11:15	0	41	11	0	1	0	0	0	0	0	0	0	0	53
11:30	0	41	10	0	0	0	0	0	0	0	0	0	0	51
11:45	0	49	11	0	0	0	0	0	0	0	0	0	0	60
12:00 PM	0	49	11	1	1	0	0	0	0	0	0	0	0	62
12:15	0	40	16	0	2	0	0	0	0	0	0	0	0	58
12:30	0	50	9	0	0	0	0	0	0	0	0	0	0	59
12:45	0	46	7	0	3	0	0	0	0	0	0	0	0	56
13:00	1	48	8	0	1	0	0	0	0	0	0	0	0	58
13:15	0	55	6	0	0	0	0	0	0	0	0	0	0	61
13:30	1	56	7	0	1	0	0	0	0	0	0	0	0	65
13:45	0	67	9	0	1	0	0	0	0	0	0	0	0	77
14:00	0	63	16	0	2	0	0	0	0	0	0	0	0	81
14:15	0	64	8	0	0	0	0	0	0	0	0	0	0	72
14:30	1	70	13	0	1	0	0	0	0	0	0	0	0	85
14:45	0	98	18	0	0	0	0	0	0	0	0	0	0	116
15:00	1	90	17	0	1	0	0	0	0	0	0	0	0	109
15:15	0	59	20	0	1	0	0	0	0	0	0	0	0	80
15:30	0	55	14	0	1	0	0	0	0	0	0	0	0	70
15:45	1	65	12	0	1	0	0	0	0	0	0	0	0	79
16:00	0	83	15	0	2	0	0	0	0	0	0	0	0	100
16:15	0	84	13	0	4	0	0	0	0	0	0	0	0	101
16:30	0	76	12	0	0	0	0	0	0	0	0	0	0	88
16:45	0	74	17	0	2	0	0	0	0	0	0	0	0	93
17:00	0	105	19	0	0	0	0	0	0	0	0	0	0	124
17:15	0	95	14	0	1	0	0	0	0	0	0	0	0	110
17:30	1	96	13	0	1	0	0	0	0	0	0	0	0	111
17:45	0	93	14	0	0	0	0	0	0	0	0	0	0	107
18:00	0	81	4	0	1	0	0	0	0	0	0	0	0	86
18:15	0	71	10	0	1	0	0	0	0	0	0	0	0	82
18:30	0	61	11	0	2	0	0	0	0	0	0	0	0	74
18:45	0	60	11	0	0	0	0	0	0	0	0	0	0	71
19:00	0	56	3	0	0	0	0	0	0	0	0	0	0	59
19:15	0	45	3	0	0	0	0	0	0	0	0	0	0	48
19:30	0	44	3	0	1	0	0	0	0	0	0	0	0	48
19:45	0	24	8	0	0	0	0	0	0	0	0	0	0	32
20:00	0	26	2	0	1	0	0	0	0	0	0	0	0	29
20:15	0	29	3	0	0	0	0	0	0	0	0	0	0	32
20:30	0	23	3	0	0	0	0	0	0	0	0	0	0	26
20:45	0	25	1	0	0	0	0	0	0	0	0	0	0	26
21:00	0	31	2	0	0	0	0	0	0	0	0	0	0	33
21:15	0	15	2	0	0	0	0	0	0	0	0	0	0	17
21:30	0	26	1	0	0	0	0	0	0	0	0	0	0	27
21:45	0	12	1	0	0	0	0	0	0	0	0	0	0	13
22:00	0	23	2	0	0	0	0	0	0	0	0	0	0	25
22:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
22:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
22:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10
23:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
23:15	0	3	1	0	0	0	0	0	0	0	0	0	0	4
23:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
23:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
<b>Totals</b>	<b>8</b>	<b>4021</b>	<b>684</b>	<b>2</b>	<b>52</b>									<b>4797</b>
% of Totals	0%	84%	14%	0%	1%									100%

<b>AM Volumes</b>	2	1646	298	1	20	0	0	0	0	0	0	0	0	1967
% AM	0%	35%	6%	0%	0%									41%
<b>AM Peak Hour</b>														
<b>Volume</b>														
<b>PM Volumes</b>	6	2375	386	1	32	0	0	0	0	0	0	0	0	2800
% PM	0%	50%	8%	0%	1%									59%
<b>PM Peak Hour</b>														
<b>Volume</b>														
<b>Directional Peak Periods</b>														
<b>All Classes</b>														
		<b>Volume</b>	<b>%</b>			<b>Volume</b>	<b>%</b>		<b>Volume</b>	<b>%</b>		<b>Volume</b>	<b>%</b>	
		957	20%			496	10%		834	17%		2480	52%	

Classification Definitions				
1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	







**CLASSIFICATION**

Meridian Ave N/O Oak St

Day: Wednesday

Date: 1/22/2020

City: South Pasadena

Project #: CA20\_5029\_002n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	10	0	0	1	0	0	0	0	0	0	0	0	11
1:00	0	7	2	0	1	0	0	0	0	0	0	0	0	10
2:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
4:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
5:00	0	43	9	0	0	0	0	0	0	0	0	0	0	52
6:00	0	149	30	0	1	0	0	0	0	0	0	0	0	180
7:00	0	461	69	1	5	0	0	0	0	0	0	0	0	536
8:00	1	361	56	0	3	0	0	0	0	0	0	0	0	421
9:00	0	252	49	0	4	0	0	0	0	0	0	0	0	305
10:00	1	173	39	0	3	0	0	0	0	0	0	0	0	216
11:00	0	174	40	0	2	0	0	0	0	0	0	0	0	216
12:00 PM	0	185	43	1	6	0	0	0	0	0	0	0	0	235
13:00	2	226	30	0	3	0	0	0	0	0	0	0	0	261
14:00	1	295	55	0	3	0	0	0	0	0	0	0	0	354
15:00	2	269	63	0	4	0	0	0	0	0	0	0	0	338
16:00	0	317	57	0	8	0	0	0	0	0	0	0	0	382
17:00	1	389	60	0	2	0	0	0	0	0	0	0	0	452
18:00	0	273	36	0	4	0	0	0	0	0	0	0	0	313
19:00	0	169	17	0	1	0	0	0	0	0	0	0	0	187
20:00	0	103	9	0	1	0	0	0	0	0	0	0	0	113
21:00	0	84	6	0	0	0	0	0	0	0	0	0	0	90
22:00	0	46	6	0	0	0	0	0	0	0	0	0	0	52
23:00	0	19	4	0	0	0	0	0	0	0	0	0	0	23
<b>Totals</b>	<b>8</b>	<b>4021</b>	<b>684</b>	<b>2</b>	<b>52</b>									<b>4767</b>
<b>% of Totals</b>	<b>0%</b>	<b>84%</b>	<b>14%</b>	<b>0%</b>	<b>1%</b>									<b>100%</b>

<b>AM Volumes</b>	2	1646	298	1	20	0	0	0	0	0	0	0	0	1967
<b>% AM</b>	0%	35%	6%	0%	0%									41%
<b>AM Peak Hour</b>	8:00	7:00	7:00	7:00	7:00									7:00
<b>Volume</b>	1	461	69	1	5									536
<b>PM Volumes</b>	6	2375	386	1	32	0	0	0	0	0	0	0	0	2800
<b>% PM</b>	0%	50%	8%	0%	1%									59%
<b>PM Peak Hour</b>	13:00	17:00	15:00	12:00	16:00									17:00
<b>Volume</b>	2	389	63	1	8									452
<b>Directional Peak Periods</b>	<b>AM 7-9</b>		<b>NOON 12-2</b>		<b>PM 4-6</b>		<b>Off Peak Volumes</b>							
<b>All Classes</b>	Volume		%	Volume		%	Volume		%	Volume		%		
	957	↔	20%	496	↔	10%	834	↔	17%	2480	↔	52%		

**Classification Definitions**

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

**CLASSIFICATION**

Meridian Ave N/O Oak St

Day: Wednesday

Date: 1/22/2020

City: South Pasadena

Project #: CA20\_5029\_002s

**South Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	16	2	0	0	0	0	0	0	0	0	0	0	18
1:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
2:00	0	9	1	0	1	0	0	0	0	0	0	0	0	11
3:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
4:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
5:00	0	18	4	0	3	0	0	0	0	0	0	0	0	25
6:00	0	98	15	0	0	0	0	0	0	0	0	0	0	113
7:00	2	337	70	1	5	1	0	0	0	0	0	0	0	416
8:00	1	319	75	1	5	0	0	0	0	0	0	0	0	401
9:00	0	190	42	1	2	1	0	0	0	0	0	0	0	236
10:00	1	132	32	1	9	1	0	0	0	0	0	0	0	176
11:00	2	157	34	0	0	1	0	0	0	0	0	0	0	194
12:00 PM	0	170	39	1	1	0	0	0	0	0	0	0	0	211
13:00	1	178	34	0	4	0	0	0	0	0	0	0	0	217
14:00	2	223	61	0	5	1	0	0	0	0	0	0	0	292
15:00	1	342	69	0	4	1	0	0	0	0	0	0	0	417
16:00	3	336	82	0	3	1	0	0	0	0	0	0	0	425
17:00	3	504	82	0	7	0	0	0	0	0	0	0	0	596
18:00	0	351	54	0	1	0	0	0	0	0	0	0	0	406
19:00	0	218	20	0	1	0	0	0	0	0	0	0	0	239
20:00	0	178	13	0	0	0	0	0	0	0	0	0	0	191
21:00	0	121	8	0	0	0	0	0	0	0	0	0	0	129
22:00	0	65	11	0	0	0	0	0	0	0	0	0	0	76
23:00	0	38	3	0	0	1	0	0	0	0	0	0	0	42
<b>Totals</b>	<b>16</b>	<b>4019</b>	<b>754</b>	<b>5</b>	<b>51</b>	<b>8</b>								<b>4853</b>
<b>% of Totals</b>	<b>0%</b>	<b>83%</b>	<b>16%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>								<b>100%</b>

<b>AM Volumes</b>	6	1295	278	4	25	4	0	0	0	0	0	0	0	1612
<b>% AM</b>	0%	27%	6%	0%	1%	0%								33%
<b>AM Peak Hour</b>	7:00	7:00	8:00	7:00	10:00	7:00								7:00
<b>Volume</b>	2	337	75	1	9	1								416
<b>PM Volumes</b>	10	2724	476	1	26	4	0	0	0	0	0	0	0	3241
<b>% PM</b>	0%	56%	10%	0%	1%	0%								67%
<b>PM Peak Hour</b>	16:00	17:00	16:00	12:00	17:00	14:00								17:00
<b>Volume</b>	3	504	82	1	7	1								596
<b>Directional Peak Periods</b>	<b>AM 7-9</b>		<b>NOON 12-2</b>		<b>PM 4-6</b>		<b>Off Peak Volumes</b>							
<b>All Classes</b>	Volume		%	Volume		%	Volume		%	Volume		%		
	817	↔	17%	428	↔	9%	1021	↔	21%	2587	↔	53%		

**Classification Definitions**

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

**CLASSIFICATION**

Meridian Ave N/O Oak St

Day: Wednesday

Date: 1/22/2020

City: South Pasadena

Project #: CA20\_5029\_002

**Summary**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	26	2	0	1	0	0	0	0	0	0	0	0	29
1:00	0	14	4	0	1	0	0	0	0	0	0	0	0	19
2:00	0	11	1	0	1	0	0	0	0	0	0	0	0	13
3:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
4:00	0	20	4	0	0	0	0	0	0	0	0	0	0	24
5:00	0	61	13	0	3	0	0	0	0	0	0	0	0	77
6:00	0	247	45	0	1	0	0	0	0	0	0	0	0	293
7:00	2	798	139	2	10	1	0	0	0	0	0	0	0	952
8:00	2	680	131	1	8	0	0	0	0	0	0	0	0	822
9:00	0	442	91	1	6	1	0	0	0	0	0	0	0	541
10:00	2	305	71	1	12	1	0	0	0	0	0	0	0	392
11:00	2	331	74	0	2	1	0	0	0	0	0	0	0	410
12:00 PM	0	355	82	2	7	0	0	0	0	0	0	0	0	446
13:00	3	404	64	0	7	0	0	0	0	0	0	0	0	478
14:00	3	518	116	0	8	1	0	0	0	0	0	0	0	646
15:00	3	611	132	0	8	1	0	0	0	0	0	0	0	755
16:00	3	653	139	0	11	1	0	0	0	0	0	0	0	807
17:00	4	893	142	0	9	0	0	0	0	0	0	0	0	1048
18:00	0	624	90	0	5	0	0	0	0	0	0	0	0	719
19:00	0	387	37	0	2	0	0	0	0	0	0	0	0	426
20:00	0	281	22	0	1	0	0	0	0	0	0	0	0	304
21:00	0	205	14	0	0	0	0	0	0	0	0	0	0	219
22:00	0	111	17	0	0	0	0	0	0	0	0	0	0	128
23:00	0	57	7	0	0	1	0	0	0	0	0	0	0	65
<b>Totals</b>	<b>24</b>	<b>8040</b>	<b>1438</b>	<b>7</b>	<b>103</b>	<b>8</b>								<b>9620</b>
<b>% of Totals</b>	<b>0%</b>	<b>84%</b>	<b>15%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>								<b>100%</b>

<b>AM Volumes</b>	8	2941	576	5	45	4	0	0	0	0	0	0	0	3579
<b>% AM</b>	0%	31%	6%	0%	0%	0%								37%
<b>AM Peak Hour</b>	7:00	7:00	7:00	7:00	10:00	7:00								7:00
<b>Volume</b>	2	798	139	2	12	1								952
<b>PM Volumes</b>	16	5099	862	2	58	4	0	0	0	0	0	0	0	6041
<b>% PM</b>	0%	53%	9%	0%	1%	0%								63%
<b>PM Peak Hour</b>	17:00	17:00	17:00	12:00	16:00	14:00								17:00
<b>Volume</b>	4	893	142	2	11	1								1048

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1774	↔ 18%	924	↔ 10%	1855	↔ 19%	5067	↔ 53%

**Classification Definitions**

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

**VOLUME**  
 Meridian Ave N/O Oak St

Day: Wednesday  
 Date: 1/22/2020

City: South Pasadena  
 Project #: CA20\_5029\_002

DAILY TOTALS					NB	SB	EB	WB	Total		
					4,767	4,853	0	0	9,620		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
0:00	1	4	0	0	5	12:00	62	43	0	0	105
0:15	5	4	0	0	9	12:15	58	59	0	0	117
0:30	4	4	0	0	8	12:30	59	51	0	0	110
0:45	1	11	6	18	7	12:45	56	235	58	211	114
1:00	2	2	0	0	4	13:00	58	56	0	0	114
1:15	2	3	0	0	5	13:15	61	47	0	0	108
1:30	2	3	0	0	5	13:30	65	58	0	0	123
1:45	4	10	1	9	5	13:45	77	261	56	217	133
2:00	0	4	0	0	4	14:00	81	60	0	0	141
2:15	1	4	0	0	5	14:15	72	66	0	0	138
2:30	1	1	0	0	2	14:30	85	74	0	0	159
2:45	0	2	2	11	2	14:45	116	354	92	292	208
3:00	1	0	0	0	1	15:00	109	101	0	0	210
3:15	1	1	0	0	2	15:15	80	112	0	0	192
3:30	0	2	0	0	2	15:30	70	109	0	0	179
3:45	1	3	1	4	2	15:45	79	338	95	417	174
4:00	2	4	0	0	6	16:00	100	115	0	0	215
4:15	0	0	0	0	0	16:15	101	102	0	0	203
4:30	5	2	0	0	7	16:30	88	97	0	0	185
4:45	8	15	3	9	11	16:45	93	382	111	425	204
5:00	8	4	0	0	12	17:00	124	152	0	0	276
5:15	12	6	0	0	18	17:15	110	152	0	0	262
5:30	16	4	0	0	20	17:30	111	155	0	0	266
5:45	16	52	11	25	27	17:45	107	452	137	596	244
6:00	30	6	0	0	36	18:00	86	134	0	0	220
6:15	38	13	0	0	51	18:15	82	96	0	0	178
6:30	45	40	0	0	85	18:30	74	80	0	0	154
6:45	67	180	54	113	121	18:45	71	313	96	406	167
7:00	79	71	0	0	150	19:00	59	70	0	0	129
7:15	140	70	0	0	210	19:15	48	72	0	0	120
7:30	152	110	0	0	262	19:30	48	44	0	0	92
7:45	165	536	165	416	330	19:45	32	187	53	239	85
8:00	114	122	0	0	236	20:00	29	51	0	0	80
8:15	87	122	0	0	209	20:15	32	55	0	0	87
8:30	118	82	0	0	200	20:30	26	52	0	0	78
8:45	102	421	75	401	177	20:45	26	113	33	191	59
9:00	89	55	0	0	144	21:00	33	40	0	0	73
9:15	71	67	0	0	138	21:15	17	34	0	0	51
9:30	69	46	0	0	115	21:30	27	33	0	0	60
9:45	76	305	68	236	144	21:45	13	90	22	129	35
10:00	54	42	0	0	96	22:00	25	23	0	0	48
10:15	54	42	0	0	96	22:15	10	22	0	0	32
10:30	46	44	0	0	90	22:30	7	14	0	0	21
10:45	62	216	48	176	110	22:45	10	52	17	76	27
11:00	52	43	0	0	95	23:00	11	13	0	0	24
11:15	53	44	0	0	97	23:15	4	11	0	0	15
11:30	51	64	0	0	115	23:30	5	11	0	0	16
11:45	60	216	43	194	103	23:45	3	23	7	42	10
<b>TOTALS</b>	1967	1612			3579	<b>TOTALS</b>	2800	3241			6041
<b>SPLIT %</b>	55.0%	45.0%			37.2%	<b>SPLIT %</b>	46.3%	53.7%			62.8%

DAILY TOTALS					NB	SB	EB	WB	Total
					4,767	4,853	0	0	9,620

AM Peak Hour	7:15	7:30	7:15	PM Peak Hour	17:00	17:00	17:00
AM Pk Volume	571	519	1038	PM Pk Volume	452	596	1048
Pk Hr Factor	0.865	0.786	0.786	Pk Hr Factor	0.911	0.961	0.949
7 - 9 Volume	957	817	1774	4 - 6 Volume	834	1021	1855
7 - 9 Peak Hour	7:15	7:30	7:15	4 - 6 Peak Hour	17:00	17:00	17:00
7 - 9 Pk Volume	571	519	1038	4 - 6 Pk Volume	452	596	1048
Pk Hr Factor	0.865	0.786	0.865	Pk Hr Factor	0.911	0.961	0.949

# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Meridian Ave & Oak St  
 City: South Pasadena  
 Control: 1-Way Stop (WB)

Project ID: 20-05030-001  
 Date: 1/22/2020

### Total

NS/EW Streets:	Meridian Ave				Meridian Ave				Oak St				Oak St				TOTAL				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
AM	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
7:00 AM	0	79	5	0	3	69	0	0	0	0	0	0	4	0	7	0					167
7:15 AM	0	121	6	0	2	57	0	0	0	0	0	0	2	0	10	0					198
7:30 AM	0	137	28	0	19	84	0	0	0	0	0	0	2	0	17	0					287
7:45 AM	0	131	71	0	61	112	0	0	1	0	0	0	6	0	32	0					414
8:00 AM	0	87	22	0	13	113	0	0	0	0	0	0	12	0	35	0					282
8:15 AM	0	78	6	0	9	115	0	0	0	0	0	0	2	0	8	0					218
8:30 AM	0	109	9	0	5	87	0	0	0	0	0	0	2	0	5	0					217
8:45 AM	0	98	4	0	3	73	0	0	0	0	0	0	0	0	9	0					187
<b>TOTAL VOLUMES :</b>	0	840	151	0	115	710	0	0	1	0	0	0	30	0	123	0					1970
<b>APPROACH %'s :</b>	0.00%	84.76%	15.24%	0.00%	13.94%	86.06%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	19.61%	0.00%	80.39%	0.00%					
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																				
<b>PEAK HR VOL :</b>	0	433	127	0	102	424	0	0	1	0	0	0	22	0	92	0					1201
<b>PEAK HR FACTOR :</b>	0.000	0.790	0.447	0.000	0.418	0.922	0.000	0.000	0.250	0.000	0.000	0.000	0.458	0.000	0.657	0.000					0.725
				0.693				0.760				0.250				0.606					
NOON	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0					
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
11:00 AM	0	50	4	0	2	45	0	0	0	0	0	0	2	0	3	0					106
11:15 AM	0	49	5	0	1	42	0	0	0	0	0	0	3	0	6	0					106
11:30 AM	0	41	2	0	7	45	0	0	0	0	0	0	2	0	5	0					102
11:45 AM	0	61	6	0	3	50	0	0	0	0	0	0	1	0	0	0					121
12:00 PM	0	50	5	0	2	33	0	0	0	0	0	0	3	0	9	0					102
12:15 PM	0	51	1	0	5	55	0	0	0	0	0	0	2	0	4	0					118
12:30 PM	0	56	3	0	3	52	0	0	0	0	0	0	1	0	3	0					118
12:45 PM	0	55	4	0	3	54	0	0	0	0	0	0	5	0	3	0					124
<b>TOTAL VOLUMES :</b>	0	413	30	0	26	376	0	0	0	0	0	0	19	0	33	0					897
<b>APPROACH %'s :</b>	0.00%	93.23%	6.77%	0.00%	6.47%	93.53%	0.00%	0.00%					36.54%	0.00%	63.46%	0.00%					
<b>PEAK HR :</b>	12:00 PM - 01:00 PM																				
<b>PEAK HR VOL :</b>	0	212	13	0	13	194	0	0	0	0	0	0	11	0	19	0					462
<b>PEAK HR FACTOR :</b>	0.000	0.946	0.650	0.000	0.650	0.882	0.000	0.000	0.000	0.000	0.000	0.000	0.550	0.000	0.528	0.000					0.931
				0.953				0.863								0.625					
PM	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0					
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
2:00 PM	0	67	5	0	8	51	0	0	0	0	0	0	3	0	21	0					155
2:15 PM	0	54	7	0	2	65	0	0	0	0	0	0	6	0	20	0					154
2:30 PM	0	77	3	0	11	63	0	0	0	0	0	0	3	0	4	1					162
2:45 PM	0	94	15	0	19	69	0	0	0	0	0	0	9	0	19	0					225
3:00 PM	0	81	9	0	16	80	0	0	0	0	0	0	5	0	25	0					216
3:15 PM	0	76	3	0	8	107	0	0	0	0	0	0	6	0	16	0					216
3:30 PM	0	64	5	0	6	97	0	0	0	0	0	0	4	0	6	0					182
3:45 PM	0	72	1	0	8	84	0	0	0	0	0	0	3	0	6	0					174
4:00 PM	0	85	3	0	9	94	0	0	0	0	0	0	4	0	10	0					205
4:15 PM	0	100	4	0	5	110	0	0	0	0	0	0	6	0	10	0					235
4:30 PM	0	81	7	0	2	88	0	0	0	0	0	0	6	0	6	0					190
4:45 PM	0	90	2	0	6	106	0	0	0	0	0	0	4	0	4	0					212
5:00 PM	0	111	6	0	8	134	0	0	0	0	0	0	6	0	11	1					277
5:15 PM	0	111	4	0	17	147	0	0	0	0	0	0	7	0	5	0					291
5:30 PM	0	106	4	0	12	139	0	0	0	0	0	0	3	0	4	0					268
5:45 PM	0	95	7	0	9	134	0	0	0	0	0	0	6	0	7	0					258
<b>TOTAL VOLUMES :</b>	0	1364	85	0	146	1568	0	0	0	0	0	0	81	0	174	2					3420
<b>APPROACH %'s :</b>	0.00%	94.13%	5.87%	0.00%	8.52%	91.48%	0.00%	0.00%					31.52%	0.00%	67.70%	0.78%					
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																				
<b>PEAK HR VOL :</b>	0	423	21	0	46	554	0	0	0	0	0	0	22	0	27	1					1094
<b>PEAK HR FACTOR :</b>	0.000	0.953	0.750	0.000	0.676	0.942	0.000	0.000	0.000	0.000	0.000	0.000	0.786	0.000	0.614	0.250					0.940
				0.949				0.915								0.694					

# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Meridian Ave & Oak St  
 City: South Pasadena  
 Control: 1-Way Stop (WB)

Project ID: 20-05030-001  
 Date: 1/22/2020

### Bikes

NS/EW Streets:	Meridian Ave				Meridian Ave				Oak St				Oak St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
TOTAL VOLUMES :	0	2	4	0	0	0	0	0	0	0	0	0	0	0	1	0	
APPROACH %'s :	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR FACTOR :	0.000	0.250	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	0.625																0.625
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
11:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
PEAK HR :	12:00 PM - 01:00 PM																TOTAL
PEAK HR VOL :	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR FACTOR :	0.00	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	0.500																0.500
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
3:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	2	0	0	0	3	0	0	0	0	0	0	3	0	0	0	
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
					0.250												0.250



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Meridian Ave & Oak St  
City: South Pasadena

Project ID: 20-05030-U01  
Date: 1/22/2020

### Pedestrians (Crosswalks)

NS/EW Streets:	Meridian Ave		Meridian Ave		Oak St		Oak St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	1	1	0	0	0	3	5
7:15 AM	0	0	1	0	0	0	2	0	3
7:30 AM	0	0	12	0	1	1	1	3	18
7:45 AM	0	0	8	0	1	0	2	0	11
8:00 AM	0	0	2	0	1	0	0	2	5
8:15 AM	0	0	0	0	1	1	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	1	0	1	0	0	2
<b>TOTAL VOLUMES :</b>	0	0	24	2	4	3	5	8	46
<b>APPROACH %'s :</b>			92.31%	7.69%	57.14%	42.86%	38.46%	61.54%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM								<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	22	0	4	2	3	5	36
<b>PEAK HR FACTOR :</b>			0.458		1.000	0.500	0.375	0.417	0.500
			0.458		0.750		0.500		

NOON	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
11:00 AM	0	0	0	0	0	1	0	0	1
11:15 AM	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	1	1	0	2
11:45 AM	0	0	1	0	0	0	1	2	4
12:00 PM	0	0	0	2	2	0	0	1	5
12:15 PM	0	0	0	2	0	1	0	0	3
12:30 PM	0	0	0	0	1	2	0	0	3
12:45 PM	0	0	0	1	0	0	1	1	3
<b>TOTAL VOLUMES :</b>	0	0	1	5	3	5	3	4	21
<b>APPROACH %'s :</b>			16.67%	83.33%	37.50%	62.50%	42.86%	57.14%	
<b>PEAK HR :</b>	12:00 PM - 01:00 PM								<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	0	5	3	3	1	2	14
<b>PEAK HR FACTOR :</b>			0.625	0.625	0.375	0.375	0.250	0.500	0.700
			0.625		0.500		0.375		

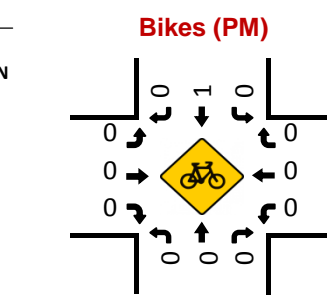
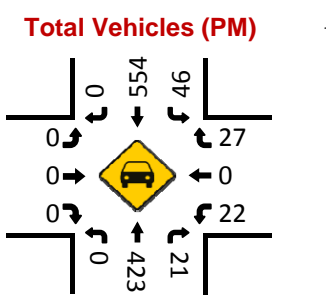
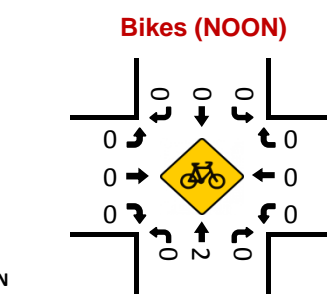
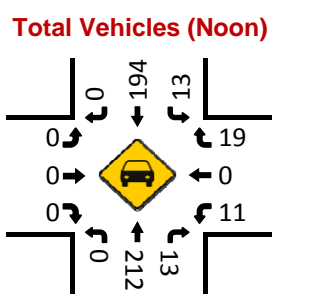
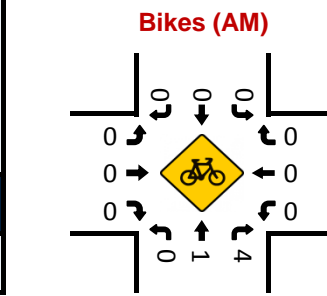
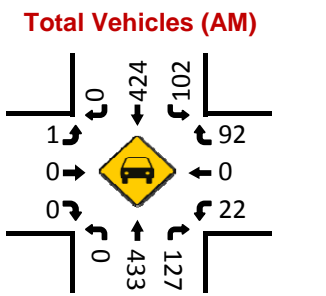
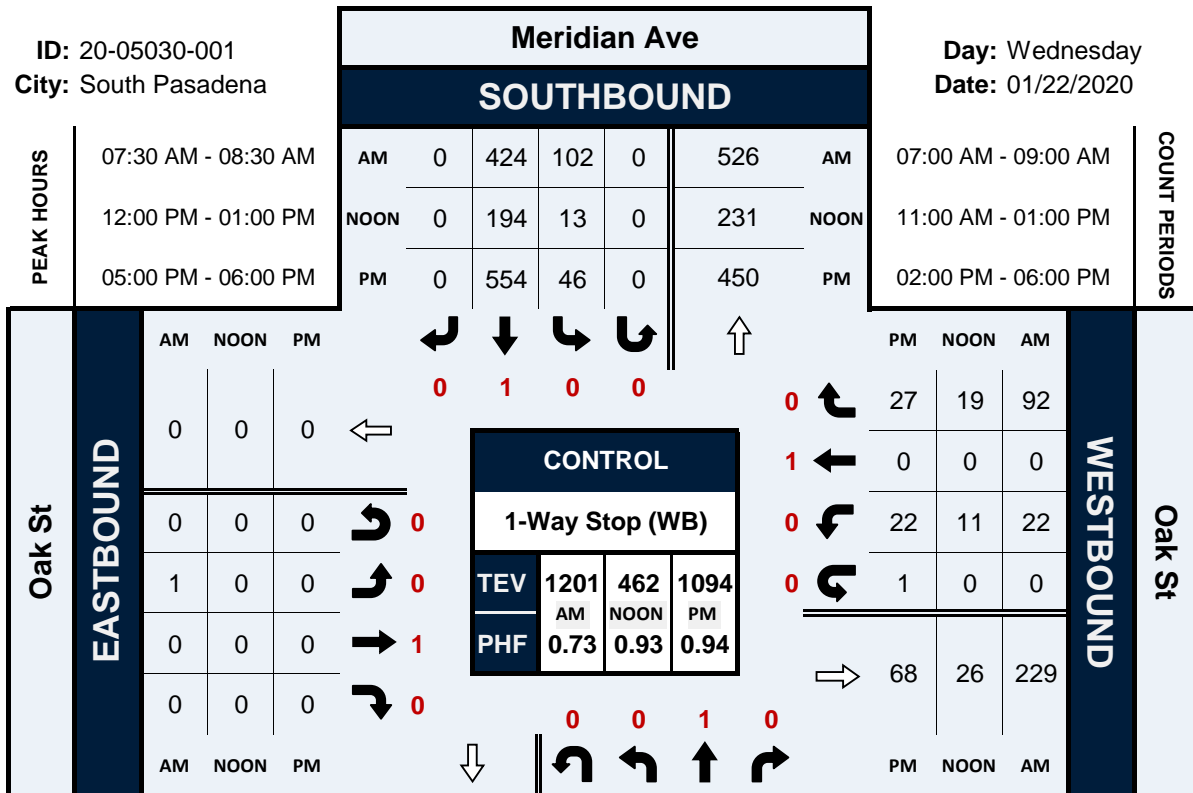
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
2:00 PM	0	0	0	3	0	1	1	0	5
2:15 PM	0	0	0	2	0	1	1	1	5
2:30 PM	0	0	0	1	1	0	2	0	4
2:45 PM	0	0	1	1	2	1	1	0	6
3:00 PM	0	0	0	5	1	3	1	1	11
3:15 PM	0	0	2	6	3	2	1	1	15
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	2	1	3	0	0	1	7
4:00 PM	0	0	3	3	1	0	0	0	7
4:15 PM	0	0	2	0	0	0	0	0	2
4:30 PM	0	0	0	2	1	1	1	3	8
4:45 PM	0	0	1	3	0	2	2	2	10
5:00 PM	0	0	3	2	1	2	1	1	10
5:15 PM	0	0	4	0	0	0	0	3	7
5:30 PM	0	0	3	1	0	3	1	3	11
5:45 PM	0	0	1	0	0	1	0	1	3
<b>TOTAL VOLUMES :</b>	0	0	22	30	13	17	12	17	111
<b>APPROACH %'s :</b>			42.31%	57.69%	43.33%	56.67%	41.38%	58.62%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM								<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	11	3	1	6	2	8	31
<b>PEAK HR FACTOR :</b>			0.688	0.375	0.250	0.500	0.500	0.667	0.705
			0.700		0.583		0.625		

# Meridian Ave & Oak St

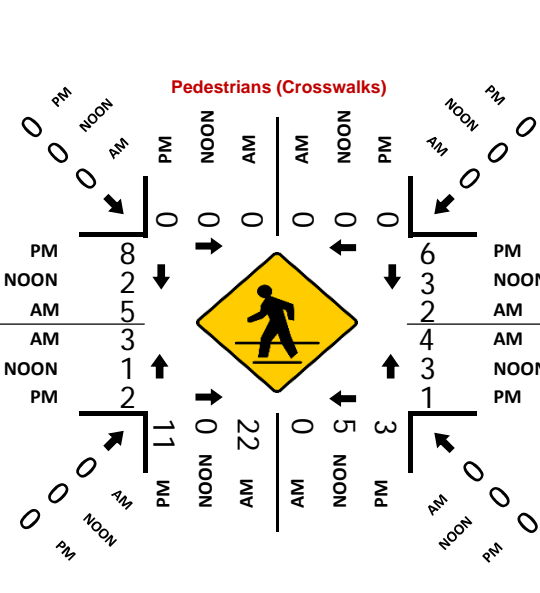
## Peak Hour Turning Movement Count

ID: 20-05030-001  
City: South Pasadena

Day: Wednesday  
Date: 01/22/2020



PM	576	0	0	423	21	PM
NOON	205	0	0	212	13	NOON
AM	446	0	0	433	127	AM







# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Meridian Ave & Maple St  
City: South Pasadena

Project ID: 20-05030-002  
Date: 1/22/2020

### Pedestrians (Crosswalks)

NS/EW Streets:	Meridian Ave		Meridian Ave		Maple St		Maple St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	3	3
7:15 AM	0	0	0	0	0	0	3	0	3
7:30 AM	1	0	0	0	6	1	3	0	11
7:45 AM	1	0	0	0	0	0	3	1	5
8:00 AM	0	2	0	0	2	0	1	3	8
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	3	4
<b>TOTAL VOLUMES :</b>	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
<b>APPROACH %'s :</b>	2	2	0	0	9	1	10	10	34
	50.00%	50.00%			90.00%	10.00%	50.00%	50.00%	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM								TOTAL
<b>PEAK HR VOL :</b>	2	2	0	0	8	1	10	4	27
<b>PEAK HR FACTOR :</b>	0.500	0.250			0.333	0.250	0.833	0.333	0.614
	0.500				0.321		0.875		

NOON	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
11:00 AM	2	0	0	0	1	1	1	0	5
11:15 AM	0	1	0	0	0	1	0	3	5
11:30 AM	1	0	0	0	0	0	5	0	6
11:45 AM	0	0	0	1	0	0	1	1	3
12:00 PM	0	0	0	0	0	0	0	1	1
12:15 PM	0	0	0	0	0	0	1	2	3
12:30 PM	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
<b>APPROACH %'s :</b>	3	1	0	1	1	2	8	7	23
	75.00%	25.00%	0.00%	100.00%	33.33%	66.67%	53.33%	46.67%	
<b>PEAK HR :</b>	11:30 AM - 12:30 PM								TOTAL
<b>PEAK HR VOL :</b>	1	0	0	1	0	0	7	4	13
<b>PEAK HR FACTOR :</b>	0.250			0.250			0.350	0.500	0.542
	0.250			0.250			0.550		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
2:00 PM	0	0	0	0	0	2	0	0	2
2:15 PM	0	1	0	0	1	0	1	0	3
2:30 PM	0	0	0	0	0	0	1	1	2
2:45 PM	0	0	0	0	4	0	1	1	6
3:00 PM	1	0	0	0	1	3	1	2	8
3:15 PM	2	1	0	0	1	1	2	4	11
3:30 PM	1	0	0	0	1	4	2	0	8
3:45 PM	0	0	0	0	0	0	0	1	1
4:00 PM	0	0	0	0	0	1	4	1	6
4:15 PM	0	1	0	0	2	3	2	1	9
4:30 PM	0	0	0	0	0	3	2	3	8
4:45 PM	0	0	0	0	2	0	3	0	5
5:00 PM	0	0	0	0	0	3	2	6	11
5:15 PM	0	1	0	0	0	4	5	1	11
5:30 PM	0	0	0	0	3	0	5	3	11
5:45 PM	2	1	0	0	1	5	3	1	13
<b>TOTAL VOLUMES :</b>	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
<b>APPROACH %'s :</b>	6	5	0	0	16	29	34	25	115
	54.55%	45.45%			35.56%	64.44%	57.63%	42.37%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM								TOTAL
<b>PEAK HR VOL :</b>	2	2	0	0	4	12	15	11	46
<b>PEAK HR FACTOR :</b>	0.250	0.500			0.333	0.600	0.750	0.458	0.885
	0.333				0.667		0.813		

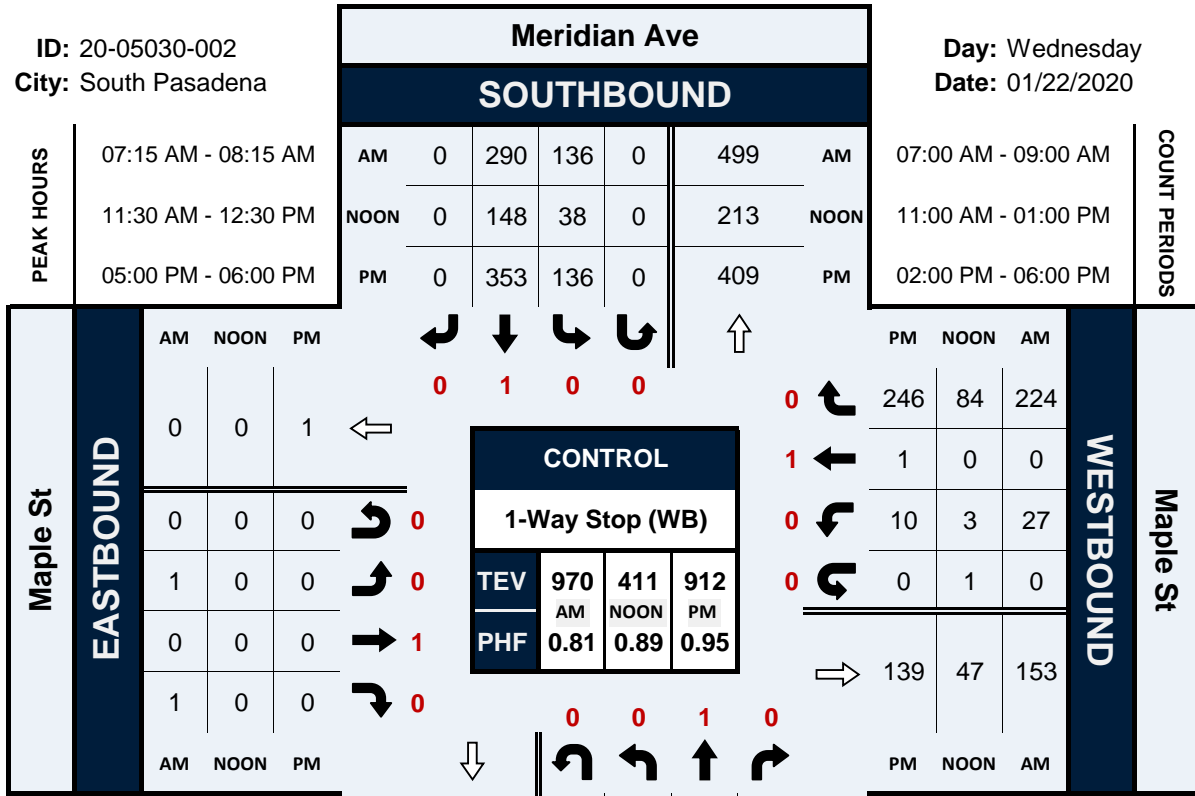


# Meridian Ave & Maple St

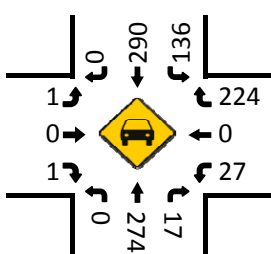
## Peak Hour Turning Movement Count

ID: 20-05030-002  
City: South Pasadena

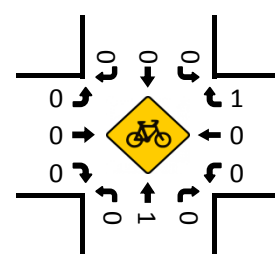
Day: Wednesday  
Date: 01/22/2020



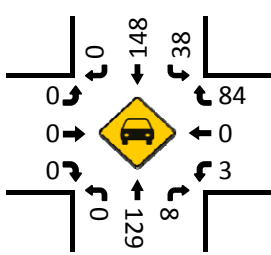
Total Vehicles (AM)



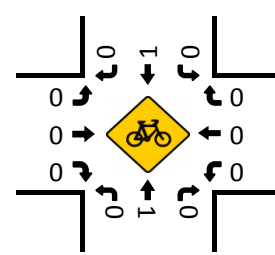
Bikes (AM)



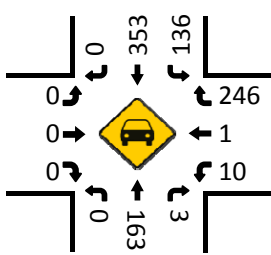
Total Vehicles (Noon)



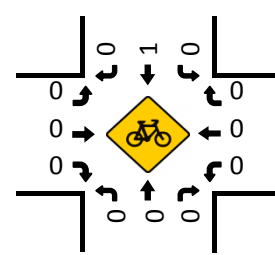
Bikes (NOON)



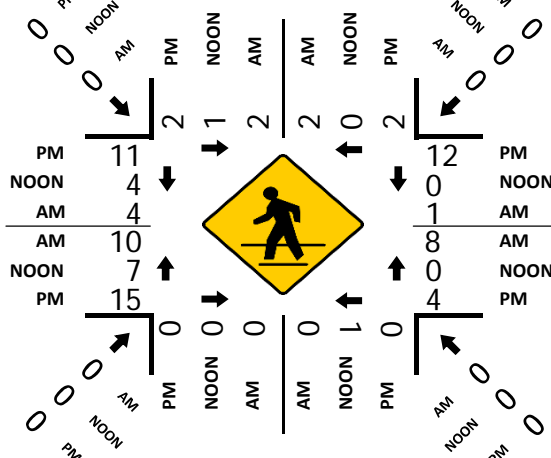
Total Vehicles (PM)



Bikes (PM)



Pedestrians (Crosswalks)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Meridian Ave & Pine St  
 City: South Pasadena  
 Control: 1-Way Stop (WB)

Project ID: 20-05030-003  
 Date: 1/22/2020

### Total

NS/EW Streets:	Meridian Ave				Meridian Ave				Pine St				Pine St				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	69	2	0	1	69	0	0	0	0	0	2	0	9	0	152	
7:15 AM	0	128	2	0	0	65	0	0	0	0	0	2	0	9	0	204	
7:30 AM	0	160	1	0	4	84	0	0	0	0	0	2	0	10	0	261	
7:45 AM	0	155	4	0	12	119	0	0	0	0	0	12	0	23	0	325	
8:00 AM	0	85	5	0	8	121	0	0	0	0	0	11	0	10	0	240	
8:15 AM	0	75	8	0	18	96	0	0	0	0	0	0	0	9	0	206	
8:30 AM	0	111	2	0	7	73	0	0	0	0	0	3	0	12	0	208	
8:45 AM	0	84	1	0	7	69	0	0	0	0	0	0	0	10	0	171	
<b>TOTAL VOLUMES :</b>	0	867	25	0	57	696	0	0	0	0	0	30	0	92	0	1767	
<b>APPROACH %'s :</b>	0.00%	97.20%	2.80%	0.00%	7.57%	92.43%	0.00%	0.00%	0.00%	0.00%	0.00%	24.59%	0.00%	75.41%	0.00%		
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	475	18	0	42	420	0	0	0	0	0	25	0	52	0	1032	
<b>PEAK HR FACTOR :</b>	0.000	0.742	0.563	0.000	0.583	0.868	0.000	0.000	0.000	0.000	0.000	0.521	0.000	0.565	0.000	0.794	
	0.766				0.882								0.550				

NS/EW Streets:	Meridian Ave				Meridian Ave				Pine St				Pine St				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
NOON	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	0	46	1	0	1	40	0	1	0	0	0	0	0	4	0	93	
11:15 AM	0	46	3	0	3	40	0	0	0	0	0	2	0	5	0	99	
11:30 AM	0	45	0	0	3	50	0	0	0	0	0	2	0	9	0	109	
11:45 AM	0	59	1	0	3	43	0	0	0	0	0	2	0	7	0	115	
12:00 PM	0	49	2	0	2	35	0	0	0	0	0	0	0	3	0	91	
12:15 PM	0	61	0	0	2	54	0	0	0	0	0	0	0	5	0	122	
12:30 PM	0	47	3	0	1	46	0	0	0	0	0	2	0	6	0	105	
12:45 PM	0	52	1	0	6	50	0	0	0	0	0	1	0	6	0	116	
<b>TOTAL VOLUMES :</b>	0	405	11	0	21	358	0	1	0	0	0	9	0	45	0	850	
<b>APPROACH %'s :</b>	0.00%	97.36%	2.64%	0.00%	5.53%	94.21%	0.00%	0.26%	0.00%	0.00%	0.00%	16.67%	0.00%	83.33%	0.00%		
<b>PEAK HR :</b>	11:30 AM - 12:30 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	214	3	0	10	182	0	0	0	0	0	4	0	24	0	437	
<b>PEAK HR FACTOR :</b>	0.000	0.877	0.375	0.000	0.833	0.843	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.667	0.000	0.895	
	0.889				0.857								0.636				

NS/EW Streets:	Meridian Ave				Meridian Ave				Pine St				Pine St				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	0	50	1	0	3	56	0	0	0	0	0	4	0	13	0	127	
2:15 PM	0	55	2	0	2	69	0	0	0	0	0	5	0	6	0	139	
2:30 PM	0	74	0	0	6	56	0	0	0	0	0	1	0	11	0	148	
2:45 PM	0	94	5	0	7	73	0	0	0	0	0	7	0	13	0	199	
3:00 PM	0	78	6	0	5	82	0	0	0	0	0	5	0	6	0	182	
3:15 PM	0	61	1	0	7	93	0	0	0	0	0	0	0	15	0	177	
3:30 PM	0	62	2	0	6	93	0	0	0	0	0	0	0	6	0	169	
3:45 PM	0	75	1	0	3	68	0	1	0	0	0	0	0	4	0	152	
4:00 PM	0	74	1	0	6	94	0	0	0	0	0	2	0	12	0	189	
4:15 PM	0	93	2	0	4	95	0	0	0	0	0	3	0	14	0	211	
4:30 PM	0	90	2	0	3	85	0	1	0	0	0	4	0	5	0	190	
4:45 PM	0	79	2	0	9	92	0	0	0	0	0	2	0	2	0	186	
5:00 PM	0	104	0	0	5	142	0	0	0	0	0	3	0	12	0	266	
5:15 PM	0	106	5	0	11	120	0	0	0	0	0	3	0	8	0	253	
5:30 PM	0	104	2	0	13	121	0	0	0	0	0	3	0	9	0	252	
5:45 PM	0	102	0	0	8	121	0	0	0	0	0	2	0	11	0	244	
<b>TOTAL VOLUMES :</b>	0	1301	32	0	98	1460	0	2	0	0	0	44	0	147	0	3084	
<b>APPROACH %'s :</b>	0.00%	97.60%	2.40%	0.00%	6.28%	93.59%	0.00%	0.13%	0.00%	0.00%	0.00%	23.04%	0.00%	76.96%	0.00%		
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	416	7	0	37	504	0	0	0	0	0	11	0	40	0	1015	
<b>PEAK HR FACTOR :</b>	0.000	0.981	0.350	0.000	0.712	0.887	0.000	0.000	0.000	0.000	0.000	0.917	0.000	0.833	0.000	0.954	
	0.953				0.920								0.850				

# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Meridian Ave & Pine St  
 City: South Pasadena  
 Control: 1-Way Stop (WB)

Project ID: 20-05030-003  
 Date: 1/22/2020

### Bikes

NS/EW Streets:	Meridian Ave				Meridian Ave				Pine St				Pine St				
<b>AM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	0.00%	80.00%	20.00%	0.00%													
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
<b>PEAK HR FACTOR :</b>	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
<b>NOON</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
11:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
<b>PEAK HR :</b>	11:30 AM - 12:30 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
<b>PEAK HR FACTOR :</b>	0.00	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
<b>PM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
2:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	0	2	1	0	0	6	0	0	0	0	0	0	0	0	0	0	9
	0.00%	66.67%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%									
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250

# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Meridian Ave & Pine St  
City: South Pasadena

Project ID: 20-05030-003  
Date: 1/22/2020

### Pedestrians (Crosswalks)

NS/EW Streets:	Meridian Ave		Meridian Ave		Pine St		Pine St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	1	0	0	0	2
7:30 AM	0	0	0	0	5	1	0	0	6
7:45 AM	1	1	0	0	4	0	0	0	6
8:00 AM	0	0	0	0	3	0	0	0	3
8:15 AM	0	0	0	0	1	1	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	1	0	0	2
<b>TOTAL VOLUMES :</b>	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
<b>APPROACH %'s :</b>	1	3	0	0	14	3	0	0	21
	25.00%	75.00%			82.35%	17.65%			
<b>PEAK HR :</b>	07:30 AM - 08:30 AM								TOTAL
<b>PEAK HR VOL :</b>	1	1	0	0	13	2	0	0	17
<b>PEAK HR FACTOR :</b>	0.250	0.250			0.650	0.500			0.708
	0.250				0.625				

NOON	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
11:00 AM	0	2	0	0	1	1	0	0	4
11:15 AM	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	1	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	1	1	0	0	2
12:45 PM	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
<b>APPROACH %'s :</b>	0	2	0	0	3	2	0	0	7
	0.00%	100.00%			60.00%	40.00%			
<b>PEAK HR :</b>	11:30 AM - 12:30 PM								TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	1	0	0	0	1
<b>PEAK HR FACTOR :</b>					0.250				0.250
					0.250				

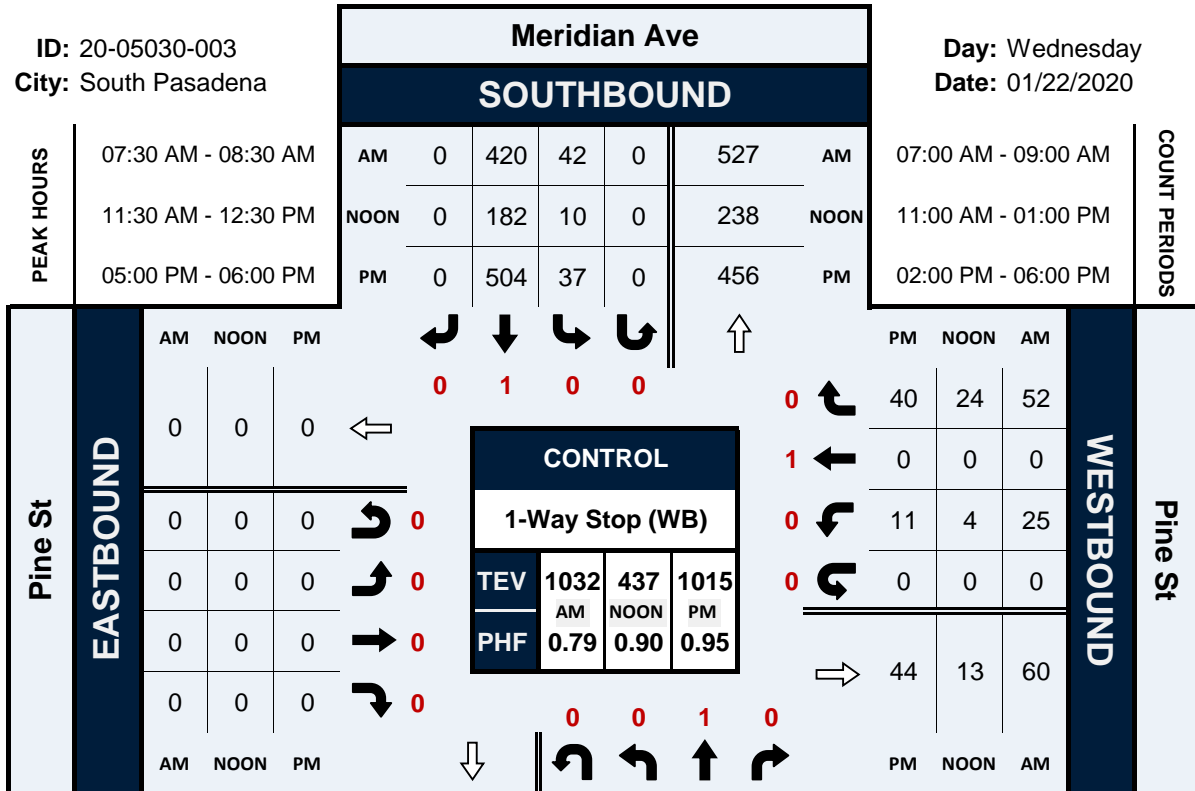
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
2:00 PM	0	0	0	0	0	1	0	0	1
2:15 PM	0	0	0	0	1	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	0
2:45 PM	0	1	0	0	2	1	0	0	4
3:00 PM	0	2	0	3	5	5	0	0	15
3:15 PM	0	2	0	0	2	6	0	0	10
3:30 PM	0	0	1	0	2	0	0	0	3
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	1	0	0	0	1	5	0	0	7
4:15 PM	0	0	0	0	1	1	0	0	2
4:30 PM	1	1	0	1	1	1	0	0	5
4:45 PM	0	1	0	0	1	2	0	0	4
5:00 PM	0	0	0	0	0	4	0	0	4
5:15 PM	0	0	0	0	1	1	0	0	2
5:30 PM	0	0	0	1	1	5	0	0	7
5:45 PM	0	0	2	0	0	0	0	0	2
<b>TOTAL VOLUMES :</b>	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
<b>APPROACH %'s :</b>	2	7	3	5	18	32	0	0	67
	22.22%	77.78%	37.50%	62.50%	36.00%	64.00%			
<b>PEAK HR :</b>	05:00 PM - 06:00 PM								TOTAL
<b>PEAK HR VOL :</b>	0	0	2	1	2	10	0	0	15
<b>PEAK HR FACTOR :</b>			0.250	0.250	0.500	0.500			0.536
			0.375		0.500				

# Meridian Ave & Pine St

## Peak Hour Turning Movement Count

ID: 20-05030-003  
City: South Pasadena

Day: Wednesday  
Date: 01/22/2020



CONTROL			
1-Way Stop (WB)			
TEV	1032	437	1015
	AM	NOON	PM
PHF	0.79	0.90	0.95

