ATTACHMENT L
TRANSPORTATION IMPACT ANALYSIS
PREPARED BY THE DEPARTMENT OF TRANSPORTATION

PASADENA
DEPARTMENT OF TRANSPORTATION

Transportation Impact Analysis

CEQA Evaluation

Category 2

Project Address: 127-141 North Madison Avenue

Project Summary: Demolition of existing office development; construction of 4,000 sf office space, and 53 rental units

Applicant:
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Planning and Entitlement
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Attention:
Kelvin Parker, Zoning Administrator
City Planning Department

September 28, 2017

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I. Study Objective

This report analyzed the impact the development will have on the City transportation system by estimating incremental changes in vehicle miles traveled (VMT) per capita, vehicle trips per capita (VT), the project impact on service population proximity access to transit and bike facilities, and walk accessibility score.

II. Project Description

The City of Pasadena Department of Transportation conducted an analysis to review potential transportation impacts related to the demolition of an office development and the construction of 53 residential rental units, a total 4,000 sf of office space, and subterranean parking.

Vehicular site access to the proposed project is planned to be along Madison Avenue.

Figure 1 depicts the project's ground floor plan which highlights the location of the offices and driveway.

III. Existing Transportation Network

Street System Classifications

Colorado Boulevard is an east-west principal arterial with two travel lanes in each direction. The City of Pasadena's adopted street classification for this roadway is **City Connector**. The posted speed limit is 25 miles per hour in the business district. At the signalized Colorado Boulevard and El Molino Avenue intersection, there exist crosswalks along all four legs.

Corson Street is a one-way eastbound minor arterial with two travel lanes and a Class II bike lane. It is classified as a multimodal corridor where several I-210 on-and-off ramps are located. The City of Pasadena's adopted street classification for this roadway is **City Connector**. The posted speed limit is 35 miles per hour.

El Molino Avenue is a north-south roadway with one through travel lane provided in each direction. The El Molino Avenue at Walnut Street intersection restricts northbound and southbound left-turn movements during 7-9 AM and 4-6 PM on weekdays. The City of Pasadena's adopted street classification for this roadway is **Neighborhood Connector**.

Los Robles Avenue is a north-south roadway that borders the project site to the west. Two through travel lanes are provided in each direction in the project study area. Exclusive left-turn lanes are provided in both directions at the Walnut Street intersection. Parking is prohibited along both sides of Los Robles Avenue adjacent to the project site. The street is classified as **City Connector.**

Madison Avenue is a north-south local roadway with one through lane for each direction. Parking is available on both sides of the street. The City of Pasadena's adopted street classification for this roadway is an **Access Road**. Both the Madison Avenue at Walnut Street intersection and the Madison Avenue at Union Street intersection are signalized with crosswalks along all legs of the intersection.

127 MADISON MIXED USE PROJECT
127 N. MADISON Avenue Pasadena, CA 91101

GROUND FLOOR PLAN

A-1

NO SCALE

FIGURE 1
PROJECT GROUND FLOOR PLAN

127 NORTH MADISON AVENUE

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Maple Street is a one-way **City Connector** that runs westbound and parallel to the 210 freeway with two through travel lanes. The posted speed limit is 35 miles per hour.

Walnut Street is an east-west roadway located south of the project site. Two through travel lanes are provided in each direction. The City of Pasadena's adopted street classification for this roadway is **City Connector**. The posted speed limit is 30 miles per hour.

Figure 2 depicts the project in the City of Pasadena's Adopted Street Types map.

Existing Transit Service

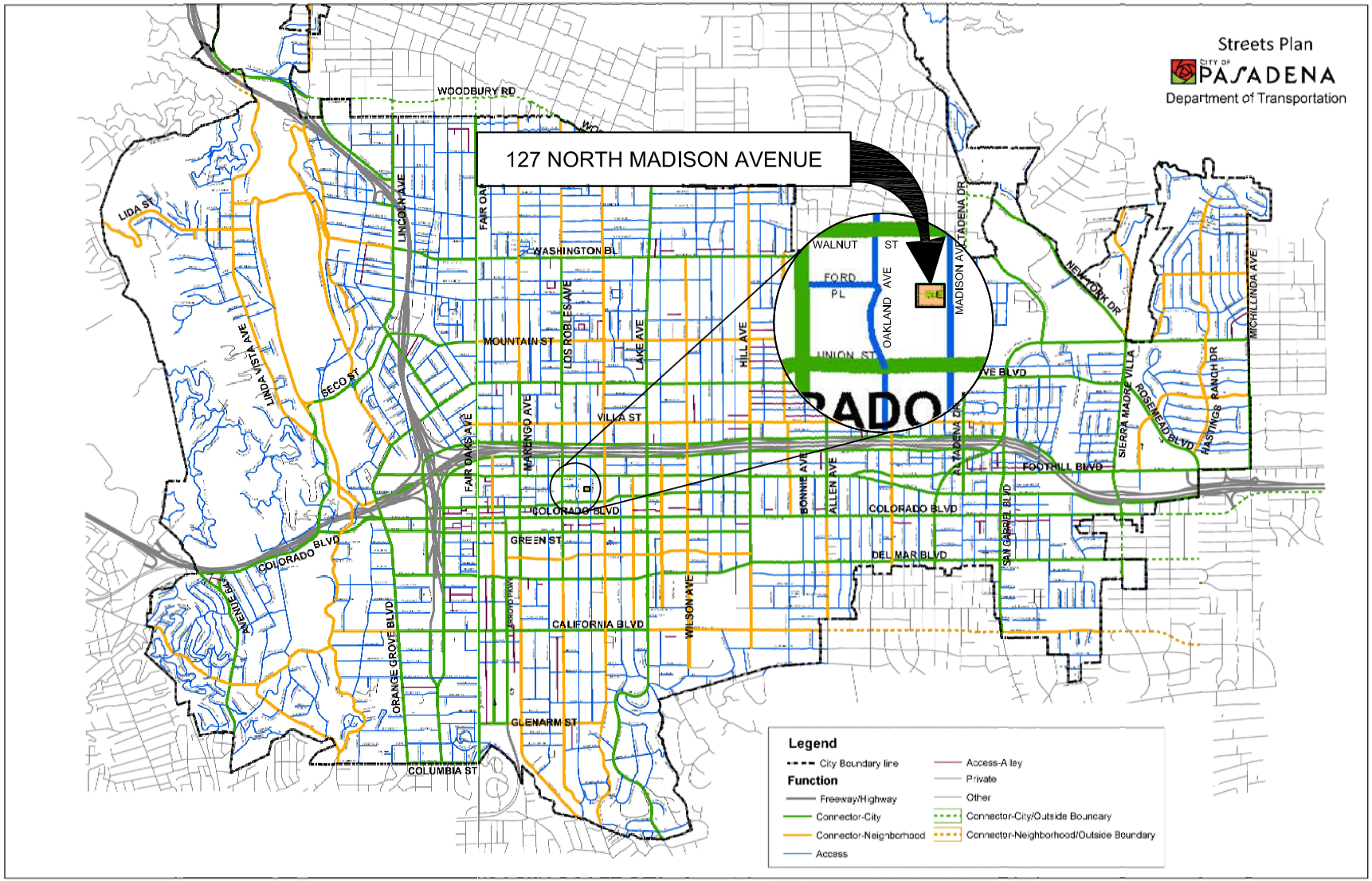
Public transit service within the project study area is currently provided by LA Metro (Metro), Foothill Transit (FT), LA Department of Transportation (LADOT), and Pasadena Transit (PT). The project occupants will have adequate access to the City's transit network within a quarter mile radius from the project address. The locations of public transit stops near the project are summarized in the following table:

Location	**Route**
NE corner Los Robles Ave at Walnut St	PT 40; Metro 687
NE corner Los Robles Ave at Walnut St	PT 40; Metro 687
NW corner Los Robles Ave at Walnut St	PT 40; Metro 267
NE corner Los Robles Ave at Colorado Blvd	Metro 267, 686; LADOT 549
SW corner Los Robles Ave at Colorado Blvd	Metro 267; LADOT 549
NW corner Oakland Ave at Colorado Blvd	PT 10
NW corner Madison Ave at Colorado Blvd	PT 10; Metro 180/181; 256; 686
SE corner Madison Ave at Colorado Blvd	PT 10; Metro 180/181; 256; 686

IV. Transportation Impact Analysis Methodology

With the City of Pasadena General Plan, the City's guiding principles cumulatively represent the community's vision for the future:

- Growth will be targeted to serve community needs and enhance quality of life.
- New construction that could affect the integrity of historic resources will be compatible with, and differentiated from, the existing historic resource.
- Economic vitality will be promoted to provide jobs, services, revenues, and opportunities.
- Pasadena will be a socially, economically, and environmentally sustainable community. Pasadena will be a city where people can circulate without cars.
- Pasadena will be promoted as a cultural, scientific, corporate, entertainment, and educational center for the region.
- Community participation will be a permanent part of achieving a greater city.



NO SCALE

FIGURE 2
CITY OF PASADENA ADOPTED STREET TYPES

127 NORTH MADISON AVENUE

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- Pasadena is committed to public education and a diverse educational system responsive to the broad needs of the community.

Understanding the goals and objectives of the General Plan, the Pasadena Department of Transportation sets forth goals and policies to improve overall transportation in Pasadena and create “a community where people can circulate without cars.” Inherent in this vision statement is to accommodate different modes of transportation including vehicle, pedestrian, bicycle, and transit. This report will assess accessibility of these different modes of travel when evaluating a project’s impact, and the project’s transportation impact to its community using the City’s adopted transportation performance measures.

Analysis Purpose

Pasadena reviews several types and sizes of projects that could be subject to environmental review under the California Environmental Quality Act (CEQA). Transportation impact analyses are an integral part of the environmental review process that is required for all proposed projects not categorically exempt under CEQA.

Analysis Cap Criteria - Transportation Performance Measures

The Pasadena Department of Transportation adopted a set of performance measures and CEQA Caps that are closely aligned with the Mobility Element objectives and policies. Pasadena Department of Transportation’s mobility performance measures assess the quality of walking, biking, transit, and vehicular travel in the City. A combination of vehicular and multimodal performance measures are employed to evaluate system performance in reviewing new development projects. They are:

- Vehicle Miles Traveled per Capita
- Vehicle Trips per Capita
- Proximity and Quality of the Bicycle Network
- Proximity and Quality of the Transit Network
- Pedestrian Accessibility

These performance measures align with the sustainability goals of the General Plan by evaluating the “efficiency” of projects by analyzing the per capita length and number of trips associated with changes in land use. With the expanded emphasis on sustainability and a continued focus on livability, the proposed performance measures will assist in determining how to balance travel modes as well as understand the mobility needs of the community.

Definitions

VMT Per Capita

The Vehicle Miles Traveled (VMT) per Capita measure sums the miles traveled for trips within the City of Pasadena Travel Demand Model (that is based on the SCAG regional model). The VMT total considers 100% of the mileage of trips that begin and end inside Pasadena and 50% of the distance travelled for trips with one end outside of Pasadena. The City's VMT is then divided by the City's total service population, defined as the population plus the number of jobs.

Although VMT itself will likely increase with the addition of new residents, the City can reduce VMT on a per-capita basis with land use policies that help Pasadena residents meet their daily needs within a short distance of home, reducing trip lengths, and by encouraging development in areas with access to various modes of transportation other than auto.

VT Per Capita

Vehicle Trips (VT) per Capita is a measure of motor vehicle trips associated with the City. The measure sums the trips with origins and destination within the City of Pasadena, as generated by the 2013 Trip-based citywide Travel Demand Model. The regional VT is calculated by adding the VT associated with trips generated and attracted within City of Pasadena boundaries, and 50% of the VT associated with trips that either begin or end in the City, but have one trip end outside of the City. The City's VT is then divided by the City's total service population, defined as the population plus the number of jobs.

As with VMT, VT itself will likely increase with the addition of new residents, but the City can reduce VT on a per-capita basis with land use policies that help Pasadena residents meet their daily needs within a short distance of home, reducing trip lengths, and by encouraging development in areas with access to various modes of transportation other than auto.

Proximity and Quality of Bicycle Network

The Proximity and Quality of Bicycle Network provides a measure of the percent of the City's service population (population + jobs) within a quarter mile of bicycle facility types. The facility types are aggregated into three hierarchy levels, obtained from the City's (Draft) Bicycle Transportation Plan categories as shown in the following table:

Table 1. Bicycle Facilities Hierarchy

LEVEL	DESCRIPTION	FACILITIES INCLUDED
1	Advanced Facilities	Bike Paths (P1) Multipurpose Paths (PP) Cycle Tracks/Protected Bike Lanes
2	Dedicated Facilities	Buffered Bike Lanes Bike Lanes (2, P2) Bike Boulevards (BB)

3	Basic Facilities	Bike Routes (3, P3) Enhanced Bike Routes (E3, PE3) Emphasized Bikeways (PEB)

For each bike facility level, a quarter-mile network distance buffer is calculated and the total service population (population + jobs) within the buffer are added.
The City can improve measures of Bike Facility Access by improving and expanding existing bike facilities and by encouraging residential and commercial development in areas with high-quality bike facilities.

Figure 3 depicts the project location in relation to the bike facility level in the area.

Proximity and Quality of Transit Network

The Proximity and Quality of Transit Network provides a measure of the percent of the City's service population (population + jobs) within a quarter mile of each of each of three transit facility types, as defined in the following table:

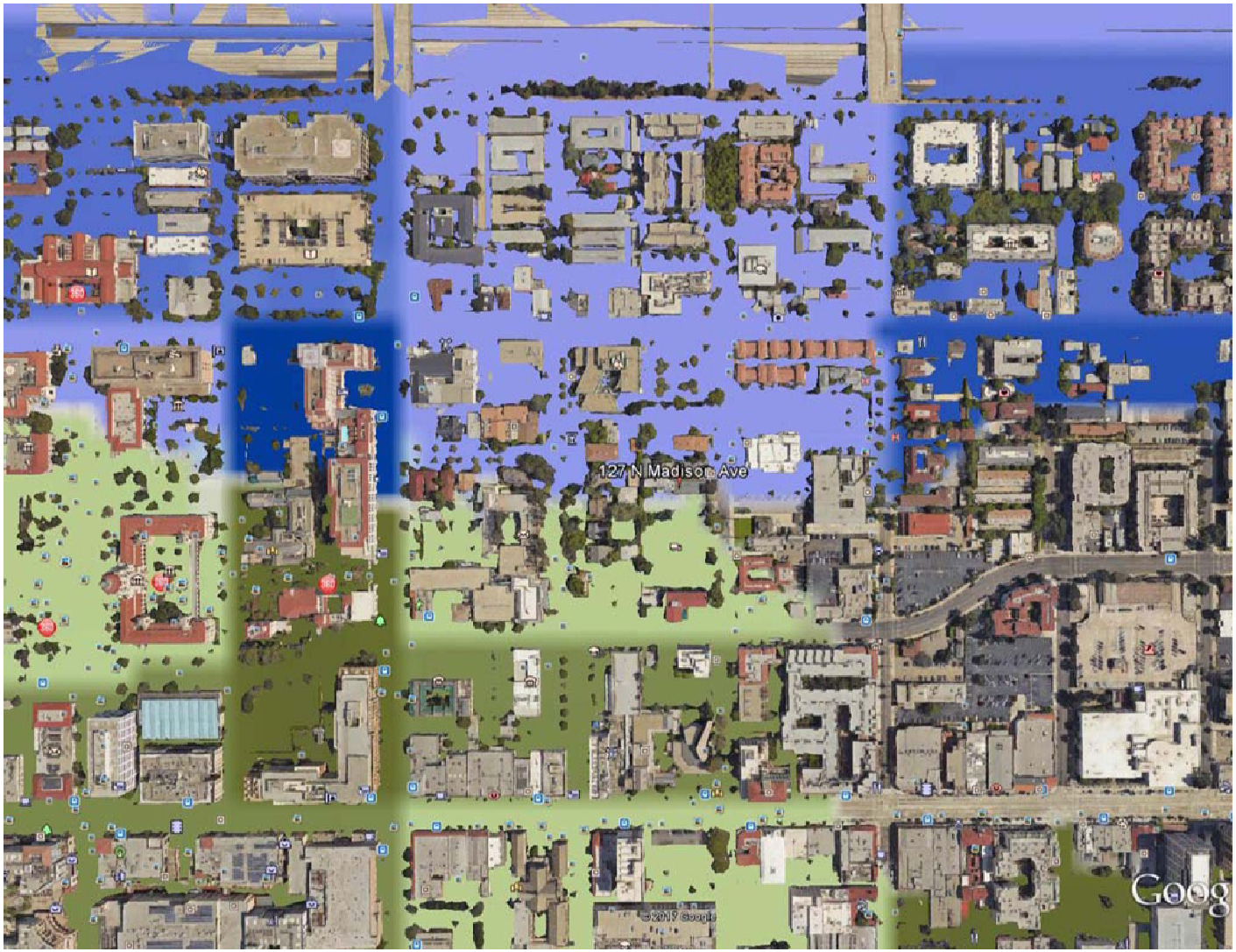
Table 2. Description of Transit Facilities

TRANSIT FACILITIES HIERARCHY	
LEVEL	FACILITIES INCLUDED
1	Includes all Gold Line stops as well as corridors with transit service, whether it be a single route or multiple routes combined, with headways of five minutes or less during the peak periods.
2	Includes corridors with transit headways of between six and 15 minutes in peak periods.
3	Includes corridors with transit headways of 16 minutes or more at peak periods.

For each facility level, a quarter-mile network distance buffer is calculated and the total service population (population + jobs) within the buffer are added.

The City can improve the measures of Transit Proximity and Quality by reducing headways on existing transit routes, by expanding transit routes to cover new areas, and by encouraging residential and commercial development to occur in areas with an already high-quality transit service.

Figure 4 depicts the project location in relation to the transit facility level in the area.



Google earth

feet 1000
meters 500

LEGEND

- LEVEL 1
- LEVEL 2
- LEVEL 3

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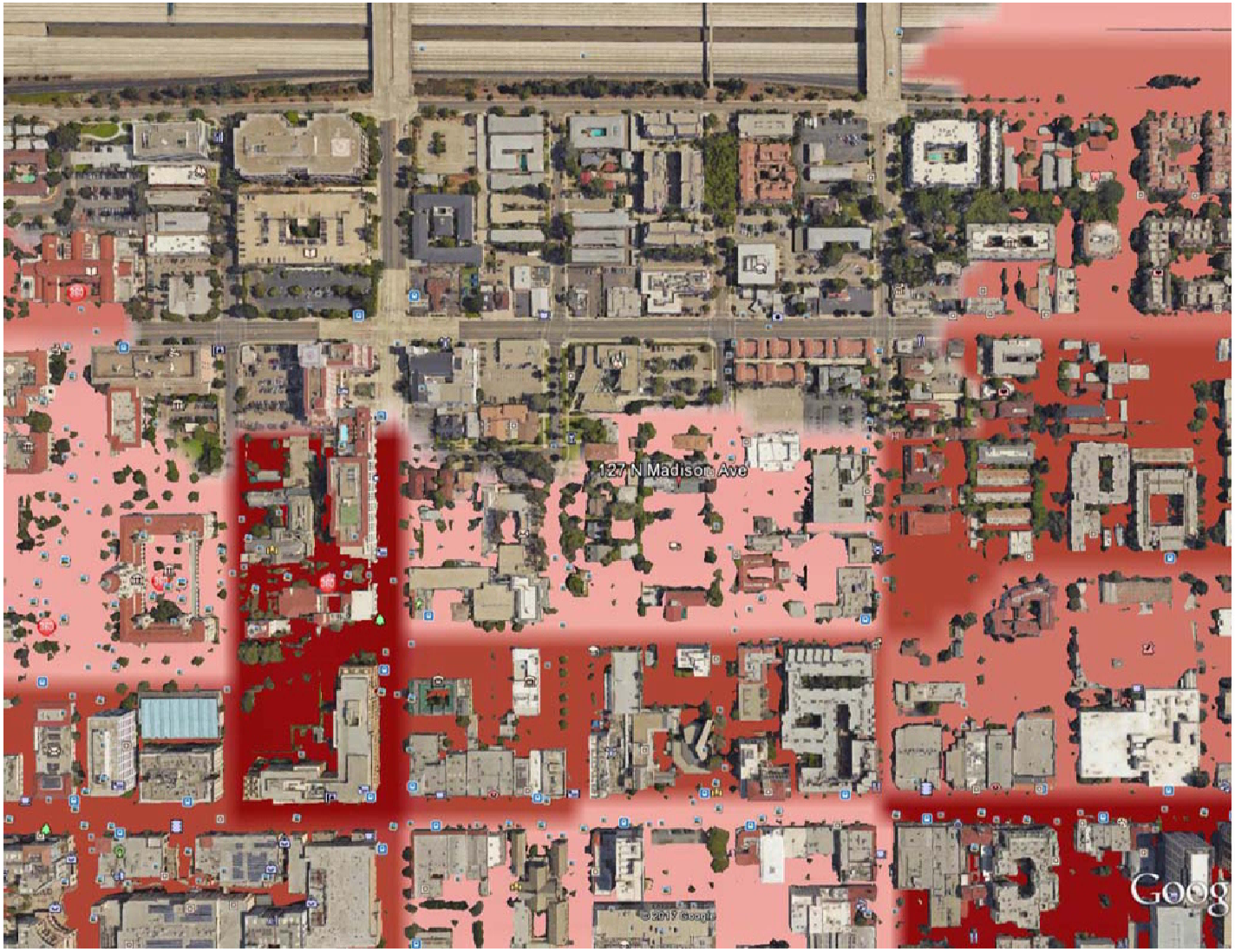
FIGURE 3
PROXIMITY AND QUALITY OF BICYCLE NETWORK

127 NORTH MADISON AVENUE



LEGEND

- LEVEL 1
- LEVEL 2
- LEVEL 3

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FIGURE 4
PROXIMITY AND QUALITY OF TRANSIT NETWORK

127 NORTH MADISON AVENUE

Pedestrian Accessibility Score

Proximity and Quality of Pedestrian Environment score provides a measure of the average walkability in the TAZ surrounding Pasadena residents, based on a Pedestrian Accessibility metric. The Pedestrian proximity metric is a simple count of the number of land use types accessible to a Pasadena resident or employee in a given TAZ within a 5-minute walk. The ten categories of land uses are:

- Retail
- Personal Services
- Restaurant
- Entertainment
- Office (including private sector and government offices)
- Medical (including medical office and hospital uses)
- Culture (including churches, religious and other cultural uses)
- Park and Open Space
- School (including elementary and high schools)
- College

The following table summarizes the City's Metrics for determining CEQA Caps:

Table 3. City of Pasadena CEQA Caps

METRIC	DESCRIPTION	IMPACT THRESHOLD
1. VMT Per Capita	Vehicle Miles Traveled (VMT) in the City of Pasadena per service population (population + jobs).	CEQA Threshold: An increase over existing Citywide VMT per Capita of 22.6.
2. VT Per Capita	Vehicle Trips (VT) in the City of Pasadena per service population (population + jobs).	CEQA Threshold: An increase over existing Citywide VT per Capita of 2.8.
3. Proximity and Quality of Bicycle Network	Percent of service population (population + jobs) within a quarter mile of bicycle facility types	CEQA Threshold: Any decrease in existing citywide 31.7% of service population (population + jobs) within a quarter mile of Level 1 & 2 bike facilities.
4. Proximity and Quality of Transit Network	Percent of service population (population + jobs) located within a quarter mile of transit facility types.	CEQA Threshold: Any decrease in existing citywide 66.6% of service population (population + jobs) within a quarter mile of Level 1 & 2 transit facilities.
5. Pedestrian Accessibility	The Pedestrian Accessibility Score uses the mix of destinations, and a network-based walk shed to evaluate walkability	CEQA Threshold: Any decrease in the Citywide Pedestrian Accessibility Score

V. Project Transportation Impact Analysis

Project analyses are based on the City's Transportation Impact Analysis Guidelines. Proposed projects are analyzed using the City's calibrated travel demand forecasting model (TDF) built on SCAG's regional model.

The City's TDF model uses TransCAD software to simulate traffic levels and travel patterns for the City of Pasadena. The program consists of input files that summarize the City's land uses, street network, travel characteristics, and other key factors. Using this data, the model performs a series of calculations to determine the amount of trips generated, the beginning and ending location of each trip, and the route taken by the trip. To be deemed accurate for project transportation impact on the transportation system, a model must be calibrated to a year in which actual land use data and traffic volumes are available and well documented. The Pasadena TDF has been calibrated to 2013 base year conditions using actual traffic counts, Census data, and land use data compiled by City staff with land uses' associated population and job increase estimates.

Projects with proposed land uses that are consistent with the General Plan and complimentary to their surrounding land uses are expected to reduce the trip length associated with adjacent land uses; and/or increase the service population access to pedestrians, bike, and transit facilities if the project is within a quarter mile of those facilities.

Table 4 summarizes the following analyses of the proposed project's impacts on the transportation system using the calibrated TDF model. The results are based on the project's vehicular and non-vehicular trip making characteristics, trip length, and its interaction with other surrounding/citywide land uses, and the City's transportation network.

Table 4. Transportation Performance Metrics Summary

Transportation Performance Metrics	Significant Impact Cap (existing)	Incremental change (existing + project)	Significant Impact?
VMT Per Capita	>22.6	17.1	No
VT Per Capita	>2.8	1.2	No
Proximity and Quality of Bicycle Network	<31.7%	35.5%	No
Proximity and Quality of Transit Network	<66.6%	68.5%	No
Pedestrian Accessibility	<3.88	3.88	No

VMT Per Capita Analysis

The TDF model calculation results indicated that the project's incremental VMT per capita change is 17.1. The incremental change does not exceed the adopted caps of significance under the Vehicle Miles Traveled (VMT) per capita of 22.6. Therefore, the project does not cause a significant impact to VMT per capita.

VT Per Capita Analysis

The TDF model calculation results indicated that the incremental VT per capita change is 1.2. This incremental change does not exceed the adopted caps of significance under the Vehicle Trips (VT) per capital of 2.8. Thus, the project does not cause a significant impact to VT per capita.

Proximity and Quality of Bicycle Network Analysis

Any decrease in the existing City-wide service population percentage of 31.7% within a quarter mile of bicycle facilities will indicate a significant impact. The TDF model calculation determined that the service population percentage with the project will be 35.5%. The project does not cause a significant impact on the existing bicycle network.

Proximity and Quality of Transit Network Analysis

Calculation of this metric provides a measure of the percent of the City's population and jobs within a quarter mile of transit facility types. Any decrease in the existing City-wide service population percentage of 66.6% within a quarter mile of transit facilities will indicate a significant impact. The TDF model calculation determined that the service population percentage with the project will be 68.5%. The project does not cause a significant impact on the existing transit network.

Pedestrian Accessibility Analysis

The proximity and quality of pedestrian environment provides a measure of the average walkability in the TAZ surrounding Pasadena residents, based on a Pedestrian Accessibility score. The score is a simple count of the number of land use types accessible to the resident in a given Transportation Analysis Zone (TAZ) within a 5-minute walk. Any decrease in the calculated Pedestrian Accessibility score of 3.88 will indicate a significant impact with the addition of the project. The TDF model results revealed that the pedestrian accessibility score will be 3.88. Therefore, the project does not cause a significant impact.

VI. Conclusion

The City of Pasadena Department of Transportation assessed the potential traffic impacts associated with the construction of mixed use development with a total 4,000 sf office space and 53 for-rent residential units.

Vehicular site access to the proposed project is planned to be along Madison Avenue.

The City's Transportation Demand Model determined that the proposed project does not cause a significant impact.

VII. Appendices

Memorandum of Understanding
City's Travel Demand Forecasting Model Output/Results

Appendix:
Memorandum of Understanding

BUILDING INFORMATION SUMMARY

LEGAL DESCRIPTION	PARCEL MAP 180-62, EL MOLINO M.R. 4.3-2 TRACT LOT 27
ASSESSOR PARCEL NOS.	5723-015-027, 5723-015-028

ZONING - BY RIGHT

GENERAL PLAN DESIGNATION -MED MIXED USE. (0.0-2.25 F.A.R.)

ZONE CD-3

F.A.R. PER ZONING CODE FIGURE 3-9 F.A.R. IS 1.5 *

* SINCE WE ARE IN FORD PLACE/FULLER SEMINARY PRECINT, FAR IS 2.0

2 x 32000 = 64000 SF ALLOWED F.A.R.

LOT SIZE	160' x 200' = 32,000 SF
ALLOWABLE DENSITY	48 DWELLING UNITS PER ACRE
UNITS BY RIGHT	35 DWELLING UNITS

AFFORDABLE HOUSING DENSITY BONUS 50%

32,000 x 48/43,560 =35 BASE X 1.5 = 53 UNITS ALLOWED

ALLOWABLE HEIGHT	50' (65' AVERAGING)
ALLOWABLE STORIES	N.A.

SETBACKS

	FRONT	SIDE	REAR
COMMERCIAL	0'	0'	0'
RESIDENTIAL	5'	10'	10'

AFFORDABLE HOUSING DENSITY BONUS CONCESSIONS REQUESTED

1. BLDG HEIGHT INCREASE REQUESTED
   BLDG HEIGHT (59'-0") INCREASE REQUEST 9'-0" (18%)
2. FAR INCREASE REQUESTED
   10% F.A.R. INCREASE 6400 SF ADDITIONAL FAR REQUESTED
   64000 + 6400 = 70,400 SF TOTAL PROJECT FAR

LOT COVERAGE

LOT AREA	= 32,000 SF
AREA COVERED BY BUILDING	= 23,560 SF
PERCENTAGE OF BLDG AREA	= 74%

UNITS BREAKDOWN SUMMARY

2 BR UNITS	36	68%
1 BR UNITS	17	32%
TOTAL UNITS	53	100%

1ST FLOOR

COMMUNITY	1200 SF		
OFFICES	4000 SF	12 CARS	REQUIRED
	5200 SF		
2- ELEVATORS	96 SF		
TRASH BINS	48 SF		
TOTAL FAR	5344 SF		

2ND FLOOR

2 BEDROOM UNITS	9		18 CARS
1A. 1-2 BR UNIT	1210 SF	1210 SF	
1B. 1-2 BR UNITS	1210 SF	1210 SF	
2. 4-2 BR UNITS	1230 SF	4920 SF	
3. 2-2 BR UNITS	1310 SF	2620 SF	
4. 1-2 BR UNITS	1420 SF	1420 SF	
1 BEDROOM UNITS	5		5 CARS
1-1 BR UNIT	940 SF	940 SF	
2-1 BR UNITS	1015 SF	2030 SF	
2-1 BR UNITS	1100 SF	2200 SF	
14 UNITS		16466 SF	23 CARS
2- ELEVATORS		96 SF	
2-TRASH CHUTES		28 SF	
ENCLOSED CORRIDOR		680 SF	
TOTAL FAR		17438 SF	
OPEN SPACE TERRACES		2010 SF	
OPEN SPACE BALCONIES		1520 SF	

3RD FLOOR

2 BEDROOM UNITS	9		18 CARS
1A. 1-2 BR UNIT	1210 SF	1210 SF	
1B. 1-2 BR UNIT	1210 SF	1210 SF	
2. 4-2 BR UNIT	1340 SF	5360 SF	
3. 2-2 BR UNIT	1310 SF	2620 SF	
4. 1-2 BR UNIT	1420 SF	1420 SF	
1 BEDROOM UNITS	5		5 CARS
1-1 BR UNIT	940 SF	940 SF	
2-1 BR UNITS	1100 SF	2200 SF	
1-1 BR UNIT	1010 SF	1010 SF	
1-1 BR UNIT	1020 SF	1020 SF	
14 UNITS		16990 SF	23 CARS
2- ELEVATORS		96 SF	
2-TRASH CHUTES		28 SF	
ENCLOSED CORRIDOR		600 SF	
TOTAL FAR		17878 SF	
OPEN SPACE BALCONIES		2200 SF	

4TH FLOOR PLAN

2 BEDROOM UNITS	10		20 CARS
1A. 1-2 BR UNIT	1210 SF	1210 SF	
1B. 1-2 BR UNIT	1220 SF	1220 SF	
2. 4-2 BR UNIT	1210 SF	4840 SF	
3. 2-2 BR UNIT	1320 SF	2640 SF	
4. 1-2 BR UNIT	1420 SF	1420 SF	
5. 1-2 BR UNIT	1310 SF	1310 SF	
1 BEDROOM UNITS	4		4 CARS
1-1 BR UNIT	1010 SF	1010 SF	
1-1 BR UNIT	1020 SF	1020 SF	
2-1 BR UNITS	1110 SF	2220 SF	
14 UNITS		16890 SF	24 CARS
2- ELEVATORS		96 SF	
2- TRASH CHUTES		28 SF	
TOTAL FAR		17014 SF	
OPEN SPACE TERRACE		2250 SF	
OPEN SPACE BALCONIES		2050 SF	

5TH FLOOR

2 BEDROOM UNITS	8		16 CARS
1. 1-2 BR UNIT	1320 SF	1320 SF	
2. 3-2 BR UNITS	1040 SF	3120 SF	
3. 2-2 BR UNITS	1310 SF	2620 SF	
4. 1-2 BR UNIT	1200 SF	1200 SF	
5. 1-2 BR UNIT	1420 SF	1420 SF	
1 BEDROOM UNITS	3		3 CARS
1-1 BR UNIT	890 SF	890 SF	
2-1 BR UNITS	1000 SF	2000 SF	
11 UNITS		12570 SF	19 CARS
2- ELEVATORS		96 SF	
2- TRASH CHUTES		28 SF	
TOTAL FAR		12694 SF	
OPEN SPACE TERRACES		3000 SF	
OPEN SPACE BALCONIES		4570 SF	

F.A.R.	53 UNITS	65024 SF
NON-RESIDENTIAL		5344 SF
TOTAL F.A.R.		70368 SF

Appendix:
City's Travel Demand Forecasting Model Output/Results

127 North Madison Avenue

VMT and VT Per Capita

Calculation Summary

Daily Trips	Internal	External
Internal	355,812	348,886
External	348,886	490,937

Pop	136,047
Emp	125,805
Ext. Factor	50%

FINAL REDUCED DAILY VMT BY SPEED BIN					EMFAC
Speed	**Internal**	**External**	**Regional**	**Total**	**INPUT**
5	184	78	1,845	2,106	0%
10	1,413	59	15,203	16,676	0%
15	4,259	1,596	48,597	54,451	1%
20	25,121	4,791	79,725	109,637	2%
25	118,031	14,345	159,159	291,535	5%
30	505,114	65,436	291,282	861,832	15%
35	854,479	145,967	338,416	1,338,862	23%
40	177,673	58,197	238,895	474,764	8%
45	155,252	106,183	179,764	441,199	8%
50	108,334	4,642	224,355	337,332	6%
55	105,673	5,000	242,761	353,434	6%
60	119,033	17,629	250,607	387,270	7%
65	320,768	19,621	190,821	531,209	9%
70	3,665	0	555,691	559,356	11%
75	0	0	81,262	81,262	
80	0	0	0	0	
85	0	0	0	0	
SUM	**2,498,998**	**443,545**	**2,898,382**	**5,840,925**	**100%**

TOTAL RAW DAILY SUMMARY					
Metric	**Internal**	**External**	**Regional**	**Total**	**Capita**
VMT	2,498,998	887,089	5,796,765	9,182,852	35.1
VT	355,812	697,772	-	1,053,584	4.0
Length	7.0	1.3	-	8.7	-

REDUCED DAILY SUMMARY					
Metric	**Internal**	**External**	**Regional**	**Total**	**Capita**
VMT	2,498,998	443,545	2,898,382	5,840,925	22.3
VT	355,812	348,886	-	704,698	2.7
Length	7.0	1.3	-	8.3	-

FINAL DAILY SCENARIO SUMMARY					
Pop	**Emp**	**VMT**	**VT**	**VMT/Cap**	**VT/Cap**
136,047	125,805	5,840,925	704,698	22.3	2.7

2013 EXISTING SUMMARY					
Pop	**Emp**	**VMT**	**VT**	**VMT/Cap**	**VT/Cap**
135,938	111,348	5,591,328	686,619	22.6	2.8

INCREMENTAL SCENARIO RESULTS					
Pop	**Emp**	**VMT**	**VT**	**VMT/Cap**	**VT/Cap**
108	14,457	249,597	18,079	17.1	1.2
				PASS	PASS

127 N Madison Avenue

Proximity and Quality Metric

Calculation Summary

Proximity and Quality of Bicycle Network

Existing

Facility Type	Service Population	Service Population Adjustment	Final Service Population	Percent of Service Population
Level 2	78,415	0	78,415	31.7%
Level 3	123,670	0	123,670	50.0%
No Facility	45,202	0	45,202	18.3%
Exist City Total	247,286	0	247,286	100.0%

Existing + Project

Facility Type	Service Population	Service Population Adjustment	Final Service Population	Percent of Service Population
Level 2	78,415	14555.55428	92,971	35.5%
Level 3	123,670	0	123,670	47.2%
No Facility	45,202	0	45,202	17.3%
Exist City Total	247,286	14555.55428	261,842	100.0%

Proximity and Quality Metric Summary - Bicycle

Network	Service Population Adjustment	Significant Impact Threshold	Service Population %	Impact?
Bike	14,556	< 31.7%	35.5%	No

Proximity and Quality of Transit Network

Existing

Facility Type	Service Population	Service Population Adjustment	Final Service Population	Percent of Service Population
Level 1	90,600	0	90,600	36.6%
Level 2	74,298	0	74,298	30.0%
Level 3	50,495	0	50,495	20.4%
No Facility	31,893	0	31,893	12.9%
Exist City Total	247,286	0	247,286	100.0%

Existing + Project

Facility Type	Service Population	Service Population Adjustment	Final Service Population	Percent of Service Population
Level 1	90,600	14555.55428	105,156	40.2%
Level 2	74,298	0	74,298	28.4%
Level 3	50,495	0	50,495	19.3%
No Facility	31,893	0	31,893	12.2%
Exist City Total	247,286	14555.55428	261,842	100.0%

Proximity and Quality Metric Summary - Transit

Network	Service Population Adjustment	Significant Impact Threshold	Service Population %	Impact?
Transit	14,556	< 66.6%	68.5%	No

127 North Madison Avenue

Pedestrian Accessibility

Calculation Summary

					Weighted Average:	**3.882616451**
PasadenaDTATAZ	Land Use Types	Population_In_TAZ	Employment_In_TAZ	Service_Population	Land Use Types	
134	8	291.24315	1098.767764	1390.010914	8	

PASADENA
DEPARTMENT OF TRANSPORTATION

Transportation Impact Analysis

Outside of CEQA Analysis

Category 2

Project Address: 127-141 North Madison Avenue

Project Summary: Demolition of existing office development; construction of 4,000 sf office space, and 53 rental units

Applicant:
Zovi Seferian
Planning and Entitlement
MBC Enterprises LLC
127 N Madison Avenue, Suite 200
Pasadena, CA 91101

Attention:
Kelvin Parker, Zoning Administrator
City Planning Department

September 28, 2017

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I. Study Objective

The Department of Transportation at its discretion may analyze performance metrics outside of CEQA for projects below community-wide significance size thresholds of 50 units and/or 50,000 square feet of development. The analysis will assess the project's vehicular trips changes to adjacent intersections' Levels of Service (LOS) and "Access and Connector-Neighborhood" Street Type segments. The findings may result in imposing project approval conditions to better manage project trips and protect neighborhoods from the proposed development's vehicular trips, if applicable.

II. Project Description

The City of Pasadena Department of Transportation conducted an analysis to review potential transportation impacts related to the demolition of an office development and the construction of 53 residential rental units, and total 4,000 sf of office space, and subterranean parking.

Vehicular site access to the proposed project is planned to be along Madison Avenue.

Figure 1 depicts the project's ground floor plan which highlights the location of the offices and driveway.

III. Project Study Area

The analysis reviewed the project's effects along the following street segment and intersections:

Street Segment:
- Madison Avenue between Walnut Street and Union Street

Intersections:
- Madison Avenue at Walnut Street
- Madison Avenue at Union Street

IV. Existing Transportation Network

<u>Street System Classifications</u>

Colorado Boulevard is an east-west principal arterial with two travel lanes in each direction. The City of Pasadena's adopted street classification for this roadway is **City Connector**. The posted speed limit is 25 miles per hour in the business district. At the signalized Colorado Boulevard and El Molino Avenue intersection, there exist crosswalks along all four legs.

Corson Street is a one-way eastbound minor arterial with two travel lanes and a Class II bike lane. It is classified as a multimodal corridor where several I-210 on-and-off ramps

127 MADISON MIXED USE PROJECT
127 N. MADISON Avenue Pasadena, CA 91101

GROUND FLOOR PLAN

A-1

NO SCALE

FIGURE 1
PROJECT GROUND FLOOR PLAN

127 NORTH MADISON AVENUE

PASADENA
DEPARTMENT OF TRANSPORTATION

are located. The City of Pasadena's adopted street classification for this roadway is **City Connector**. The posted speed limit is 35 miles per hour.

El Molino Avenue is a north-south roadway with one through travel lane provided in each direction. The El Molino Avenue at Walnut Street intersection restricts northbound and southbound left-turn movements during 7-9 AM and 4-6 PM on weekdays. The City of Pasadena's adopted street classification for this roadway is **Neighborhood Connector**.

Los Robles Avenue is a north-south roadway that borders the project site to the west. Two through travel lanes are provided in each direction in the project study area. Exclusive left-turn lanes are provided in both directions at the Walnut Street intersection. Parking is prohibited along both sides of Los Robles Avenue adjacent to the project site. The street is classified as **City Connector.**

Madison Avenue is a north-south local roadway with one through lane for each direction. Parking is available on both sides of the street. The City of Pasadena's adopted street classification for this roadway is an **Access Road**. Both the Madison Avenue at Walnut Street intersection and the Madison Avenue at Union Street intersection are signalized with crosswalks along all legs of the intersection.

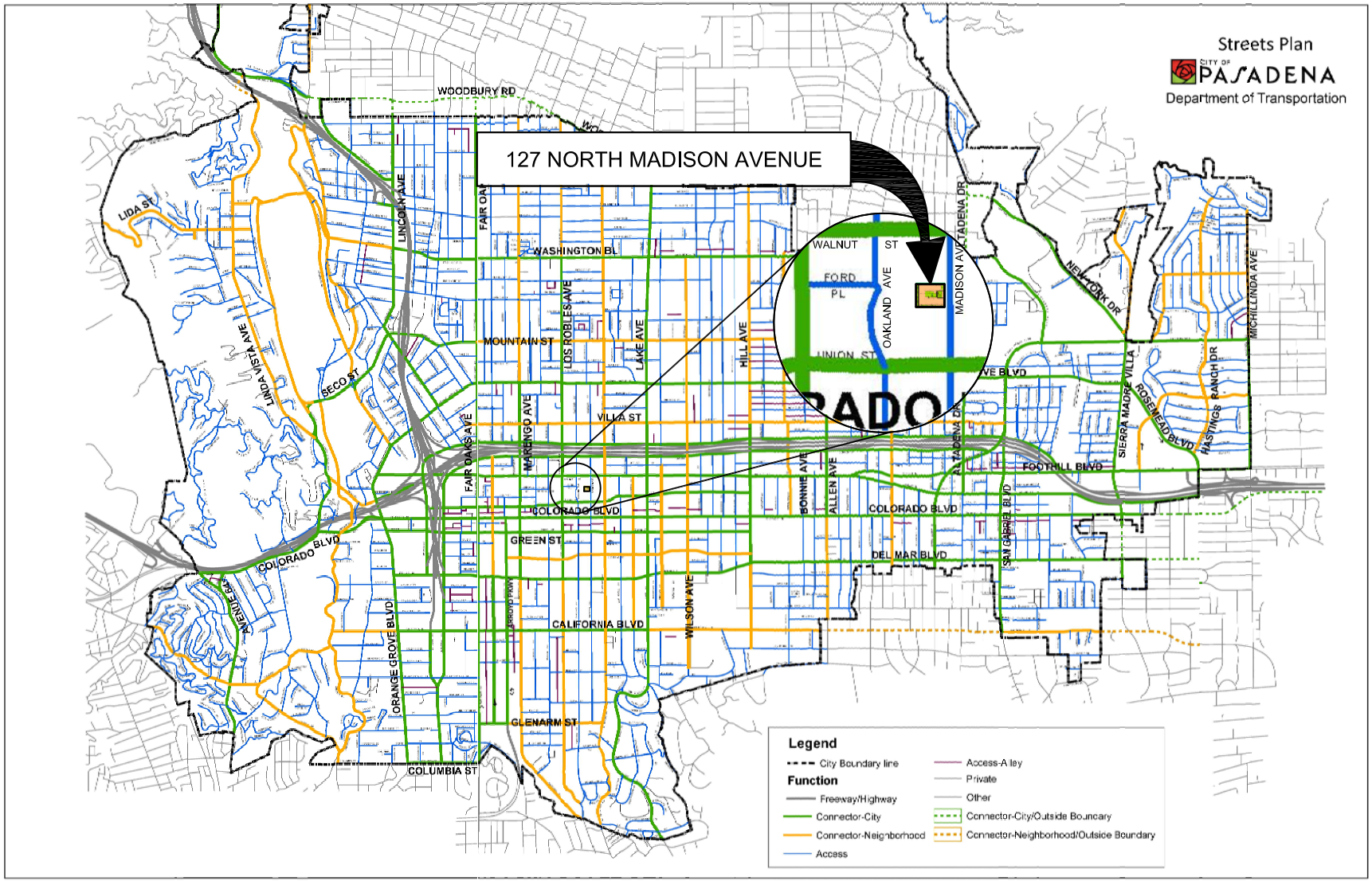
Maple Street is a one-way **City Connector** that runs westbound and parallel to the 210 freeway with two through travel lanes. The posted speed limit is 35 miles per hour.

Walnut Street is an east-west roadway located south of the project site. Two through travel lanes are provided in each direction. The City of Pasadena's adopted street classification for this roadway is **City Connector**. The posted speed limit is 30 miles per hour.

Figure 2 depicts the project within the context of the City of Pasadena's Adopted Street Types map.

Average daily traffic counts (ADT) collected in 2016 along Madison Avenue, an access road street type within the project vicinity, is summarized as follows:

Street Segment	**Existing ADT Volumes**
Madison Avenue between Walnut Street and Union Street	4,291



NO SCALE

FIGURE 2
CITY OF PASADENA ADOPTED STREET TYPES

127 NORTH MADISON AVENUE

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Existing Transit Service

Public transit service within the project study area is currently provided by LA Metro (Metro), Foothill Transit (FT), LA Department of Transportation (LADOT), and Pasadena Transit (PT). The project occupants will have adequate access to the City's transit network within a quarter mile radius from the project address. The locations of public transit stops near the project are summarized in the following table:

Location	**Route**
NE corner Los Robles Ave at Walnut St	PT 40; Metro 687
NE corner Los Robles Ave at Walnut St	PT 40; Metro 687
NW corner Los Robles Ave at Walnut St	PT 40; Metro 267
NE corner Los Robles Ave at Colorado Blvd	Metro 267, 686; LADOT 549
SW corner Los Robles Ave at Colorado Blvd	Metro 267; LADOT 549
NW corner Oakland Ave at Colorado Blvd	PT 10
NW corner Madison Ave at Colorado Blvd	PT 10; Metro 180/181; 256; 686
SE corner Madison Ave at Colorado Blvd	PT 10; Metro 180/181; 256; 686

V. Transportation Analysis Methodology

With the City of Pasadena General Plan, the City's guiding principles cumulatively represent the community's vision for the future:

- Growth will be targeted to serve community needs and enhance quality of life.
- New construction that could affect the integrity of historic resources will be compatible with, and differentiated from, the existing historic resource.
- Economic vitality will be promoted to provide jobs, services, revenues, and opportunities.
- Pasadena will be a socially, economically, and environmentally sustainable community.
- Pasadena will be a city where people can circulate without cars.
- Pasadena will be promoted as a cultural, scientific, corporate, entertainment, and educational center for the region.
- Community participation will be a permanent part of achieving a greater city.
- Pasadena is committed to public education and a diverse educational system responsive to the broad needs of the community.

Understanding the goals and objectives of the General Plan, the Pasadena Department of Transportation sets forth goals and policies to improve overall transportation in Pasadena and create "a community where people can circulate without cars." Inherent in

this vision statement is to accommodate different modes of transportation including vehicle, pedestrian, bicycle, and transit. The analysis is based on City Transportation Impact Analysis Guidelines. This report will assess accessibility of these different modes of travel and the project's transportation impacts using the City's adopted transportation performance measures.

Analysis Threshold Criteria - Transportation Performance Measures

The Department's defined criteria and categories when determining the level of transportation impact of projects fall under three categories based on project size and community-wide significance.

- Exempt projects have 10 residential units or less, are 10,000 sf or less, or generate less than 300 daily trips if less than 10,000 sf.
- Category 1 Projects considered below community-wide significance are between 11-49 residential units, or 10,001 to 49,999 sf.
- Category 2 Projects classified as having community-wide significance have 50 or more residential units, or are 50,000 sf or more.

Pasadena Department of Transportation's mobility performance measures assess the quality of walking, biking, transit, and vehicular travel in the City. A combination of vehicular and multimodal performance measures are employed to evaluate system performance in reviewing new development impacts.

Metrics in the following table shall be analyzed for projects of "communitywide significance" in the City's Metrics Cap Outside of CEQA:

Table 1. City of Pasadena Metrics Cap

METRIC	DESCRIPTION	CAP*
1. Street Segment Analysis	The street segment analysis assesses traffic intrusion on local streets in residential neighborhoods	Specific percent increases above existing traffic on streets with more than 1500 ADT would trigger conditions of approval to reduce project vehicular trips
2. Auto Level of Service	Level of Service (LOS) as defined by the Transportation Research Board's *Highway Capacity Manual (HCM) 2010*.	A decrease beyond LOS D Citywide or LOS E within Transit Oriented Districts (TODs) would trigger conditions of approval to reduce project vehicular trips
3. PEQI	Pedestrian Environmental Quality Index	Below average conditions
4. BEQI	Bicycle Environmental Quality Index	Below average conditions

*The adopted caps are not intended to be the absolute limits, but rather limits/ranges when exceeded may require additional project approval conditions

Caps for Determining Project Street Segment Changes

Caps for evaluating changes in vehicular volumes on street segments were developed to measure the potential changes of net new trips from projects that intensify an existing land use, change site access, or alter existing traffic patterns. The caps are designed to capture a project's anticipated level of changes measured in terms of net new trips over existing conditions.

Specific caps have been established to determine whether there would be any potential project changes along neighborhood street segments by project traffic. A conservative approach is taken when calculating the traffic growth by basing the calculation on the increase relative to existing traffic volumes as follows:

$$\text{Percentage of Increase} = {}^{\text{net new project trips}}/_{\text{existing daily traffic}}$$

The analysis is limited to "access" and "neighborhood connector" street types within a residential context.

The daily traffic growth thresholds for determining the level of street segment transportation changes are summarized as follows:

Table 2. Specific Street Segment Caps

Existing ADT	Project-Related Vehicular Increase in ADT
0 to 1,499 average daily trips	150 trips or more
1,500 to 3,499 average daily trips	10 percent or more of final project ADT
3,500 or more	8 percent or more of final project ADT

As stated in Table 1, specific percent increases above existing traffic on streets with 1500 ADT or more would trigger conditions of approval to reduce project vehicular trips. If project-related net trips exceed the caps in the table above, conditions of approval would require the project applicant to implement measures to discourage neighborhood intrusion by project related traffic. Input from the affected residents, Council Districts, and DOT would be involved to encourage use of non-vehicular modes by the project's patrons. If the project traffic increases fall below the street segment thresholds, additional analyses are not required.

Caps for Determining Intersection Changes

Proposed development projects that meet or exceed the size thresholds to be considered projects of communitywide significance will evaluate intersections using the Highway

Capacity Manual (HCM) Level of Service (LOS) analysis criteria. HCM methodology determines an intersection's level of service by calculating delay.

Intersection LOS analysis using HCM criteria will be conducted for peak hour conditions.

LOS caps are summarized below:

Table 3: Intersection Level of Service Caps

Study Intersections	Existing + Project LOS Cap
Citywide	D
Transit Oriented District (TOD)	E

Where the existing LOS for evaluated intersections are worsened with the addition of project traffic, recommended conditions of approval will be consistent with the City's guiding principles to encourage walking, biking, and transit to and from the project site to reduce project-related vehicular trips.

LOS descriptions are summarized in Table 4.

Table 4. LOS Capacity Criteria

HIGHWAY CAPACITY LEVEL OF SERVICE CRITERIA		
LOS	DESCRIPTION	DELAY (s)
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor (vehicle) progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0
Source: 2010 *Highway Capacity Manual.*		

VI. Transportation Analysis

Project Trip Generation

Street segment and intersection LOS analyses are required for all Category 2 projects. The analyses involve evaluating existing plus project trip conditions against existing traffic. The industry standard procedure to determine the number of daily and peak hour trips a project would generate is based on published trip generation estimates from the ITE Trip Generation manual.

Project Trip Generation

The industry standard procedure to determine the number of daily and peak hour trips a project would generate is based on published trip generation estimates from the ITE Trip Generation manual and is summarized in the following table:

Trip Generation Rates (proposed)											
						AM Peak Hour			PM Peak Hour		
Proposed Use	Land Use Code	Amount	Units	Measure	Daily	In	Out	Total	In	Out	Total
Apartment	220	53	DU	1	6.65	0.10	0.41	0.51	0.40	0.22	0.62
General Office Building	710	4,000	SF	1000	11.01	1.36	0.19	1.55	0.25	1.24	1.49

Trip Generation Rates (previous)											
						AM Peak Hour			PM Peak Hour		
Previous Use	Land Use Code	Amount	Units	Measure	Daily	In	Out	Total	In	Out	Total
General Office Building	710	24,283	SF	1000	11.01	1.36	0.19	1.55	0.25	1.24	1.49

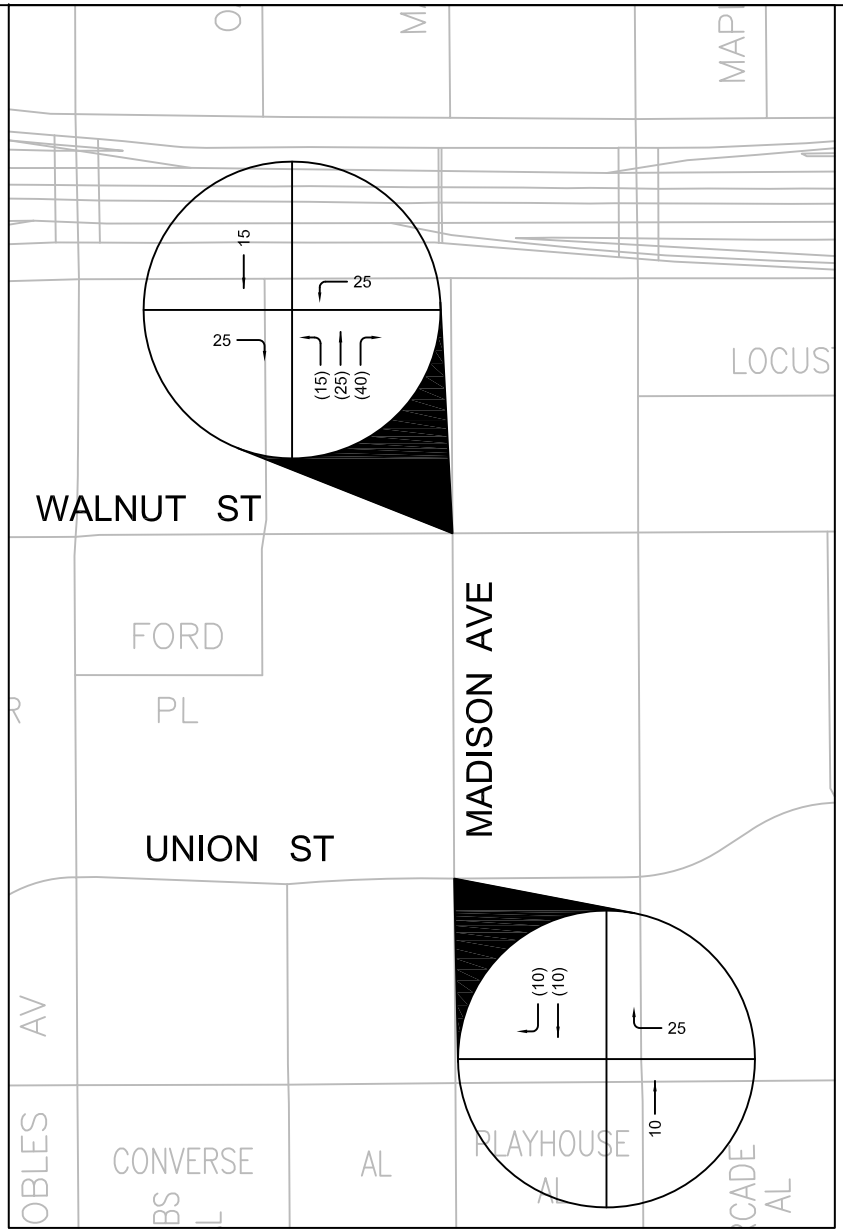
Volumes								
		AM Peak Hour			PM Peak Hour		
Proposed Use	Daily	In	Out	Total	In	Out	Total
Apartment	352	5	22	27	21	12	33
General Office Building	44	5	1	6	1	5	6
Total Project Trips	396	11	22	33	22	16	39
Internal Trip Capture 0%	0	0	0	0	0	0	0
Walk-In 0%	0	0	0	0	0	0	0
Transit Trips 0%	0	0	0	0	0	0	0
Pass-By Trips 0%	0	0	0	0	0	0	0
Net Project Vehicle Trips	396	11	22	33	22	16	39

Volumes							
		AM Peak Hour			PM Peak Hour		
Previous Use	Daily	In	Out	Total	In	Out	Total
General Office Building	267	33	5	38	6	30	36
Total Project Trips	267	33	5	38	6	30	36
Internal Trip Capture 0%	0	0	0	0	0	0	0
Walk-In 0%	0	0	0	0	0	0	0
Transit Trips 0%	0	0	0	0	0	0	0
Pass-By Trips 0%	0	0	0	0	0	0	0
Net Project Vehicle Trips	267	33	5	38	6	30	36
Net total (proposed minus existing trips)	***129***	***-22***	***18***	***-4***	***16***	***-14***	***3***

The square footage of the existing office development is based on the information included in the City's transportation model. Utilizing the ITE Trip Generation Manual rates, it is estimated that the project would generate an estimated 129 net daily trips, 4 less net AM peak hour trips, and 3 net PM peak hour trips.

Street Segment Analysis

Figure 3 describes the project trip distribution used to evaluate project traffic volumes on the street network. Using counts collected in 2016, the calculated increase in average daily traffic along Madison Avenue is summarized in Table 5.



NO SCALE

LEGEND

XX	% INBOUND
(XX)	% OUTBOUND

PASADENA
DEPARTMENT OF TRANSPORTATION

FIGURE 3
PROJECT TRIP DISTRIBUTION

127 NORTH MADISON AVENUE

Table 5. Street Segment Changes Summary

Street Segment	Daily Volume	Project Volume	Vehicular Increase in ADT	Exceeds Cap?
Madison Ave between Walnut St and Union St	4,291	129	3.0%	No

Intersection Level of Service (LOS) Analysis

Figure 4 indicates that the project is in the City's Transit Oriented District. Therefore, the Existing + Project LOS cap for intersections is "LOS E". Figure 5 describes the existing and existing plus project traffic volumes on the study intersections.

The calculated LOS results are summarized in Table 6.

Table 6. Signalized Intersection LOS Summary

Intersection	Peak Hour	Existing		Existing w/Project		Exceeds LOS Cap?
		Delay	LOS	Delay	LOS	Yes/No
Madison Ave at Walnut St	AM	3.8	A	4.1	A	No
	PM	6.9	A	7.2	A	No
Madison Ave at Union St	AM	6.4	A	6.5	A	No
	PM	4.9	A	4.9	A	No

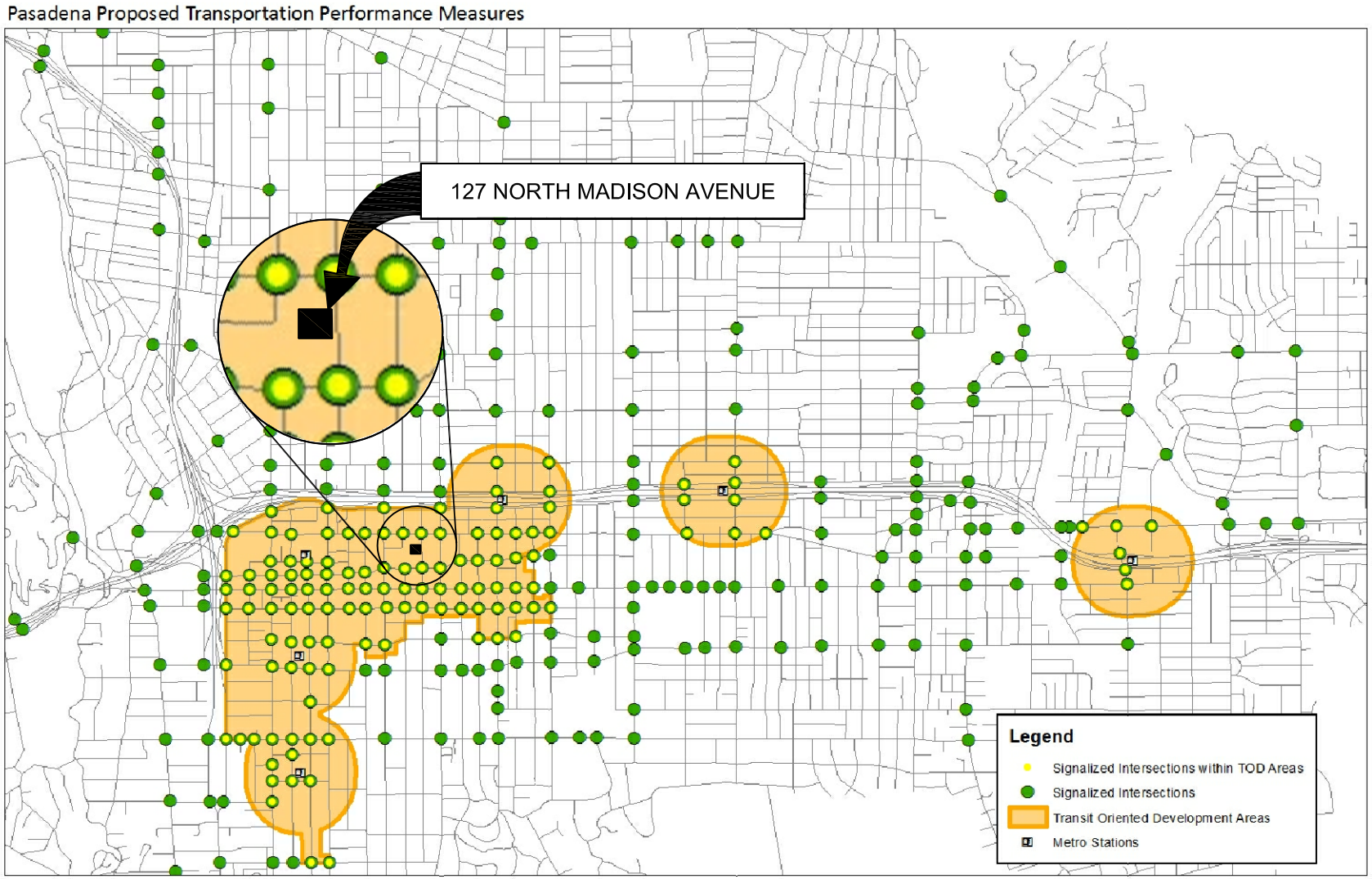
The project is not expected to exceed adopted intersection caps.

PEQI/BEQI Analysis

A field observational survey was conducted along Madison Avenue between Walnut Street and Union Street to document existing pedestrian and bicycle quality conditions. Vehicle traffic features (i.e., number of lanes, vehicle speed, etc.) as well as street quality features (i.e., sidewalk widths and impediments, driveway cuts, land use characteristics, etc.) were collected for the east and west sides of the street.

Environmental quality of non-vehicular modes must be improved when assessment of project study street segments and intersections reveal less than average conditions. According to the PEQI and BEQI indicator and indicator category scores, the following observational scores are:

Segment	**PEQI Score**	**BEQI Score**
Madison Avenue between Walnut Street and Union Street - Northbound (east side) - Soutbound (west side)	 58 – Average 62 – High	 39 – Low 42 – Average

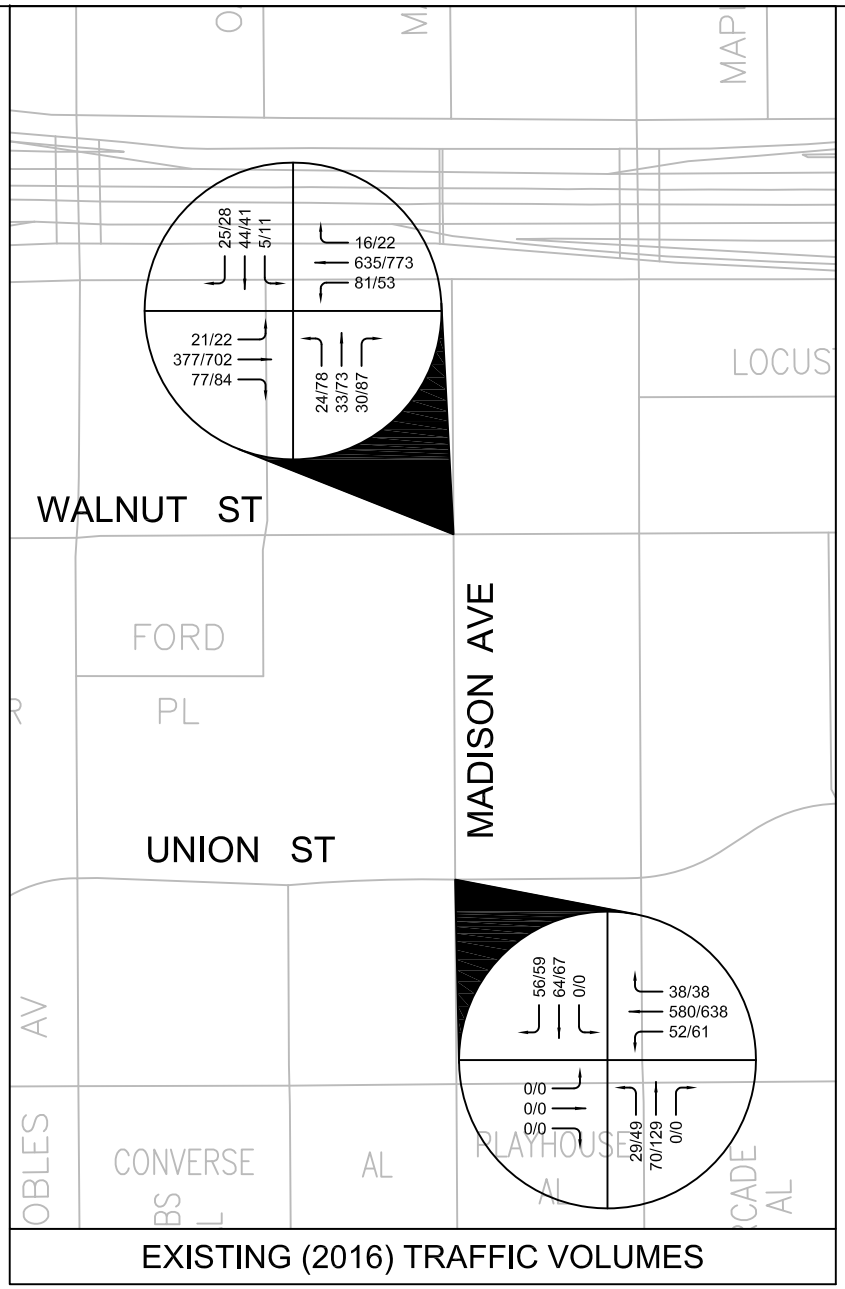


NO SCALE

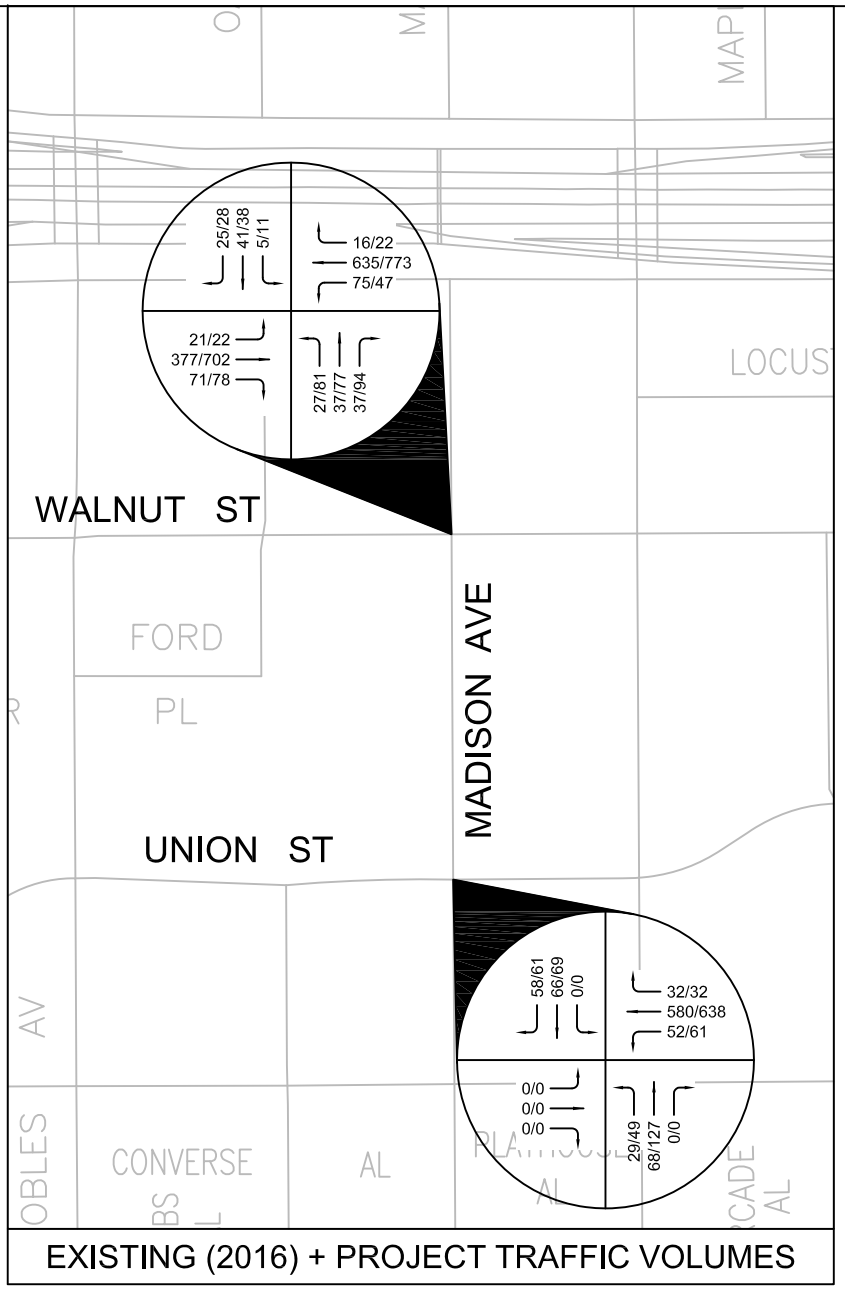
FIGURE 4
CITY OF PASADENA ADOPTED TRANSIT ORIENTED DEVELOPMENT AREA

127 NORTH MADISON AVENUE

PASADENA
DEPARTMENT OF TRANSPORTATION



EXISTING (2016) TRAFFIC VOLUMES



EXISTING (2016) + PROJECT TRAFFIC VOLUMES

LEGEND

XX/YY AM/PM VOLUMES

NO SCALE

PASADENA
DEPARTMENT OF TRANSPORTATION

FIGURE 5
TRAFFIC INTERSECTION VOLUMES

127 NORTH MADISON AVENUE

VII. Congestion Management Plan

CMP Traffic Impact Analysis

The 2010 Congestion Management Program (CMP) for Los Angeles County requires an Environmental Impact Report for all projects that determine whether project traffic is a significant issue. The geographic area examined in the traffic study must include the following, at minimum:

- All CMP arterial monitoring intersections where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours of adjacent street traffic
- If CMP arterial segments are being analyzed rather than intersections, the study area must include all segments where the proposed project will add 50 or more peak hour trips.
- Mainline freeway monitoring locations where the project will add 150 or more peak hour trips
- Caltrans must also be consulted through the Notice of Preparation (NOP) process to identify other specific locations to be analyzed on the state highway system.

The mainline freeway monitoring locations in Pasadena are:

- Arroyo Parkway at California Boulevard (CMP ID 119)
- Pasadena Avenue/ St John Avenue at California Boulevard (CMP ID 120)
- Rosemead Boulevard at Foothill Boulevard (CMP ID 121)
- 110 Freeway at Pasadena Avenue (CMP Station 1050)
- 134 Freeway west of San Rafael Avenue (CMP Station 1056)
- 210 Freeway west of Routes 134 and 710 (CMP Station 1060)
- 210 Freeway at Rosemead Boulevard (CMP Station 1061)

Since this project would not add 150 or more trips nor add 50 or more trips during either the AM or PM weekday peak hours of adjacent street traffic onto the mainline freeway monitoring locations, no further CMP analysis is required.

CMP Transit Impact Analysis

CMP transit analysis requirements are require that:
- Evidence that affected transit operators received the Notice of Preparation (NOP)
- Summary of existing transit service in the study area
- Project trip generation estimates
- Project transit trip estimates
- Project components including facilities and programs to encourage public transit use
- Analysis of transit impacts and mitigations, if any.

Section IV above described the existing transit services in the project area.

The CMP transit trip estimates are summarized:

Transit Trip Estimate Summary			
	Daily	AM Peak Hour	PM Peak Hour
Total project vehicle trips	129	-4	3
Total person trips	181	-2	4
% CMP transit factor [1]	3.5%	3.5%	3.5%
Total Transit Trips	6	0	0

* Based on the 2010 Congestion Management Program for Los Angeles County Appendix D.8.4

[1] 3.5% of Total Person Trips generated.

With the proposed project, an increase in transit trip ridership of 6 daily riders, 0 AM peak hour riders, and 0 PM peak hour riders are estimated. This calculation is based on total project vehicle trips. No trip credit was given from existing trips, internal trip capture, walk-in, pass-by trips, or transit trips. There should be adequate transit capacity to have no significant transit impacts.

VIII. Conclusion

The City of Pasadena Department of Transportation conducted an analysis to review potential transportation impacts related to the demolition of an office development and the construction of 53 residential rental units, and total 4,000 sf of office space, and subterranean parking. It is estimated that the project would generate an estimated 129 net daily trips, 4 less net AM peak hour trips, and 3 net PM peak hour trips.

The project is not expected to exceed adopted intersection caps nor street segment caps.

The PEQI score adjacent to the project is High.

The BEQI score adjacent to the project is Average.

VIII. Appendices

Memorandum of Understanding
Traffic Volumes
HCM Analysis
PEQI/BEQI Calculations

Appendix:
Memorandum of Understanding

BUILDING INFORMATION SUMMARY

LEGAL DESCRIPTION	PARCEL MAP 180-62, EL MOLINO M.R. 4.3-2 TRACT LOT 27
ASSESSOR PARCEL NOS.	5723-015-027, 5723-015-028

ZONING - BY RIGHT

GENERAL PLAN DESIGNATION -MED MIXED USE. (0.0-2.25 F.A.R.)

ZONE CD-3

F.A.R. PER ZONING CODE FIGURE 3-9 F.A.R. IS 1.5 *

* SINCE WE ARE IN FORD PLACE/FULLER SEMINARY PRECINT, FAR IS 2.0

2 x 32000 = 64000 SF ALLOWED F.A.R.

LOT SIZE	160' x 200' = 32,000 SF
ALLOWABLE DENSITY	48 DWELLING UNITS PER ACRE
UNITS BY RIGHT	35 DWELLING UNITS

AFFORDABLE HOUSING DENSITY BONUS 50%

32,000 x 48/43,560 =35 BASE X 1.5 = 53 UNITS ALLOWED

ALLOWABLE HEIGHT	50' (65' AVERAGING)
ALLOWABLE STORIES	N.A.

SETBACKS

	FRONT	SIDE	REAR
COMMERCIAL	0'	0'	0'
RESIDENTIAL	5'	10'	10'

AFFORDABLE HOUSING DENSITY BONUS CONCESSIONS REQUESTED

1. BLDG HEIGHT INCREASE REQUESTED
   BLDG HEIGHT (59'-0") INCREASE REQUEST 9'-0" (18%)
2. FAR INCREASE REQUESTED
   10% F.A.R. INCREASE 6400 SF ADDITIONAL FAR REQUESTED
   64000 + 6400 = 70,400 SF TOTAL PROJECT FAR

LOT COVERAGE

LOT AREA	= 32,000 SF
AREA COVERED BY BUILDING	= 23,560 SF
PERCENTAGE OF BLDG AREA	= 74%

UNITS BREAKDOWN SUMMARY

2 BR UNITS	36	68%
1 BR UNITS	17	32%
TOTAL UNITS	53	100%

1ST FLOOR

COMMUNITY	1200 SF		
OFFICES	4000 SF	12 CARS	REQUIRED
	5200 SF		
2- ELEVATORS	96 SF		
TRASH BINS	48 SF		
TOTAL FAR	5344 SF		

2ND FLOOR

2 BEDROOM UNITS	9		18 CARS
1A. 1-2 BR UNIT	1210 SF	1210 SF	
1B. 1-2 BR UNITS	1210 SF	1210 SF	
2. 4-2 BR UNITS	1230 SF	4920 SF	
3. 2-2 BR UNITS	1310 SF	2620 SF	
4. 1-2 BR UNITS	1420 SF	1420 SF	
1 BEDROOM UNITS	5		5 CARS
1-1 BR UNIT	940 SF	940 SF	
2-1 BR UNITS	1015 SF	2030 SF	
2-1 BR UNITS	1100 SF	2200 SF	
14 UNITS		16466 SF	23 CARS
2- ELEVATORS		96 SF	
2-TRASH CHUTES		28 SF	
ENCLOSED CORRIDOR		680 SF	
TOTAL FAR		17438 SF	
OPEN SPACE TERRACES		2010 SF	
OPEN SPACE BALCONIES		1520 SF	

3RD FLOOR

2 BEDROOM UNITS	9		18 CARS
1A. 1-2 BR UNIT	1210 SF	1210 SF	
1B. 1-2 BR UNIT	1210 SF	1210 SF	
2. 4-2 BR UNIT	1340 SF	5360 SF	
3. 2-2 BR UNIT	1310 SF	2620 SF	
4. 1-2 BR UNIT	1420 SF	1420 SF	
1 BEDROOM UNITS	5		5 CARS
1-1 BR UNIT	940 SF	940 SF	
2-1 BR UNITS	1100 SF	2200 SF	
1-1 BR UNIT	1010 SF	1010 SF	
1-1 BR UNIT	1020 SF	1020 SF	
14 UNITS		16990 SF	23 CARS
2- ELEVATORS		96 SF	
2-TRASH CHUTES		28 SF	
ENCLOSED CORRIDOR		600 SF	
TOTAL FAR		17878 SF	
OPEN SPACE BALCONIES		2200 SF	

4TH FLOOR PLAN

2 BEDROOM UNITS	10		20 CARS
1A. 1-2 BR UNIT	1210 SF	1210 SF	
1B. 1-2 BR UNIT	1220 SF	1220 SF	
2. 4-2 BR UNIT	1210 SF	4840 SF	
3. 2-2 BR UNIT	1320 SF	2640 SF	
4. 1-2 BR UNIT	1420 SF	1420 SF	
5. 1-2 BR UNIT	1310 SF	1310 SF	
1 BEDROOM UNITS	4		4 CARS
1-1 BR UNIT	1010 SF	1010 SF	
1-1 BR UNIT	1020 SF	1020 SF	
2-1 BR UNITS	1110 SF	2220 SF	
14 UNITS		16890 SF	24 CARS
2- ELEVATORS		96 SF	
2- TRASH CHUTES		28 SF	
TOTAL FAR		17014 SF	
OPEN SPACE TERRACE		2250 SF	
OPEN SPACE BALCONIES		2050 SF	

5TH FLOOR

2 BEDROOM UNITS	8		16 CARS
1. 1-2 BR UNIT	1320 SF	1320 SF	
2. 3-2 BR UNITS	1040 SF	3120 SF	
3. 2-2 BR UNITS	1310 SF	2620 SF	
4. 1-2 BR UNIT	1200 SF	1200 SF	
5. 1-2 BR UNIT	1420 SF	1420 SF	
1 BEDROOM UNITS	3		3 CARS
1-1 BR UNIT	890 SF	890 SF	
2-1 BR UNITS	1000 SF	2000 SF	
11 UNITS		12570 SF	19 CARS
2- ELEVATORS		96 SF	
2- TRASH CHUTES		28 SF	
TOTAL FAR		12694 SF	
OPEN SPACE TERRACES		3000 SF	
OPEN SPACE BALCONIES		4570 SF	

F.A.R.	53 UNITS	65024 SF
NON-RESIDENTIAL		5344 SF
TOTAL F.A.R.		70368 SF

Appendix:
Traffic Volumes

City of Pasadena

MS2

Transportation Data Management System

Volume Count Report

LOCATION INFO	
Location ID	2203
Type	SPOT
Fnct'l Class	-
Located On	Madison Ave
Loc On Alias	
BETWEEN	Walnut St AND Union St
Direction	2-WAY
County	Los Angeles
Community	Pasadena
MPO ID	
HPMS ID	
Agency	City of Pasadena

COUNT DATA INFO	
Count Status	Accepted
Start Date	Thu 9/8/2016
End Date	Fri 9/9/2016
Start Time	12:00:00 AM
End Time	12:00:00 AM
Direction	2-WAY
Notes	pasadena
Station	2203
Study	
Speed Limit	
Description	
Sensor Type	

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	7	10	3	3	23
1:00-2:00	2	2	2	0	6
2:00-3:00	2	1	0	2	5
3:00-4:00	0	1	3	1	5
4:00-5:00	1	0	0	2	3
5:00-6:00	7	5	9	12	33
6:00-7:00	16	23	21	25	85
7:00-8:00	21	36	36	73	166
8:00-9:00	70	112	91	93	366
9:00-10:00	87	80	79	84	330
10:00-11:00	66	79	67	67	279
11:00-12:00	72	71	59	94	296
12:00-13:00	71	70	85	72	298
13:00-14:00	72	77	74	70	293
14:00-15:00	76	78	75	88	317
15:00-16:00	58	84	94	80	316
16:00-17:00	72	55	69	84	280
17:00-18:00	72	98	80	90	340
18:00-19:00	68	80	74	68	290
19:00-20:00	58	65	61	44	228
20:00-21:00	47	31	30	23	131
21:00-22:00	22	21	28	30	101
22:00-23:00	17	20	18	7	62
23:00-24:00	12	13	5	8	38
Total					4,291
AADT					4,291
AM Peak					08:15-09:15 383
PM Peak					17:00-18:00 340

Peak Hour Data for Intersection

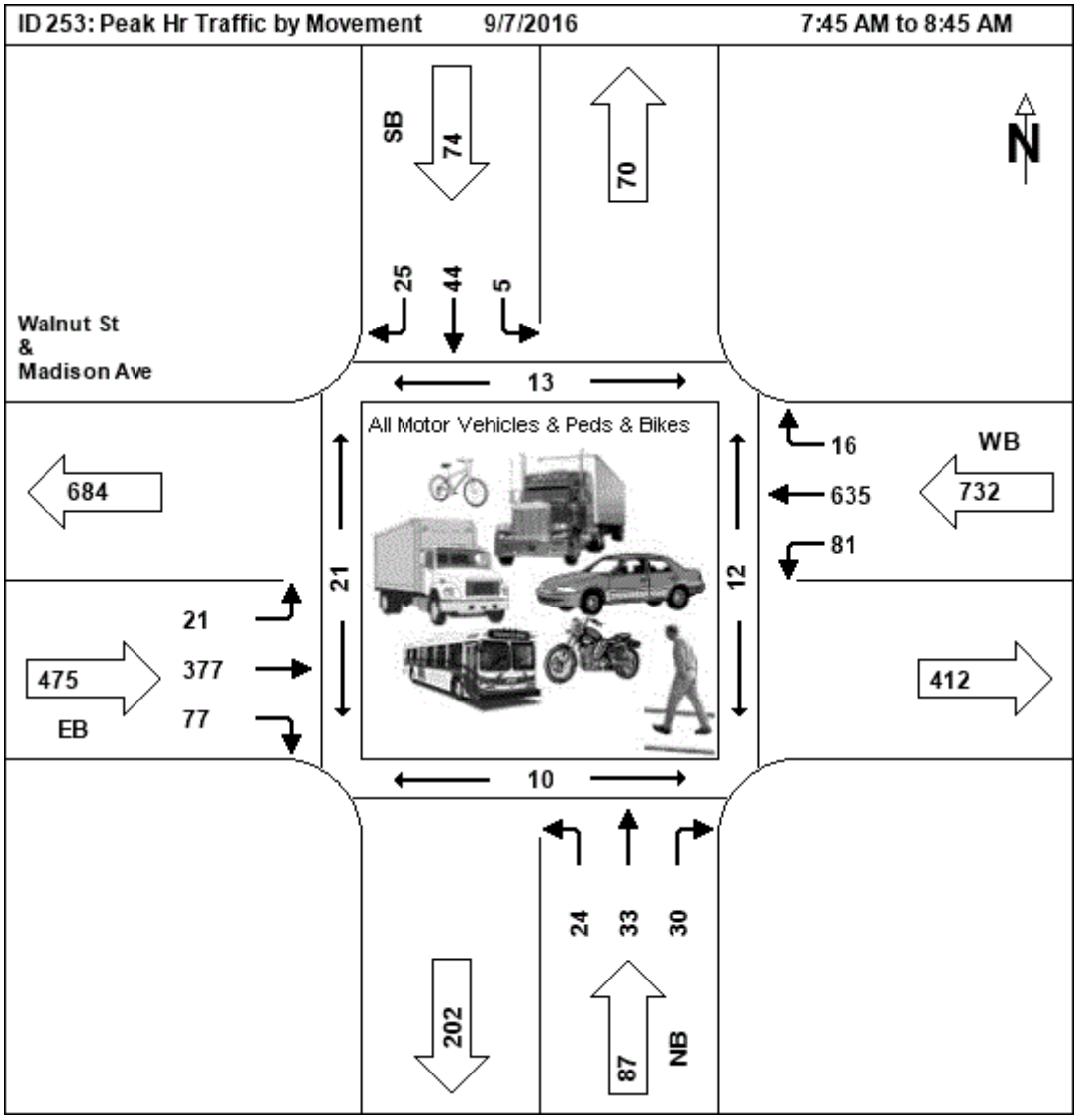
Int ID:	253		
Community:	pasadena	**Corridor:**	
Road 1:	Walnut St	**Road 3:**	
Road 2:	Madison Ave	**Road 4:**	

|<< < > >>| 1-1 of 1

AM Peak Hour
09/07/2016

Start Time	NB Left	NB Thru	NB Right	NB Ped	NB App Total	EB Left	EB Thru	EB Right	EB Ped	EB App Total	SB Left	SB Thru	SB Right	SB Ped	SB App Total	WB Left	WB Thru	WB Right	WB Ped	WB App Total	Int Total
7:45 AM	7	6	9	3	22	7	79	18	1	104	2	10	10	8	22	22	155	3	2	180	328
8:00 AM	0	14	9	3	23	9	93	19	1	121	0	10	5	1	15	18	181	4	6	203	362
8:15 AM	8	7	5	1	20	2	93	28	7	123	1	14	6	9	21	20	145	5	2	170	334
8:30 AM	9	6	7	5	22	3	112	12	1	127	2	10	4	3	16	21	154	4	3	179	344
Total	24	33	30	12	87	21	377	77	10	475	5	44	25	21	74	81	635	16	13	732	1368
PHF	0.67	0.59	0.83		0.95	0.58	0.84	0.69		0.94	0.63	0.79	0.63		0.84	0.92	0.88	0.80		0.90	
HV %	0	0	0			0	0	0			0	0	0			0	0	0			

☑ Cars ☑ Trucks ☑ Pedestrians ☑ Bikes

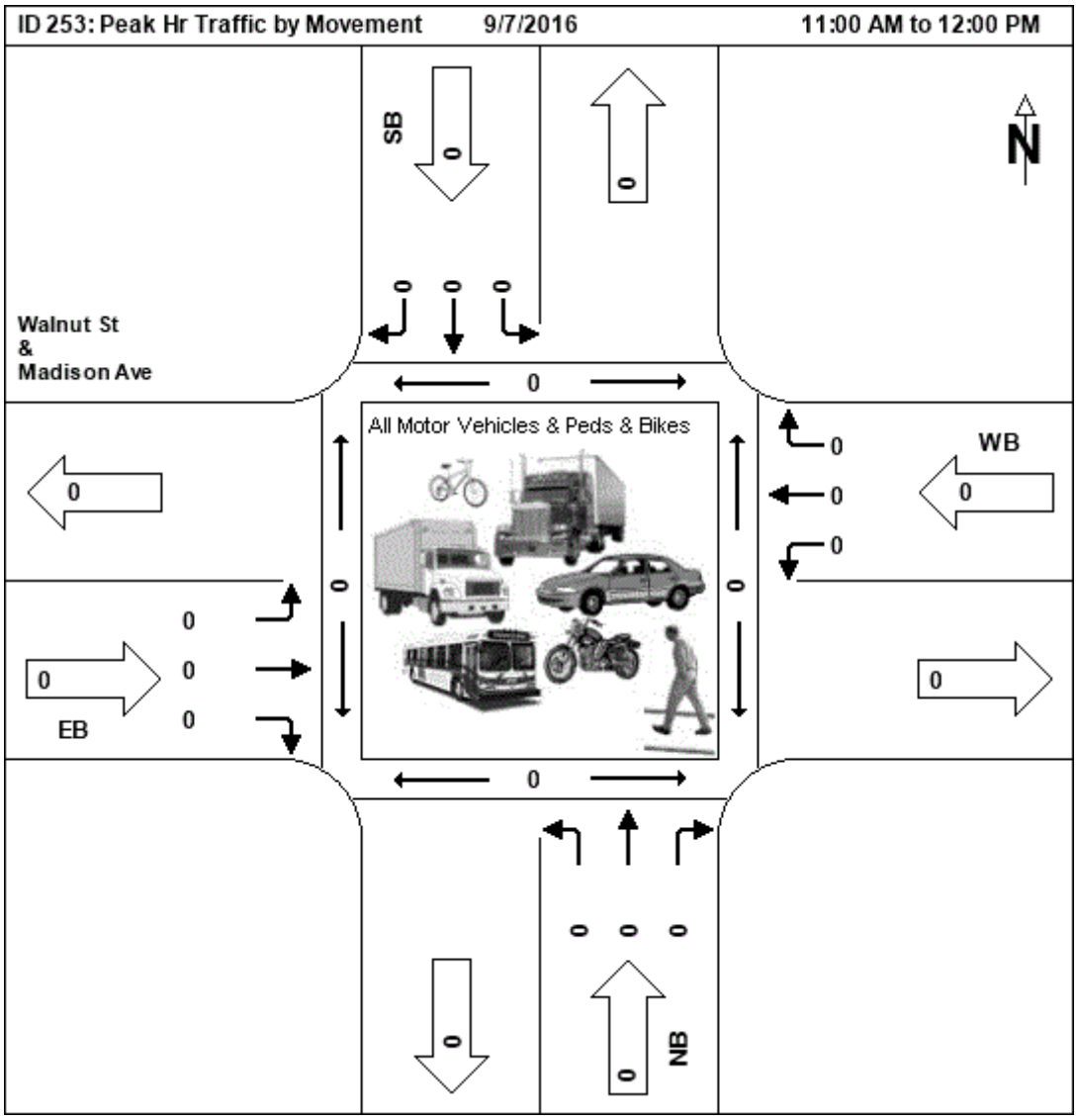


Midday Peak Hour
09/07/2016

Start Time	NB Left	NB Thru	NB Right	NB Ped	NB App Total	EB Left	EB Thru	EB Right	EB Ped	EB App Total	SB Left	SB Thru	SB Right	SB Ped	SB App Total	WB Left	WB Thru	WB Right	WB Ped	WB App Total	Int Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF																						
HV %																						

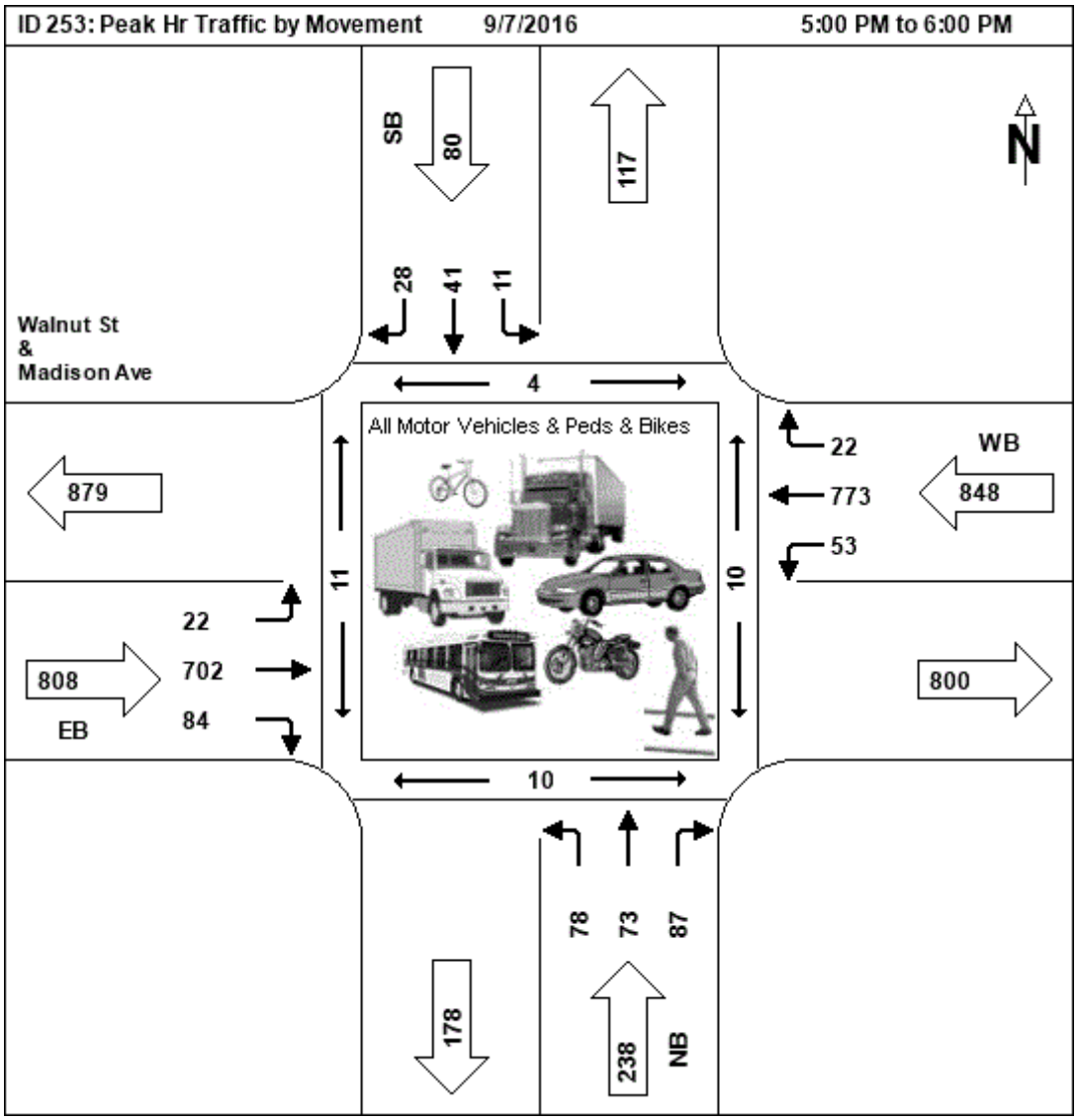
☑ Cars ☑ Trucks ☑ Pedestrians ☑ Bikes



PM Peak Hour
09/07/2016

	NB					EB					SB					WB					
Start Time	Left	Thru	Right	Ped	App Total	Left	Thru	Right	Ped	App Total	Left	Thru	Right	Ped	App Total	Left	Thru	Right	Ped	App Total	Int Total
5:00 PM	26	22	17	5	65	8	156	15	6	179	3	12	7	10	22	12	216	4	1	232	498
5:15 PM	21	16	21	0	58	5	172	18	0	195	2	10	8	0	20	15	165	6	0	186	459
5:30 PM	17	18	24	0	59	6	179	24	0	209	3	12	6	0	21	12	206	5	0	223	512
5:45 PM	14	17	25	5	56	3	195	27	4	225	3	7	7	1	17	14	186	7	3	207	505
Total	78	73	87	10	238	22	702	84	10	808	11	41	28	11	80	53	773	22	4	848	1974
PHF	0.75	0.83	0.87		0.92	0.69	0.90	0.78		0.90	0.92	0.85	0.88		0.91	0.88	0.89	0.79		0.91	
HV %	0	0	0			0	0	0			0	0	0			0	0	0			

☑ Cars ☑ Trucks ☑ Pedestrians ☑ Bikes


ID 253: Peak Hr Traffic by Movement
9/7/2016
5:00 PM to 6:00 PM
SB
80
117
N
28
41
11
Walnut St
&
Madison Ave
4
All Motor Vehicles & Peds & Bikes
22
WB
773
848
53
879
11
10
22
702
808
84
EB
800
10
78
73
87
178
238
NB

Peak Hour Data for Intersection

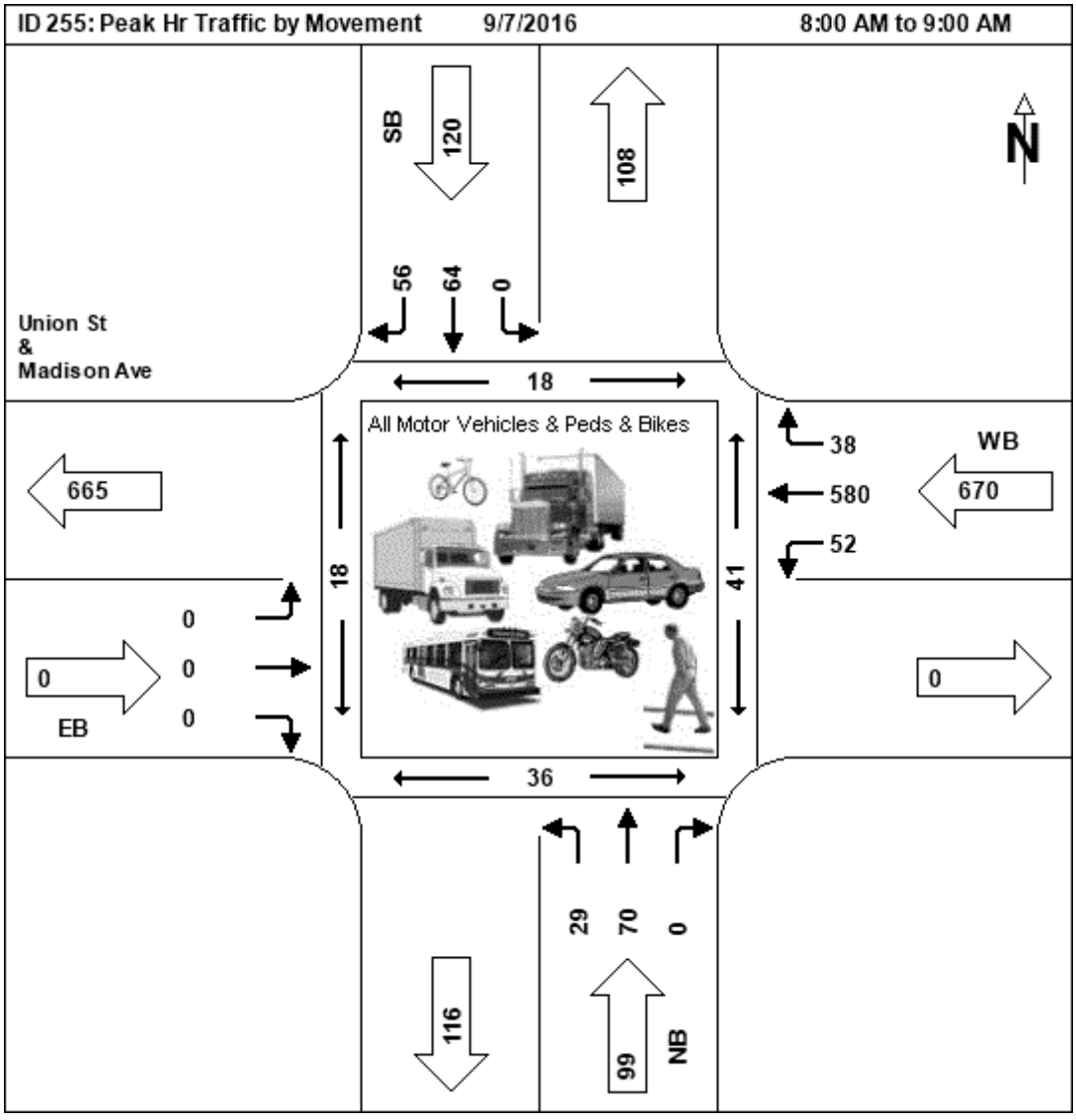
Int ID:	255		
Community:	Pasadena	**Corridor:**	
Road 1:	Union St	**Road 3:**	
Road 2:	Madison Ave	**Road 4:**	

|<< < > >>| 1-1 of 1

AM Peak Hour
09/07/2016

Start Time	NB Left	NB Thru	NB Right	NB Ped	NB App Total	EB Left	EB Thru	EB Right	EB Ped	EB App Total	SB Left	SB Thru	SB Right	SB Ped	SB App Total	WB Left	WB Thru	WB Right	WB Ped	WB App Total	Int Total
8:00 AM	7	19	0	7	26	0	0	0	7	0	0	19	13	4	32	12	151	8	3	171	229
8:15 AM	8	9	0	10	17	0	0	0	4	0	0	18	17	7	35	16	158	14	0	188	240
8:30 AM	7	24	0	12	31	0	0	0	9	0	0	10	14	2	24	11	134	7	10	152	207
8:45 AM	7	18	0	12	25	0	0	0	16	0	0	17	12	5	29	13	137	9	5	159	213
Total	29	70	0	41	99	0	0	0	36	0	0	64	56	18	120	52	580	38	18	670	889
PHF	0.91	0.73			0.80							0.84	0.82		0.86	0.81	0.92	0.68		0.89	
HV %	0	0										0	0			0	0	0			

☑ Cars ☑ Trucks ☑ Pedestrians ☑ Bikes

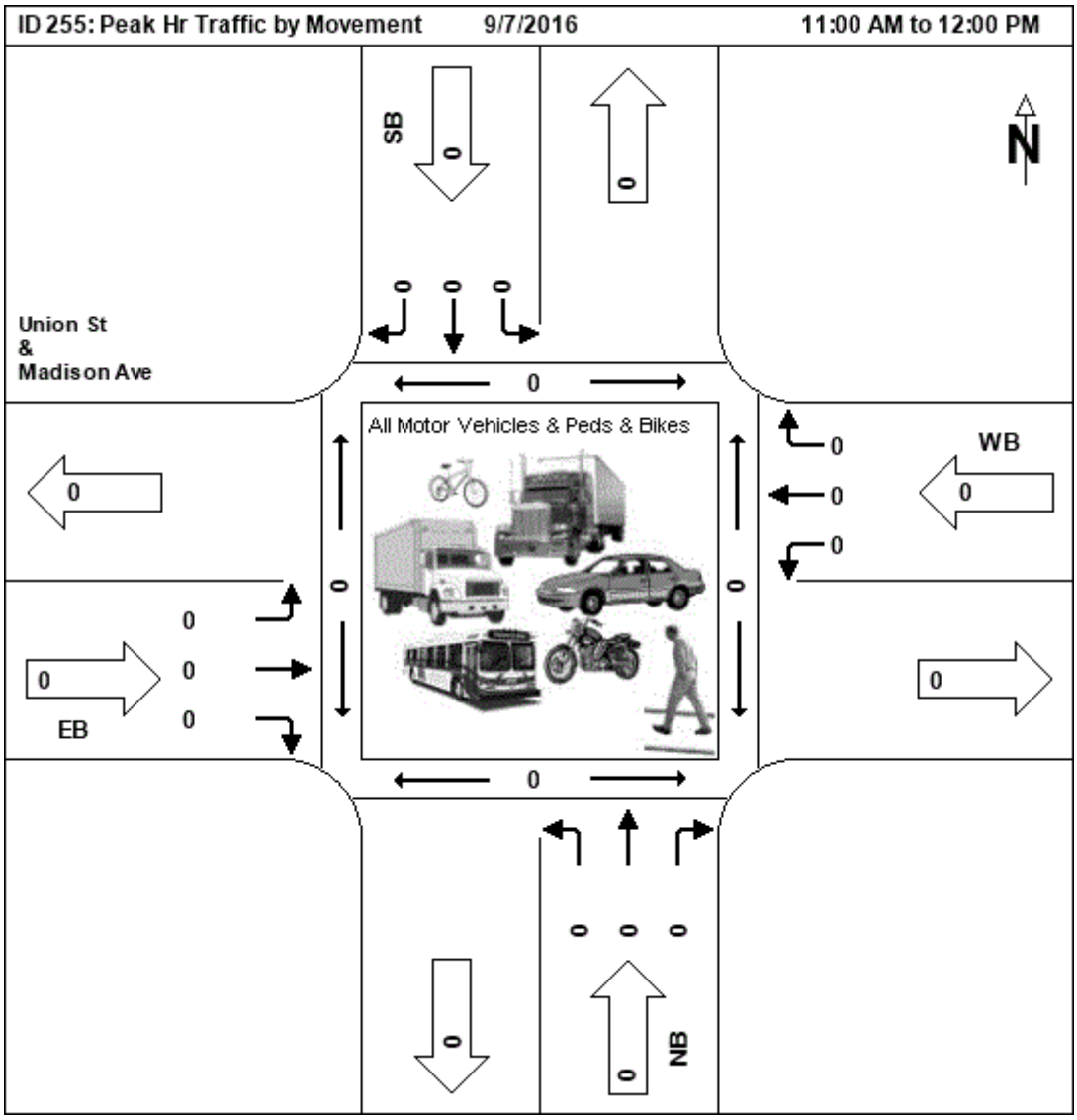


Midday Peak Hour
09/07/2016

Start Time	NB Left	NB Thru	NB Right	NB Ped	NB App Total	EB Left	EB Thru	EB Right	EB Ped	EB App Total	SB Left	SB Thru	SB Right	SB Ped	SB App Total	WB Left	WB Thru	WB Right	WB Ped	WB App Total	Int Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF																						
HV %																						

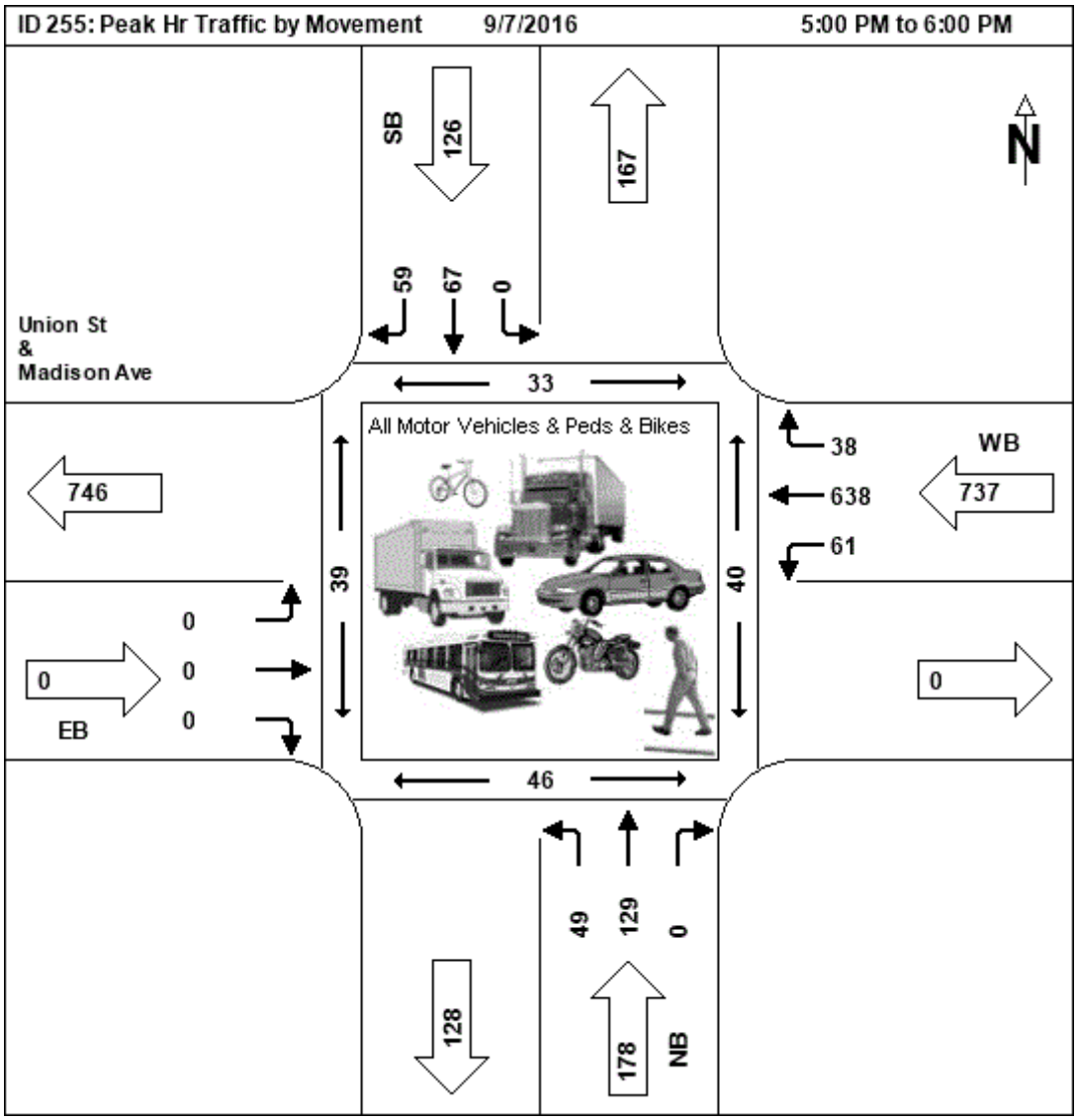
☑ Cars ☑ Trucks ☑ Pedestrians ☑ Bikes



PM Peak Hour
09/07/2016

Start Time	NB Left	NB Thru	NB Right	NB Ped	NB App Total	EB Left	EB Thru	EB Right	EB Ped	EB App Total	SB Left	SB Thru	SB Right	SB Ped	SB App Total	WB Left	WB Thru	WB Right	WB Ped	WB App Total	Int Total
5:00 PM	25	35	0	12	60	0	0	0	13	0	0	21	22	2	43	21	165	11	5	197	300
5:15 PM	6	33	0	2	39	0	0	0	6	0	0	16	8	12	24	14	150	16	10	180	243
5:30 PM	6	31	0	19	37	0	0	0	15	0	0	14	13	15	27	14	179	4	11	197	261
5:45 PM	12	30	0	7	42	0	0	0	12	0	0	16	16	10	32	12	144	7	7	163	237
Total	49	129	0	40	178	0	0	0	46	0	0	67	59	39	126	61	638	38	33	737	1041
PHF	0.49	0.92			0.74							0.80	0.67		0.73	0.73	0.89	0.59		0.94	
HV %	0	0										0	0			0	0	0			

☑ Cars ☑ Trucks ☑ Pedestrians ☑ Bikes


ID 255: Peak Hr Traffic by Movement
9/7/2016
5:00 PM to 6:00 PM
SB
126
167
N
59
67
0
Union St
&
Madison Ave
33
All Motor Vehicles & Peds & Bikes
38
WB
638
737
61
746
39
40
0
0
0
0
EB
0
46
49
129
0
128
178
NB

127 Madison Mixed Use

127 - 141 North Madison Avenue

Intersection	Direction	AM Peak Hour Volumes			PM Peak Hour Volumes		
		Existing Year (2016)	Project	Existing w/ Project	Existing Year (2016)	Project	Existing w/ Project
Madison Avenue at Walnut Street	NBL	24	3	27	78	3	81
	NBT	33	4	37	73	4	77
	NBR	30	7	37	87	7	94
	SBL	5	0	5	11	0	11
	SBT	44	(3)	41	41	(3)	38
	SBR	25	0	25	28	0	28
	EBL	21	0	21	22	0	22
	EBT	377	0	377	702	0	702
	EBR	77	(6)	71	84	(6)	78
	WBL	81	(6)	75	53	(6)	47
	WBT	635	0	635	773	0	773
	WBR	16	0	16	22	0	22
Madison Avenue at Union Street	NBL	29	0	29	49	0	49
	NBT	70	(2)	68	129	(2)	127
	NBR	0	0	0	0	0	0
	SBL	0	0	0	0	0	0
	SBT	64	2	66	67	2	69
	SBR	56	2	58	59	2	61
	EBL	0	0	0	0	0	0
	EBT	0	0	0	0	0	0
	EBR	0	0	0	0	0	0
	WBL	52	0	52	61	0	61
	WBT	580	0	580	638	0	638
	WBR	38	(6)	32	38	(6)	32

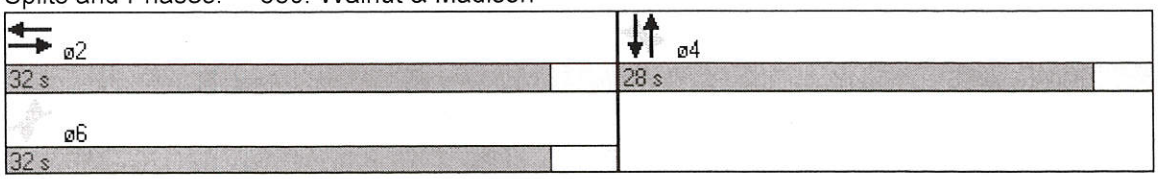
Appendix:
HCM Analysis

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	21	377	81	635	24	33	5	44
Turn Type	custom		custom		Perm		Perm	
Protected Phases		2		2		4		4
Permitted Phases	6		6		4		4	
Detector Phases	6	2	6	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.2	20.2	20.2	20.2
Total Split (s)	32.0	32.0	32.0	32.0	28.0	28.0	28.0	28.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.2	3.2	3.2	3.2
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	47.6	47.6	47.6	47.6		6.9		6.9
Actuated g/C Ratio	0.79	0.79	0.79	0.79		0.12		0.12
v/c Ratio	0.05	0.18	0.13	0.25		0.43		0.35
Control Delay	2.7	2.2	2.5	2.3		13.7		17.5
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	2.7	2.2	2.5	2.3		13.7		17.5
LOS	A	A	A	A		B		B
Approach Delay		2.2		2.3		13.7		17.5
Approach LOS		A		A		B		B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 16 (27%), Referenced to phase 2:EBWB and 6:EBWBL, Start of FDW or yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 3.8 — Intersection LOS: A
Intersection Capacity Utilization 43.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 630: Walnut & Madison

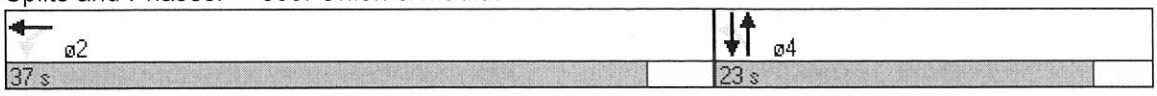


Lane Group	WBT	NBL	NBT	SBT
Lane Configurations	↑↑↑		↑	↑
Volume (vph)	580	29	70	64
Turn Type		Perm		
Protected Phases	2		4	4
Permitted Phases		4		
Detector Phases		4		
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	17.6	21.2	21.2	21.2
Total Split (s)	37.0	23.0	23.0	23.0
Total Split (%)	61.7%	38.3%	38.3%	38.3%
Yellow Time (s)	3.6	3.2	3.2	3.2
All-Red Time (s)	0.0	0.0	0.0	0.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	33.0		19.0	19.0
Actuated g/C Ratio	0.55		0.32	0.32
v/c Ratio	0.26		0.28	0.24
Control Delay	3.6		14.1	13.0
Queue Delay	0.0		0.0	0.0
Total Delay	3.6		14.1	13.0
LOS	A		B	B
Approach Delay	3.6		14.1	13.0
Approach LOS	A		B	B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 15 (25%), Referenced to phase 2:WBTL, Start of FDW or yellow
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.28
Intersection Signal Delay: 6.4 Intersection LOS: A
Intersection Capacity Utilization 31.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 659: Union & Madison



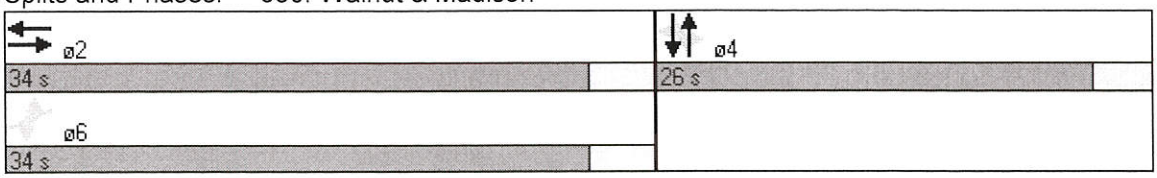
PM

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	22	702	53	773	78	73	11	41
Turn Type	custom		custom		Perm		Perm	
Protected Phases		2		2		4		4
Permitted Phases	6		6		4		4	
Detector Phases	6	2	6	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.2	20.2	20.2	20.2
Total Split (s)	34.0	34.0	34.0	34.0	26.0	26.0	26.0	26.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%	43.3%	43.3%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.2	3.2	3.2	3.2
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	39.6	39.6	39.6	39.6		12.4		12.4
Actuated g/C Ratio	0.66	0.66	0.66	0.66		0.21		0.21
v/c Ratio	0.07	0.37	0.18	0.37		0.71		0.23
Control Delay	4.7	5.0	4.9	4.1		20.9		13.1
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	4.7	5.0	4.9	4.1		20.9		13.1
LOS	A	A	A	A		C		B
Approach Delay		5.0		4.1		20.9		13.1
Approach LOS		A		A		C		B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 7 (12%), Referenced to phase 2:EBWB and 6:EBWBL, Start of FDW or yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 6.9 — Intersection LOS: A
Intersection Capacity Utilization 55.6% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 630: Walnut & Madison

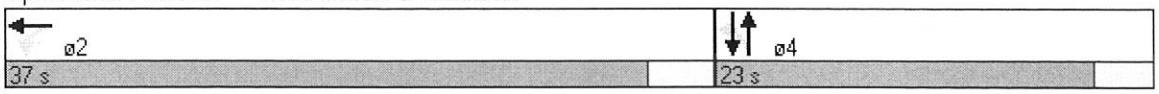


Lane Group	WBT	NBL	NBT	SBT
Lane Configurations	↑↑↑		↑	↑
Volume (vph)	638	49	129	67
Turn Type		Perm		
Protected Phases	2		4	4
Permitted Phases		4		
Detector Phases		4		
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	17.6	21.2	21.2	21.2
Total Split (s)	37.0	23.0	23.0	23.0
Total Split (%)	61.7%	38.3%	38.3%	38.3%
Yellow Time (s)	3.6	3.2	3.2	3.2
All-Red Time (s)	0.0	0.0	0.0	0.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	33.0		19.0	19.0
Actuated g/C Ratio	0.55		0.32	0.32
v/c Ratio	0.29		0.36	0.23
Control Delay	2.1		13.4	9.6
Queue Delay	0.0		0.0	0.0
Total Delay	2.1		13.4	9.6
LOS	A		B	A
Approach Delay	2.1		13.4	9.6
Approach LOS	A		B	A

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 6 (10%), Referenced to phase 2:WBTL, Start of FDW or yellow
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 4.9 Intersection LOS: A
Intersection Capacity Utilization 42.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 659: Union & Madison



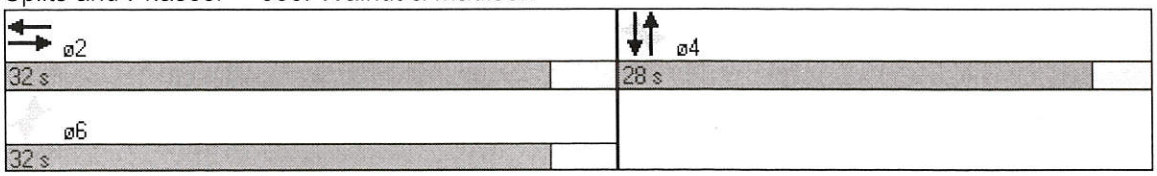
AM + Proj

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	21	377	75	635	27	37	5	41
Turn Type	custom		custom		Perm		Perm	
Protected Phases		2		2		4		4
Permitted Phases	6		6		4		4	
Detector Phases	6	2	6	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.2	20.2	20.2	20.2
Total Split (s)	32.0	32.0	32.0	32.0	28.0	28.0	28.0	28.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.2	3.2	3.2	3.2
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	47.1	47.1	47.1	47.1		7.5		7.5
Actuated g/C Ratio	0.78	0.78	0.78	0.78		0.12		0.12
v/c Ratio	0.05	0.18	0.12	0.26		0.45		0.32
Control Delay	3.0	2.4	2.7	2.5		14.6		16.7
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	3.0	2.4	2.7	2.5		14.6		16.7
LOS	A	A	A	A		B		B
Approach Delay		2.5		2.6		14.6		16.7
Approach LOS		A		A		B		B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 16 (27%), Referenced to phase 2:EBWB and 6:EBWBL, Start of FDW or yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 4.1 — Intersection LOS: A
Intersection Capacity Utilization 43.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 630: Walnut & Madison

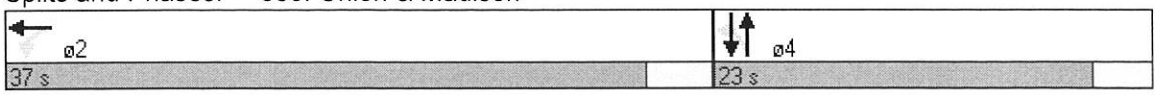


Lane Group	WBT	NBL	NBT	SBT
Lane Configurations	↑↑↑		↑	↑
Volume (vph)	580	29	68	66
Turn Type		Perm		
Protected Phases	2		4	4
Permitted Phases		4		
Detector Phases		4		
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	17.6	21.2	21.2	21.2
Total Split (s)	37.0	23.0	23.0	23.0
Total Split (%)	61.7%	38.3%	38.3%	38.3%
Yellow Time (s)	3.6	3.2	3.2	3.2
All-Red Time (s)	0.0	0.0	0.0	0.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	33.0		19.0	19.0
Actuated g/C Ratio	0.55		0.32	0.32
v/c Ratio	0.26		0.28	0.25
Control Delay	3.6		14.0	13.0
Queue Delay	0.0		0.0	0.0
Total Delay	3.6		14.0	13.0
LOS	A		B	B
Approach Delay	3.6		14.0	13.0
Approach LOS	A		B	B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 15 (25%), Referenced to phase 2:WBTL, Start of FDW or yellow
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.28
Intersection Signal Delay: 6.5 Intersection LOS: A
Intersection Capacity Utilization 39.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 659: Union & Madison



PM+Proj

Timings
630: Walnut & Madison

9/21/2017

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	22	702	47	773	81	77	11	38
Turn Type	custom		custom		Perm		Perm	
Protected Phases		2		2		4		4
Permitted Phases	6		6		4		4	
Detector Phases	6	2	6	2	4	4	4	4
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.2	20.2	20.2	20.2
Total Split (s)	34.0	34.0	34.0	34.0	26.0	26.0	26.0	26.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%	43.3%	43.3%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.2	3.2	3.2	3.2
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	39.2	39.2	39.2	39.2		12.8		12.8
Actuated g/C Ratio	0.65	0.65	0.65	0.65		0.21		0.21
v/c Ratio	0.08	0.37	0.16	0.38		0.72		0.22
Control Delay	5.0	5.3	4.8	4.2		21.4		12.5
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	5.0	5.3	4.8	4.2		21.4		12.5
LOS	A	A	A	A		C		B
Approach Delay		5.2		4.2		21.4		12.5
Approach LOS		A		A		C		B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 7 (12%), Referenced to phase 2:EBWB and 6:EBWBL, Start of FDW or yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 7.2 Intersection LOS: A
Intersection Capacity Utilization 56.3% ICU Level of Service B
Analysis Period (min) 15

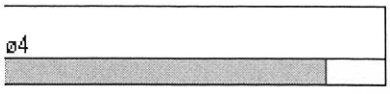
Splits and Phases: 630: Walnut & Madison

Lane Group	WBT	NBL	NBT	SBT
Lane Configurations	↑↑↑		↑	↑
Volume (vph)	638	49	127	69
Turn Type		Perm		
Protected Phases	2		4	4
Permitted Phases		4		
Detector Phases		4		
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	17.6	21.2	21.2	21.2
Total Split (s)	37.0	23.0	23.0	23.0
Total Split (%)	61.7%	38.3%	38.3%	38.3%
Yellow Time (s)	3.6	3.2	3.2	3.2
All-Red Time (s)	0.0	0.0	0.0	0.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	Max	Max
Act Effct Green (s)	33.0		19.0	19.0
Actuated g/C Ratio	0.55		0.32	0.32
v/c Ratio	0.29		0.36	0.24
Control Delay	2.1		13.4	9.4
Queue Delay	0.0		0.0	0.0
Total Delay	2.1		13.4	9.4
LOS	A		B	A
Approach Delay	2.1		13.4	9.4
Approach LOS	A		B	A

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 6 (10%), Referenced to phase 2:WBTL, Start of FDW or yellow
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 4.9 Intersection LOS: A
Intersection Capacity Utilization 42.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 659: Union & Madison



Appendix:
PEQI/BEQI Calculations

City of Pasadena
Department of Transportation
Pedestrian Environmental Quality Index
Calculation Summary
-- Segment --

Segment: Madison Avenue
Limits: Between Walnut Street and Union Street

Indicator Category		Score Weight	Indicator Response	Northbound (East side) Surveyed Response Category Score	Indicator Response	Southbound (West side) Surveyed Response Category Score
Traffic						
	Number of Lanes	0.64	Shared/Pedestrian-only street	20	Shared/Pedestrian-only street	20
	Posted Speed Limit	0.64	25 mph or none posted	4	25 mph or none posted	4
	Traffic Volume[1]	0.64	1,000-6,000 V/D	11	1,000-6,000 V/D	11
	Street Traffic Calming Features (TCFs)	0.64	None	0	None	0
				35		**35**
Street design						
	Width of Sidewalk	1.35	8-12 ft	20	8-12 ft	20
	Width of Throughway	1.35	6-8 ft	17	6-8 ft	17
	Large SW Obstructions	1.35	None	22	None	22
	Sidewalk Impediments	1.35	None	24	None	24
	Trees	1.35	None	0	Continuous	9
	Driveway Cuts	1.35	More than 5	0	More than 5	0
	Presence of Buffer	1.35	Non-Peak Parallel Parking	9	Non-Peak Parallel Parking	9
	Planters/Gardens	1.35	Yes	4	Yes	4
	Public Seating	1.35	No	0	No	0
				96		**105**
Land Use						
	Public Art/ Historic Sites	0.15	No	0	No	0
	Retail Use/Public Places	0.15	None	0	None	0
				0		**0**
Perceived Safety						
	Lighting	0.34	None	0	None	0
	Illegal Graffiti	0.34	No	2	No	2
	Litter	0.34	No	11	No	11
	Empty Spaces	0.34	Yes	0	Yes	0
				13		**13**
Domain Summary		Score Weight		Category Score		Category Score
	Traffic	0.64	Traffic	35	Traffic	35
	Street Design	1.35	Street Design	96	Street Design	105
	Land Use	0.15	Land Use	0	Land Use	0
	Safety	0.34	Safety	13	Safety	13
		2.48		144		153

PEQI Score **58** Northbound (East side)

PEQI Score **62** Southbound (West side)

[1] Traffic volumes are based on segment volumes, not directional traffic volumes.

City of Pasadena
Department of Transportation
Bicycle Environmental Quality Index
Calculation Summary

Segment: Madison Avenue
Limits: Between Walnut Street and Union Street

Indicator Category	Score Weight	Indicator Response	Northbound (East side) Surveyed Response Category Score	Indicator Response	Southbound (West side) Surveyed Response Category Score
Street design					
Presence of a Marked Area for Bicycle Traffic	2.05	None	4	None	4
Width of Bike Lane	2.05	None	0	None	0
Bicycle Lane Markings	2.05	None	4	None	4
Connectivity of Bicycle Lanes	2.05	No	13	No	13
Pavement Type/Condition	2.05	Smooth Surface	40	Smooth Surface	40
Street Slope	2.05	< 5%	27	< 5%	27
Driveway Cuts	2.05	More Than Five	11	More Than Five	11
Presence of Trees	2.05	None	15	Continuously Lined	29
			114		**128**
Vehicle Traffic					
Posted Speed Limit	1.39	25	29	25	29
Traffic Volume - Avg # of Vehicles Per Day	1.39	1,000 - 5,000	19	1,000 - 5,000	19
Percentage of Heavy Vehicles	1.39	Less than 5%	36	Less than 5%	36
Parallel Parking Adjacent to Bicycle Lane/Route	1.39	TPP 7 ft - 9 ft	22	TPP 7 ft - 9 ft	22
Traffic Calming Features Streets	1.39	0 TCF	11	0 TCF	11
Number of Lanes	1.39	1	36	1	36
			153		**153**
Safety/Other					
Presence of Bicycle Lane Signs	0.42	No	15	No	15
Bicycle/Pedestrian Scale Lighting	0.42	No	15	No	15
			30		**30**
Land Use					
Bicycle Parking	0.66	No	12	No	12
Retail Use	0.66	0	14	0	14
Line of Site	0.66	Clear Line of Sight	36	Clear Line of Sight	36
			62		**62**

Domain Summary	Score Weight	Min Score	Category Score	Min Score	Category Score
Street design	2.05	62	114	62	128
Vehicle Traffic	1.39	59	153	59	153
Safety/Other	0.42	30	30	30	30
Land Use	0.66	33	62	33	62
	4.52	184	359	184	373

BEQI Score [1] **39** Northbound (East side)

BEQI Score [1] **42** Southbound (West side)

[1] BEQI calculation did not consider intersection indicators.