PROJECT MITIGATION

Pages 19 and 23 of the 2005 MMA report call for the implementation of the *Pasadena High School Pick-Up and Drop-Off Plan* as the mitigation for the 1000 Rose Avenue Residential Project segment impacts. The PHS plan was generally described as Project Number 75505 in the City's Capital Improvement Plan.

The 2005 MMA report states that, "With the implementation of the proposed mitigation measures, the project's traffic impacts are expected to be mitigated to less than significant levels"[3].

While this mitigation statement is made in the report, no quantitative analysis was presented.

[3] ibid., page 22

III. PHS APPROVED PLAN

The City of Pasadena, PUSD, PHS staff and the neighbors living near the high school have been meeting and working in the development of a plan to improve traffic conditions adjacent to the school. The goals of the plan are to:

1. Improve student safety,
2. Reduce traffic impact on the neighborhood, and
3. Increase convenience for the parents picking up and dropping off students.

After a series of meetings and work sessions, a comprehensive program was approved by all parties. That program is described below.

APPROVED PLAN

Table 3 lists the elements of the Approved Plan for the PHS pick-up and drop-off improvements. The plan seeks to improve the safety of the pick-up and drop-off areas on all sides of the school but especially at the front of the school along Sierra Madre Boulevard and on the north side of the school along Cooley Place.

The Sierra Madre Boulevard improvements include a new pick-up and drop-off area inside the parking lot in front of the school auditorium. A new traffic signal on Sierra Madre Boulevard will assist vehicles turning into the parking lot and the existing two-way median break will be closed to reduce the crossover traffic that now causes weaving problems. These changes are expected to increase the level of activity that occurs along the Sierra Madre Boulevard side of the school.

The intersection of Cooley Place/Rose Avenue will be reconfigured to prohibit eastbound Cooley Place traffic from continuing onto northbound Rose Avenue. Instead, eastbound Cooley

TABLE 3

PASADENA HIGH SCHOOL
APPROVED PICK-UP AND DROP-OFF PROGRAM

AREA A – COOLEY/ALTADENA INTERSECTION AND NEIGHBORHOOD ENTRIES

1. Restripe westbound Cooley approaching Altadena to provide one right turn lane and two left turn lanes.
2. Install a green arrow for the westbound-to-southbound left turn lanes to give the left turns a chance to clear prior to the "WALK" indication on the south crosswalk. City of Pasadena to determine the appropriate signal phasing for this intersection.
3. Prohibit parking on the north curb of Cooley for a distance of 100 feet east of Altadena. Install "NO PARKING, School Days, 7:30 to 8:30 am and 2:30 to 3:30 pm" from the end of the NO PARKING zone easterly to Del Rey Avenue.
4. Install turn restriction signs to prohibit southbound left turns along Altadena at Woodlyn and at Whitefield, eastbound right turns along Washington at Switzer and Del Rey, and the northbound left turn at Washington/ Woodlyn. These turn restrictions should be signed to be in effect only during school days between 7:30 to 8:30 a.m. and 2:30 to 3:30 p.m.

AREA B – COOLEY/ROSE GATE – PHASE 1

5. Construct a new vehicular gate at the end of Cooley to allow controlled access for trucks and service vehicles. The gate would be controlled by PHS staff and would not allow access to the campus by faculty/staff vehicles or by pedestrians.
6. Construct a new pedestrian gate near the new service gate on Cooley. This gate would be closed to pedestrian access to the campus during school hours except for morning and afternoon pick-up and drop-off times.
7. During the first two years of operation, a temporary partial cul-de-sac would be constructed at Rose/Cooley to prohibit eastbound traffic on Cooley form traveling northbound on Rose. The temporary cul-de-sac would be constructed of temporary asphalt curbs and planters or similar materials to delineate the outline of the cul-de-sac.
8. PHS would send out a traffic plan to its parents advising them of the new traffic patterns on Cooley and discouraging the use of southbound Rose as a drop-off and pick-up route.
9. Install parking control signs along the south curb of Cooley from Rose to Bella Vista reading "PASSENGER LOADING, School Days, 7:30 to 8:30am and 2:30 to 3:30pm – TOW AWAY". The intent of creating this passenger loading zone is to keep the Cooley curb clear for pick-up and drop-off activities.
10. Work with the Pasadena Police Department to enforce the laws on speed limit, turning maneuvers, and double parking along Cooley.
11. PUSD will continue to open the pedestrian gate at the east end of the tennis courts and at the southwest corner of the soccer field after school hours and on weekends in compliance with the existing Memorandum of Understanding between the City and School District. Groups that hold valid school property use permits will be allowed access to the appropriate facilities.

AREA B – COOLEY/ROSE GATE – PHASE 2

12. After evaluation of the performance of Area B, Phase 1 and if the neighborhood approves, additional mitigation measures, including the installation of a permanent cul-de-sac that prohibits eastbound Cooley traffic from entering northbound Rose will be explored and implemented. Construction will require dedication of right-of-way by PUSD to City.
13. The agreement between the City and the School District will reserve sufficient funds to make the temporary cul-de-sac a permanent installation if the evaluation shows that to be the best alternative.
14. Allow southbound traffic on Rose to enter Cooley. Install STOP sign and DO NOT ENTER sign.
15. Continue Items 5, 6, and 8-11 from the Area B, Phase 1 improvement program.

AREA C – SIERRA MADRE BOULEVARD

16. Remove the four ADA accessible parking spaces from the curb face in front of the school along the north curb of Sierra Madre Boulevard.
17. Replace the four accessible spaces with new accessible spaces within the parking lot in front of the school.
18. Open the pedestrian gate toward the west end of the campus (at the Auditorium) for the morning drop-off.
19. Open both vehicular gates exiting the parking lot in front of the school.
20. Sign and stripe the easterly driveway to the parking lot as inbound only.
21. Stripe the aisle inside the parking lot adjacent to the sidewalk as a one-way westbound only aisle.
22. Install a second drop-off lane inside the parking lot adjacent to the curb lane to double the amount of drop-off area inside the lot. Install a 4-5 foot wide island separating the two drop-off lanes.
23. Install a second island along the north side of the parking lot to separate the maneuvers within the parking lot from the drop-off activities.
24. Install fences along the islands to restrict pedestrian crossings to the painted crosswalk locations.
25. Paint the curbs red along the south side of the westbound drop-off aisles and install signs to prohibit parking along the south side of the aisle.
26. Paint pedestrian crosswalks at two locations in the parking lot connecting the school sidewalk to the Sierra Madre Boulevard sidewalk.
27. Resurface and restripe the lot to modify the parking aisles to reflect the double drop-off lanes. Change the parking aisle orientation to alternate northbound and southbound travel.
28. Restripe westbound Sierra Madre Boulevard to provide a right turn lane into the parking lot.
29. Open all pedestrian gates from the campus during the afternoon dismissal.
30. Modify the Sierra Madre Boulevard median opening in front of the school to provide direct access into the school parking lot. Provide a single left turn lane into the parking lot and install a half-signal controlling westbound traffic.
31. Remove the existing two-way median crossover in front of the school.

AREA D – WASHINGTON

32. Install a traffic signal at the school driveway north of Sierra Madre. This signal will allow vehicles to enter/leave the faculty/staff parking lot safely.
33. Allow the traffic signal to rest in green for Washington traffic. Place detectors on the northbound left turn lane and in the driveway to call up these phases only when a vehicle is present.
34. Interconnect the new traffic signal with the existing signal at Washington/Sierra Madre.
35. Restripe Washington to provide a northbound left turn lane into the school driveway.
36. Install a "Signal Ahead – Prepare to STOP" sign with flashers facing southbound Washington traffic. Interconnect the flashers to the signal to coordinate the flashers with the red signal indication facing southbound traffic.
37. Assign faculty/staff parking to this campus entry.
38. Restripe the parking lot adjacent to Washington to allow inbound traffic to use this lot as a pick-up and drop-off area. Move existing staff parking in this lot to the main Faculty/staff lot.
39. Open the pedestrian gate at this lot during the pick-up and drop-off times.

CONSTRUCTION SCHEDULE

Given the lead time needed to secure traffic signal equipment and to complete construction plans and permits, and given the desire to conduct major construction activities during non-school times, the following general construction schedule results:

Summer 2006 — Area A and Area B Phase 1

- Install Temporary cul-de-sac at Rose Cooley
- Install parking and loading zone signs as appropriate
- Restripe Altadena/Cooley and modify traffic signal

Summer 2007 — Area C and Area D

- Install traffic signal at Washington entrance to school and develop pick-up/drop-off area in the small Washington faculty/staff parking lot
- Reconfigure parking lot on Sierra Madre Boulevard to include student pick-up and drop-off islands
- Modify the center median on Sierra Madre and install traffic signal controlling westbound traffic

Summer 2008 — Area B Phase 2

- Install permanent partial cul-de-sac at Rose/Cooley if warranted by neighbor, school and city evaluation

PROGRAM EVALUATION

The evaluation of the above program elements will be a joint effort of the City of Pasadena, Pasadena High School staff and the adjacent neighbors.

Key evaluation points would occur at the end of the first semester of implementation (mid-December 2006) when the evaluation would focus on the operation of Cooley/Altadena and the Rose/Cooley. Adjustments to operations at both intersections could be made, if warranted. The turn prohibitions at the neighborhood entry intersections and the length of the parking prohibitions along the Cooley curb face would be among the elements reviewed.

At the end of the first school year of operation (June 2006), the neighbors would evaluate the success of the Rose/Cooley closure to determine if additional changes are warranted. The full effect of the Rose/Cooley partial cul-de-sac would likely not be felt until the 2007-08 school year when the faculty/staff traffic is transferred to the Washington gate and the Sierra Madre revised parking lot areas are in operation. At the end of the 2007-08 school year, the decision regarding the permanent partial cul-de-sac installation could be made.

If southbound Rose traffic bound for school presents a problem, the southbound traffic flow could be prohibited by barricading the open portion of the partial cul-de-sac during pick-up and drop-off times. If this were the recommendation, PHS would have to agree to deploy staff to man the barricades during the time that they were in place.

PHS staff would attend one neighborhood meeting per year to review school-related traffic and pedestrian impacts and any other issues that affect the adjacent neighborhoods.

Place traffic will travel through a cul-de-sac and be sent back to Altadena Drive via westbound Cooley Place. The intent of this change is to protect the neighborhood by removing school traffic from Rose Avenue and Woodlyn Road.

A new traffic signal will be installed along Washington Boulevard on the east side of the campus at the parking lot driveway. This new signal will allow the faculty/staff to enter the parking lot from Washington Boulevard rather than from Rose Avenue/Cooley Place as they now do. This will also help to reduce the traffic along the Rose Avenue and Cooley Place corridors. A new student pick-up and drop-off area will be developed in the current small faculty staff lot located south of the driveway. Again, this new area will help distribute the traffic and reduce the number of vehicles that use the Rose Avenue/Cooley Place gate.

PROGRAM EVALUATION

The last portions of Table 3 describe the ongoing evaluation of the Approved Program. At the end of the first school year of operation, the neighbors would evaluate the success of the Rose Avenue/Cooley Place closure to determine if additional changes are warranted. The neighbors, PUSD, and PHS staff will work with the City to evaluate and refine, if necessary, the components of the plan. The plan will be implemented in phases so that elements can be evaluated before they are made permanent and so that construction can be accomplished outside of the school year to minimize the disruption to the students and the neighbors.

IV. PLAN EFFECTIVENESS

The 2005 MMA study claimed that the PHS plan would serve as the mitigation for the segment impacts resulting from the development of the 1000 Rose Avenue residential development. While the purpose of the PHS plan was really to improve the safety of the students and to reduce the school's traffic impact on the adjacent neighborhoods, the plan does reduce traffic along many of the residential streets to the north of the school. This could indeed result in offsetting the increases in traffic caused by the new residential development.

This chapter measures the effectiveness of the Approved Plan in terms of mitigating the impacts of the residential project.

SCHOOL TRAFFIC PATTERNS

The current traffic pattern sees approximately 250 parent vehicles approaching the Rose Avenue/Cooley Place gate along eastbound Cooley Place in the morning peak hour (the hour prior to the morning bell). Of this total, approximately 125-130 vehicles proceed to northbound Rose Avenue to exit the campus area after dropping off a student, while the remaining vehicles make a U-turn at Rose Avenue/Cooley Place and return to Altadena Drive.

During that same hour, approximately 95 vehicles approach the Rose Avenue/Cooley Place gate from southbound Rose Avenue. Virtually all of these vehicles exit the campus area via westbound Cooley Place to Altadena Drive.

In addition, approximately 80 faculty/staff vehicles approach the campus along Cooley Place during the hour before the students begin to arrive. These vehicles do not exit the campus until the afternoon and at that time they use the Washington Boulevard driveway from the faculty/staff parking lot.

The partial cul-de-sac at Rose Avenue/Cooley Place will change the school traffic patterns. All of the vehicles approaching campus from eastbound Cooley Place will make a U-turn at Rose Avenue/Cooley Place and return to Altadena Drive. The vehicles now using southbound Rose Avenue will not use the Cooley Place gate in the future (because of turn restrictions at Woodlyn Road/Washington Boulevard), but instead are expected to use the new pick-up and drop-off area directly off Washington Boulevard. The faculty/staff will use the Washington Boulevard signalized driveway and thus will not use Cooley Place at all.

The afternoon pick-up traffic patterns are expected to parallel the routes described above.

The net result of the changes is that the school traffic will decrease on Woodlyn Road and Rose Avenue, stay at about the current traffic level along Cooley Place during the peak school hours and decrease slightly over the entire day, and increase slightly on Altadena Drive south of Cooley Place.

1000 ROSE AVENUE RESIDENTIAL PATTERNS

The changes resulting from the PHS Approved Plan will affect the traffic patterns predicted in the 2005 MMA report only in one instance. Traffic to the residential development will no longer be able to approach the project via eastbound Cooley Place because of the partial cul-de-sac at Rose Avenue/Cooley Place. Instead, residential traffic approaching on Altadena Drive would have to use either Woodlyn Road or Whitefield Road to reach Rose Avenue. This change could result in approximately 100 eastbound trips on the combination of these two streets – approximately the same number of school trips that would be removed from these two streets as a result of the partial cul-de-sac.

All other residential traffic patterns that were predicted in the 2005 MMA report would remain even after the implementation of the PHS Approved Plan.

STREET SEGMENT IMPACTS

Table 4 shows the results of the street segment analysis when the PHS Approved Plan is combined with the traffic patterns to/from the residential project. Columns F and G show that the street segment impact on Rose Avenue is eliminated (primarily through the implementation of the partial cul-de-sac). Traffic on Woodlyn Road and on Rose Avenue actually decreases after the implementation of the two projects.

Columns H and I show that both significant street segment impacts would be mitigated by the Approved Plan if approximately 10% of the current Cooley Place school traffic moves to the front of the school or to the new pick-up and drop-off area on Washington Boulevard. With the substantial improvements being made to both of these areas, the 10% shift is a conservative estimate of what would actually occur.

INTERSECTION IMPACTS

The intersection of Altadena Drive/Cooley Place will see an increase of 50-60 trips in the morning peak hour as a result of the residential traffic and the revised school traffic patterns. The PHS Approved Plan includes a restriping of the westbound approach to Altadena Drive on Cooley Place to add a double left turn lane. This increase in capacity exceeds the anticipated demand.

The 2005 MMA report projected traffic increases at the intersections of Altadena Drive/Mountain Street and Altadena Drive/Orange Grove. Accordingly, both of these intersections would experience an increase of approximately 60 vehicles per hour southbound, which could increase the volume/capacity ratio of the intersection by 0.019, not enough increase to create a significant impact at either intersection given the current operating conditions at the locations.

TABLE 4
1000 ROSE AVENUE RESIDENTIAL PROJECT
STREET SEGMENT ANALYSIS WITH PASADENA HIGH SCHOOL APPROVED PLAN

Street Segment	A	B	C	D	E	F	G	H	I
	Daily Volumes (Two-Way)				% Growth	Future +	% Growth	Fugre + Proj w/	% Growth
	Existing	Future w/o Project	Project Only	Future Project	Due to Project	Project w/ PHS Improvements	Due to Project	PHS Improvement w/10% to Sierra Madre Bl Entry	Due to Project
1 Altadena Dr n/o Orange Grove Blvd	21,804	22,240	217	22,457	1.0%	22,497	1.0%	22,397	0.7%
2 Cooley Pl e/o Altadena Dr	2,156	2,199	232	2,431	10.5% [a]	2,316	5.3% [a]	2,216	0.8%
3 Woodlyn Rd w/o Washington Blvd	1,310	1,336	58	1,394	4.3%	1,128	-15.6%	1,128	-15.6%
4 Sierra Madre Blvd e/o Washington Blvd	18,387	18,775	34	18,789	0.2%	18,789	0.2%	18,789	0.2%
5 Rose Av between Cooley Pl and Whitefield Rd	916	934	232	1,166	24.8% [a]	774	-20.3%	774	-20.3%

Note
[a] The projected growth along this segment would require mitigation under the City's thresholds

CONCLUSION

The PHS Approved Plan mitigates the segment impacts of the 1000 Rose Avenue residential project and it does not cause a significant intersections impact. The plan is effective at mitigating the impacts of the residential project and it is effective at both increasing student safety and protecting the neighborhood from the impacts of school traffic.

APPENDIX

2005 MMA REPORT

DRAFT REPORT

1000 Rose Avenue Residential Project Traffic Impact Study

Prepared for

City of Pasadena

Prepared by

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July 21, 2005

J05-1649

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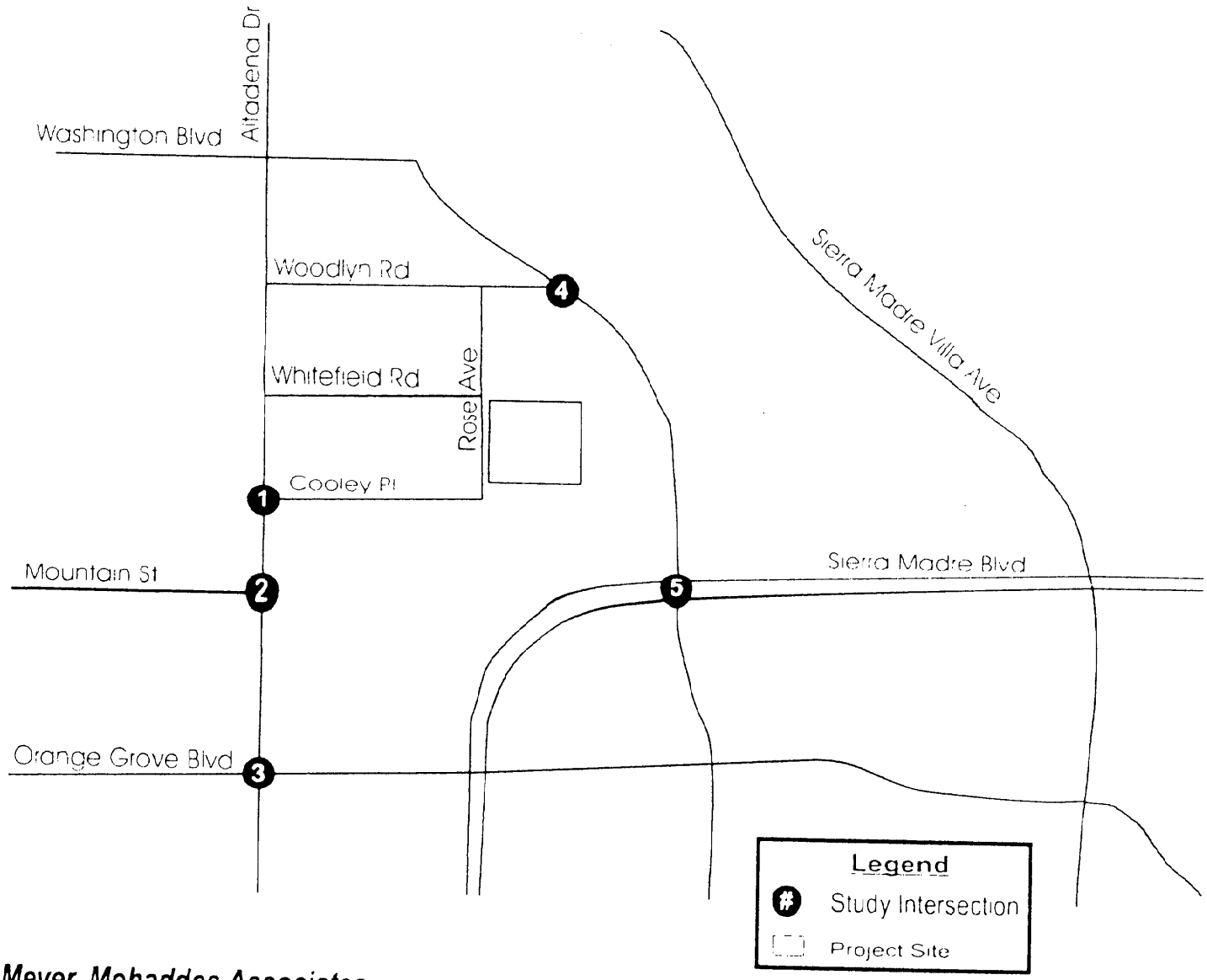

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Traffic Impact Study

FIGURE 1

Study Area

SOURCE: WILLIAM HEZMALHALC ARCHITECTS INC.

NOT TO SCALE

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1000 Rose Avenue Residential Project
Traffic Impact Study

FIGURE 2
Site Plan

X:\JOBS\ERS\2005\005-XXXX 1000 Rose Avenue - Pasadena\GRA\Figures.cdr 6/13/05

EXISTING CONDITIONS

New weekday morning and evening peak period turning movement traffic counts were obtained from the City of Pasadena Department of Transportation. The intersection traffic counts were conducted at the five analyzed intersections in June 2005. The traffic counts were conducted from 7:00-9:00 AM and 4:00-6:00 PM and the traffic impact analysis was based on the highest single hour of traffic (during each of the morning and evening peak periods) at each study intersection. New 24-hour counts were also conducted along the five analyzed street segments and were provided by the City.

Figure 3 show the existing morning and evening peak hour traffic volumes at the five study intersections. A field inventory was conducted of all study intersection locations. The inventory included review of intersection geometric layout, traffic control, lane configuration, posted speed limits, transit service, land use and parking. This information is required for the subsequent traffic impact analysis. **Figure 4** illustrates the existing intersection geometry (lane configurations) for the five analyzed intersections.

Existing Roadway Conditions

The project site is located approximately three-quarters of a mile north of the Foothill Freeway (I-210). In the vicinity of the project site, on and off ramps with the I-210 are provided at Altadena Drive and Sierra Madre Boulevard. Altadena Drive and Washington Boulevard provide the primary north-south access to and from the project site. There are also other local roadways which provide access to the project site. The following provides a brief description of these roadways within the study area.

Altadena Drive - Altadena Drive is a north-south street located one block to the west of the project site. Within the study area, Altadena Drive provides a total of four travel lanes (two in each direction) divided by striped median. On-street parking is prohibited along both sides of Altadena Drive during the morning and evening peak periods. In the vicinity of the project site, public bus stops are provided along Altadena Drive at Washington Boulevard, Brigden Road, Cooley Place, Paloma Street, and Orange Grove Boulevard.

Washington Boulevard – Washington Boulevard travels in an east-west direction north of the project and then turns into a north-south street east of the project site. Washington Boulevard provides a total of four travel lanes divided by a striped median. South of Sierra Boulevard, the street is named Eaton Drive and provides a total of two lanes. On-street parking is permitted along Washington Boulevard/Eaton Drive and the posted speed limit is 35 miles per hour. In the vicinity of the project site, public bus stops are provided along Washington Boulevard at Altadena Drive and Sierra Madre Boulevard.

Rose Avenue – Rose Avenue is a north-south residential street which will provide direct access to the project site. Rose Avenue provides a total of two travel lanes and on-street parking is provided along both sides of the street. The posted sped limit along Rose Avenue is 25 miles per hour.

Sierra Madre Boulevard – Within the study area, Sierra Madre Boulevard is generally a six-lane facility divided by a raised median. Sierra Madre Boulevard travels in a north-south direction and then in an east-west direction with Washington Boulevard being the general point where the change in travel direction occurs. On-street parking is generally provided along both sides of the street expect for the southbound/westbound portion of the street between Washington Boulevard and Orange Grove Boulevard. In the vicinity of the project site, public bus stops are provided at the intersections of Sierra Madre Boulevard/Washington Boulevard and Sierra Madre Boulevard/Orange Grove Boulevard.

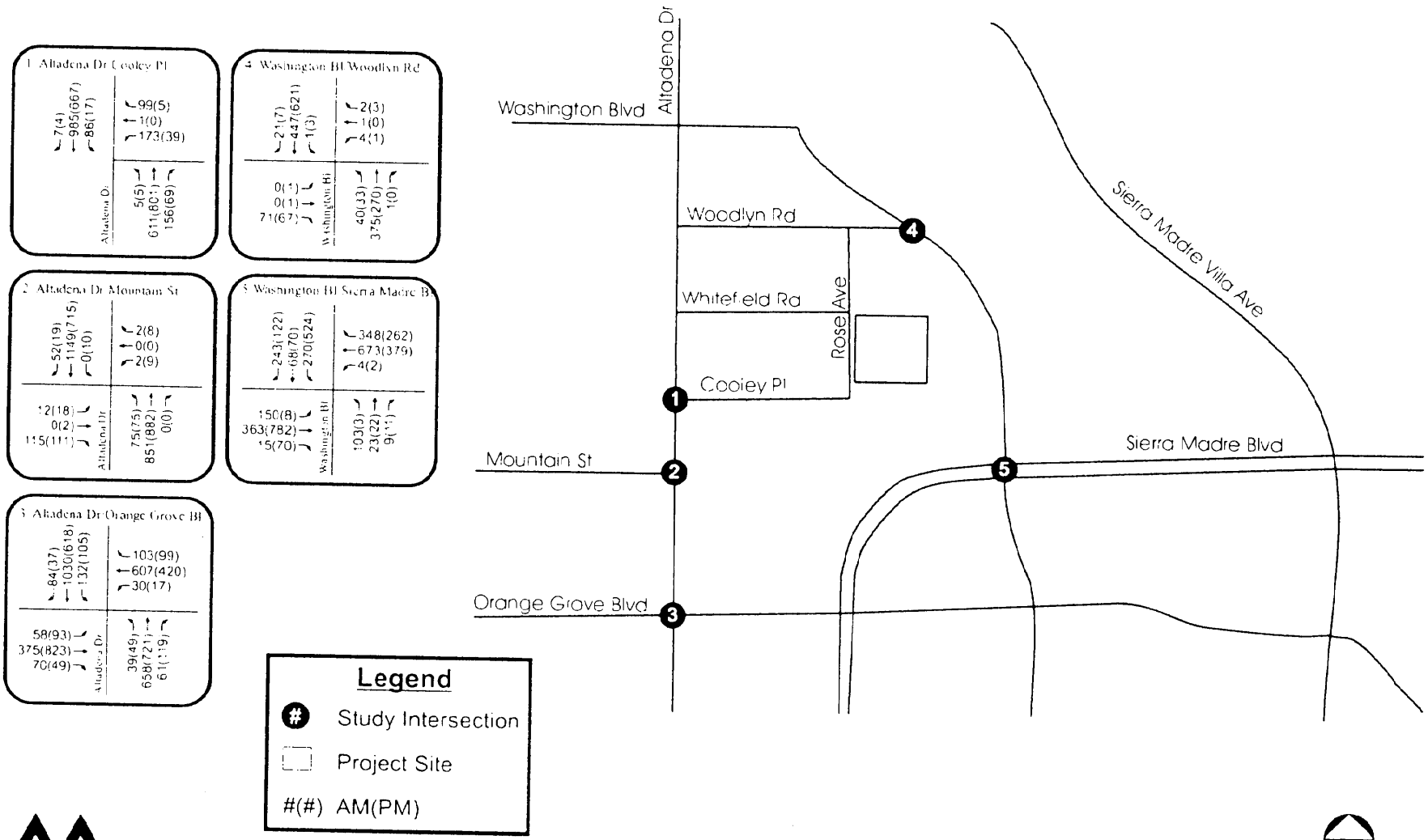

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FIGURE 3
Existing Peak Hour Volumes

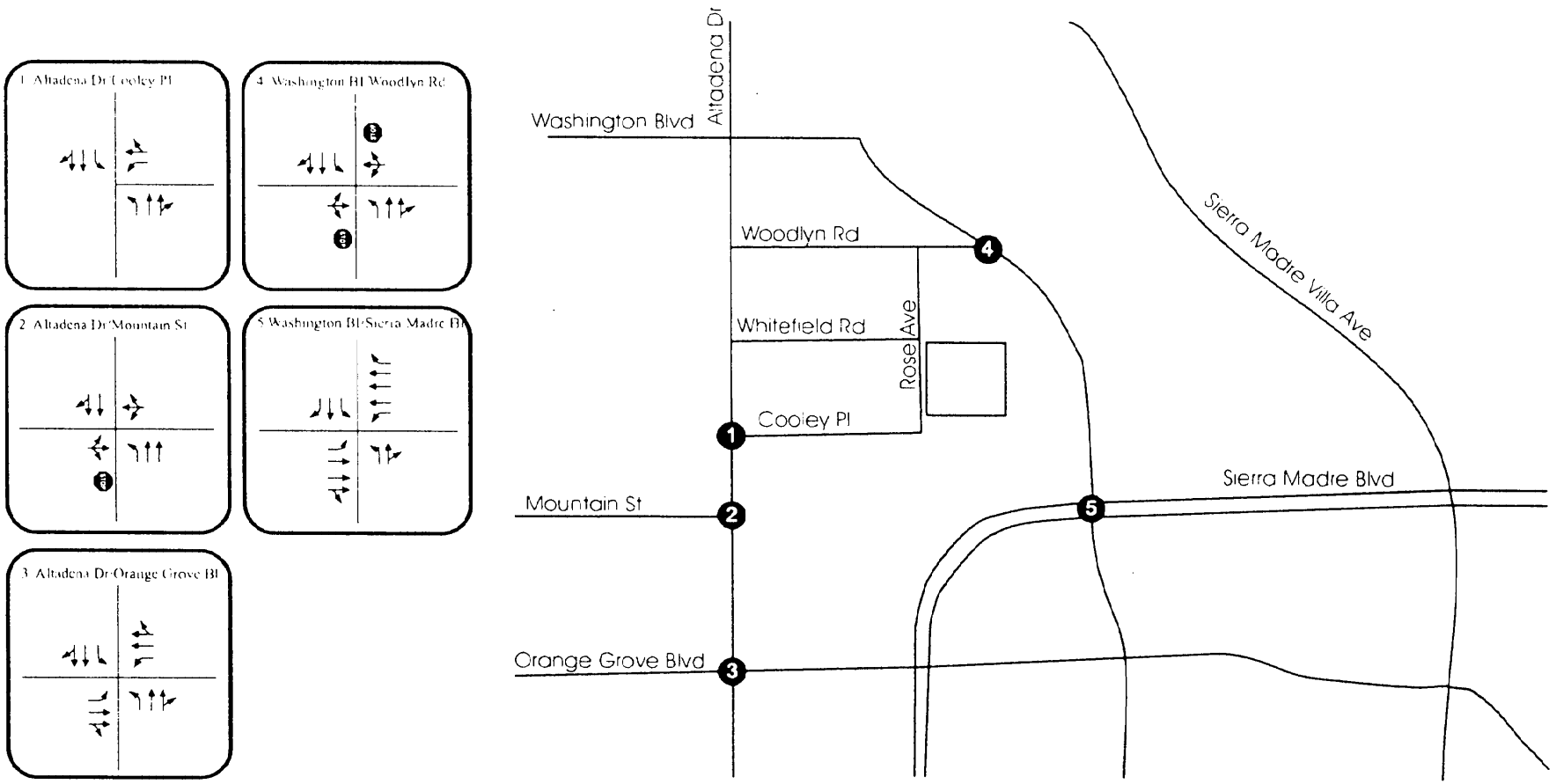

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FIGURE 4

Existing Lane Configurations

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