CITY OF SOUTH PASADENA
MOBILITY AND TRANSPORTATION INFRASTRUCTURE COMMISSION
REGULAR MEETING AGENDA

Council Chamber
1424 Mission Street, South Pasadena, CA 91030
May 18, 2021, at 6:30 p.m.

South Pasadena Mobility and Transportation Infrastructure Commission Statement of Civility
As your elected governing board, we will treat each other, members of the public, and city employees with patience, civility and courtesy as a model of the same behavior we wish to reflect in South Pasadena for the conduct of all city business and community participation. The decisions made tonight will be for the benefit of the South Pasadena community and not for personal gain.

NOTICE ON PUBLIC PARTICIPATION & ACCESSIBILITY

Pursuant to Section 3 of Executive Order N-29-20, issued by Governor Newsom on March 17, 2020, the regular meeting of the Mobility and Transportation Infrastructure Commission (MTIC) for May 18, 2021, will be conducted remotely and held by Zoom video conference.

Please be advised that pursuant to the Executive Order, and to ensure the health and safety of the public by limiting human contact that could spread the COVID-19 virus, the Council Chambers will not be open for the meeting. Commission Members will be participating remotely and will not be physically present in the Council Chambers.

To maximize public safety while still maintaining transparency and public access, members of the public can observe the meeting via Zoom in one of the three methods below.

Mobility and Transportation Infrastructure Commission
Zoom Meeting Information
Meeting ID: 860 4706 8047
Passcode: 567303

1. Go to the Zoom website, https://zoom.us/join and enter the Zoom Meeting information accordingly; or
2. Click on the following unique Zoom meeting link: https://us02web.zoom.us/j/86047068047?pwd=TENCTFd0MU5VWG1TWTJGV1FSK05FQT09 or
3. You may listen to the meeting by calling: +1-669-900-6833 and entering the Zoom Meeting ID and Passcode when prompted to do so.

For additional Zoom assistance with telephone audio, you may find your local number at: https://us02web.zoom.us/u/ky9n7bhtz

IMPORTANT NOTE: Members of the public may access the meeting to observe the meeting's proceedings; however, at this time, there is no live, real-time participation by members of the

PUBLIC COMMENT
If you would like to comment on an agenda item, members of the public may submit their comments in writing for consideration, by emailing comments or questions to: mticpubliccomments@southpasadenaca.gov. **Public Comments must be received by 12:00 p.m., May 18, 2021** to ensure adequate time to compile and post. Public Comment portion of the email is limited to 250 words. Please make sure to indicate: 1) your name; 2) what agenda item you are submitting public comment on, or if it is a general public comment; and/or 3) clearly state if you wish for your comment to be read during the meeting.

CALL TO ORDER: Chair Abelson

ROLL CALL: Commissioners: Lawrence Abelson, Eric Dunlap, John Fisher, Kimberley Hughes, and Donson Liu

CITY COUNCIL LIAISON: Councilmember Jon Primuth

STAFF PRESENT: Garrett Crawford, Acting Deputy Director of Public Works, and Leaonna DeWitt, Public Works Assistant

PLEDGE OF ALLEGIANCE: Chair Abelson

PUBLIC COMMENT AND SUGGESTIONS

1. Public Comment – General

DISCUSSION ITEMS

2. Update on Implementation of Citywide Neighborhood Traffic Management Plan

ACTION ITEMS

3. Minutes of the Regular Mobility and Transportation Infrastructure Commission on April 20, 2021

4. Proposed Stop Sign on Meridian Avenue at Oak Street

5. Formation of Citywide Preferential Parking District Ad Hoc Committee

COMMISSION LED DISCUSSION

6. SR 710 Mobility Improvement Projects Ad Hoc Committee

7. Ramona Avenue Neighborhood Traffic Management Ad Hoc Committee

8. Discussion of Local Return Measure M Projects for FY 2022

9. COVID-19 Ad Hoc Committee
Metro Open Streets Grant

COMMUNICATIONS

10. City Council Liaison Communications

11. Commissioner Communications

12. Staff Liaison Communications

ADJOURNMENT

FUTURE MOBILITY AND TRANSPORTATION INFRASTRUCTURE COMMISSION MEETINGS

June 15, 2021	TBD	6:30 p.m.
July 20, 2021	TBD	6:30 p.m.

PUBLIC ACCESS TO AGENDA DOCUMENTS AND BROADCASTING OF MEETINGS

Commission Meeting agenda packets are available online at the City website: https://www.southpasadenaca.gov/government/boards-commissions/mobility-and-transportation-infrastructure-commission

ACCOMMODATIONS

The City of South Pasadena wishes to make all of its public meetings accessible to the public. If special assistance is needed to participate in this meeting, please contact the City Clerk's Division at (626) 403-7230. Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities. Notification at least 48 hours prior to the meeting will assist staff in assuring that reasonable arrangements can be made to provide accessibility to the meeting (28 CFR 35.102-35.104 ADA Title II).

I declare under penalty of perjury that I posted this notice of agenda on the bulletin board in the courtyard of City Hall at 1414 Mission Street, South Pasadena, CA 91030, and on the City's website as required by law.

4/14/21
Date

/s/
Leaonna DeWitt
Public Works Assistant

ITEM 3

Minutes of the Regular Mobility and Transportation Infrastructure Commission – April 20, 2021

TUESDAY, APRIL 20, 2021
MINUTES OF THE CITY OF SOUTH PASADENA
MOBILITY AND TRANSPORTATION INFRASTRUCTURE COMMISSION
REGULAR MEETING

CALL TO ORDER

The Regular Meeting of the Mobility and Transportation Infrastructure Commission was called to order by Chair Abelson on April 20, 2021, at 6:34 p.m. The meeting was held in a virtual setting, via Zoom.

ROLL CALL: Leaonna DeWitt, Public Works Assistant

Present via Zoom: Chair Abelson, Commissioner Dunlap, Commissioner Fisher, Commissioner Hughes and Commissioner Liu

Absent: Councilmember Jon Primuth, Council Liaison

Staff Present: Shahid Abbas, Public Works Director, Garrett Crawford, Acting Deputy Public Works Director and Leaonna DeWitt, Public Works Assistant

PLEDGE OF ALLEGIANCE

Commissioner Liu led the pledge of allegiance.

PUBLIC COMMENT

1. Public Comment

1. Erik Wochna expressed concern with the traffic on Orange Grove Avenue and the merging one lane south of Columbia St. She (check name – Erik vs. "She") suggested the Commission consider a traffic study to assess the traffic.

2. Craig Erickson expressed concern with the traffic and safety issues on Ramona Avenue. He supports staggered school start times and removal of the drop off location for Holy Family Church.

3. Sophia Taylor expressed concern about the dangerous traffic on Orange Grove Avenue between Columbia St. and the 110 Freeway. She has requested a traffic study be completed.

4. Joanne Nuckols expressed support for further discussion regarding preferential parking with each neighborhood and suggested reviewing policies from other cities such as Beverly Hills.

The Commission agreed to reorganize the agenda and discuss Item 3 first.

ACTION ITEMS

3. Proposed Stop Signs on Meridian Avenue at Oak Street, Pine Street and Maple Street

ADPWD Crawford gave a brief presentation on this item.

Discussion ensued regarding establishing criteria and a policy for stop signs, the cost for the stop signs, and a budget for other calming devices (rubber bulbouts, chokers).

Public Comment

1. Susan Sulsky expressed support for this item.

2. Lisa Zahra expressed support for this item.

3. D.W. Shane, as part of SMART Families expressed support for this item.

4. Denise Philley expressed support for this item.

5. Paul Wood expressed support for this item.

6. Joanne Nuckols expressed support for this item.

7. Jason J Wallace expressed support for this item.

A motion was made to receive and file the Rock E. Miller & Associates report. (Liu, Hughes 5-0)

The Commission recommended not to install an all-way stop at Meridian Avenue at Pine Street, but to proceed with the extension of red curb as a recommended in the report, with appropriate notification to the affected property owners. (Hughes, Fisher 5-0)

The Commission recommended that staff request a supplement report for Meridian Avenue at Oak Street to include more information on his determination of inadequate sight distance, the percentage of drivers not yielding to pedestrians, and up-to-date accident data. (Abelson, Hughes 5-0)

The Commission recommended not to proceed with a stop sign at Meridian Avenue and Maple Avenue at this time. It was recommended that the City to proceed with the installation of red curb on the east side of Meridian Avenue and provide appropriate outreach to the affected property owners. (Abelson, Hughes 5-0)

The Commission recommended that staff request if Mr. Miller could review the impact of potentially removing the existing marked crosswalk at Maple Avenue.

2. Minutes of the Regular Mobility and Transportation Infrastructure Commission on March 16, 2021 - Minutes approved as amended. (Hughes, Fisher; 5-0)

COMMISSION LED DISCUSSIONS

4. SR 710 Mobility Improvement Projects Ad Hoc Committee

Chair Abelson reported that the Committee is waiting on a draft scope from staff for the study of the SR 110 Fair Oaks Interchange. Commissioner Fisher met with Yoga Chandrum from the firm HNTB, who developed an engineering design concept for the Loop Ramp with some modifications to the design that might be more acceptable to Caltrans.

5. COVID-19 Ad Hoc Committee

Commissioner Dunlap reported they have been meeting weekly and providing updates on the current scope of work for bollards. The preliminary scope and cost estimate should be presented to the City Council in May.

Discussion ensued regarding the budget, safe streets signage and devices on residential streets, and long-term improvements, such as the closing of Meridian between Mission St. and El Centro, as well as re-configuring Mission St.

6. Discussion of Local Return Measure M projects (staff to provide update)

ADPWD Crawford briefly reported that the City has been unsuccessful with contacting the City of San Marino regarding the improvements on Garfield Avenue. Chair Abelson commented that Shahid has made contact with San Marino regarding the proposed new traffic signal at the intersection of Garfield Avenue and Monterey Road. San Marino suggested that the City proceed with a warrant analysis and if warranted, they would present it to their City Council.

Discussion ensued regarding other potential projects such as Columbia Street at Orange Grove; Huntington Drive at Fremont Avenue; Fremont at Monterey Road; Stoney Drive and Lohman Lane and Diamond St. at Lyndon Street.

ADPWD Crawford commented that there had been contact with the City of Pasadena regarding the proposed projects at Columbia Avenue at the border of the Cities of Pasadena and South Pasadena.

Chair Abelson requested a list of all of the projects for the next meeting.

7. Fremont Avenue Projects
Chair Abelson requested this be on the agenda to keep track on the development of a list of projects to be implemented with the $6 million grant and any other funds. ADPWD Crawford shared that there was nothing new, but that there would be message boards as part of the overall project. Commissioner Dunlap requested traffic accident data for the street.

COMMUNICATIONS
8. City Council Liaison Communications
No Comments.

9. Commissioner Communications
Commissioner Liu commented regarding a resident on Orange Grove Avenue, south of Columbia who is suggesting that the City look into installing "merge ahead" signs. He stated that would have a summary on the Preferential Parking before the next meeting.

Commissioner Hughes thanked everyone for the UUT and sales tax. With the Budget being approved, she wants to understand the funding sources that will be available for all of the mobility and transportation projects for the upcoming fiscal year.

Commissioner Abelson commented on the Ramona NTMP will be added to the agenda to keep track of it. He also commented on the "Preferential Parking Policy," and that staff would be following up and investigating policies in other cities. Commissioner Dunlap and Liu agreed to be the lead in this effort. Chair Abelson mentioned Arroyo Drive, Arroyo Square and Columbia Street near city limits, as areas where water collects and sits. He inquired as to staff's awareness of the issue and whether it could be addressed without major cost.

10. Staff Liaison Communications
Acting Deputy Director Crawford provided an update on the location of Orange Grove Avenue south of Columbia. Staff has a temporary design to install additional signage and bots dots to alert drivers to the lane merging situation. He updated the Commission on the Rogan Funds. RFPs have been received and the City has invited the top few candidates to participate in interviews. Once a candidate is selected, the staff will present the proposed candidate to the City Council for award. ADDPW Crawford announced that the new Deputy Public Works Director will be starting soon and will be introduced to the Commission.

ADJOURNMENT: Meeting adjourned at 9:46 p.m.

I HEREBY CERTIFY that the foregoing minutes were adopted by the Mobility and Transportation Infrastructure Commission of the City of South Pasadena at a meeting held on May 18, 2021.

_____
Larry Abelson, Chair

PUBLIC COMMENT

MOBILITY AND TRANSPORTATION INFRASTRUCTURE COMMISSION MEETING

April 20, 2021

Item No.	Name	Document	Date Received
GC	Erik Wochna	E-mail Public Comment	4/18/21
3	Ron Rose	E-mail Public Comment	4/19/21
3	Susan Sulsky	E-mail Public Comment	4/19/21
3	Kris Curry	E-mail Public Comment	4/19/21
3	Lisa Zahra	E-mail Public Comment	4/19/21
GC	Janna Philpot	E-mail Public Comment	4/19/21
3	D.W. Shane	E-mail Public Comment	4/19/21
3	Julie Riley	E-mail Public Comment	4/20/21
3	Denise Philley	E-mail Public Comment	4/20/21
3	Paul Wood	E-mail Public Comment	4/20/21
GC	Craig Erickson	E-mail Public Comment	4/20/21
GC	Sophia Taylor	E-mail Public Comment	4/20/21

GC	Joanne Nuckols	E-mail Public Comment	4/20/21
3	Joanne Nuckols	E-mail Public Comment	4/20/21
3	Jason Wallce	E-mail Public Comment	4/20/21
GC	Christopher Kramsch	E-mail Public Comment	4/20/21
3	Sally Takeda	E-mail Public Comment	4/20/21

From: Erik Wochna
Sent: Sunday, April 18, 2021 10:56 PM
To: MTIC Public Comments
Subject: Re: Public Comment re: Orange Grove Traffic s of Columbia

Follow Up Flag: Follow up
Flag Status: Flagged

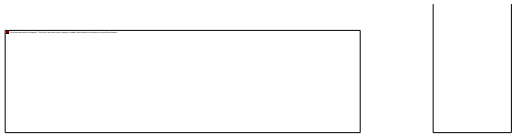
This is general public comment, which may be read at the meeting

Hello,

Along with some of my neighbors, I wanted to urge the City and this commission to consider a traffic study to assess to the impact that traffic on the 200 block Orange Grove Ave is having on the community. Over the past month, we have witnessed several-near collisions with cars merging to one lane south of Columbia. In one instance, a motorist drove over the curb and on our parkway to speed ahead of another. The merging poses a great deal of risk to people utilizing the sidewalk, which our family and neighbors frequently use.

Thank you for your consideration,

Erik J. Wochna | Managing Attorney | Inland Empire



From: Ron Rosen
Sent: Monday, April 19, 2021 7:30 AM
To: MTIC Public Comments
Subject: Stop Signs on Meridian and Oak and Meridian and Maple

Dear MTIC Commissioners:

We need stop signs at Meridian and Oak and Meridian and Maple. Those are the only things that will make people stop at these locations and will slow down traffic. In spite of the blinking crosswalk, cars often do not stop for people at Meridian and Oak who are trying to cross the street. If you stand at that intersection for several minutes, you will see that.

Speed limit signs, lines on the street, etc do not slow traffic the way stop signs will.

Public Works seems willing to spend money on every possible tool but stop signs. This is absurd. Stop signs actually make people slow down and stop. Nothing else does. Public works' view of this is not only wrong, but a waste of taxpayer money.

Please approve stop signs at Meridian and Oak and Meridian and Maple.

Ron Rosen

From: Susan Sulsky
Sent: Monday, April 19, 2021 10:46 AM
To: MTIC Public Comments
Subject: Support for Agenda Item #3: Proposed Stop Signs on Meridian Avenue at Oak Street, Pine Street and Maple Street

Follow Up Flag: Follow up
Flag Status: Flagged

Meeting Date: April 20, 2021
From: Susan Sulsky, 2013 Meridian Avenue
Please read out at meeting

Dear Commissioners,

It is with great anticipation that on the Agenda for the April 20, 2021 meeting I read:

Item #3. Proposed Stop Signs on Meridian Avenue at Oak Street, Pine Street and Maple Street

This has been a long time coming, and as a resident of Meridian Avenue for over 20 years, I sincerely believe that it is an important step to make Meridian Avenue a safer route for the many residents and school age children that access these routes to walk and/or bike to the High School and Middle School; as well as those students that cross Meridian to walk to Monterey Hills Elementary School.

I am grateful to the Public Works Department for making a number of improvements to Meridian Avenue over the past year. However, there is no question that, for a variety of reasons and rationales, Meridian Avenue has not been earmarked for substantial improvements. The stop signs will enhance the work that was begun by the PWD, and can be the beginning of other opportunities to enable safe access for all users.

Your recommendation to approve these stop signs will be an equitable solution to make Meridian Avenue as safe as other streets in the City that are used as routes to neighborhood schools. Safety is the only precedent that should be considered in making your decision.

Thank you.

Susan Sulsky

From: Kris Curry
Sent: Monday, April 19, 2021 10:57 AM
To: MTIC Public Comments
Subject: Stop sign at Oak and Meridian

I cannot voice my support of this stop sign loudly enough. For 7 years my daughter and her friends have had to cross this intersection to get to middle and high school, while speeders and distracted drivers barrel across the crosswalk at deadly speeds. They disregard the flashing lights, and the number of close calls these children have had is terrifying. This street should not be used as a 'faster' cut through from Alhambra and points south because there are no stop signs and street lights, as it currently is being used. Its a recipe for a child to get killed by an automobile.

There is zero justification for not putting a single stop sign on this street. Please vote now to install one without delay.

Sincerely,

Kris Curry

From: Lisa Zahra
Sent: Monday, April 19, 2021 11:14 AM
To: MTIC Public Comments
Subject: Agenda Item #3, for public comment

Follow Up Flag: Follow up
Flag Status: Flagged

Hi,
My name is Lisa Zahra, and I have lived on Meridian Ave. near Oak Street for 15 years.
I am commenting on Agenda Item #3 and would like my comments to be read aloud during the MTIC meeting.
The community has desperately needed a stop sign at Meridian/Oak for as long as I have been here, and probably much longer. In my opinion, it is one of the most dangerous intersections in the city, and is heavily used by children walking to and from school. The flashing lights are only effective in stopping cars some of the time. And since this is the beginning of a straightaway, people speed up, or check their phones while they drive this area. A stop sign will make it so much safer for pedestrians and prevent a tragedy at this intersection. I also think a second stop sign at Meridian/Maple would do a lot to deter speeders (and there are many) and help pedestrians, on Meridian. Please, finally, do the right thing, and install these stop signs on Meridian.

From: Janna Philpot
Sent: Monday, April 19, 2021 2:00 PM
To: MTIC Public Comments
Subject: Wider Sidewalks on Mission

I am writing in support of wider sidewalks on Mission. This would be a huge improvement in the walkability and charm of our downtown. I would love to see it incorporated along with a protected bike lane, benches, planters and greenery, and diagonal parking. Restaurants wanting to use it for patio dining should be able to, but even if they don't just having additional green space and space to "be" would be a delightful addition to our community.

Thank you,
Janna Philpot
Resident of South Pasadena

From:	D.W. Shane
Sent:	Monday, April 19, 2021 9:53 PM
To:	MTIC Public Comments
Cc:	Garrett Crawford; Leaonna Dewitt; Lawrence Abelson; Sean Joyce; Tamara Binns; Jon Primuth; Joanna Hankamer
Subject:	MTIC April 20 Public Hearing: Agenda No. 3: Meridian Stop Signs: Public Comment: Please Read Out Loud at Meeting
Importance:	High
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear MTIC Chair and Commissioners:

SMART Families strongly support the installation of three-way stop signs at the intersections of Meridian/Oak and Meridian/Maple. We are pleased that in his peer review, Mr. Rock Miller agrees with us. Mr. Miller notes that at Meridian/Oak: "Based upon the unique intersection geometrics, the marked crosswalk, and the street usage further to the east, there is ample justification to conclude that all-way stops are appropriate for this location."

For Meridian/Maple, he states: "The high turning volume, sight distance limitations of parked cars, and the marked crosswalk are suitable special justification to consider an all-way stop at the location." **SMART Families** also note that neighbors (especially school-age children) who reside above Meridian on streets such as Bonita, Oneonta, and Summit routinely access the public stairway from Bonita leading down to Meridian, and then use the Meridian/Maple crosswalk.

Overall, we worry about our children's safety in crossing Meridian while walking to or from either the high school or the middle school now that hybrid learning has begun.

Please recommend to the City Council that these two intersections receive three-way stop signs for the safety of our residents who walk, bicycle, and drive on Meridian.

Thank you.

Sincerely,

SMART Families

The resolution is presented to MTIC on behalf of the following 126 residents:

Delaine W. Shane
Russell Shane
Sara Shane
Susan Sulsky
Jason Wallace
Wendy Kim
Sally Takada-Teer
Sean Teer
Evan Takeda-Teer
Noah Takeda-Teer
Denise Philley
Paul Wood
Linus Wood
Wende Lee
Robert Lee
Jon Healey
Margot Healey
Kim Carlson
Brock Carlson
Owen Carlson
Peyton Carlson
Ryder Carlson
Claire Gibbs
Taila Marin
Rolando Marin
Alfred Meza
Tani Meza

Aislinn Meza
Ron Rosen
Suzy Campeau
Greg Campeau
Sam Burgess
Jan Marshall
Kit Bellamy
Nancy Michler
Michelle Hammond
John Vandercook
Peggy O'Leary
Karen Donaldson
Vaishalee Mehta
Stephanie Stern
Johan Garcia
Aidan Garcia
Fayven Lee
Andy Lee
Zachary Lee
Derrick Lee
Kristen Swift
Mark Swift
Josh Shepard
Lisa Zahra
Glen Duncan
Eduardo Herrera
Ava Herrera

Lorenzo Herrera
Demarco Herrera
Desiree Berreras
Jim Dowd
Sheila Rossi
Linda Esposito
Billy Reed
Elizabeth Friedman
Emily Beaghan
James Beaghan
Georgia Beaghan
Joanne Nuckols
Tom Nuckols
Caleb Smith
Betsy Smith
Richard Petty
Lisa Petty
Jonathan Eisenberg
Linda Nguyen
Elizabeth Bagasao
Kris Curry
Rich Fox
Dusty Fox
Nanci Batelaan
William Gibson
Jeff Tran
Eve Rubell

Lauren Black

Alan Ehrlich

Stephanie Ehrlich

Justin Ehrlich

Banjong Muninnopmas

Esther Huang

Margie Menza

Jeff Mullican

Florence Chun

Amber Haley

Patrick Haley

Katrina Lowstuter

Nathan Lowstuter

Jerilyn Schmidt

Gregory Chun

Beatrice Chun

Jacob Chun

Harrison Chun

Joanne Heyler

Madeleine Horton

Melissa Lien

Erin Chase

Ann Gillespie

Shannon Kumagai

Deborah Malafronte

Ken Rivers

Ken Wu

Nick Scarpa

Lisa Shetler

Kelly Higgins-Paulsen

Kirsten Jones

Jeffrey Olney

Dawn Tull

Barbara Sutton

Bonnie Kingry

Lauren Child

Krista Cocke

Roman Ogawa

Oliver Wang

Taleen Mitchell

Annat dror Sanchez

Jerilyn Schmidt

Helga Kuhn

Francoise McCullough

Pat Rodriguez-Holguin

From: Julie Riley
Sent: Tuesday, April 20, 2021 7:29 AM
To: MTIC Public Comments
Subject: Agenda Item 3

Dear MTIC,
This is a public comment for Item 3. My name is Julie Riley. I live at 1700 Meridian Avenue, close to the intersection of Oak Avenue. I am writing in support of the idea of installing an all-way stop sign at this intersection. As the Rock E. Miller peer review of the original traffic study noted, Meridian is a collector street and there is an urgent need to control left-turn conflicts from Oak to Meridian Avenue. Pedestrians are not adequately protected from cars speeding south on Meridian Avenue.

Just last weekend, a vehicle knocked down and destroyed the sign in the middle of the street intended to warn motorists of people crossing the street. I found the original traffic study to be flawed because it did not acknowledge that motorists routinely exceed 40 mph at this juncture of Meridian and the traffic study appeared to stop its data collection at 5:45 p.m each day. It also noted only one accident, which is not likely to be the case if another period of time were studied.

Meridian and its feeder streets are often suggested as the quickest ways through South Pasadena on WAZE and other map applications. This speed for motorists comes at the expense of residents' safety. We should at least start with installing a 3-way stop sign at Meridian/Oak and continue to study the traffic patterns to determine whether additional measures are necessary.

Thank you,
Julie Riley

Sent from my iPhone

From: Denise Philley
Sent: Tuesday, April 20, 2021 8:36 AM
To: MTIC Public Comments
Subject: Agenda Item #3: Meridian Stop Signs

Follow Up Flag: Follow up
Flag Status: Flagged

Date: April 20, 2021

To: South Pasadena City Council
MTIC

Re: Agenda Item #3

THE FOLLOWING COMMENT SHOULD BE READ ALOUD

The first time I attended a Council meeting in January, 2020, to ask for the installation of stop signs at the Meridian intersections of Maple and Oak, was in reaction to a recent spate of auto collisions at Maple, a few steps from my home. Two of those happened within a 24-hour period. There have been several more accidents since then.

I've parked my car on Meridian for 6 years and my home office faces the street, so I'm intimately familiar with the habits of Meridian drivers. It's common to see speeding, frustrated honking by drivers waiting for cars to park or pull out of driveways and side streets, and motorists blatantly ignoring pedestrians. Also a frequent walker, when I pass or cross at the Oak intersection, I see cars breeze through the crosswalk, ignoring the flashing lights and signs, more often than not. It's a frequent source of complaint among my neighbors.

Meridian Avenue is simply not safe. A residential street frequented by dog walkers, schoolchildren, parents with strollers — and motorists who have no impetus to slow for any of them.

The best, most direct way to control the flow of traffic here is to force drivers to come to a full stop every few blocks, just like traffic is controlled on Marengo. You can't speed on Marengo, you shouldn't be able to speed on Meridian.

Thank you.

From: woodcutcabin
Sent: Tuesday, April 20, 2021 10:04 AM
To: MTIC Public Comments
Subject: Agenda Item #3: Meridian Stop Signs

Follow Up Flag: Follow up
Flag Status: Flagged

Date: April 20, 2021

To:
South Pasadena City Council - MTIC

Re:
Agenda Item #3

THE FOLLOWING COMMENT SHOULD BE READ ALOUD

I have lived on the 2000 block of Meridian Avenue (between Bonita & Valley View) since 2015. I use Meridian as a pedestrian, driver and cyclist.

To highlight the perpetual issues we face on our street, I have personally witnessed numerous car smashes, Including 4 within the last few months on our block alone.

Last year I actually saw an overturned car in an accident 100 yards from our house - IN A 25 MPH ZONE.

In September 2019 I was hit on my bicycle close to Meridian / Oak by a car actually U-Turning in front of me. This lead to a life threatening injury and hospitalization.

In my opinion ALL of these issues might have been avoided if motorists are FORCED to stop at both Meridian / Oak and Meridian / Maple.

Whilst the city's efforts (at Meridian / Oak) are appreciated, we are still experiencing speeding motorists at every hour of the day as they cut through between Monterey and Kendall and those motorists show no signs of slowing. In fact, as a drive along Meridian, intentionally at 25 MPH I am often / usually tailgated by someone trying to get past me a unreasonable speeds.

It is very clear that these behaviours will not change until action is taken by the city to force drivers to make a full and complete stop at those mentioned key junctions on our Avenue. It's my hope that residents' testimonials and experience will finally result in action that will enable real change.

From: Craig Erickson
Sent: Tuesday, April 20, 2021 10:33 AM
To: MTIC Public Comments
Subject: Ramona Avenue Neighborhood Traffic Management Plan Ad Hoc Committee-Public Comment

Craig Erickson
Ramona Avenue Neighborhood Traffic Management Plan Ad Hoc Committee
Please read the comment during the meeting.

I live at 1545 Ramona Ave, on the corner of Ramona and Oak. I watch every morning and afternoon as the cars for Holy Family line up down Ramona and cause traffic and safety issues in the neighborhood. I have reviewed the November 2019 Traffic Management Plan. While it does suggest some reasonable solutions. It does nothing to address the root of the problem. None of these solutions will reduce the traffic flow. The root of the problem is all the traffic from the Holy Family drop off. There also needs to be better enforcement of drop off at the High School.

I believe that the simplest and most cost-effective solution is to stagger the start times and take away the Holy Family drop off, especially since 90% of the students are from outside South Pas. They should utilize the 75 spots in their other lot. Their reason for not doing this is the students having to cross Fremont. Students at every other school in the district cross busy streets every day. Not only is there a traffic light, but they can move the nice lady who watches the driveway to the Fremont/Oak intersection to act as a crossing guard.

While they are overly concerned with the safety of their students, they don't seem to have the same concern for the other students and residents of the neighborhood. The parents have a total disregard for the neighborhood and traffic laws. They are constantly making u turns and stopping in the crosswalks both on Ramona and Oak. The traffic back up, which runs from Oak all the way to Huntington, causes other drivers to lose patience and not make the safest driving choices.

This has been an ongoing problem for years, and the neighborhood is tired of waiting for a solution. The lineup of cars from outside the city, idling, polluting the neighborhood, disregarding traffic laws, and creating dangerous situations is unacceptable. We are asking that the subcommittee act post haste to eliminate this dangerous drop off and pick up at Holy Family School.

Thank you.

Craig Erickson

Joanne Heyler

Tom Nuckols

Joanne Nuckols

Andrew Berk

Gabriella Berk

Caleb Smith

Betsy Smith

Amber Haley

From: sophia taylor
Sent: Tuesday, April 20, 2021 11:05 AM
To: MTIC Public Comments; sophia taylor
Subject: General Public Comment for Tuesday April 20 City Meeting

My name is Sophia Taylor. This email is for General Public Comment. I wish for my email public comment to be read aloud during the meeting.

I own a home at 310 Orange Grove Ave in South Pasadena. My family has lived on this property since 1979. I am commenting this evening because of the dangerous traffic on Orange Grove Ave. between Columbia St. and the 110 Freeway. This one-quarter stretch south of Columbia has for years been a very dangerous street in So. Pas. Cars land on our lawn, take out light posts, broken curbs etc. It's clear drivers cannot handle that curve heading south. I am always nervous when walking with my kids in front of my home.

I am requesting that a Traffic Study be completed. Following the Traffic Study, mitigation strategies can be implemented immediately. Something must be done to slow down the speed of traffic.

Thank you - Sophia Taylor

From: Joanne Nuckols
Sent: Tuesday, April 20, 2021 11:36 AM
To: MTIC Public Comments
Subject: #1 Public Comment

Please read aloud.

The discussion at the March meeting about preferential parking hopefully will continue and be enhanced by a meeting with each neighborhood, separately or together, who have a parking district and find out the successes and failures. Without this knowledge from those living with the existing districts it's just speculation on the part of the staff and commission as to effectiveness of the current policies and what needs to change to make them more efficient for the purpose originally intended. Beverly Hills is another city, as well as Pasadena, that has an effective ordinance that serves the community.

Joanne Nuckols/
Representing the Ramona Ave Preferential Parking District, the first residential parking district in the city

Sent from my iPad

From: Joanne Nuckols
Sent: Tuesday, April 20, 2021 11:49 AM
To: MTIC Public Comments
Subject: #3 Stop Signs

Please read aloud

We thank Mr Miller for his recommendation for stop signs at Meridian/Oak and Meridian/Maple. We all urge you to recommend the same to the city council for the future safety of the neighborhood. The time is now to respond to all the comments and complaints and make Meridian a safer street for all and relieve the neighborhood's anxiety.

In addition to this last engineers reasoned analysis and recommendation to MTIC, former Transportation Commission Chairman Helgeson, a retired city attorney, stated to me that another criteria for consideration is antidotal evidence of safety issues and accidents. We all know there's plenty of evidence of both of those.

Please make the neighborhood safer and vote for stop signs at Meridian/Oak and Meridian/Maple.

Joanne Nuckols

Sent from my iPad

From: Jason J Wallace
Sent: Tuesday, April 20, 2021 12:02 PM
To: MTIC Public Comments
Subject: MTIC April 20 Public Hearing: Agenda No. 3: Meridian Stop Signs: Public Comment: Please Read Out Loud at Meeting

1) Jason Wallace & Wendy Kim
2) Agenda Item #3
3) I wish for my comment to be read aloud

_____

My wife and I would like to express our urgent support of stop signs at the intersections of Meridian/Oak and Meridian/Maple.

We have lived on Meridian Avenue for a number of years, and each year that goes by we feel more unsafe on our own street. Each day we struggle to cross the street, park our cars, and back out of our driveway. We constantly face tailgating, honking, obscene gestures, and aggression, all while simply driving the speed limit on our way home. On top of that, back in November 2017 our friend's car was totaled by a speeding car, while just parked along the curb outside our house. Drivers simply do not take Meridian Avenue seriously, and it is only a matter of time before someone is seriously injured or killed due to the unsafe driving conditions that have been allowed to develop on our street.

We recognize that the City attempted to address the speeding traffic, dangerous intersections, and unsafe pedestrian conditions on Meridian Avenue through a multitude of other road improvements. However, it is clear to us and our neighbors that stop signs at Meridian/Oak and Meridian/Maple are by far the most effective and economical action the City can take to address our concerns and reduce the dangerous traffic on Meridian Avenue.

Please help us feel safe on our street and recommend to the City Council that stop signs are placed at these intersections.

Very respectfully,
Jason Wallace & Wendy Kim

From: Christopher Kramsch
Sent: Tuesday, April 20, 2021 12:34 PM
To: MTIC Public Comments
Subject: Line of cars Ramona

Hello. I live at 1608 Ramona ave and am sick and tired of the line of holy family school cars sitting idle in front of my house 2 x per day all weekdays spewing their noxious fumes all over my kids who play in the front yard. This has got to stop!! I saw several kids walking to high school and middle school almost get run over several times as well from these cars jostling for position on my street. Please address at your meeting and ask them to park somewhere and walk their kids like all the other parents do at the public schools.
Chris kramsch
Sent from my iPhone

ITEM 4

Proposed Stop Sign on Meridian Avenue at Oak Street

No Additional Data or Information was provided by Mr. Miller as requested by the Commission.

Mobility & Transportation Infrastructure Commission Agenda Report

ITEM NO. 4

DATE: April 20, 2021

FROM: Garrett Crawford, Acting Deputy Public Works Director

SUBJECT: **Update on the Multi-Way Stop Signs Study for Meridian Avenue at Oak Street, Pine Street, and Maple Street**

Recommendation

It is recommended that the Mobility and Transportation Infrastructure Commission (MTIC):

- Receive and file the Multi-Way Stop Sign Analysis Update, and make a recommendation to the City Council for traffic controls on Meridian Avenue at Oak Street, Pine Street, and Maple Street, or
- Provide guidance to the staff on how to proceed further on this report.

Background

In response to the request by the residents of Meridian Avenue, W.G. Zimmerman Engineering, Inc. prepared a stop sign analysis for Meridian Avenue at Oak Street, Pine Street, and Maple Street (Engineer's Study) on May 6, 2020 (Attachment 1). The study concluded that the subject intersections do not meet the California Manual of Uniform Traffic Control Devices (CAMUTCD) criteria for Multi-Way Stop Application in Section SB.07.

On August 5, 2020, staff presented the Engineer's Study's findings to the City Council. Subsequently, at October 7, 2020, Council Meeting, Council directed staff to conduct a new traffic study at the above intersections.

Recently in March of this year, the Interwest Consulting Group conducted a Peer Review of the original Engineer's Study (Attachment 2). Their review consisted of evaluating field and site conditions, vehicular and non-vehicular traffic operations on Meridian Avenue, and side streets, including turning movements at the three locations. The review validated the findings of W.G. Zimmerman Engineering stop sign analysis.

Discussion

Subsequent to the Peer Review, the City consulted with Rock E. Miller & Associates (Miller Report), who prepared a report, "Review and Evaluate Traffic Control needs on Meridian Avenue," dated April 13, 2021 (Attachment 3). The report identifies alternative criteria in CAMUTCD that may be considered for installing multi-way stop signs on neighborhood local residential streets when if specific safety concerns exist. The MUTCD Section 2B.07 states as follows:

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

This section of CAMUTCD intends to apply an alternative criterion as a safety measure, but it may not support its application when there are no identifiable safety concerns. Following are the major conclusions of the Miller's Report:

- Oak Street and Meridian Avenue: Based on the unique intersection geometrics, the marked school crossing at the south leg, and the street usage further to the east. The report recommends a multi-way stop sign control at this location.
- Maple Street and Meridian Avenue: The report cites higher traffic volumes and restricted sight distance as a factor for installation of a multi-way stop sign control while noting that sight distance is good and could further improve by painting additional red curb, which would result in a safer and better operation of the intersection. Therefore, staff does not recommend a multi-way stop sign control at this location.
- Pine Street and Meridian Avenue: The report finds lower traffic volumes compared to the other locations with the fewest distinguished factors for installing an all-way stop sign control. The report also recommends an additional red curb to improve sight distance. Given these factors, staff does not recommend a multi-way stop sign control at this location.

The report also suggests that if the City chose to deviate from CAMUTCD warrants and install an all-way stop sign, it must consider how it might apply to other intersections in the City. This will set a precedent, which may lead to the installation of many stop signs at intersections with similar characteristics. Therefore the report recommends adopting new guidelines for installing a multi-way stop controls on local residential streets. The report provides no additional engineering data on existing conditions.

Fiscal Impact
The cost of installing the stop signs and stop ahead signs is estimated to be $2,000. If approved, Public Works will use its exiting operating funds to manufacture and install the signs.

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*.

Attachments:

1. Engineer's Study
2. Peer Review - Interwest
3. Miller Report

ATTACHMENT 1

Engineer's Study

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:*

W.G. Zimmerman Engineering, Inc.
17011 Beach Boulevard, Suite 1240
Huntington Beach, CA 92647
Phone: 714-799-1700 Fax: 714-333-4712

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	49
	Pedestrian	36	Pedestrian	14	Pedestrian	31
	Bicycles	0	Bicycles	0	Bicycles	0
	AM Total	**150**	**Noon Total**	**44**	**PM Total**	**80**

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	51
	Pedestrian	17	Pedestrian	1	Pedestrian	15
	Bicycles	0	Bicycles	0	Bicycles	0
	AM Total	**94**	**Noon Total**	**29**	**PM Total**	**66**

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	257
	Pedestrian	27	Pedestrian	13	Pedestrian	46
	Bicycles	2	Bicycles	2	Bicycles	1
	AM Total	**280**	**Noon Total**	**103**	**PM Total**	**304**

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).

If you have any questions regarding this memo, please feel free to contact me at 714-799-1700 x 100.

Sincerely,
W.G. Zimmerman Engineering, Inc.

Bill Zimmerman, PE, TE, PTOE
President

WGZE

W.G. Zimmerman Engineering, Inc.
17011 Beach Boulevard, Suite 1240
Huntington Beach, CA 92647
Phone: 714-799-1700 Fax: 714-333-4712

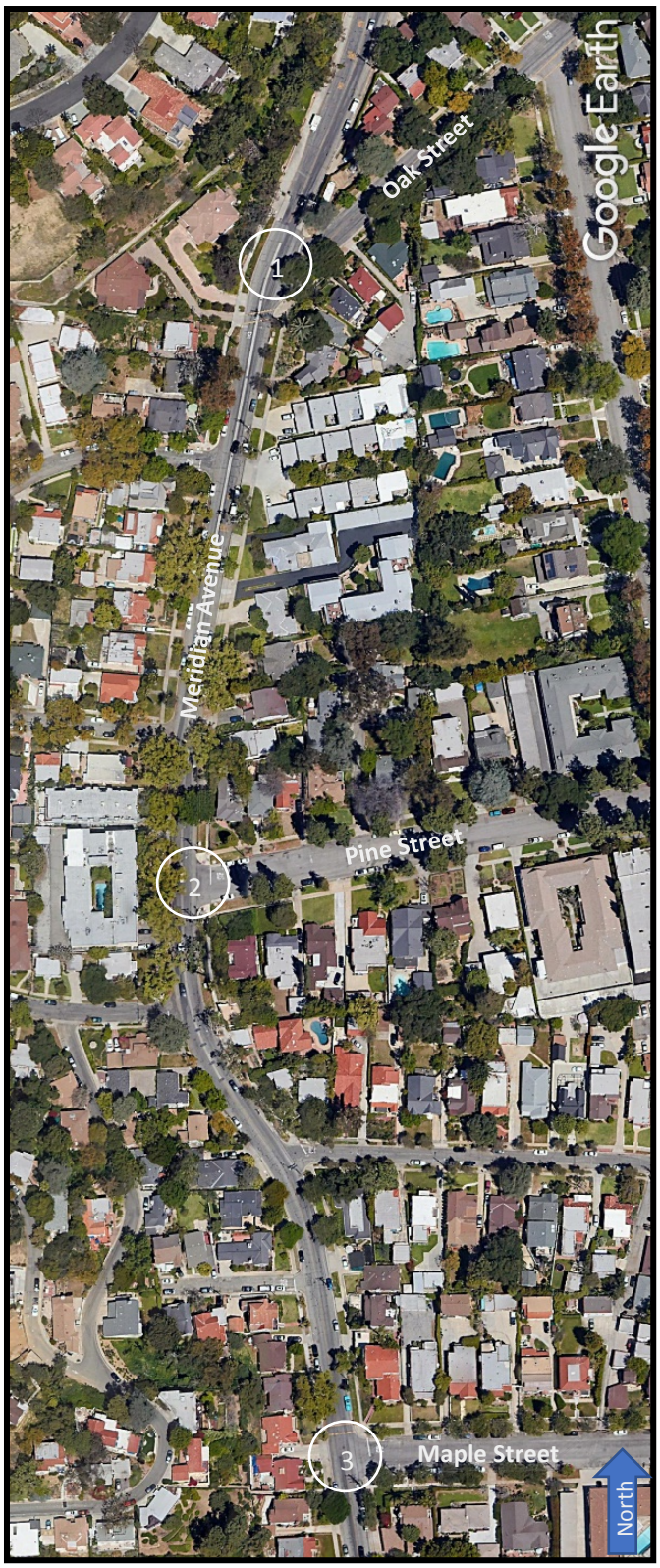


Exhibit A

Aerial Photo

WGZE

W.G. Zimmerman Engineering, Inc.
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Huntington Beach, CA 92647
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DATA

W.G. Zimmerman Engineering, Inc.
17011 Beach Boulevard, Suite 1240
Huntington Beach, CA 92647
Phone: 714-799-1700 Fax: 714-333-4712

Prepared by National Data & Surveying Services

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
Totals	**8**	**4021**	**684**	**2**	**52**									**4767**
% of Totals	0%	84%	14%	0%	1%									100%

AM Volumes	2	1646	298	1	20	0	0	0	0	0	0	0	0	1967
% AM	0%	35%	6%	0%	0%									41%
AM Peak Hour														
Volume														
PM Volumes	6	2375	386	1	32	0	0	0	0	0	0	0	0	2800
% PM	0%	50%	8%	0%	1%									59%
PM Peak Hour														
Volume														

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	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	

Prepared by National Data & Surveying Services

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	4	0	0	0	0	0	0	0	0	0	0	0	4
0:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
0:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
0:45	0	5	1	0	0	0	0	0	0	0	0	0	0	6
1:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
1:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
1:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
2:15	0	3	1	0	0	0	0	0	0	0	0	0	0	4
2:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
4:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
5:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
5:15	0	5	1	0	0	0	0	0	0	0	0	0	0	6
5:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
5:45	0	5	3	0	3	0	0	0	0	0	0	0	0	11
6:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
6:15	0	12	1	0	0	0	0	0	0	0	0	0	0	13
6:30	0	36	4	0	0	0	0	0	0	0	0	0	0	40
6:45	0	46	8	0	0	0	0	0	0	0	0	0	0	54
7:00	2	60	7	0	2	0	0	0	0	0	0	0	0	71
7:15	0	62	6	1	0	1	0	0	0	0	0	0	0	70
7:30	0	87	23	0	0	0	0	0	0	0	0	0	0	110
7:45	0	128	34	0	3	0	0	0	0	0	0	0	0	165
8:00	1	92	27	1	1	0	0	0	0	0	0	0	0	122
8:15	0	98	22	0	2	0	0	0	0	0	0	0	0	122
8:30	0	70	11	0	1	0	0	0	0	0	0	0	0	82
8:45	0	59	15	0	1	0	0	0	0	0	0	0	0	75
9:00	0	44	10	0	1	0	0	0	0	0	0	0	0	55
9:15	0	57	9	0	0	1	0	0	0	0	0	0	0	67
9:30	0	39	7	0	0	0	0	0	0	0	0	0	0	46
9:45	0	50	16	1	1	0	0	0	0	0	0	0	0	68
10:00	1	31	7	0	3	0	0	0	0	0	0	0	0	42
10:15	0	31	8	1	2	0	0	0	0	0	0	0	0	42
10:30	0	34	9	0	1	0	0	0	0	0	0	0	0	44
10:45	0	36	8	0	3	1	0	0	0	0	0	0	0	48
11:00	0	33	10	0	0	0	0	0	0	0	0	0	0	43
11:15	1	37	6	0	0	0	0	0	0	0	0	0	0	44
11:30	1	47	15	0	0	1	0	0	0	0	0	0	0	64
11:45	0	40	3	0	0	0	0	0	0	0	0	0	0	43
12:00 PM	0	38	5	0	0	0	0	0	0	0	0	0	0	43
12:15	0	46	11	1	1	0	0	0	0	0	0	0	0	59
12:30	0	39	12	0	0	0	0	0	0	0	0	0	0	51
12:45	0	47	11	0	0	0	0	0	0	0	0	0	0	58
13:00	0	48	8	0	0	0	0	0	0	0	0	0	0	56
13:15	0	40	5	0	2	0	0	0	0	0	0	0	0	47
13:30	0	46	12	0	0	0	0	0	0	0	0	0	0	58
13:45	1	44	9	0	2	0	0	0	0	0	0	0	0	56
14:00	0	48	11	0	0	1	0	0	0	0	0	0	0	60
14:15	1	50	11	0	4	0	0	0	0	0	0	0	0	66
14:30	0	56	18	0	0	0	0	0	0	0	0	0	0	74
14:45	1	69	21	0	1	0	0	0	0	0	0	0	0	92
15:00	0	85	15	0	1	0	0	0	0	0	0	0	0	101
15:15	0	90	21	0	1	0	0	0	0	0	0	0	0	112
15:30	1	89	18	0	1	0	0	0	0	0	0	0	0	109
15:45	0	78	15	0	1	1	0	0	0	0	0	0	0	95
16:00	0	91	24	0	0	0	0	0	0	0	0	0	0	115
16:15	1	81	18	0	1	1	0	0	0	0	0	0	0	102
16:30	0	80	17	0	0	0	0	0	0	0	0	0	0	97
16:45	2	84	23	0	2	0	0	0	0	0	0	0	0	111
17:00	1	135	15	0	1	0	0	0	0	0	0	0	0	152
17:15	1	131	17	0	3	0	0	0	0	0	0	0	0	152
17:30	1	126	26	0	2	0	0	0	0	0	0	0	0	155
17:45	0	112	24	0	1	0	0	0	0	0	0	0	0	137
18:00	0	118	16	0	0	0	0	0	0	0	0	0	0	134
18:15	0	84	12	0	0	0	0	0	0	0	0	0	0	96
18:30	0	68	12	0	0	0	0	0	0	0	0	0	0	80
18:45	0	81	14	0	1	0	0	0	0	0	0	0	0	96
19:00	0	63	7	0	0	0	0	0	0	0	0	0	0	70
19:15	0	64	8	0	0	0	0	0	0	0	0	0	0	72
19:30	0	43	1	0	0	0	0	0	0	0	0	0	0	44
19:45	0	48	4	0	1	0	0	0	0	0	0	0	0	53
20:00	0	47	4	0	0	0	0	0	0	0	0	0	0	51
20:15	0	49	6	0	0	0	0	0	0	0	0	0	0	55
20:30	0	51	1	0	0	0	0	0	0	0	0	0	0	52
20:45	0	31	2	0	0	0	0	0	0	0	0	0	0	33
21:00	0	38	2	0	0	0	0	0	0	0	0	0	0	40
21:15	0	31	3	0	0	0	0	0	0	0	0	0	0	34
21:30	0	32	1	0	0	0	0	0	0	0	0	0	0	33
21:45	0	20	2	0	0	0	0	0	0	0	0	0	0	22
22:00	0	19	4	0	0	0	0	0	0	0	0	0	0	23
22:15	0	19	3	0	0	0	0	0	0	0	0	0	0	22
22:30	0	12	2	0	0	0	0	0	0	0	0	0	0	14
22:45	0	15	2	0	0	0	0	0	0	0	0	0	0	17
23:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
23:15	0	11	0	0	0	0	0	0	0	0	0	0	0	11
23:30	0	9	1	0	0	1	0	0	0	0	0	0	0	11
23:45	0	5	2	0	0	0	0	0	0	0	0	0	0	7
Totals	**16**	**4019**	**754**	**5**	**51**	**8**								**4853**
% of Totals	0%	83%	16%	0%	1%	0%								100%

AM Volumes	6	1295	278	4	25	4	0	0	0	0	0	0	0	1612
% AM	0%	27%	6%	0%	1%	0%								33%
AM Peak Hour	6:15	7:30	7:30	7:15	10:00	10:45								7:30
Volume	2	405	106	2	9	2								519
PM Volumes	10	2724	476	1	26	4	0	0	0	0	0	0	0	3241
% PM	0%	56%	10%	0%	1%	0%								67%
PM Peak Hour	16:45	17:00	17:15	12:00	16:45	15:30								17:00
Volume	5	504	83	1	8	2								596

Directional Peak Periods	**AM 7-9**			**NOON 12-2**			**PM 4-6**			**Off Peak Volumes**		
All Classes	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	

Prepared by National Data & Surveying Services

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	5	0	0	0	0	0	0	0	0	0	0	0	5
0:15	0	9	0	0	0	0	0	0	0	0	0	0	0	9
0:30	0	6	1	0	1	0	0	0	0	0	0	0	0	8
0:45	0	6	1	0	0	0	0	0	0	0	0	0	0	7
1:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
1:30	0	2	2	0	1	0	0	0	0	0	0	0	0	5
1:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
2:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
2:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
2:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
4:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
4:45	0	8	3	0	0	0	0	0	0	0	0	0	0	11
5:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
5:15	0	16	2	0	0	0	0	0	0	0	0	0	0	18
5:30	0	17	3	0	0	0	0	0	0	0	0	0	0	20
5:45	0	18	6	0	3	0	0	0	0	0	0	0	0	27
6:00	0	30	6	0	0	0	0	0	0	0	0	0	0	36
6:15	0	44	7	0	0	0	0	0	0	0	0	0	0	51
6:30	0	72	13	0	0	0	0	0	0	0	0	0	0	85
6:45	0	101	19	0	1	0	0	0	0	0	0	0	0	121
7:00	2	130	15	0	3	0	0	0	0	0	0	0	0	150
7:15	0	187	21	1	0	1	0	0	0	0	0	0	0	210
7:30	0	216	45	0	1	0	0	0	0	0	0	0	0	262
7:45	0	265	58	1	6	0	0	0	0	0	0	0	0	330
8:00	1	192	40	1	2	0	0	0	0	0	0	0	0	236
8:15	0	176	31	0	2	0	0	0	0	0	0	0	0	209
8:30	1	168	28	0	3	0	0	0	0	0	0	0	0	200
8:45	0	144	32	0	1	0	0	0	0	0	0	0	0	177
9:00	0	127	15	0	2	0	0	0	0	0	0	0	0	144
9:15	0	117	20	0	0	1	0	0	0	0	0	0	0	138
9:30	0	93	21	0	1	0	0	0	0	0	0	0	0	115
9:45	0	105	35	1	3	0	0	0	0	0	0	0	0	144
10:00	1	70	22	0	3	0	0	0	0	0	0	0	0	96
10:15	0	78	15	1	2	0	0	0	0	0	0	0	0	96
10:30	0	72	17	0	1	0	0	0	0	0	0	0	0	90
10:45	1	85	17	0	6	1	0	0	0	0	0	0	0	110
11:00	0	76	18	0	1	0	0	0	0	0	0	0	0	95
11:15	1	78	17	0	1	0	0	0	0	0	0	0	0	97
11:30	1	88	25	0	0	1	0	0	0	0	0	0	0	115
11:45	0	89	14	0	0	0	0	0	0	0	0	0	0	103
12:00 PM	0	87	16	1	1	0	0	0	0	0	0	0	0	105
12:15	0	86	27	1	3	0	0	0	0	0	0	0	0	117
12:30	0	89	21	0	0	0	0	0	0	0	0	0	0	110
12:45	0	93	18	0	3	0	0	0	0	0	0	0	0	114
13:00	1	96	16	0	1	0	0	0	0	0	0	0	0	114
13:15	0	95	11	0	2	0	0	0	0	0	0	0	0	108
13:30	1	102	19	0	1	0	0	0	0	0	0	0	0	123
13:45	1	111	18	0	3	0	0	0	0	0	0	0	0	133
14:00	0	111	27	0	2	1	0	0	0	0	0	0	0	141
14:15	1	114	19	0	4	0	0	0	0	0	0	0	0	138
14:30	1	126	31	0	1	0	0	0	0	0	0	0	0	159
14:45	1	167	39	0	1	0	0	0	0	0	0	0	0	208
15:00	1	175	32	0	2	0	0	0	0	0	0	0	0	210
15:15	0	149	41	0	2	0	0	0	0	0	0	0	0	192
15:30	1	144	32	0	2	0	0	0	0	0	0	0	0	179
15:45	1	143	27	0	2	1	0	0	0	0	0	0	0	174
16:00	0	174	39	0	2	0	0	0	0	0	0	0	0	215
16:15	1	165	31	0	5	1	0	0	0	0	0	0	0	203
16:30	0	156	29	0	0	0	0	0	0	0	0	0	0	185
16:45	2	158	40	0	4	0	0	0	0	0	0	0	0	204
17:00	1	240	34	0	1	0	0	0	0	0	0	0	0	276
17:15	1	226	31	0	4	0	0	0	0	0	0	0	0	262
17:30	2	222	39	0	3	0	0	0	0	0	0	0	0	266
17:45	0	205	38	0	1	0	0	0	0	0	0	0	0	244
18:00	0	199	20	0	1	0	0	0	0	0	0	0	0	220
18:15	0	155	22	0	1	0	0	0	0	0	0	0	0	178
18:30	0	129	23	0	2	0	0	0	0	0	0	0	0	154
18:45	0	141	25	0	1	0	0	0	0	0	0	0	0	167
19:00	0	119	10	0	0	0	0	0	0	0	0	0	0	129
19:15	0	109	11	0	0	0	0	0	0	0	0	0	0	120
19:30	0	87	4	0	1	0	0	0	0	0	0	0	0	92
19:45	0	72	12	0	1	0	0	0	0	0	0	0	0	85
20:00	0	73	6	0	1	0	0	0	0	0	0	0	0	80
20:15	0	78	9	0	0	0	0	0	0	0	0	0	0	87
20:30	0	74	4	0	0	0	0	0	0	0	0	0	0	78
20:45	0	56	3	0	0	0	0	0	0	0	0	0	0	59
21:00	0	69	4	0	0	0	0	0	0	0	0	0	0	73
21:15	0	46	5	0	0	0	0	0	0	0	0	0	0	51
21:30	0	58	2	0	0	0	0	0	0	0	0	0	0	60
21:45	0	32	3	0	0	0	0	0	0	0	0	0	0	35
22:00	0	42	6	0	0	0	0	0	0	0	0	0	0	48
22:15	0	28	4	0	0	0	0	0	0	0	0	0	0	32
22:30	0	18	3	0	0	0	0	0	0	0	0	0	0	21
22:45	0	23	4	0	0	0	0	0	0	0	0	0	0	27
23:00	0	23	1	0	0	0	0	0	0	0	0	0	0	24
23:15	0	14	1	0	0	0	0	0	0	0	0	0	0	15
23:30	0	13	2	0	0	1	0	0	0	0	0	0	0	16
23:45	0	7	3	0	0	0	0	0	0	0	0	0	0	10
Totals	**24**	**8040**	**1438**	**7**	**103**	**8**								**9620**
% of Totals	0%	84%	15%	0%	1%	0%								100%

AM Volumes	8	2941	576	5	45	4	0	0	0	0	0	0	0	3579
% AM	0%	31%	6%	0%	0%	0%								37%
AM Peak Hour	10:45	7:15	7:30	7:15	7:45	10:45								7:15
Volume	3	860	174	3	13	2								1038
PM Volumes	16	5099	862	2	58	4	0	0	0	0	0	0	0	6041
% PM	0%	53%	9%	0%	1%	0%								63%
PM Peak Hour	16:45	17:00	14:45	12:00	16:45	15:30								17:00
Volume	6	893	144	2	12	2								1048

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	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	

Prepared by National Data & Surveying Services

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
Totals	8	4021	684	2	52									4767
% of Totals	0%	84%	14%	0%	1%									100%

AM Volumes	2	1646	298	1	20	0	0	0	0	0	0	0	0	1967
% AM	0%	35%	6%	0%	0%									41%
AM Peak Hour	8:00	7:00	7:00	7:00	7:00									7:00
Volume	1	461	69	1	5									536
PM Volumes	6	2375	386	1	32	0	0	0	0	0	0	0	0	2800
% PM	0%	50%	8%	0%	1%									59%
PM Peak Hour	13:00	17:00	15:00	12:00	16:00									17:00
Volume	2	389	63	1	8									452

Directional Peak Periods All Classes	AM 7-9 Volume	AM 7-9 %	NOON 12-2 Volume	NOON 12-2 %	PM 4-6 Volume	PM 4-6 %	Off Peak Volumes Volume	Off Peak Volumes %
	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	

Prepared by National Data & Surveying Services

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
Totals	16	4019	754	5	51	8								4853
% of Totals	0%	83%	16%	0%	1%	0%								100%

AM Volumes	6	1295	278	4	25	4	0	0	0	0	0	0	0	1612
% AM	0%	27%	6%	0%	1%	0%								33%
AM Peak Hour	7:00	7:00	8:00	7:00	10:00	7:00								7:00
Volume	2	337	75	1	9	1								416
PM Volumes	10	2724	476	1	26	4	0	0	0	0	0	0	0	3241
% PM	0%	56%	10%	0%	1%	0%								67%
PM Peak Hour	16:00	17:00	16:00	12:00	17:00	14:00								17:00
Volume	3	504	82	1	7	1								596

Directional Peak Periods	AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes	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	

Prepared by National Data & Surveying Services

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
Totals	24	8040	1438	7	103	8								9620
% of Totals	0%	84%	15%	0%	1%	0%								100%

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

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

Classification Definitions

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

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

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	0	0	7	29	12:45	56	235	58	211	0	0	114	446
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	0	0	5	19	13:45	77	261	56	217	0	0	133	478
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	0	0	2	13	14:45	116	354	92	292	0	0	208	646
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	0	0	2	7	15:45	79	338	95	417	0	0	174	755
4:00	2		4		0	0	6		16:00	100		115		0	0	215	
4:15	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	0	0	11	24	16:45	93	382	111	425	0	0	204	807
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	0	0	27	77	17:45	107	452	137	596	0	0	244	1048
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	0	0	121	293	18:45	71	313	96	406	0	0	167	719
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	0	0	330	952	19:45	32	187	53	239	0	0	85	426
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	0	0	177	822	20:45	26	113	33	191	0	0	59	304
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	0	0	144	541	21:45	13	90	22	129	0	0	35	219
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	0	0	110	392	22:45	10	52	17	76	0	0	27	128
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	0	0	103	410	23:45	3	23	7	42	0	0	10	65
TOTALS		1967		1612				3579	TOTALS		2800		3241				6041
SPLIT %		55.0%		45.0%				37.2%	SPLIT %		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	0	0			1774		4 - 6 Volume	834	1021	0	0			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	0	0			1038		4 - 6 Pk Volume	452	596	0	0			1048		
Pk Hr Factor	0.865	0.786	0.000	0.000			0.786		Pk Hr Factor	0.911	0.961	0.000	0.000			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				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	840	151	0	115	710	0	0	1	0	0	0	30	0	123	0	1970
APPROACH %'s :	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%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	433	127	0	102	424	0	0	1	0	0	0	22	0	92	0	1201
PEAK HR FACTOR :	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	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	413	30	0	26	376	0	0	0	0	0	0	19	0	33	0	897
APPROACH %'s :	0.00%	93.23%	6.77%	0.00%	6.47%	93.53%	0.00%	0.00%					36.54%	0.00%	63.46%	0.00%	
PEAK HR :	12:00 PM - 01:00 PM																TOTAL
PEAK HR VOL :	0	212	13	0	13	194	0	0	0	0	0	0	11	0	19	0	462
PEAK HR FACTOR :	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	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1364	85	0	146	1568	0	0	0	0	0	0	81	0	174	2	3420
APPROACH %'s :	0.00%	94.13%	5.87%	0.00%	8.52%	91.48%	0.00%	0.00%					31.52%	0.00%	67.70%	0.78%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	423	21	0	46	554	0	0	0	0	0	0	22	0	27	1	1094
PEAK HR FACTOR :	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				
	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	TOTAL
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	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	2
7:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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	1	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	4	0	0	0	0	0	0	0	0	0	0	0	1	0	7
APPROACH %'s :	0.00%	33.33%	66.67%	0.00%									0.00%	0.00%	100.00%	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	5
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				
	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	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	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	2
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				
	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	TOTAL
2:00 PM	0	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	1
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
3:00 PM	0	1	0	0	0	1	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	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	0	0	0	3	0	0	0	0	0	0	3	0	0	0	8
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	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	1
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: 20-05030-001
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		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
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
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	24	2	4	3	5	8	46
APPROACH %'s :			92.31%	7.69%	57.14%	42.86%	38.46%	61.54%	
PEAK HR :	**07:30 AM - 08:30 AM**								TOTAL
PEAK HR VOL :	0	0	22	0	4	2	3	5	36
PEAK HR FACTOR :			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		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
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
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	1	5	3	5	3	4	21
APPROACH %'s :			16.67%	83.33%	37.50%	62.50%	42.86%	57.14%	
PEAK HR :	**12:00 PM - 01:00 PM**								TOTAL
PEAK HR VOL :	0	0	0	5	3	3	1	2	14
PEAK HR FACTOR :				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		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
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
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	22	30	13	17	12	17	111
APPROACH %'s :			42.31%	57.69%	43.33%	56.67%	41.38%	58.62%	
PEAK HR :	**05:00 PM - 06:00 PM**								TOTAL
PEAK HR VOL :	0	0	11	3	1	6	2	8	31
PEAK HR FACTOR :			0.688	0.375	0.250	0.500	0.500	0.667	0.705
			0.700		0.583		0.625		

Prepared by National Data & Surveying Services

Meridian Ave & Oak St

Peak Hour Turning Movement Count

ID: 20-05030-001
City: South Pasadena

Day: Wednesday
Date: 01/22/2020

Meridian Ave

SOUTHBOUND

PEAK HOURS								COUNT PERIODS
07:30 AM - 08:30 AM	AM	0	424	102	0	526	AM	07:00 AM - 09:00 AM
12:00 PM - 01:00 PM	NOON	0	194	13	0	231	NOON	11:00 AM - 01:00 PM
05:00 PM - 06:00 PM	PM	0	554	46	0	450	PM	02:00 PM - 06:00 PM

EASTBOUND (Oak St)

AM	NOON	PM		
0	0	0	⇦	
0	0	0	↶	0
1	0	0	↱	0
0	0	0	→	1
0	0	0	↷	0
AM	NOON	PM		

WESTBOUND (Oak St)

PM	NOON	AM		
27	19	92	↰	0
0	0	0	←	1
22	11	22	↰	0
1	0	0	↶	0
68	26	229	⇨	
PM	NOON	AM		

	0	1	0	0
	↶	↓	↷	↶

	0	0	1	0
	↶	↰	↑	↱

CONTROL

1-Way Stop (WB)

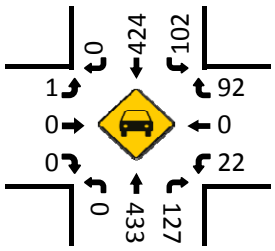
TEV	1201 AM	462 NOON	1094 PM
PHF	0.73	0.93	0.94

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

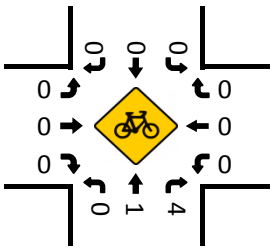
NORTHBOUND

Meridian Ave

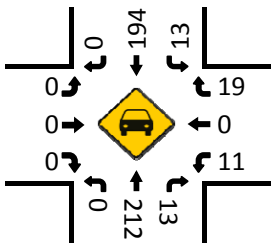
Total Vehicles (AM)



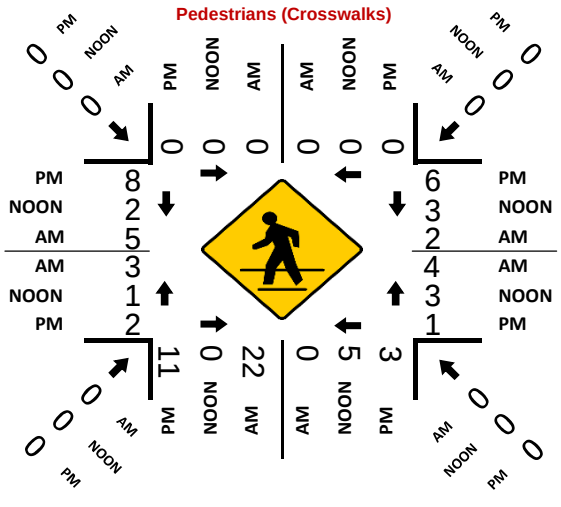
Bikes (AM)



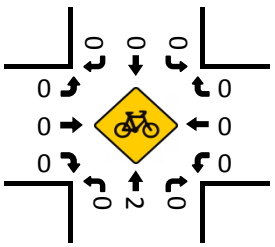
Total Vehicles (Noon)



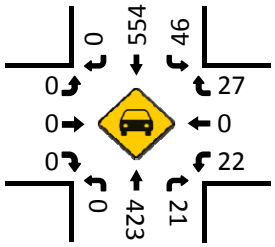
Pedestrians (Crosswalks)



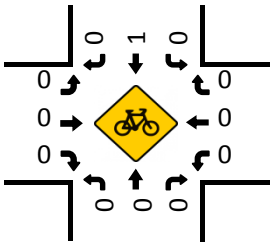
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



National Data & Surveying Services

Intersection Turning Movement Count

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

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

Total

NS/EW Streets:	Meridian Ave				Meridian Ave				Maple St				Maple St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
7:00 AM	0	32	1	0	25	45	0	0	0	0	0	0	1	0	39	0	143
7:15 AM	0	56	2	0	23	45	0	0	0	0	1	0	0	0	69	0	196
7:30 AM	0	86	1	0	28	61	0	0	0	0	0	0	2	0	61	0	239
7:45 AM	0	94	3	0	39	95	0	0	1	0	0	0	14	0	54	0	300
8:00 AM	0	38	11	0	46	89	0	0	0	0	0	0	11	0	40	0	235
8:15 AM	0	46	6	0	54	40	0	0	0	0	0	0	2	0	37	0	185
8:30 AM	0	55	1	0	38	36	0	0	0	0	0	0	3	0	56	0	189
8:45 AM	0	36	6	0	31	39	0	0	0	0	0	0	2	0	43	0	157
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	443	31	0	284	450	0	0	1	0	1	0	35	0	399	0	1644
APPROACH %'s :	0.00%	93.46%	6.54%	0.00%	38.69%	61.31%	0.00%	0.00%	50.00%	0.00%	50.00%	0.00%	8.06%	0.00%	91.94%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	274	17	0	136	290	0	0	1	0	1	0	27	0	224	0	970
PEAK HR FACTOR :	0.000	0.729	0.386	0.000	0.739	0.763	0.000	0.000	0.250	0.000	0.250	0.000	0.482	0.000	0.812	0.000	0.808
		0.750				0.789				0.500				0.909			

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
11:00 AM	0	17	6	0	10	29	0	0	0	0	0	0	3	0	29	0	94
11:15 AM	0	26	5	1	9	32	0	0	0	0	0	0	1	0	18	0	92
11:30 AM	0	31	2	0	11	40	0	0	0	0	0	0	0	0	15	0	99
11:45 AM	0	30	3	0	7	38	0	0	0	0	0	0	1	0	27	0	106
12:00 PM	0	29	3	0	9	26	0	0	0	0	0	0	0	0	22	1	90
12:15 PM	0	39	0	0	11	44	0	0	0	0	0	0	2	0	20	0	116
12:30 PM	0	25	1	0	5	37	0	0	0	0	0	0	2	0	16	0	86
12:45 PM	0	31	1	0	10	41	0	0	0	0	0	0	1	0	25	0	109
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	228	21	1	72	287	0	0	0	0	0	0	10	0	172	1	792
APPROACH %'s :	0.00%	91.20%	8.40%	0.40%	20.06%	79.94%	0.00%	0.00%					5.46%	0.00%	93.99%	0.55%	
PEAK HR :	11:30 AM - 12:30 PM																TOTAL
PEAK HR VOL :	0	129	8	0	38	148	0	0	0	0	0	0	3	0	84	1	411
PEAK HR FACTOR :	0.000	0.827	0.667	0.000	0.864	0.841	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.778	0.250	0.886
		0.878				0.845								0.786			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
2:00 PM	0	23	3	0	14	42	0	0	0	0	0	0	4	0	23	0	109
2:15 PM	0	30	2	0	13	58	0	0	1	0	0	0	2	0	28	0	134
2:30 PM	0	38	5	0	22	36	0	0	0	0	0	0	5	0	41	0	147
2:45 PM	0	55	3	0	22	56	0	0	0	0	0	0	7	0	39	0	182
3:00 PM	0	48	3	0	18	65	0	0	0	0	0	0	2	0	38	0	174
3:15 PM	0	19	0	0	30	58	1	0	0	0	0	0	1	0	41	0	150
3:30 PM	0	33	1	0	25	66	0	0	0	0	0	0	0	0	25	0	150
3:45 PM	0	37	3	0	19	50	0	0	0	0	0	0	1	0	39	0	149
4:00 PM	0	37	3	0	25	65	0	0	0	0	0	0	3	0	37	0	170
4:15 PM	0	48	0	0	35	61	0	0	0	0	0	0	2	0	48	0	194
4:30 PM	0	37	1	0	32	55	0	0	0	0	0	0	2	0	44	0	171
4:45 PM	0	44	2	0	35	49	0	0	0	0	0	0	3	0	38	0	171
5:00 PM	0	40	0	0	42	96	0	0	0	0	0	0	2	0	61	0	241
5:15 PM	0	46	2	0	34	87	0	0	0	0	0	0	1	0	56	0	226
5:30 PM	0	34	1	0	30	86	0	0	0	0	0	0	5	1	71	0	228
5:45 PM	0	43	0	0	30	84	0	0	0	0	0	0	2	0	58	0	217
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	612	29	0	426	1014	1	0	1	0	0	0	42	1	687	0	2813
APPROACH %'s :	0.00%	95.48%	4.52%	0.00%	29.56%	70.37%	0.07%	0.00%	100.00%	0.00%	0.00%	0.00%	5.75%	0.14%	94.11%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	163	3	0	136	353	0	0	0	0	0	0	10	1	246	0	912
PEAK HR FACTOR :	0.000	0.886	0.375	0.000	0.810	0.919	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.866	0.000	0.946
		0.865				0.886								0.834			

National Data & Surveying Services

Intersection Turning Movement Count

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

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

Bikes

NS/EW Streets:	Meridian Ave				Meridian Ave				Maple St				Maple St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	1	0	0	0	0	0	0	0	0	2	0	6
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.500
	0.250												0.250				

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	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	0
12:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	0	5
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	11:30 AM - 12:30 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	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
	0.250				0.250												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	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	TOTAL
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	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	0	0	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
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	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
4:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	5	0	0	0	0	0	0	1	0	1	0	10
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					50.00%	0.00%	50.00%	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	1
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 & 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		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
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
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	2	0	0	9	1	10	10	34
APPROACH %'s :	50.00%	50.00%			90.00%	10.00%	50.00%	50.00%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	2	2	0	0	8	1	10	4	27
PEAK HR FACTOR :	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		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
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
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	1	0	1	1	2	8	7	23
APPROACH %'s :	75.00%	25.00%	0.00%	100.00%	33.33%	66.67%	53.33%	46.67%	
PEAK HR :	11:30 AM - 12:30 PM								TOTAL
PEAK HR VOL :	1	0	0	1	0	0	7	4	13
PEAK HR FACTOR :	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		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
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
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	6	5	0	0	16	29	34	25	115
APPROACH %'s :	54.55%	45.45%			35.56%	64.44%	57.63%	42.37%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	2	2	0	0	4	12	15	11	46
PEAK HR FACTOR :	0.250	0.500			0.333	0.600	0.750	0.458	0.885
	0.333				0.667		0.813		

Prepared by National Data & Surveying Services

Meridian Ave & Maple St

Peak Hour Turning Movement Count

ID: 20-05030-002
City: South Pasadena

Day: Wednesday
Date: 01/22/2020

PEAK HOURS

AM	07:15 AM - 08:15 AM
NOON	11:30 AM - 12:30 PM
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	11:00 AM - 01:00 PM
PM	02:00 PM - 06:00 PM

Meridian Ave — SOUTHBOUND

AM	0	290	136	0	499	AM
NOON	0	148	38	0	213	NOON
PM	0	353	136	0	409	PM

Maple St — EASTBOUND

AM	NOON	PM		
0	0	1	⇦	
0	0	0	↶	0
1	0	0	↱	0
0	0	0	→	1
1	0	0	↴	0
AM	NOON	PM		

CONTROL

1-Way Stop (WB)

TEV	970 AM	411 NOON	912 PM
PHF	0.81	0.89	0.95

WESTBOUND — Maple St

	PM	NOON	AM	
0	246	84	224	↰
1	1	0	0	←
0	10	3	27	↰
0	0	1	0	↶
	139	47	153	⇨
	PM	NOON	AM	

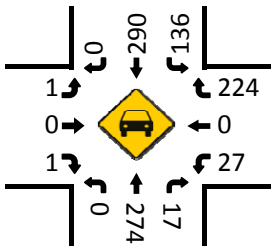
Meridian Ave — NORTHBOUND

PM	363	0	0	163	3	PM
NOON	151	0	0	129	8	NOON
AM	318	0	0	274	17	AM

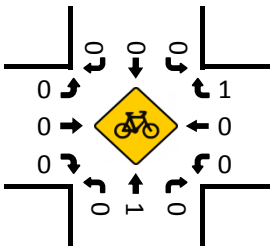
0 0 1 0 (↰ ← ↑ ↱)

0 1 0 0 (↶ ↱ → ↴)

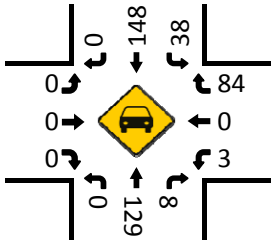
Total Vehicles (AM)



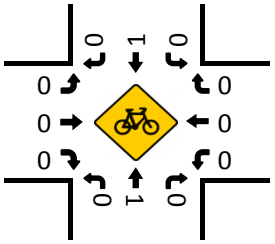
Bikes (AM)



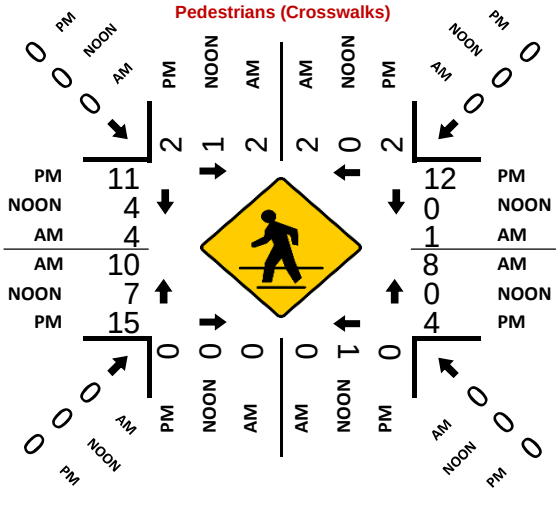
Total Vehicles (Noon)



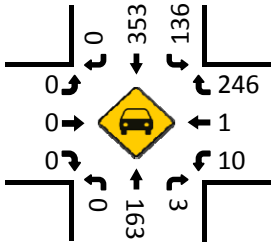
Bikes (NOON)



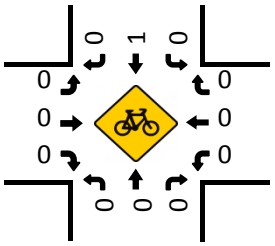
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



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				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	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	0	2	0	9	0	152
7:15 AM	0	128	2	0	0	65	0	0	0	0	0	0	0	0	9	0	204
7:30 AM	0	160	1	0	4	84	0	0	0	0	0	0	2	0	10	0	261
7:45 AM	0	155	4	0	12	119	0	0	0	0	0	0	12	0	23	0	325
8:00 AM	0	85	5	0	8	121	0	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	0	9	0	206
8:30 AM	0	111	2	0	7	73	0	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	0	10	0	171
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	867	25	0	57	696	0	0	0	0	0	0	30	0	92	0	1767
APPROACH %'s :	0.00%	97.20%	2.80%	0.00%	7.57%	92.43%	0.00%	0.00%					24.59%	0.00%	75.41%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	475	18	0	42	420	0	0	0	0	0	0	25	0	52	0	1032
PEAK HR FACTOR :	0.000	0.742	0.563	0.000	0.583	0.868	0.000	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			

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	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	0	4	0	93
11:15 AM	0	46	3	0	3	40	0	0	0	0	0	0	2	0	5	0	99
11:30 AM	0	45	0	0	3	50	0	0	0	0	0	0	2	0	9	0	109
11:45 AM	0	59	1	0	3	43	0	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	0	3	0	91
12:15 PM	0	61	0	0	2	54	0	0	0	0	0	0	0	0	5	0	122
12:30 PM	0	47	3	0	1	46	0	0	0	0	0	0	2	0	6	0	105
12:45 PM	0	52	1	0	6	50	0	0	0	0	0	0	1	0	6	0	116
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	405	11	0	21	358	0	1	0	0	0	0	9	0	45	0	850
APPROACH %'s :	0.00%	97.36%	2.64%	0.00%	5.53%	94.21%	0.00%	0.26%					16.67%	0.00%	83.33%	0.00%	
PEAK HR :	11:30 AM - 12:30 PM																TOTAL
PEAK HR VOL :	0	214	3	0	10	182	0	0	0	0	0	0	4	0	24	0	437
PEAK HR FACTOR :	0.000	0.877	0.375	0.000	0.833	0.843	0.000	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			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	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	0	4	0	13	0	127
2:15 PM	0	55	2	0	2	69	0	0	0	0	0	0	5	0	6	0	139
2:30 PM	0	74	0	0	6	56	0	0	0	0	0	0	1	0	11	0	148
2:45 PM	0	94	5	0	7	73	0	0	0	0	0	0	7	0	13	0	199
3:00 PM	0	78	6	0	5	82	0	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	0	15	0	177
3:30 PM	0	62	2	0	6	93	0	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	0	4	0	152
4:00 PM	0	74	1	0	6	94	0	0	0	0	0	0	2	0	12	0	189
4:15 PM	0	93	2	0	4	95	0	0	0	0	0	0	3	0	14	0	211
4:30 PM	0	90	2	0	3	85	0	1	0	0	0	0	4	0	5	0	190
4:45 PM	0	79	2	0	9	92	0	0	0	0	0	0	2	0	2	0	186
5:00 PM	0	104	0	0	5	142	0	0	0	0	0	0	3	0	12	0	266
5:15 PM	0	106	5	0	11	120	0	0	0	0	0	0	3	0	8	0	253
5:30 PM	0	104	2	0	13	121	0	0	0	0	0	0	3	0	9	0	252
5:45 PM	0	102	0	0	8	121	0	0	0	0	0	0	2	0	11	0	244
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1301	32	0	98	1460	0	2	0	0	0	0	44	0	147	0	3084
APPROACH %'s :	0.00%	97.60%	2.40%	0.00%	6.28%	93.59%	0.00%	0.13%					23.04%	0.00%	76.96%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	416	7	0	37	504	0	0	0	0	0	0	11	0	40	0	1015
PEAK HR FACTOR :	0.000	0.981	0.350	0.000	0.712	0.887	0.000	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				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
APPROACH %'s :	0.00%	80.00%	20.00%	0.00%													
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	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
	0.500																

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	11:30 AM - 12:30 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	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
	0.250				0.250												

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
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
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	1	0	0	6	0	0	0	0	0	0	0	0	0	0	9
APPROACH %'s :	0.00%	66.67%	33.33%	0.00%	0.00%	100.00%	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	1
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 & 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		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
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
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	3	0	0	14	3	0	0	21
APPROACH %'s :	25.00%	75.00%			82.35%	17.65%			
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	1	1	0	0	13	2	0	0	17
PEAK HR FACTOR :	0.250	0.250			0.650	0.500			0.708
	0.250				0.625				

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

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

Prepared by National Data & Surveying Services

Meridian Ave & Pine St

Peak Hour Turning Movement Count

ID: 20-05030-003
City: South Pasadena

Day: Wednesday
Date: 01/22/2020

Meridian Ave

SOUTHBOUND

PEAK HOURS									COUNT PERIODS
07:30 AM - 08:30 AM	AM	0	420	42	0	527	AM		07:00 AM - 09:00 AM
11:30 AM - 12:30 PM	NOON	0	182	10	0	238	NOON		11:00 AM - 01:00 PM
05:00 PM - 06:00 PM	PM	0	504	37	0	456	PM		02:00 PM - 06:00 PM

Pine St — **EASTBOUND**

AM	NOON	PM				
0	0	0				
0	0	0				0
0	0	0				0
0	0	0				0
0	0	0				0
AM	NOON	PM				

WESTBOUND — **Pine St**

PM	NOON	AM	
40	24	52	0
0	0	0	1
11	4	25	0
0	0	0	0
44	13	60	
PM	NOON	AM	

CONTROL

1-Way Stop (WB)

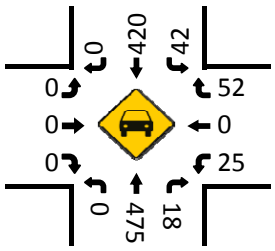
TEV	1032	437	1015
	AM	NOON	PM
PHF	0.79	0.90	0.95

	0	1	0	0	
PM	515	0	0	416	7 PM
NOON	186	0	0	214	3 NOON
AM	445	0	0	475	18 AM
		0	0	1	0

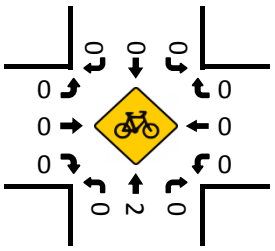
NORTHBOUND

Meridian Ave

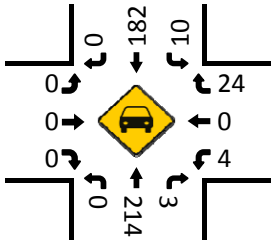
Total Vehicles (AM)



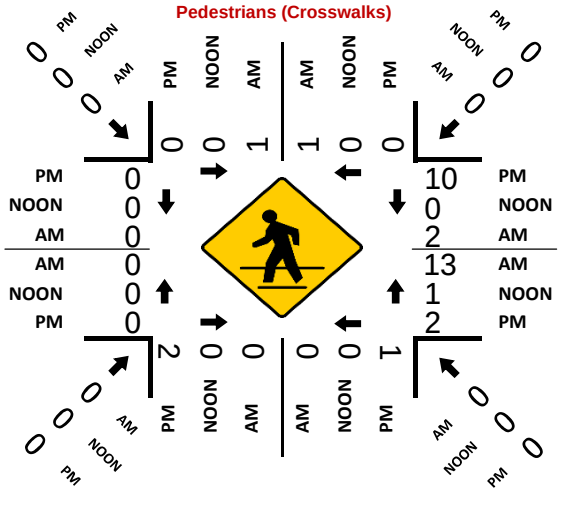
Bikes (AM)



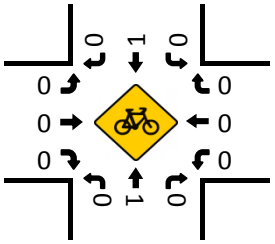
Total Vehicles (Noon)



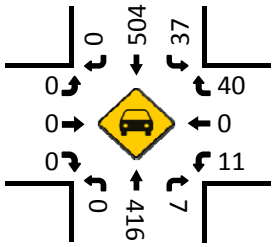
Pedestrians (Crosswalks)



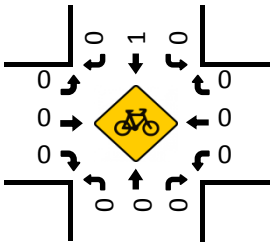
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



ATTACHMENT 1

Peer Review - Interwest

March 8, 2021

INTERWEST

MEMORANDUM

Mr. Shahid Abbas, Public Works Director

City of South Pasadena

Re: Meridian Avenue Stop Analysis

Mr. Abbas

Per your direction, I conducted a peer review of the Stop Analysis conducted by W.G. Zimmerman Engineering, Inc. dated May 6, 2020 for Meridian Avenue at Oak Street, Pine Street, and Maple Street.

My review consisted of field conditions, vehicular and non-vehicular traffic operation on Meridian Avenue and side streets including turning movements and site conditions at three intersections. My conclusions did not change the findings of the Meridian Avenue Stop Analysis.

Regards,

Mike Bagheri, P.E.

Interwest Group

ATTACHMENT 1

Miller Report

ROCK E. MILLER & ASSOCIATES
Traffic Engineering / Transportation Planning

April 13, 2021

Mr. Sean Joyce
City Manager
City of South Pasadena
1414 Mission Street
South Pasadena, CA 91030

Subject: Review and Evaluate Traffic Control needs on Meridian Avenue

Dear Sean;

I am pleased to provide this report regarding a review and evaluation of stop sign warrants or other potential traffic controls for Meridian Avenue at Oak Street, Pine Street, Maple Street and along the Meridian corridor.

Background

The City previously requested a review of the study area and intersections to see if they met the warrants for all-way stop control or other improvements. The previous studies indicated that the traffic levels were not high enough to meet National and State recommended values. The purpose of this report is to review the findings of the previous analyses and determine whether additional traffic controls may be appropriate.

The traffic information collected for the previous studies appears to be valid based upon my observations of the study area. Traffic volumes are typically 10% lower at this time based upon the continuing effects of the Covid pandemic, but this differential is not significant enough to affect recommendations.

Basis of Recommendations

The California Manual on Uniform Traffic Control Devices (MUTCD) establishes standards and guidance for use of traffic controls on public roadways in California. Cities in California are legally required to be consistent with the MUTCD. Standards in the MUTCD are "shall" conditions and are rarely violated except in unique circumstances. Standards include the red color and octagonal shape of stop signs. MUTCD guidelines are "Should" statements and provide some flexibility. The criteria in the MUTCD to determine whether locations are appropriate for all-way stop signs are guidelines. This allows some flexibility in placement of all-way stops on local streets within neighborhoods, but an engineering study is always advised when determining whether to follow a guideline.

I am considered an expert on the MUTCD. I teach classes to professionals on its use for the University of California Institute for Transportation Studies, and I am a voting member of the National Committee on Uniform Traffic Control Devices, a group that advises the Federal Highway Administration on the Federal Version of the MUTCD, the parent document of the California MUTCD. In these roles, I am familiar with the past, present, and probable future changes in the two Manuals.

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Prior Studies

The City recently conducted two analyses in the area. The May 2020 study of Meridian Avenue evaluated three potential all-way stop locations following strict consistency with the numerical guidelines in the MUTCD. The study concluded that none of the locations met the numerical criteria, generally known as "warrants", based upon traffic volumes, crash history, and speeds. This conclusion is technically correct, but the study did not consider whether any conditions might be apparent to consider recommendation of traffic controls that did not meet numerical the warrants in the MUTCD. The March 2021 study confirmed the conclusions of the May 2020 study.

Additional MUTCD Criteria

The current edition of the California MUTCD provides additional criteria for consideration in the potential use of all-way stop controls. The initial paragraph addressing their potential use is as follows:

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

After its presentation of vehicle volume, speed and crash criteria, the California MUTCD provides these additional options that can help to determine whether an all-way stop is appropriate, as follows:

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

A. *The need to control left-turn conflicts;*
B. *The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian. volumes;*
c. *Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and*
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."*

The California MUTCD clearly allows some flexibility as indicated above in applying its guidelines for consideration of all-way stop controls. Rigidly following the numerical guidelines in the MUTCD is most appropriate for higher volume locations where traffic signalization may be more appropriate, but MUTCD guidelines offer language to allow for flexibility for neighborhoods and local residential streets.

A popular misuse of all-way stop signs is for speed control, and the warrants are structured more to discourage random application of all-way stops if speed reduction is the goal. Before and after studies often find that speeds have increased slightly away from or between new all-way stop intersections. Noise, congestion, and fumes can increase near stop-controlled intersections. It is important to recognize that reduction of vehicle speeds may not be a great justification to install stop signs.

Ultimately, it is more important for the City to affirm an engineering recommendation to deviate from the numerical MUTCD warrants than to strictly follow them in a neighborhood scenario. If a City chooses to install a multiway stop, it is perhaps more important to consider the precedent and how it

might apply to other intersections in the City. Many cities, including Los Angeles and Alhambra have established alternate warrant systems for use of stop signs in neighborhoods. For example, Los Angeles has established a policy to allow all-way stop controls at nearly every 4-way intersection in the City that is not located along an arterial through route. These tend to reduce through traffic and alleviate sight distance visibility issues at intersections, since all traffic will be slowing. The action requires 10's of thousands of stop signs, but it has likely improved overall safety levels within neighborhoods.

Meridian Avenue Analysis

I have reviewed the traffic information and the local site conditions for each potential location along Meridian Avenue. In addition to the traffic volume information in the 2020 study, I reviewed the local conditions for each intersection and determined whether there are unrecognized advantages and unique circumstances at each intersection that might affect a final decision.

Meridian Avenue carries approximately 8000 vehicles per day. At this volume there can be challenges for crossing pedestrians and entering traffic at intersections. Motorists and pedestrians using cross streets will need to observe 6-7-second traffic gaps to turn onto or walk across the street. This suggests that sight distance of 250-300 feet is desirable especially at marked crosswalks. New stop signs generally will not result in extensive congestion at the existing traffic level of Meridian Avenue, if applied at intersections where cross traffic volume is lower than on Meridian. Also, traffic levels are unlikely to increase in the future to the range where traffic signals would ever be required.

Oak Street

Oak Street terminates at Meridian Avenue, but it continues to the east as a community collector, with an all-way stop at Ramona and traffic signals at Fremont and Fair Oaks.

Oak and Meridian meet at an acute angle, making it difficult to observe southbound traffic. Meridian is curving on the southbound approach and through the intersection. The skewed angle also increases the time required to make a left turn from Oak Street, requiring greater visibility of southbound traffic. The visibility from Oak Street to observe southbound traffic on Meridian is also limited by a hedge that is growing directly behind the sidewalk and by a utility pole. The sidewalk does not meet ADA width criteria at the utility pole.

A school crosswalk is located relatively far south from the center of the intersection because of the skewed angle. It is used by over 20 pedestrians in the AM peak hour, and use is likely related to nearby schools. The crosswalk also averages 15 or more pedestrians per hour from 2 pm to 5 pm, which likely includes both school and general neighborhood pedestrian traffic.

Based upon the unique intersection geometrics, the marked crosswalk, and the street usage further to the east, there is ample justification to conclude that all-way stops are appropriate for this location. Due to the unique geometrics, I would recommend that a plan be prepared to clearly indicate how to install the all-way stops and treat the crosswalk.

As a future consideration, I would study how the location could be improved to address ADA deficiencies and to allow relocation of the south crosswalk closer to the intersection or perhaps to the north leg. This would require street construction to widen the sidewalk into the street on the east side

to the north and move the curb toward the street to reduce the paved area on the southeast quadrant to " square off" the Oak Street approach. It would probably be in the $30-50,000 range.

Pine Street

Pine Street terminates at Meridian Avenue and continues to the east. It is wider than the other streets in the area, but it does not likely carry a large proportion of though traffic. There are no marked crosswalks at or near the intersection. Meridian Avenue has an unusual design on both sides of the intersection, because water is carried in a concrete gutter down the center of the street rather than along the curbs. This can affect how drivers use the street, and the appearance may help to reduce speeds.

Meridian Avenue curves south of Pine Street, limiting the visibility from Pine Street to observe northbound Meridian northbound traffic. The visibility is approximately 250 feet if no cars are parked and can be further limited by parked cars, trees, and a utility box. Some red curb has been added recently to the east curb north and south of the intersection, but the red curbing is not long enough to fully clear sight distance.

Traffic levels on Pine Street are much lower than levels on Oak and Maple Streets at their intersections with Meridian. Of the three locations, Pine Street has the fewest distinguishing factors for providing an all-way stop. Potential limitations to sight distance are perhaps the strongest justifying factor, and the drainage treatment along Pine Street makes the intersection unique. But if stops are approved at all three locations, there could be concerns raised about excessive stops within a short distance. Among other factors, being the middle intersection of the three, it would be the lowest priority.

There would likely be no large consequential issues if an all-way stop was provided at this intersection, but it may require more enforcement because of the low cross traffic volumes. If all way stop controls are not provided, lengthening of the red curb along the east side of Meridian to at least 30 feet north and south of the intersection would be advised. If all-way stops are added, the red curb would not require adjustment.

Maple Street

Maple Street terminates at Meridian Avenue and continues east across Huntington Drive for one block. There is a marked school crosswalk across the north leg. Maple intersects at a slight angle but not enough to affect turning vehicles. The traffic counts identified a high flow of traffic that turns right from westbound Maple to northbound Meridian, over 200 vehicles in both the AM and the PM peak hours. The corresponding left turn from Meridian is also high, nearly 150 vehicles in AM and PM peak hours. Sight distance visibility is good if no cars are parked along the east curb of Meridian, but a longer red curb prohibition would be required than what exists to provide better sight distance especially for pedestrians.

The traffic flow requirements are closer to meeting MUTCD guidelines at this intersection than at the other two intersections, and the location clearly meets the MUTCD criteria of two nearly equal residential streets. The high turning volume, sight distance limitations of parked cars, and the marked crosswalk are suitable special justification to consider an all-way stop at the location.

If the City decides not to pursue an all-way stop, additional red curb would be recommended on the east side of Meridian north and south of the intersection so that parking was prohibited for at least 30 feet. In addition, the school crosswalk on the north leg should have PED XING signs and more visible school area signs and markings at the crosswalk and in advance.

Conclusions

There are clear and unique factors at the Oak street and Maple Street intersections that would justify provision of all way stop controls based upon options in the California MUTCD. I can support a recommendation to change the controls at these intersections.

There are less evident special conditions at the Pine Street intersection. I would not criticize a decision by the city to install all-way stop controls at this location also, but the location does not appear to have unique factors or special justification that is found at the other two locations. I would prefer to advise the City of the merits and consequences of adding stop signs at the location and allow them to reach their decision, which would likely benefit from public input.

Please contact me if you have any questions.

Sincerely,

Rock Miller, P.E.
Consulting Traffic Engineer