

ANALYSIS OF FUTURE TRAFFIC

In order to analyze future traffic, two sets of capacity analyses were conducted:

- (1) Street Segment Capacity Analysis, and
- (2) Intersection Capacity Analysis.

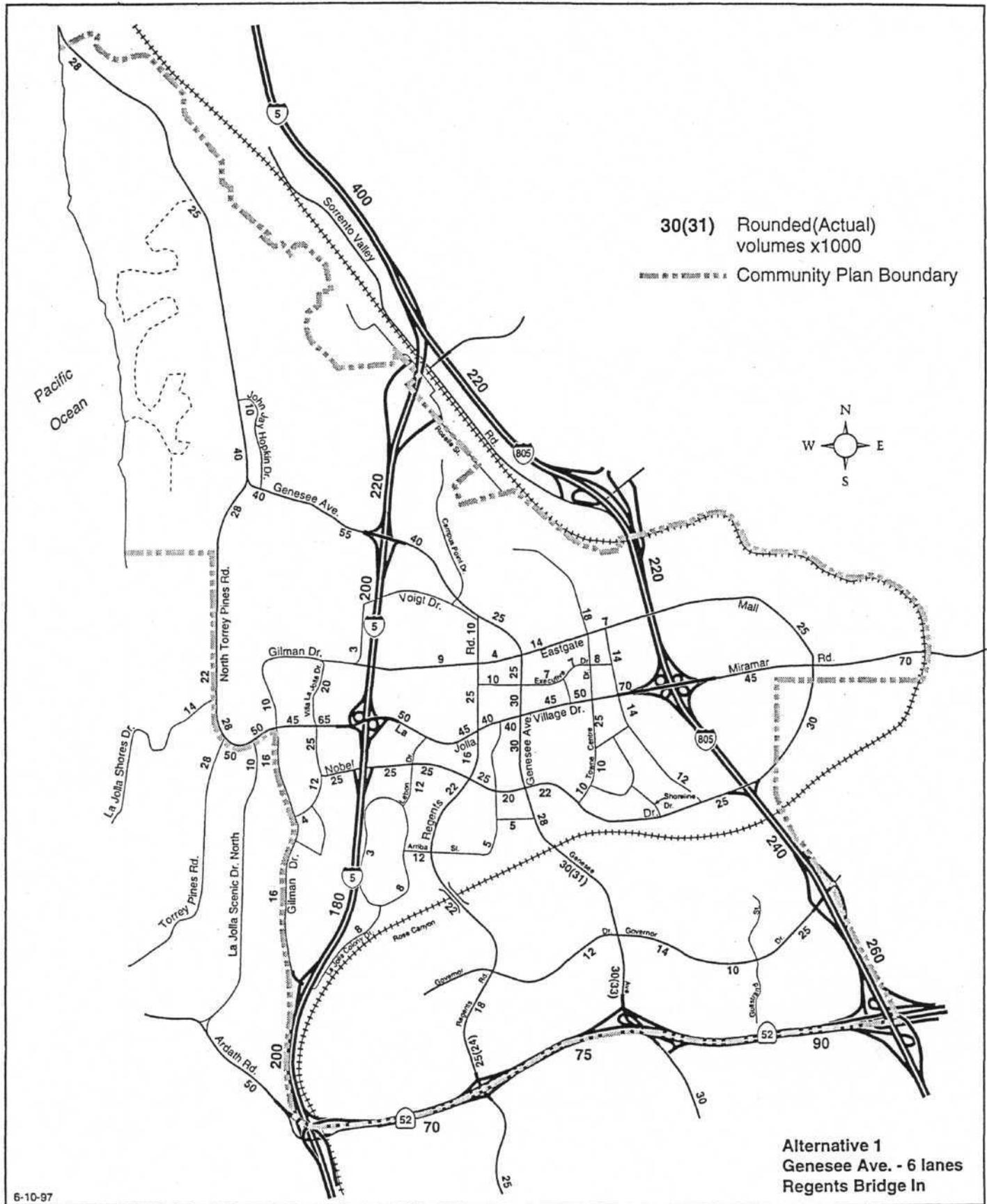
Street Segment Analysis

Figures 10-13 illustrate the future daily traffic volumes at buildout of the University community for Alternatives 1-4, respectively. The average daily traffic (ADT) volumes and the Level of Service (LOS) for selected street segments in the vicinity of the CIP projects are shown in **Table 8**. The ADT volumes are rounded to reflect the level of precision of the model output. The 1995 traffic counts for the same segments are also shown for comparison.

Alternative 1 shows that various street segments would be at LOS C with both projects completed. Alternative 2 shows that, with only the Genesee Avenue widening, the levels of service are somewhat less, but mostly within acceptable ranges for the community except for the segment of Genesee Avenue between Governor Drive and Nobel Drive. Alternative 4 shows that, with only the bridge built, the levels of service are still good and somewhat better than Alternative 2. Alternative 3, which is effectively the "no project" alternative, shows that the levels of service for Genesee Avenue will deteriorate to F, which is unacceptable.

Table 9 shows the ADT volumes and the LOS for the same selected street segments for Alternatives 5-8. These alternatives differed from Alternatives 1-4 by having a 20 percent reduction in generated trips for undeveloped parcels that did not have active development permits. As can be seen, after rounding the ADT volumes, the results were identical to the full development alternatives for these segments.

Since there was no significant change in the ADT volumes for the selected street segments, Alternatives 5-8 were eliminated from any further analysis.



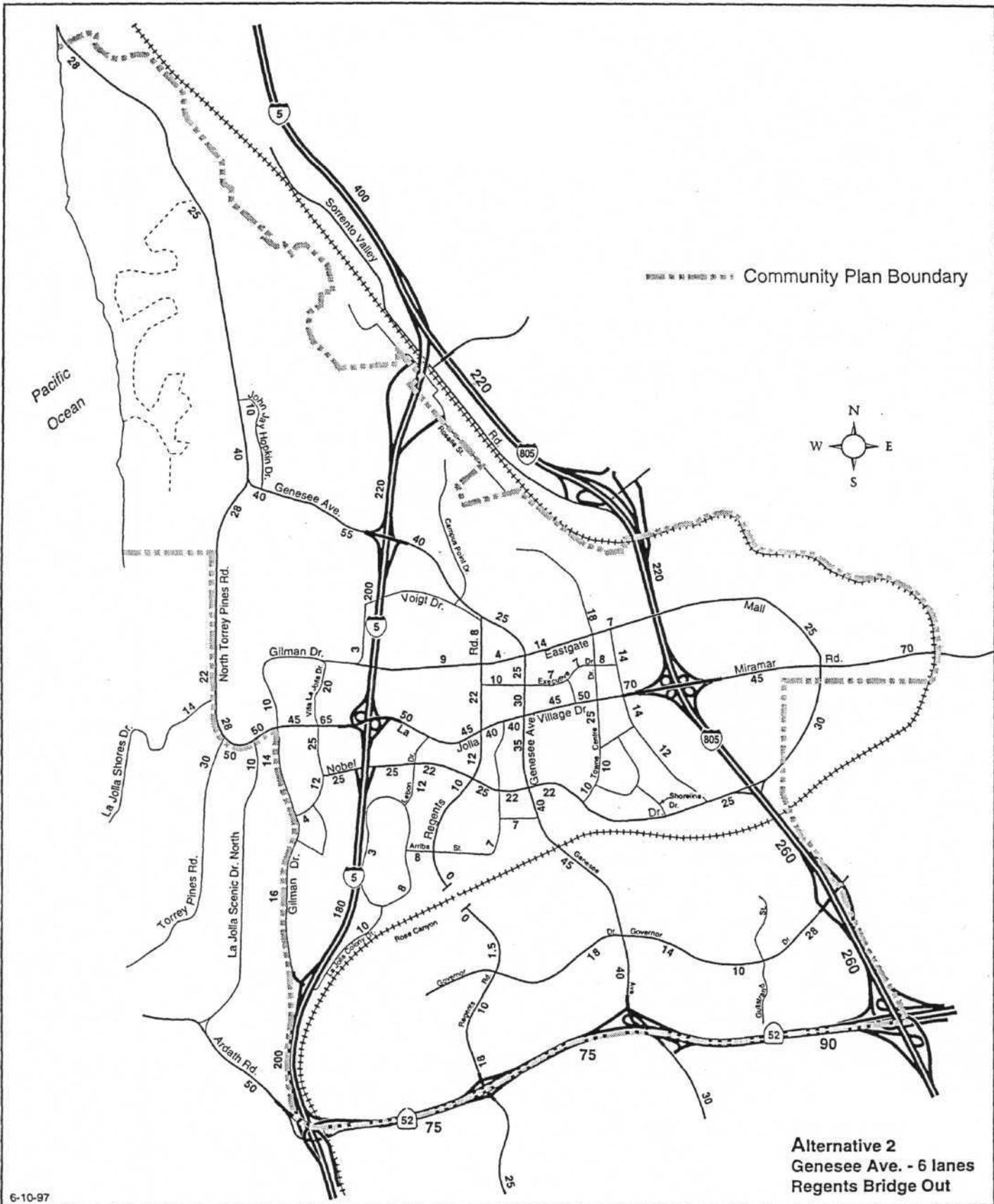
Year 2015 Model Daily Traffic Volumes (x1000)

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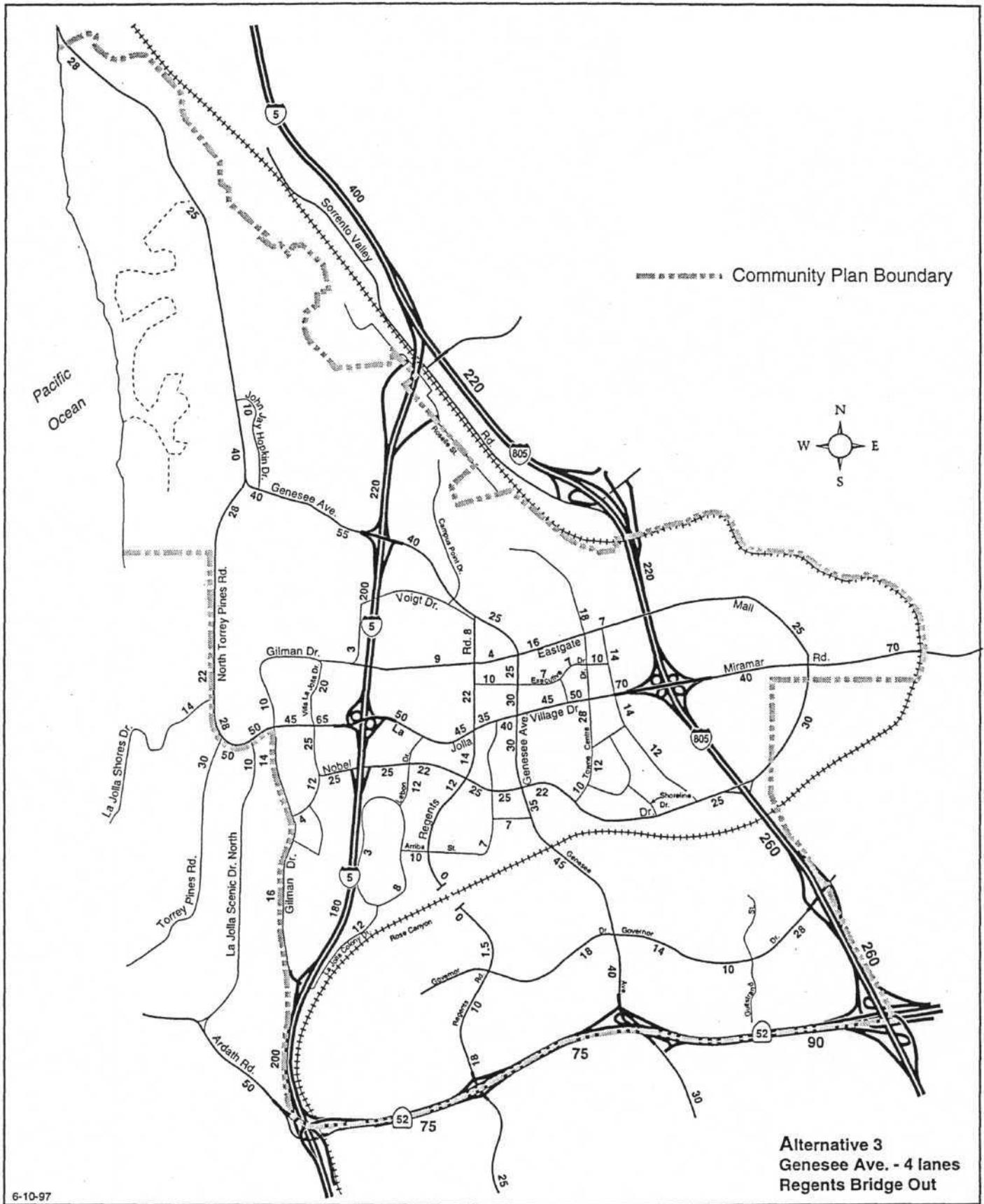


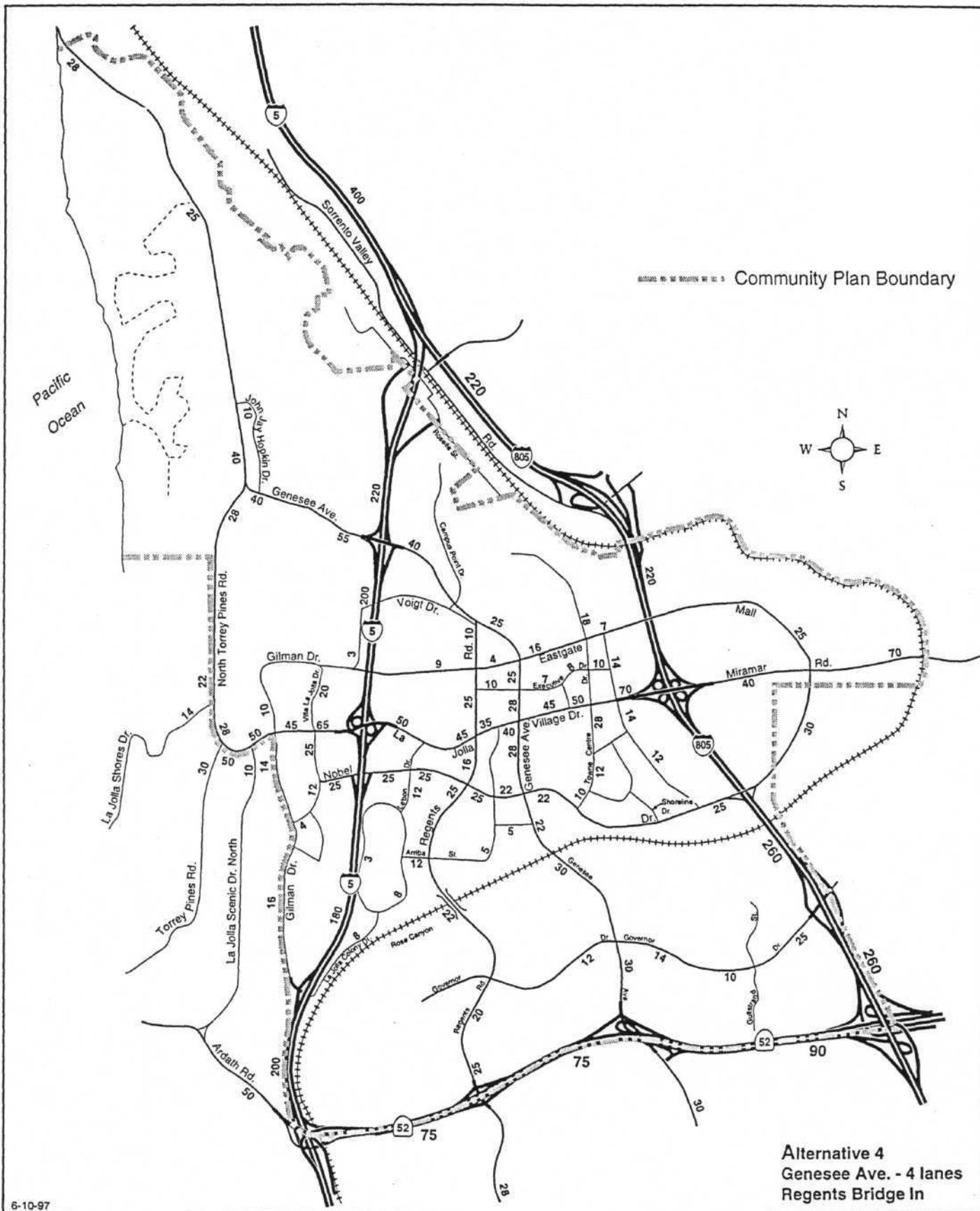
Year 2015 Model Daily Traffic Volumes (x1000)
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Year 2015 Model Daily Traffic Volumes (x1000)
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Table 8

Average Daily Traffic Volume and Level of Service Summary Comparisons

Land Use	1995		Future Buildout of University Community							
Road Segment	1995 Network Genesee Av-4 lanes Regents Bridge - Out		Alternative 1* Genesee Av-6 lanes Regents Bridge - In		Alternative 2* Genesee Av-6 lanes Regents Bridge - Out		(No Project) Alternative 3* Genesee Av-4 lanes Regents Bridge - Out		Alternative 4* Genesee Av-4 lanes Regents Bridge - In	
	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS
Genesee Avenue SR-52 - Governor	27,500	C	30,000	C	40,000	C/D	40,000	E/F	30,000	C/D
Governor - Nobel	31,000	D	30,000	C	45,000	D/E	45,000	F	30,000	C/D
Regents Road SR-52 - Governor	15,500	B	25,000	C	18,000	B	18,000	B	25,000	C
Governor - Arriba	1,500	A	22,000	C	1,500	A	1,500	A	22,000	C
Governor Drive Regents-Genesee	14,500	C	12,000	C	20,000	C/D	18,000	C/D	12,000	C
Genesee - I-805	20,000	B	25,000	C	28,000	C	28,000	C	25,000	C

* All future alternatives have the same Community Plan land use and street network assumptions except as noted.

Table 9

Average Daily Traffic Volume and Level of Service Summary Comparisons
 (With 20 % Reduction on Undeveloped Parcels Without Active Permits)

Land Use Road Segment	Future Buildout of University Community							
	Alternative 5* Genesee Av-6 lanes Regents Bridge - In		Alternative 6* Genesee Av-6 lanes Regents Bridge - Out		Alternative 7* Genesee Av-4 lanes Regents Bridge - Out		Alternative 8* Genesee Av-4 lanes Regents Bridge - In	
	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS
Genesee Avenue SR-52 - Governor	30,000	C	40,000	C/D	40,000	E/F	30,000	C/D
Governor - Nobel	30,000	C	45,000	D/E	45,000	F	30,000	C/D
Regents Road SR-52 - Governor	25,000	C	18,000	B	18,000	B	25,000	C
Governor - Arriba	22,000	B	1,500	A	1,500	A	22,000	C
Governor Drive Regents-Genesee	12,000	C	20,000	C/D	18,000	C/D	12,000	C
Genesee - I-805	25,000	C	28,000	C	28,000	C	25,000	C

* All future alternatives have the same Community Plan land use and street network assumptions except as noted.

Intersection Analysis

To help further compare the alternatives, an analysis of Level of Service and average delay for the PM peak hour was conducted at ten key intersections throughout the community.

Table 10 shows the PM peak hour Level of Service (LOS) and average delay for 1995 and Alternatives 1-4 for the ten key intersections. All ten intersections were signalized in 1995 and are expected to remain so at buildout.

The HCS software was used to calculate the LOS and delay for the intersections, except where noted. This software is based on the Highway Capacity Manual methodology. In those cases where the HCS program could not calculate the delay and resulting LOS, the Signal 94 software was used. Refer to Table 2 for the intersection evaluation criteria and the range of seconds of stopped delay per vehicle for the levels of service A through F.

In 1995, one intersection was operating at LOS F and three intersections were operating at LOS E. For buildout of the community, Alternative 1 would have one intersection operating at LOS F and two intersections operating at LOS E. Alternative 2 would also have one intersection operating at LOS F and two intersections operating at LOS E. Alternative 4 would have three intersections operating at LOS F and two intersections operating at LOS E. Alternative 3, "no project", would have four intersections operating at LOS F and two intersections operating at LOS E.

The intersection of Governor Drive/Genesee Avenue would continue to operate at LOS F without the Genesee Avenue widening project. The intersection of Genesee Avenue /SR-52 eastbound ramps would deteriorate to LOS F without the Genesee Avenue widening project.

For Alternatives 1 and 2, the intersections within the Genesee Avenue widening project limits, namely Genesee Avenue/Nobel Drive, Genesee Avenue/Governor Drive and Genesee Avenue/SR-52 ramps, included improvements necessary to bring them to LOS D with the buildout traffic. Since Alternatives 3 and 4 did not include the widening of Genesee Avenue, no improvements were included for the intersections.

TABLE 10
PM PEAK HOUR LEVEL OF SERVICE
FOR SELECTED UNIVERSITY INTERSECTIONS

NO.	INTERSECTION	CONTROL	1995		Alternative 1		Alternative 2		(No Project) Alternative 3		Alternative 4	
			LOS ¹	DELAY ¹ (sec/veh)	LOS ¹	DELAY ¹ (sec/veh)	LOS ¹	DELAY ¹ (sec/veh)	LOS ¹	DELAY ¹ (sec/veh)	LOS ¹	DELAY ¹ (sec/veh)
1	Governor Drive/Genesee Avenue	Signalized	F	81.2 ²	D ³	36.6	D/E ³	*	F	109.8 ²	F	78.7 ²
2	Governor Drive/Regents Road	Signalized	C	22.1	D	27.9	D	26.9	D	26.9	D	36.5
3	Nobel Drive/Genesee Avenue	Signalized	D	33.4	D ³	37.5	D/E ³	*	F	67.1 ²	D	38.3
4	Nobel Drive/Regents Road	Signalized	D	29.2	D	33.0	D	34.1	D	34.4	D	33.4
5	La Jolla Village Dr/Towne Center Dr	Signalized	E	41.5	F	64.6 ²	F	63.9 ²	F	73.8 ²	F	64.4 ²
6	La Jolla Village Dr./Genesee Av.	Signalized	E	40.7	E	49.3	E	47.7	E	47.7	E	48.2
7	La Jolla Village Drive/Regents Road	Signalized	D	31.1	E	41.0	E	40.2	E	43.8	E	41.0
8	SR-52 EB on/off/Genesee Avenue	Signalized	E	45.8 ²	C ³	24.8	D ³	26.6	F	63.8 ²	F	77.0 ²
9	SR-52 WB on/off/Regents Road	Signalized	C	17.2	C	21.0	C	19.8	C	20.1	C	21.4
10	SR-52 EB on/off/Regents Road	Signalized	C	20.8	D	28.5	C	22.2	D	27.0	D	28.3

¹ Intersection Level of Service (LOS) and delay are calculated based on the Highway Capacity Manual, using the HCS Software (except where noted)

² HCS Software unable to calculate delay; "Average delay" calculated using Signal 94 Software

³ Includes intersection improvements as part of the Genesee Avenue project

* Level of Service controlled by the segment

Alternative 1: Genesee Avenue - 6 lanes Regents Bridge - In

Alternative 2: Genesee Avenue - 6 lanes Regents Bridge - Out

Alternative 3: Genesee Avenue - 4 lanes Regents Bridge - Out

Alternative 4: Genesee Avenue - 4 lanes Regents Bridge - In

Intersection Only Improvements

Based on a request from the University Community Planning Group, additional analysis were conducted analysis to see if sufficient improvements could be made just to the intersections to mitigate the poor levels of service without building the complete CIP projects.

Tables 11, 12 and 13 show the congested intersections for Alternatives 1, 2 and 4, respectively, along with the necessary improvements for them to operate at LOS D. Also included are the estimated costs of the improvements. Alternative 3 was not evaluated for intersection only improvements because the road segments are forecast to operate at LOS F.

Road Segment Usage

To determine what portion of the forecast traffic using the Genesee Avenue corridor and what portion of the forecast traffic using the Regents Road Bridge had origins and destinations inside the University community or outside the community, a select link run was made using the Alternative 1 street network. The first link north of Governor Drive to Calgary Drive was chosen to represent travel on Genesee Avenue.

The 4545 TAZs representing the total San Diego region were divided into 3 districts. District 1 consisted of the 79 zones representing the portion of the University community north of Rose Canyon (North University). District 2 consisted of the 16 zones representing the portion of the University community south of Rose Canyon (South University). District 3 consisted of the remaining 4450 zones outside the University community.

As can be seen in **Table 14** and **Figure 14**, about 66% of the forecast traffic using Genesee Avenue has origins or destinations inside the University community, while about 34% of the forecast traffic has origins or destinations outside the community.

Table 15 and **Figure 15** show similar results that about 72% of the forecast traffic using the Regents Road Bridge has origins or destinations inside the University community, while about 28% of the forecast traffic has origins or destinations outside the community.

TABLE 11

INTERSECTION IMPROVEMENTS
AND
PM PEAK HOUR LEVEL OF SERVICE

For Selected Signalized Intersections in University

Alternative 1 : Genesee Avenue - 6 lanes Regents Bridge - In

NO.	INTERSECTION	BEFORE		ADDITIONAL INTERSECTION IMPROVEMENTS			
		LOS ¹	AVG. DELAY ¹ (sec/veh)	IMPROVEMENTS	ESTIMATED COST (\$)	LOS ¹	AVG. DELAY ¹ (sec/veh)
5	La Jolla Village Dr/Towne Center Dr	F	64.6 ²	Add 4th WB thru lane, Signal phasing & timing adjustments	1,000,000	D	31.6
6	La Jolla Village Dr./Genesee Av.	E	49.3	Signal phasing & timing adjustments	0	D	37.8
7	La Jolla Village Drive/Regents Road	E	41.0	Signal phasing & timing adjustments	0	D	33.1

¹ Intersection Level of Service (LOS) and delay are calculated based on the Highway Capacity Manual, using the HCS Software (except where noted)

² HCS Software unable to calculate delay; "Average delay" calculated using Signal 94 Software

WB = Westbound

TABLE 12
 INTERSECTION IMPROVEMENTS
 AND
 PM PEAK HOUR LEVEL OF SERVICE

For Selected Signalized Intersections in University

Alternative 2 : Genesee Avenue - 6 lanes Regents Bridge - Out

NO.	INTERSECTION	BEFORE		ADDITIONAL INTERSECTION IMPROVEMENTS			
		LOS ¹	AVG. DELAY ¹ (sec/veh)	IMPROVEMENTS	ESTIMATED COST (\$)	LOS ¹	AVG. DELAY ¹ (sec/veh)
5	La Jolla Village Dr/Towne Center Dr	F	63.9 ²	Add 4th WB thru lane	1,000,000	D	37.3
6	La Jolla Village Dr./Genesee Av.	E	47.7	Signal phasing & timing adjustments	0	D	36.0
7	La Jolla Village Drive/Regents Road	E	40.2	Add NB right-turn overlap signal phase	10,000	D	38.3

¹ Intersection Level of Service (LOS) and delay are calculated based on the Highway Capacity Manual, using the HCS Software (except where noted)

² HCS Software unable to calculate delay; "Average delay" calculated using Signal 94 Software

NB = Northbound
 WB = Westbound

TABLE 13

INTERSECTION IMPROVEMENTS
AND
PM PEAK HOUR LEVEL OF SERVICE

For Selected Signalized Intersections in University

Alternative 4 : Genesee Avenue - 4 lanes Regents Bridge - In

NO.	INTERSECTION	BEFORE		ADDITIONAL INTERSECTION IMPROVEMENTS			
		LOS ¹	AVG. DELAY ¹ (sec/veh)	IMPROVEMENTS	ESTIMATED COST (\$)	LOS ¹	AVG. DELAY ¹ (sec/veh)
1	Governor Drive/Genesee Avenue	F	78.7 ²	Add 3rd NB & SB TH Lane, Add SB RT Lane, Add SB RT overlap signal phase, Add 2nd WB LT Lane	500,000	D	37.3
5	La Jolla Village Dr/Towne Center Dr	F	64.4 ²	Add 4th WB thru lane	1,000,000	D	34.1
6	La Jolla Village Dr./Genesee Av.	E	48.2	Signal phasing & timing adjustments	0	D	36.4
7	La Jolla Village Drive/Regents Road	E	41.0	Signal phasing & timing adjustments	0	D	33.1
8	SR-52 EB on/off/Genesee Avenue	F	77.0 ²	Add 2nd SB LT Lane & Eliminate NB Free RT	200,000	C	22.1

¹ Intersection Level of Service (LOS) and delay are calculated based on the Highway Capacity Manual, using the HCS Software (except where noted)

² HCS Software unable to calculate delay; "Average delay" calculated using Signal 94 Software

NB = Northbound
SB = Southbound
WB = Westbound

LT = Left-turn
TH = Thru
RT = Right-turn

Table 14

GENESEE AVE. (GOVERNOR DR. TO CALGARY DR.)

Travel Utilization By Area

AREA *	% UTILIZING GENESEE AVE.
North University	44.8
South University	21.6
Outside University	33.6

* Trips having either origins or destinations in the specified area

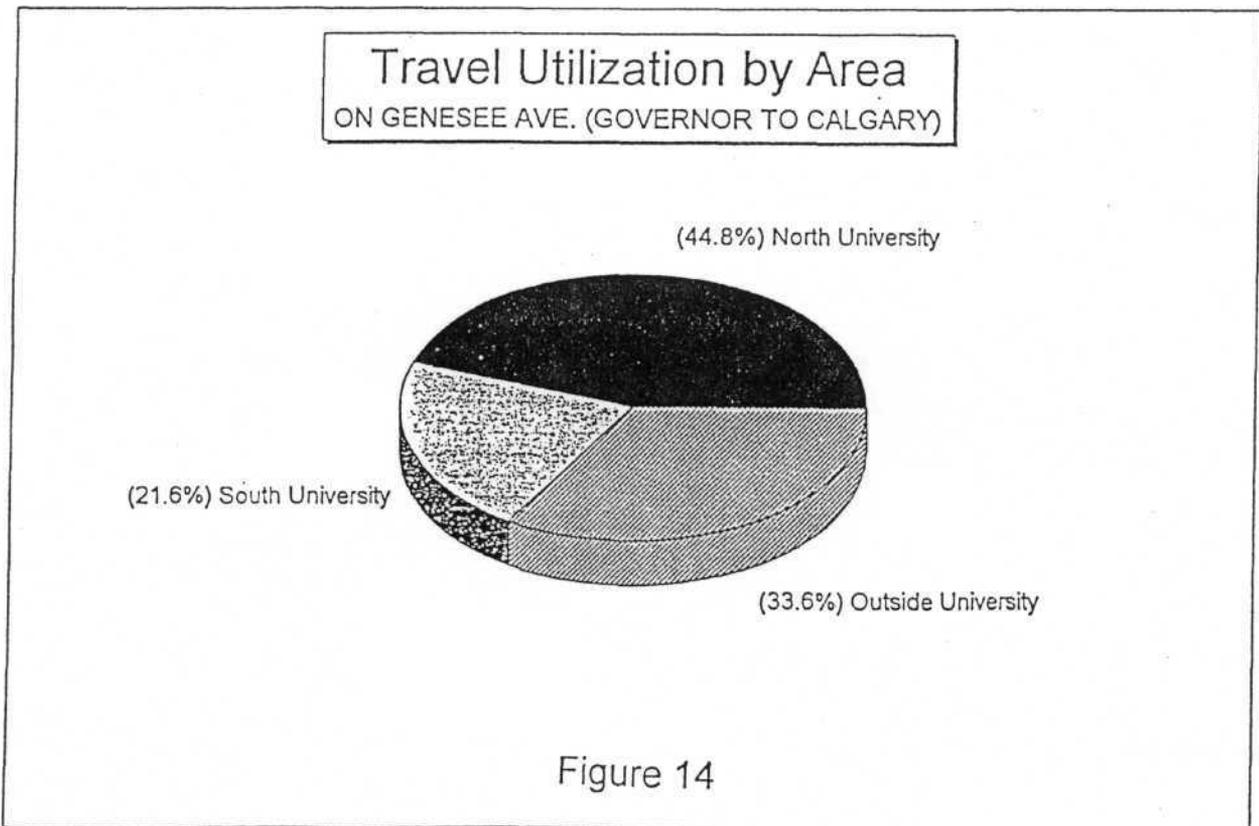


Table 15

REGENTS ROAD BRIDGE

Travel Utilization By Area

AREA *	% UTILIZING REGENTS RD. BRIDGE
North University	44.2
South University	28.2
Outside University	27.6

* Trips having either origins or destinations in the specified area

