

# **DRAFT REPORT**

## **STANFORD UNIVERSITY TRAFFIC MONITORING REPORT 2007**

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Prepared for:

**Santa Clara County  
Department of Planning Development**



**November 2007**

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## **FOREWORD FROM THE COUNTY OF SANTA CLARA PLANNING OFFICE**

### **Background**

The purpose of this report is to compare traffic volumes entering and exiting Stanford campus during the inbound AM peak and the outbound PM commute peak to a traffic baseline. This comparison is completed on an annual basis. The requirements for establishment of the traffic baseline and performing annual comparisons to the baseline are contained within the December 2000 Stanford Community Plan/General Use Permit (GUP)/Environmental Impact Report (EIR) and within the 2000 Stanford General Use Permit. These documents can be reviewed at the County website or at the County Planning Office. Essentially, Stanford is required to attain a "no net new commute trip" standard as defined in the GUP and EIR.

### **The Process**

Following the adoption of the GUP by the County Board of Supervisors in December 2000, the County Planning Office selected DMJM HARRIS : AECOM formerly Korve Engineering to conduct the monitoring process outlined in the conditions of approval. Because of the type of data to be collected (particularly license plate numbers), the data could not be collected until after the start of daylight savings time in Spring 2001. The data collection involved three, 2-week periods in the Spring and one, 2-week period in the Fall 2001.

Condition of Approval G.7 outlines the process for establishing the baseline counts and for continuing monitoring in subsequent years. The process can be summarized as follows:

- Peak hour traffic is counted at least three times per year for a two-week period each time. The three counts shall be averaged to determine the annual traffic level.
- All counts are recorded at the 16 campus entry and exit points forming a cordon around the campus.
- License plate numbers are recorded for each entering and exiting vehicle to determine the amount of non-campus traffic.
- Cordon volumes are adjusted for parking lots within the cordon used by the hospital (these volumes are subtracted from the cordon line counts) and parking lots outside the cordon used by the university (these volumes are added to the cordon line counts).
- A peak hour is then established for the campus based on the counts, adjusted for cut through and parking lot location.

Condition of Approval G.6 defines the peak commute directions as entering the campus in the morning peak commute period and leaving the campus in the evening commute period. The peak commute period is defined as the one-hour period of time between 7 AM and 9 AM and again between 4 PM and 6 PM with the highest volume of traffic, as defined by the counts.

# County of Santa Clara

## Environmental Resources Agency

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Therefore, the two peak hours are considered to be independent events. For example, an increase in AM peak traffic for two out of three years would trigger the additional elements of the monitoring program without a change, or even a decrease, in PM peak traffic, or the reverse. Also, a significant increase during one year in the AM and a sufficient increase in the PM for the following year would not trigger additional mitigation.

## Activities Related to Traffic Baseline and Annual Monitoring Counts to Date

### ***Stanford University Traffic Monitoring Report -- 2001 GUP Baseline***

The 2001 Baseline Report was originally issued on July 3, 2002. An update to that report was issued on October 15, 2003. Per the provisions of the GUP, this original Traffic Baseline Report established the standard for measuring future traffic impacts to the "no net new commute" standard.

The following were the count dates of the 2001 Baseline Report:

- Week of April 2, 2001
- Week of April 9, 2001
- Week of April 23, 2001
- Week of April 30, 2001
- Week of May 7, 2001
- Week of May 14, 2001
- Week of October 22, 2001
- Week of October 29, 2001

The following were the results of the 2001 Baseline Monitoring:

#### Inbound AM:

Average count	3,319
90% confidence interval	+/- 120
significant traffic increase	3,439
1% increase trigger	3,474

#### Outbound PM:

Average	3,446
90% confidence interval	+/- 109
significant traffic increase	3,555
1% trigger	3,591

### ***Stanford University Traffic Monitoring Report – 2002 Monitoring Report***

The 2002 Monitoring Report was originally issued in July 2003. The count dates for the 2002 Monitoring Report were as follows:

- Week of April 15, 2002
- Week of April 22, 2002
- Week of April 29, 2002
- Week of May 6, 2002
- Week of May 13, 2002
- Week of May 20, 2002
- Week of October 14, 2002
- Week of October 21, 2002

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The 2002 Monitoring Report concluded that the adjusted AM inbound count totaled 3,390 vehicles. This represented an increase of 71 vehicles, which fell within the 90% confidence interval and did not represent a significant AM inbound traffic increase. The PM outbound count totaled 3,678 vehicles which was an increase of 232 vehicles from the baseline, which was higher than the 90% confidence interval. This count exceeded the 1% trigger of 3,591 vehicles by 87. The following is a summary of the results of the 2002 Monitoring Report as contained in the July 2003 document.

#### Inbound AM:

Adjusted average 2002 count	3,390
Baseline-established 90% confidence interval (2001)	+/- 120
Baseline-established significant traffic increase (2001)	3,439
Baseline-established 1% increase trigger (2001)	3,474
Result (falls below the 1% trigger by 84)	-84

#### Outbound PM:

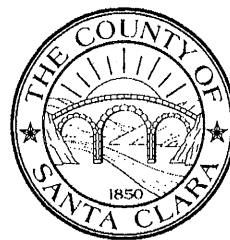
Adjusted average 2002 count	3,678
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (232 increase in vehicles exceeds the trigger by 87 vehicles)	+87

### **Adjustment 1 to 2002 Monitoring Report**

An update to the original 2002 Monitoring Report was issued on October 15, 2003. Following the publication of the July 2003 report, Stanford and the County separately analyzed traffic data for the Stanford Homecoming Week. Based on consultation with Stanford and independent analysis of County consultant traffic data, the County determined that data collected for the week of Homecoming should not be included in the comparison data set. The rationale for this decision was that this event (Homecoming) had been ongoing for years, was not included in the baseline count, and would continue to be an annual event. The County communicated to Stanford that other future "large events" would not be excluded from future counts. The revised report substituted the week of October 28, 2002 for the previously counted week of October 14, 2002. The following are the results of the Revised 2002 Monitoring Report.

#### Inbound AM:

Adjusted average 2002 count	3,287
Baseline-established 90% confidence interval (2001)	+/- 120
Baseline-established significant traffic increase (2001)	3,439
Baseline-established 1% increase trigger (2001)	3,474
Result (falls below the 1% trigger by 187)	-187



Outbound PM:

Adjusted average 2002 count	3,598
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (152 increase in vehicles exceeds the trigger by 7 vehicles)	+7

**Adjustment 2 to the 2002 Monitoring Report**

Subsequent to the first adjustment to the 2002 Monitoring Report, Stanford informed the County that additional Marguerite shuttle runs had been introduced to campus since the completion of the baseline count, and thus counted in the Year 1 (2002) comparison counts. This resulted in an increase of 12 vehicles in each peak hour. County staff determined that these new bus lines should be subtracted from the comparison count. This provided an end result as follows:

Inbound AM:

Adjusted average 2002 count	3,275
Baseline-established 90% confidence interval (2001)	+/- 120
Baseline-established significant traffic increase (2001)	3,439
Baseline-established 1% increase trigger (2001)	3,474
Result (falls below the 1% trigger by 199)	-199

Outbound PM:

Adjusted average 2002 count	3,586
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (falls below the 1% trigger by 5 vehicles)	-5

***Stanford University Traffic Monitoring Report – 2003 Monitoring Report***

This report represents the 2003 Monitoring Report. The count dates for the 2003 Monitoring Report were as follows:

- Week of April 7, 2003
- Week of April 21, 2003
- Week of April 28, 2003
- Week of May 5, 2003
- Week of May 12, 2003
- Week of May 19, 2003
- Week of September 29, 2003
- Week of October 20, 2003

The 2003 Monitoring Report concluded that the adjusted AM inbound count totaled 3,413 vehicles. This represented an increase of 94 vehicles, which fell within the 90% confidence interval and did not represent a significant AM inbound traffic increase. The PM outbound count totaled 3,476 vehicles which was an increase of 30 vehicles from the baseline, which also fell



within the 90% confidence interval. The following is a summary of the results of the 2003 Monitoring Report.

Inbound AM:

Adjusted average 2003 count	3,413
Baseline-established 90% confidence interval (2001)	+/- 120
Baseline-established significant traffic increase (2001)	3,439
Baseline-established 1% increase trigger (2001)	3,474
Result (falls below the 90% confidence interval by 26)	-26
Result (falls below the 1% trigger by 61 vehicles)	-61

Outbound PM:

Adjusted average 2003 count	3,476
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (falls below the 90% confidence interval by 79 vehicles)	-79
Result (falls below the 1% trigger by 115 vehicles)	-115

***Stanford University Traffic Monitoring Report – 2004 Monitoring Report***

This report represents the 2004 Monitoring Report. The count dates for the 2004 Monitoring Report were as follows:

- Week of April 12, 2004
- Week of April 19, 2004
- Week of April 26, 2004
- Week of May 3, 2004
- Week of May 10, 2004
- Week of May 17, 2004
- Week of September 27, 2004
- Week of October 4, 2004

The 2004 Monitoring Report concluded that the adjusted AM inbound count totaled 3,176 vehicles. This represented a decrease of 143 vehicles, which fell within the 90% confidence interval and did not represent a significant AM inbound traffic increase. The PM outbound count totaled 3,642 vehicles which was an increase of 196 vehicles from the baseline, which is 87 vehicles above 90% confidence interval and 51 vehicles more than the 1% established trigger. The following is a summary of the results of the initial 2004 Monitoring Report.

Inbound AM:

Adjusted average 2004 count	3,176
Baseline-established 90% confidence interval (2001)	+/- 120
Baseline-established significant traffic increase (2001)	3,439
Baseline-established 1% increase trigger (2001)	3,474
Result (falls below the 90% confidence interval by 263)	-263
Result (falls below the 1% trigger by 298 vehicles)	-298





### ***Stanford University Traffic Monitoring Report – 2006 Monitoring Report***

This report represents the 2006 Monitoring Report. The count dates for the 2006 Monitoring Report were as follows:

- Week of April 17, 2006
- Week of April 24, 2006
- Week of May 1, 2006
- Week of May 8, 2006
- Week of May 15, 2006
- Week of May 22, 2006
- Week of October 16, 2006
- Week of October 23, 2006

The 2006 Monitoring Report concluded that the adjusted AM inbound count totaled 3,048 vehicles. This represented a decrease of 271 vehicles from baseline, which falls within the 90 percent confidence interval and does not represent a significant AM inbound traffic increase. The PM outbound count totaled 3,427 vehicles which was a decrease of 19 vehicles from the baseline, which is 128 vehicles below the 90 percent confidence interval and 164 vehicles below the 1 percent established trigger. The following is a summary of the results of the 2006 Monitoring Report.

#### Inbound AM:

Adjusted average 2006 count	3,048
Baseline-established 90% confidence interval (2001)	+/- 120
Baseline-established significant traffic increase (2001)	3,439
Baseline-established 1% increase trigger (2001)	3,474
Result (falls below the 90% confidence interval by 391 vehicles)	-391
Result (falls below the 1% increase trigger by 426 vehicles)	-426

#### Outbound PM:

Adjusted average 2006 count	3,427
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (falls below the 90% confidence interval by 128 vehicles)	-128
Result (falls below the 1% trigger by 164 vehicles)	-164

### ***Stanford University Traffic Monitoring Report – 2007 Monitoring Report***

This report represents the 2007 Monitoring Report. The count dates for the 2007 Monitoring Report were as follows:

- Week of April 9, 2007
- Week of April 16, 2007
- Week of April 23, 2007
- Week of April 30, 2007
- Week of May 7, 2007
- Week of May 14, 2007
- Week of October 15, 2007
- Week of October 22, 2007

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The 2007 Monitoring Report concluded that the adjusted AM inbound count totaled 3,058 vehicles. This represented a decrease of 261 vehicles from baseline. The PM outbound count totaled 3,494 vehicles which is an increase of 48 vehicles from the baseline, which is 61 vehicles below the 90 percent confidence interval and 97 vehicles below the 1 percent established trigger. The following is a summary of the results of the 2007 Monitoring Report.

#### Inbound AM:

Adjusted average 2007 count	3,058
Baseline-established 90% confidence interval (2001)	+/- 120
Baseline-established significant traffic increase (2001)	3,439
Baseline-established 1% increase trigger (2001)	3,474
Result (falls below the 90% confidence interval by 381 vehicles)	-381
Result (falls below the 1% increase trigger by 416 vehicles)	-416

#### Outbound PM:

Adjusted average 2007 count	3,494
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (falls below the 90% confidence interval by 61 vehicles)	-61
Result (falls below the 1% trigger by 97 vehicles)	-97

## INTRODUCTION

This report presents the traffic and parking data that has been collected at Stanford University by DMJM HARRIS : AECOM, formerly Korve Engineering, during the monitoring periods of 2007. Traffic volumes were collected for six weeks during the spring 2007 and two weeks during the fall 2007. The spring counts were conducted for the weeks of April 9, April 16, April 23, April 30, May 7 and May 14. The fall counts were conducted for the weeks of October 15 and October 22. The data include vehicle counts at all of the access points to the campus and parking lots. Parking lot counts and cut-through percentages were used to adjust the raw traffic counts in order to determine the total amount of peak hour traffic generated by Stanford University. The parking data were used to add in campus traffic that parks outside of the count area and subtract out hospital traffic from parking inside the count area. License plate surveys were used to calculate the amount of traffic that cuts through the campus and thus is not University-generated traffic. Data collection methodology is described in greater detail in Task 1. A description of the data analysis procedures is presented in Task 2. The data collected in calendar year 2007 is compared to the baseline counts collected in calendar year 2001. Differences between the two years are then analyzed to determine if traffic is increasing to a significant degree.

### Task 1.0 Traffic Monitoring Data Collection Methodology

Data collection is a critical component of the traffic monitoring program. The following work elements were conducted to collect all relevant traffic data for the monitoring program.

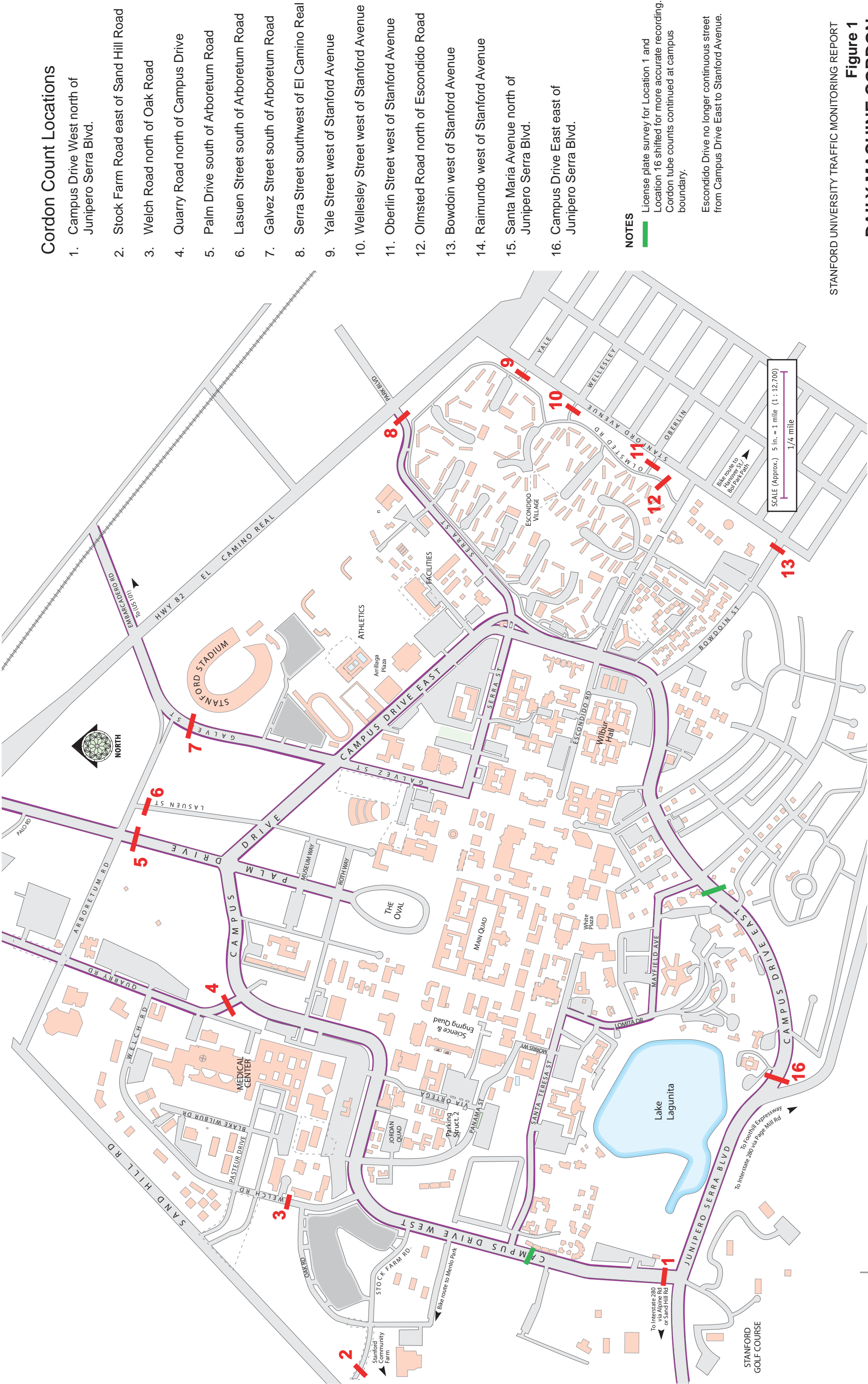
#### **Task 1.1 Machine Cordon Line Traffic Counts**

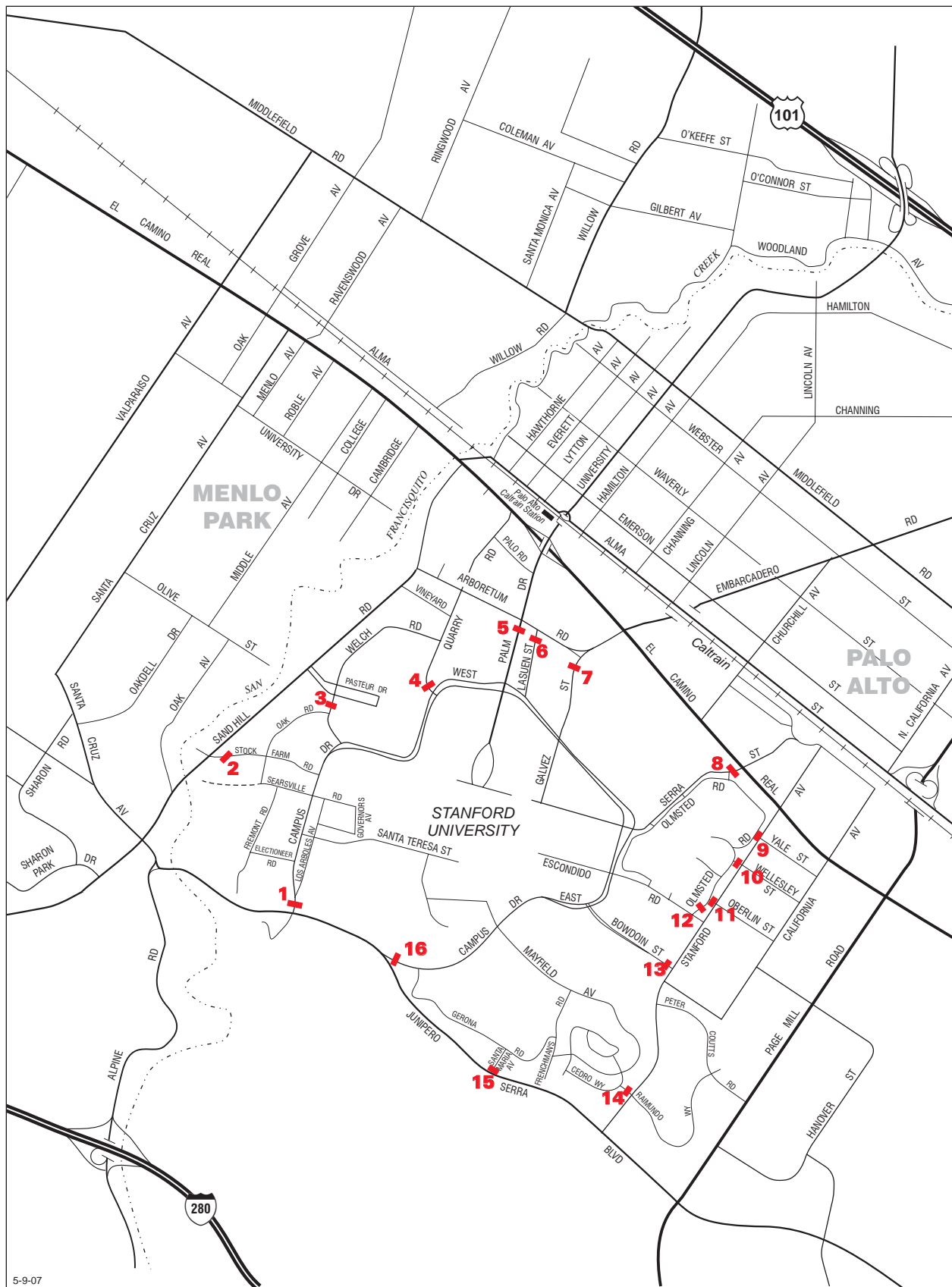
Directional traffic counts were collected at Stanford University for eight weeks in 2007 on each of the 16 roadways that provide access to and from the campus. The location of the 16 cordon counts are listed below and shown graphically in Figures 1 and 2.

1. Campus Drive West, north of Junipero Serra Boulevard
2. Stock Farm Road, east of Sand Hill Road
3. Welch Road, north of Oak Road
4. Quarry Road, north of Campus Drive West
5. Palm Drive, south of Arboretum Road
6. Lausen Street, south of Arboretum Road
7. Galvez Street, south of Arboretum Road
8. Serra Street, southwest of El Camino Real
9. Yale Street, west of Stanford Avenue
10. Wellesley Street, west of Stanford Avenue
11. Oberlin Street, west of Stanford Avenue
12. Olmsted Road, north of Escondido Road
13. Bowdoin Street, west of Stanford Avenue
14. Raimundo Way, west of Stanford Avenue
15. Santa Maria Avenue, north of Junipero Serra Boulevard
16. Campus Drive East, east of Junipero Serra Boulevard

Figure 1  
DAILY MACHINE CORDON  
COUNT LOCATIONS

For count locations 14 and 15 see Figure 2





5-9-07

The detailed traffic counts at the 16 cordon locations are presented in Appendix A and are summarized in Table 1. Table 1 shows the AM inbound and PM outbound peak hour volumes for each day that traffic is monitored. As indicated in Table 1, the AM peak hour usually occurred from 8:00 to 9:00 and the PM peak hour generally occurred between 5:00 to 6:00. The unadjusted AM inbound traffic volumes ranged from a low of 3,609 on Friday, April 13 to a high of 4,222 on Tuesday, May 1. The PM peak hour traffic volumes ranged from a low of 4,110 on Thursday, April 12 to a high of 4,674 on Thursday, April 19.

### **Task 1.2 Parking Lot Driveway Counts**

There are two parking lots (L1 – Rectangle Lot and L2 – Quarry Lot) outside the cordon line that serves some campus uses. There are also several parking lots (L3, L4 – Beckman Lot and L5 – Stock Farm Road Lot) along with parking structures 1 (PS1) and 3 (PS3) that are inside the established cordon line that serve some hospital uses. Parking lot L6 is also located inside the cordon and serves buses only. Traffic was counted by direction into and out of these parking lots during the entire count period. The detailed count sheets for the driveway traffic at these lots are included in Appendix B.

The driveway count locations are presented below and in Figure 3.

1. PS1a – Parking Structure 1 North Access to Campus Drive
2. PS1b – Parking Structure 1 South Access to Roth Way
3. PS3a – Parking Structure 3 Northwest Access
4. PS3b – Parking Structure 3 Northeast Access
5. L1a – Rectangle Lot (Lot 1) Quarry Road Access
6. L1b – Rectangle Lot (Lot 1) North Access
7. L2a – Quarry Lot (Lot 2) North Access to Quarry Road
8. L2b – Quarry Lot (Lot 2) Middle Access to Quarry Road
9. L2c – Quarry Lot (Lot 2) South Access to Quarry Road
10. L3a<sup>(2)</sup> – Near Medical Drive, west of Campus Drive
11. L4a<sup>(1)</sup> – Driveway to Lot 4 from Campus Drive West, Panama Street
12. L5a – West Driveway to Lot 5 from Oak Road
13. L5b – Center Driveway to Lot 5 from Oak Road
14. L5c – East Driveway to Lot 5 from Oak Road
15. L5d – East Driveway to Lot 5 from Stock Farm Road
16. L5e – West Driveway to Lot 5 from Stock Farm Road
17. L6a – West Driveway to Lot 6 from Oak Road
18. L6b – South Driveway to Lot 6 from Stockfarm Road
19. L4b<sup>(1)</sup> – Driveway to Lot 4 from Campus Drive West, Via Ortega
20. L4c<sup>(1)</sup> – Driveway to Lot 4 from Campus Drive West, b/t Panama & Ortega

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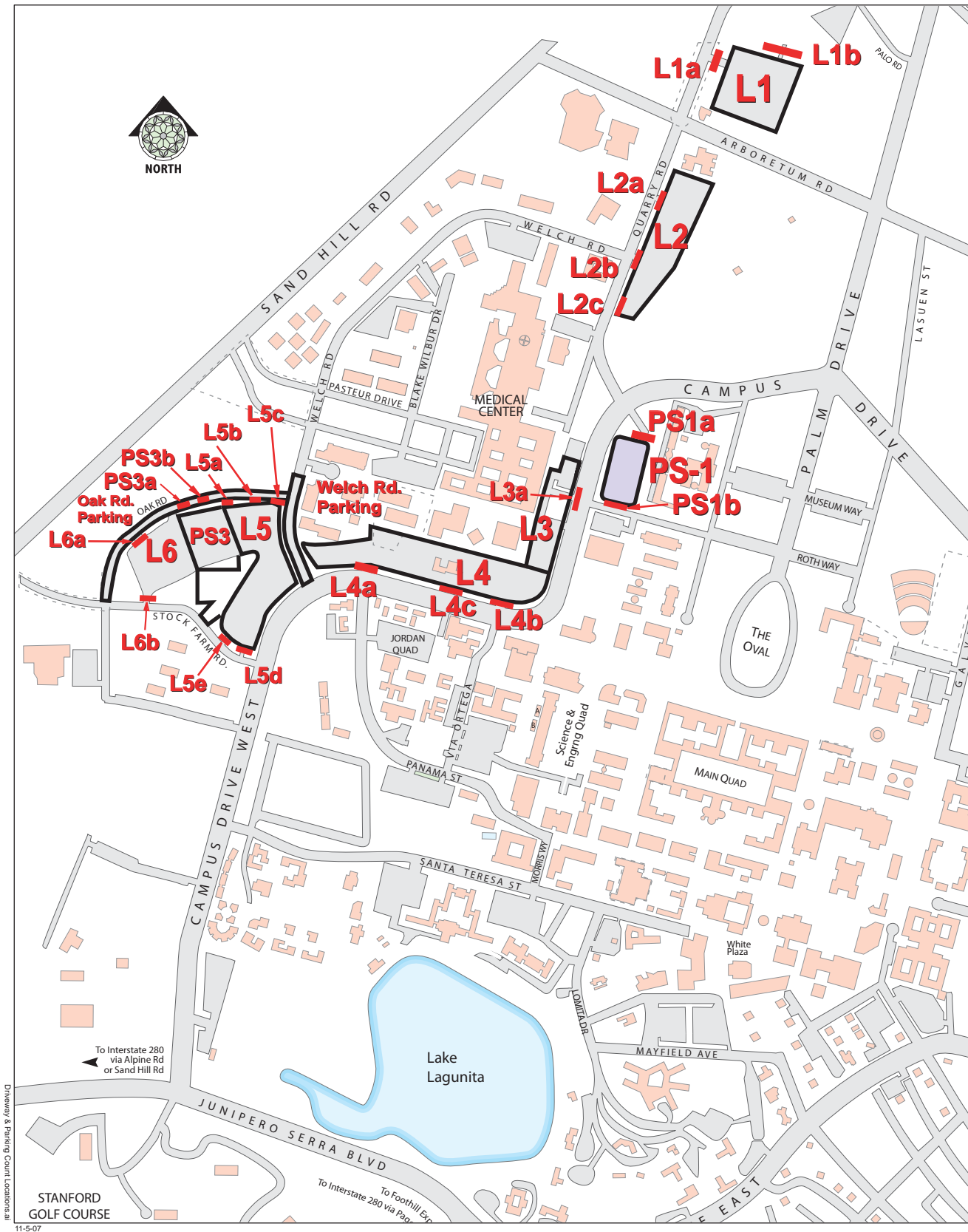
<sup>(1)</sup> Access L4a was open during the first four weeks of the counts. For weeks 5 and 6 driveway L4a was closed due to construction. Access to lot 4 was provided via driveway L4b and L4c, both providing two-way flow. During week 7 & 8 access to Lot 4 was provided via driveway L4b, while L4a and L4c were closed.

<sup>(2)</sup> During week 7 & 8 Lot 3 was closed.



**Table 1 2007 Raw Traffic Count Summary**

Date	AM Inbound			PM Outbound		
	Weather	Volume	Period	Weather	Volume	Period
Week 1						
April 9, 2007	Scattered Clouds	3769	7:45 to 8:45	Partly Cloudy	4334	5:00 to 6:00
April 10, 2007	Overcast	3838	7:45 to 8:45	Scattered Clouds	4183	5:00 to 6:00
April 11, 2007	Overcast	3874	7:45 to 8:45	Mostly Cloudy	4387	5:00 to 6:00
April 12, 2007	Partly Cloudy	3782	7:45 to 8:45	Partly Cloudy	4110	4:45 to 5:45
April 13, 2007	Scattered Clouds	3609	7:45 to 8:45	Mostly Cloudy	4206	4:45 to 5:45
Week 2						
April 16, 2007	Partly Cloudy	3795	8:00 to 9:00	Clear	4194	5:00 to 6:00
April 17, 2007	Scattered Clouds	4067	7:45 to 8:45	Scattered Clouds	4239	5:00 to 6:00
April 18, 2007	Scattered Clouds	3946	8:00 to 9:00	Partly Cloudy	4368	5:00 to 6:00
April 19, 2007	Overcast	4174	8:00 to 9:00	Overcast	4674	5:00 to 6:00
April 20, 2007	Overcast	3984	8:00 to 9:00	Partly Cloudy	4519	5:00 to 6:00
Week 3						
April 23, 2007	Scattered Clouds	3985	7:45 to 8:45	Partly Cloudy	4198	5:00 to 6:00
April 24, 2007	Partly Cloudy	4024	8:00 to 9:00	Clear	4248	4:45 to 5:45
April 25, 2007	Scattered Clouds	4012	8:00 to 9:00	Mostly Cloudy	4417	5:00 to 6:00
April 26, 2007	Clear	4019	7:45 to 8:45	Scattered Clouds	4261	5:00 to 6:00
April 27, 2007	Clear	3770	7:45 to 8:45	Scattered Clouds	4246	4:45 to 5:45
Week 4						
April 30, 2007	Clear	4005	8:00 to 9:00	Mostly Cloudy	4218	4:45 to 5:45
May 1, 2007	Clear	4222	7:45 to 8:45	Mostly Cloudy	4330	5:00 to 6:00
May 2, 2007	Light Rain	4038	7:45 to 8:45	Scattered Clouds	4418	5:00 to 6:00
May 3, 2007	Scattered Clouds	4015	7:45 to 8:45	Overcast	4424	4:45 to 5:45
May 4, 2007	Overcast	3861	7:45 to 8:45	Mostly Cloudy	4426	4:45 to 5:45
Week 5						
May 7, 2007	Partly Cloudy	3898	8:00 to 9:00	Partly Cloudy	4217	5:00 to 6:00
May 8, 2007	Clear	3998	8:00 to 9:00	Clear	4488	5:00 to 6:00
May 9, 2007	Mostly Cloudy	4019	8:00 to 9:00	Partly Cloudy	4474	5:00 to 6:00
May 10, 2007	Overcast	4033	8:00 to 9:00	Scattered Clouds	4316	5:00 to 6:00
May 11, 2007	Overcast	3787	7:45 to 8:45	Mostly Cloudy	4634	4:45 to 5:45
Week 6						
May 14, 2007	Clear	3855	7:45 to 8:45	Clear	4215	5:00 to 6:00
May 15, 2007	Overcast	4026	8:00 to 9:00	Scattered Clouds	4333	5:00 to 6:00
May 16, 2007	Scattered Clouds	3910	8:00 to 9:00	Clear	4357	5:00 to 6:00
May 17, 2007	Partly Cloudy	3880	8:00 to 9:00	Clear	4382	4:45 to 5:45
May 18, 2007	Mostly Cloudy	3915	8:00 to 9:00	Mostly Cloudy	4622	5:00 to 6:00
Week 7						
October 15, 2007	Haze	4061	8:00 to 9:00	Overcast	4140	5:00 to 6:00
October 16, 2007	Scattered Clouds	4137	7:45 to 8:45	Mostly Cloudy	4354	4:45 to 5:45
October 17, 2007	Overcast	4081	8:00 to 9:00	Scattered Clouds	4274	5:00 to 6:00
October 18, 2007	Mostly Cloudy	4012	8:00 to 9:00	Scattered Clouds	4321	5:00 to 6:00
October 19, 2007	Mostly Cloudy	3863	8:00 to 9:00	Mostly Cloudy	4226	4:30 to 5:30
Week 8						
October 22, 2007	Clear	3911	7:45 to 8:45	Clear	4182	4:45 to 5:45
October 23, 2007	Clear	4030	7:45 to 8:45	Clear	4369	4:45 to 5:45
October 24, 2007	Clear	3936	8:00 to 9:00	Scattered Clouds	4259	5:00 to 6:00
October 25, 2007	Mostly Cloudy	3777	8:00 to 9:00	Scattered Clouds	4341	5:00 to 6:00
October 26, 2007	Overcast	3698	7:45 to 8:45	Mostly Cloudy	4306	4:30 to 5:30



STANFORD UNIVERSITY TRAFFIC MONITORING REPORT

**Figure 3****DRIVEWAY AND PARKING  
COUNT LOCATIONS**



Hospital trips from parking lots inside the cordon line were subtracted from the cordon counts, while campus trips from lots outside the cordon line were added to the raw counts. This was done to properly identify all trips generated by Stanford University and not by other adjacent land uses, particularly the medical complex.

### **Task 1.3 Parking Permit Scanning/Count**

At the beginning and end of both the morning and evening peak period, the number of vehicles in each of the lots identified in Figure 3 was counted. The exception is Lot 6 which is bus only parking lot. Each vehicle permit was also scanned to determine if it was related to campus or hospital uses. Both Campus and Medical related parking stickers were purple or orange in color with white lettering for campus and orange or purple lettering for hospital related vehicles. During the counts, both Medical Center and Campus vehicles were identified by a windshield sticker stating Hospital or Campus on the bottom right or left hand corner.

On-street parking on Oak Road between Stock Farm Road and Welch Road, and on Welch Road between Campus Drive West and the cordon station just north of Oak Road was counted and classified in the same manner as described above. Since these on-street parking facilities are located within the cordon line, hospital vehicles were subtracted out of the cordon count and no adjustment was made to add in campus trips. The parking lot and on-street parking occupancy data is included in Appendix B along with the parking counts.

DMJM HARRIS : AECOM formerly Kolve Engineering used the traffic counts in Task 1.1 and the parking counts in Tasks 1.2 and 1.3 to adjust the raw traffic counts. If campus parking permits were observed in lots outside the cordon area, they were added back into the cordon count. If hospital trips were observed inside the cordon area, they were subtracted from the cordon count. All vehicles without a parking permit were assumed to be campus trips.

### **Task 1.4 License Plate Survey**

The purpose of the license plate survey was to identify vehicles that are only passing through the Stanford campus, not beginning or ending their trip there. License plate numbers were recorded for vehicles entering and leaving each cordon location. Vehicles that entered the cordon and left within a period of 15 minutes were considered to be "cut-through" vehicles. Surveys were done during one day each week for both of the peak hours. The license plate matching process showed that during the spring counts the average AM and PM cut-through percentages were 12.27% and 14.88%, respectively. During the fall count, the AM cut-through percentage was 16.54%, while the PM was 17.13%. The average spring and fall percentages were used to adjust their respective vehicle counts.

## **Task 2.0 Traffic Monitoring Data Analysis**

### ***Task 2.1 Daily Cordon Count Spreadsheets***

First, the raw cordon count numbers were entered into spreadsheets. Two spreadsheets – one for the AM peak period and one for the PM peak period – were created for each weekday that a cordon count was conducted. Each spreadsheet shows the AM inbound and PM outbound vehicles passing all 16 cordon locations during five hourly increments. For the AM peak, the hours were 7:00-8:00, 7:15-8:15, 7:30-8:30, 7:45-8:45, and 8:00-9:00. For the PM peak, the hours were 4:00-5:00, 4:15-5:15, 4:30-5:30, 4:45-5:45, and 5:00-6:00. Since cordon counts were collected for eight weeks, there are a total of 80 daily cordon count spreadsheets (40 AM and 40 PM). These sheets are included in Appendix C of this report.

### ***Task 2.2 Daily Parking Spreadsheets***

The number of vehicles coming in and out of the parking lots in the vicinity of the Stanford Medical Center was also monitored during the six-week period. The AM inbound and PM outbound volumes at all lot entrances were entered into spreadsheets for the AM and PM peak periods of each day just as described for the cordon counts in Task 2.1. All 80 daily parking spreadsheets are included in Appendix D.

### ***Task 2.3 Adjustments For Parking and Cut-Through Vehicles***

The parking sticker counts performed at the lots were used to compute the percentage of campus and hospital vehicles present in each lot during the AM and PM peak hours. Since a sticker survey was done at the beginning and end of each two-hour peak period count, the two values for every lot were averaged. Sticker surveys were completed for both peak hours of one day during each week.

The parking lot AM inbound and PM outbound volumes were used along with the averaged campus and hospital vehicle percentages in order to adjust the cordon count spreadsheets. Since Lots 1 and 2 are outside of the cordon boundary, some campus-related vehicles will park in those lots and not get counted in the cordon count. To add them in, the average percentage of campus vehicles in those lots was multiplied by the AM inbound and PM outbound volumes at each corresponding lot entrance (from Task 2.2), and then added to the cordon counts.

Lots 3, 4, and 5, as well as the two parking structures (PS-1 and PS-3), are located inside the cordon boundary. Thus, hospital-related vehicles parking in these lots need to be subtracted out of the cordon counts. To do this, the average percentage of hospital-related vehicles was multiplied by the AM inbound and PM outbound volumes at each respective lot entrance (from Task 2.2), and then subtracted from the cordon counts.

A parking sticker survey was also conducted at two on-street locations during the same days as the surveys for the parking lots. The streets surveyed were Oak Road and the portion of Welch Road between Campus Drive West and the cordon location

just north of Oak Road. Since both streets are inside the cordon, only the hospital vehicles were of importance. If more hospital vehicles were present at the end of the period than at the beginning, the change in vehicles was subtracted from the inbound totals for that period. If fewer hospital vehicles were present at the end of the period, the difference was subtracted from the outbound totals.

The average observed cut-through traffic percentages during the spring monitoring period were 12.27% percent during the AM peak hour and 14.88% percent during the PM peak hour. During the fall count, the AM cut-through percentage was 16.54%, while the PM was 17.13%. The traffic counts were reduced by these percentages in order to subtract out vehicles lacking a destination within the Stanford University campus. Spreadsheets showing the detailed license plate matching data are shown in Appendix E. A summary table showing the 80 daily cordon counts adjusted for parking lot factors and cut-through traffic is shown in Table 2 along with the average AM inbound and PM outbound traffic volume. Table 3 shows the traffic data collected in the 2001 baseline Stanford Traffic Monitoring Program, including the baseline average and the 90% confidence interval.

## **INBOUND AM TRAFFIC**

Using the 2001 baseline counts, it was determined that an average of 3,439 inbound vehicles during the AM peak hour would constitute a significant increase in traffic at the 90% confidence level. The 2007 AM average of 3,058 vehicles is lower than the 2001 baseline count of 3,319 and is 141 vehicles lower than -90% confidence level. A scatter plot of the 2007 AM inbound data is shown in Figure 4. Lines representing the baseline average, baseline 90% confidence interval, and 2007 average are also shown in this figure. As shown in the figure the average 2007 volume is lower than the lower 90 percent confidence boundary established from 2001.

## **OUTBOUND PM TRAFFIC**

The 2001 baseline counts determined that an average of 3,555 outbound vehicles during the PM peak hour would constitute a significant increase in traffic at the 90% confidence level. The PM outbound adjusted average of 3,494 shows an increase of 48 vehicles over the 2001 baseline count, this increase falls below the +90% confidence interval of 3,555 by 61 vehicles. The 1% significant increase trigger was developed from 2001 baseline counts as 3,591 vehicles. The average 2007 PM outbound volume is calculated as 3,494 vehicles which falls below the 1% increase trigger by 97 vehicles. Since the established 1% increased trigger requirement is not met, no additional mitigation is required.

A scatter plot of the 2007 PM outbound data is shown in Figure 5. Lines representing the baseline average, baseline 90% confidence interval, and 2001 average are shown in this figure. As shown in Figure 5, the average 2007 data line falls below the +90% confidence level.

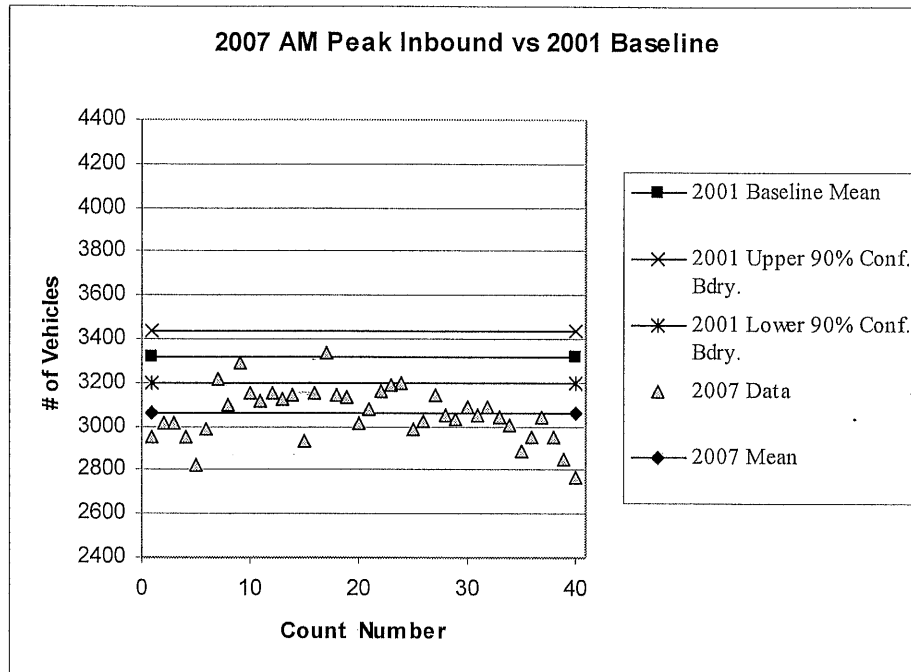
**Table 2 2007 Adjusted Traffic Totals**

Date	AM Inbound		PM Outbound	
	Volume	Period	Volume	Period
Week 1				
April 9, 2007	2950	7:45 to 8:45	3508	5:00 to 6:00
April 10, 2007	3012	7:45 to 8:45	3369	5:00 to 6:00
April 11, 2007	3019	7:45 to 8:45	3537	5:00 to 6:00
April 12, 2007	2953	7:45 to 8:45	3327	4:45 to 5:45
April 13, 2007	2824	7:45 to 8:45	3408	4:45 to 5:45
Week 2				
April 16, 2007	2988	8:00 to 9:00	3397	5:00 to 6:00
April 17, 2007	3213	7:45 to 8:45	3431	5:00 to 6:00
April 18, 2007	3097	8:00 to 9:00	3549	5:00 to 6:00
April 19, 2007	3292	8:00 to 9:00	3807	5:00 to 6:00
April 20, 2007	3150	8:00 to 9:00	3674	5:00 to 6:00
Week 3				
April 23, 2007	3112	7:45 to 8:45	3403	5:00 to 6:00
April 24, 2007	3148	8:00 to 9:00	3429	4:45 to 5:45
April 25, 2007	3126	8:00 to 9:00	3574	5:00 to 6:00
April 26, 2007	3144	7:45 to 8:45	3450	5:00 to 6:00
April 27, 2007	2928	7:45 to 8:45	3432	4:45 to 5:45
Week 4				
April 30, 2007	3153	8:00 to 9:00	3428	4:45 to 5:45
May 1, 2007	3340	7:45 to 8:45	3520	5:00 to 6:00
May 2, 2007	3142	7:45 to 8:45	3574	5:00 to 6:00
May 3, 2007	3137	7:45 to 8:45	3594	4:45 to 5:45
May 4, 2007	3013	7:45 to 8:45	3596	4:45 to 5:45
Week 5				
May 7, 2007	3075	8:00 to 9:00	3443	5:00 to 6:00
May 8, 2007	3158	8:00 to 9:00	3665	5:00 to 6:00
May 9, 2007	3190	8:00 to 9:00	3654	5:00 to 6:00
May 10, 2007	3195	8:00 to 9:00	3524	5:00 to 6:00
May 11, 2007	2989	7:45 to 8:45	3805	4:45 to 5:45
Week 6				
May 14, 2007	3028	7:45 to 8:45	3445	5:00 to 6:00
May 15, 2007	3145	8:00 to 9:00	3545	5:00 to 6:00
May 16, 2007	3050	8:00 to 9:00	3555	5:00 to 6:00
May 17, 2007	3030	8:00 to 9:00	3577	4:45 to 5:45
May 18, 2007	3086	8:00 to 9:00	3813	5:00 to 6:00
Week 7				
October 15, 2007	3052	8:00 to 9:00	3245	5:00 to 6:00
October 16, 2007	3091	7:45 to 8:45	3437	4:45 to 5:45
October 17, 2007	3044	8:00 to 9:00	3373	5:00 to 6:00
October 18, 2007	3010	8:00 to 9:00	3407	5:00 to 6:00
October 19, 2007	2885	8:00 to 9:00	3316	4:30 to 5:30
Week 8				
October 22, 2007	2954	7:45 to 8:45	3282	4:45 to 5:45
October 23, 2007	3039	7:45 to 8:45	3447	4:45 to 5:45
October 24, 2007	2952	8:00 to 9:00	3372	5:00 to 6:00
October 25, 2007	2851	8:00 to 9:00	3435	5:00 to 6:00
October 26, 2007	2770	7:45 to 8:45	3393	4:30 to 5:30
Average	3,058		3,494	

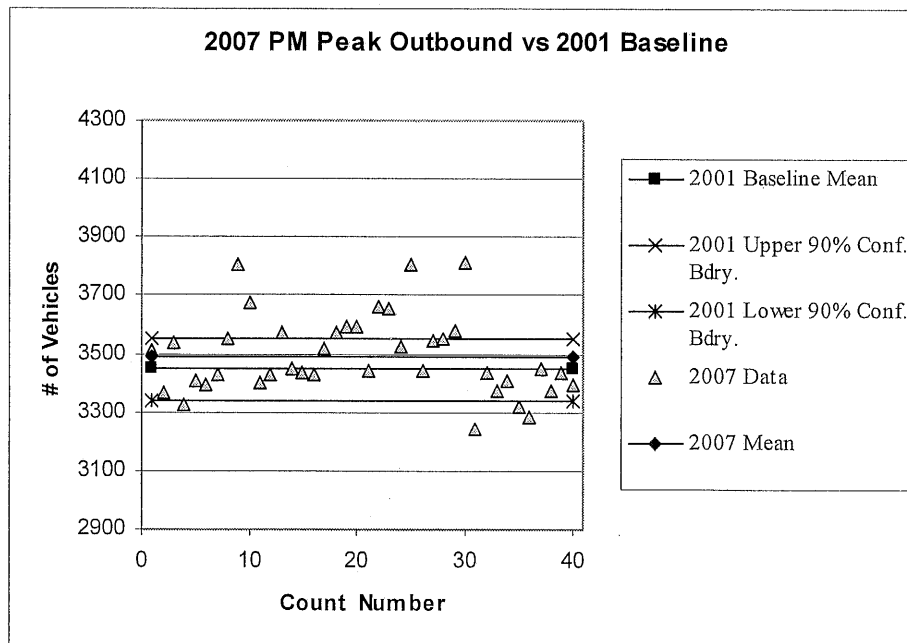
**Table 3 2001 Baseline Adjusted Traffic Totals**

Date	AM INBOUND		PM OUTBOUND	
	Volume	Period	Volume	Period
Week 1				
April 2, 2001	3036	7:45 to 8:45	3323	5:00 to 6:00
April 3, 2001	3059	7:45 to 8:45	3285	4:45 to 5:45
April 4, 2001	2884	8:00 to 9:00	3334	4:45 to 5:45
April 5, 2001	3000	7:45 to 8:45	3216	5:00 to 6:00
April 6, 2001	2610	8:00 to 9:00	3092	4:45 to 5:45
Week 2				
April 9, 2001	3265	8:00 to 9:00	3329	5:00 to 6:00
April 10, 2001	3141	8:00 to 9:00	3362	5:00 to 6:00
April 11, 2001	3107	8:00 to 9:00	3473	4:45 to 5:45
April 12, 2001	3081	8:00 to 9:00	3397	5:00 to 6:00
April 13, 2001	2973	8:00 to 9:00	3413	4:45 to 5:45
Week 3				
April 23, 2001	3285	7:45 to 8:45	3311	4:30 to 5:30
April 24, 2001	3322	7:45 to 8:45	3281	5:00 to 6:00
April 25, 2001	3186	7:30 to 8:30	3326	4:45 to 5:45
April 26, 2001	3129	7:45 to 8:45	3286	5:00 to 6:00
April 27, 2001	2723	8:00 to 9:00	3154	4:45 to 5:45
Week 4				
April 30, 2001	2502	7:30 to 8:30	2681	4:15 to 5:15
May 1, 2001	2826	7:45 to 8:45	2967	5:00 to 6:00
May 2, 2001	2742	7:45 to 8:45	2912	5:00 to 6:00
May 3, 2001	2632	8:00 to 9:00	2861	5:00 to 6:00
May 4, 2001	2595	8:00 to 9:00	2744	4:45 to 5:45
Week 5				
May 7 2001	3604	8:00 to 9:00	3410	4:45 to 5:45
May 8, 2001	3559	8:00 to 9:00	3422	5:00 to 6:00
May 9, 2001	3455	8:00 to 9:00	3326	5:00 to 6:00
May 10, 2001	3478	8:00 to 9:00	3396	4:45 to 5:45
May 11, 2001	3393	8:00 to 9:00	3090	5:00 to 6:00
Week 6				
May 14 2001	3479	8:00 to 9:00	3235	4:45 to 5:45
May 15, 2001	3756	8:00 to 9:00	3450	5:00 to 6:00
May 16, 2001	3830	8:00 to 9:00	3374	5:00 to 6:00
May 17, 2001	3533	8:00 to 9:00	3456	5:00 to 6:00
May 18, 2001	3246	8:00 to 9:00	3386	4:45 to 5:45
Week 7				
October 22, 2001	3221	8:00 to 9:00	3505	5:00 to 6:00
October 23, 2001	3835	8:00 to 9:00	3805	5:00 to 6:00
October 24, 2001	3550	8:00 to 9:00	3959	5:00 to 6:00
October 25, 2001	3908	7:45 to 8:45	3991	5:00 to 6:00
October 26, 2001	3371	8:00 to 9:00	4072	4:45 to 5:45
Week 8				
October 29, 2001	4241	8:00 to 9:00	4115	5:00 to 6:00
October 30, 2001	4251	8:00 to 9:00	4217	5:00 to 6:00
October 31, 2001	4139	8:00 to 9:00	4394	5:00 to 6:00
November 1, 2001	4037	8:00 to 9:00	4193	5:00 to 6:00
November 2, 2001	3789	7:45 to 8:45	4277	5:00 to 6:00
Average	3,319		3,446	
90% confidence interval	+/- 120		+/- 109	

**Figure 4 2007 AM Peak Inbound vs. 2001 Baseline**



**Figure 5 2007 PM Peak Outbound vs. 2001 Baseline**



## CONCLUSION

The AM inbound adjusted average shows a decrease of 261 vehicles from the 2001 baseline count to the 2007 average count. Since the AM inbound volumes are lower in 2007 compared to the 2001 baseline no mitigation measures are required.

The PM outbound count totaled 3,494 vehicles which was an increase of 48 vehicles above the baseline and is 61 vehicles lower than the +90% confidence interval and 97 vehicles lower than the 1% established trigger. Therefore, this increase is not significant. Mitigation measures are required if the trigger is exceeded in two out of three consecutive years for the same peak hour.

Table 4 summarizes the comparison between the baseline 2001 counts and the 2007 monitoring counts.

**Table 4: 2007 Monitoring Comparison to Baseline**

Inbound AM:

Adjusted average 2007 count	3,058
Baseline-established 90% confidence interval (2001)	+/- 120
Baseline-established significant traffic increase (2001)	3,439
Baseline-established 1% increase trigger (2001)	3,474
Result (falls below the 90% confidence interval by 381 vehicles)	-381
Result (falls below the 1% increase trigger by 416 vehicles)	-416

Outbound PM:

Adjusted average 2007 count	3,494
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (falls below the 90% confidence interval by 61 vehicles)	-61
Result (falls below the 1% trigger by 97 vehicles)	-97

## SUMMARY AND COMPARISON OF PREVIOUS REPORTS

### INTRODUCTION

The purpose of the Stanford University Traffic Monitoring Program is to compare traffic volumes entering and exiting the Stanford Campus during the inbound AM peak and the outbound PM commute peak to a traffic baseline. This comparison is completed on an annual basis. The requirements for establishment of the traffic baseline and performing annual comparisons to the baseline are contained within the December 2000 Stanford Community Plan/General Use Permit (GUP)/Environmental Impact Report (EIR) and within the 2000 Stanford General Use Permit. Stanford is required to attain a "no net new commute trip" standard as defined in the GUP and EIR.

Condition of Approval G.7 outlines the process for establishing the baseline counts and for continuing monitoring in subsequent years. The process can be summarized as follows:

- Peak hour traffic is counted at least three times per year for a two-week period each time. The three counts shall be averaged to determine the annual traffic level.
- All counts are recorded at the 16 campus entry and exit points forming a cordon around the campus.
- License plate numbers are recorded for each entering and exiting vehicle to determine the amount of non-campus traffic.
- Cordon volumes are adjusted for parking lots within the cordon used by the hospital (these volumes are subtracted from the cordon line counts) and parking lots outside the cordon used by the university (these volumes are added to the cordon line counts).
- A peak hour is then established for the campus based on the counts, adjusted for cut through and parking lot location.

Condition of Approval G.6 defines the peak commute directions as entering the campus in the morning peak commute period and leaving the campus in the evening commute period. The peak commute period is defined as the one-hour period of time between 7 AM and 9 AM and again between 4 PM and 6 PM with the highest volume of traffic, as defined by the counts. Therefore, the two peak hours are considered to be independent events. An increase in traffic during the AM peak hour is independent from an increase in traffic during the PM peak hour. An increase in traffic for two out of three years in one peak hour would trigger the additional element of the monitoring program, even if there is no change or even a decrease in traffic in the other peak hour. Also, a significant increase during one year in the AM and a sufficient increase in the PM for the following year would not trigger additional mitigation.

The following is a summary of the Baseline report prepared in 2001 and the subsequent six years of monitoring from 2002 through 2007.



## Traffic Baseline Report

The Traffic Baseline Report represents the first year of traffic monitoring. This report established the baseline conditions to which subsequent years are compared.

<b>Data Collection:</b>	Week of April 2, 2001 through week of May 14 2001 and week of October 22, 2001 through week of October 29, 2001.																
<b>Final Report Issued:</b>	July 2002 and updated on October 2003.																
<b>Findings:</b>	<p>The following were the results of the 2001 Baseline Monitoring:</p> <p><u>Inbound AM:</u></p> <table><tr><td>Average Count</td><td>3,319</td></tr><tr><td>90% Confidence Interval</td><td>+/- 120</td></tr><tr><td>Significant Traffic Increase</td><td>3,439</td></tr><tr><td>1% Increase Trigger</td><td>3,474</td></tr></table> <p><u>Outbound PM:</u></p> <table><tr><td>Average</td><td>3,446</td></tr><tr><td>90% Confidence Interval</td><td>+/- 109</td></tr><tr><td>Significant Traffic Increase</td><td>3,555</td></tr><tr><td>1% Trigger</td><td>3,591</td></tr></table>	Average Count	3,319	90% Confidence Interval	+/- 120	Significant Traffic Increase	3,439	1% Increase Trigger	3,474	Average	3,446	90% Confidence Interval	+/- 109	Significant Traffic Increase	3,555	1% Trigger	3,591
Average Count	3,319																
90% Confidence Interval	+/- 120																
Significant Traffic Increase	3,439																
1% Increase Trigger	3,474																
Average	3,446																
90% Confidence Interval	+/- 109																
Significant Traffic Increase	3,555																
1% Trigger	3,591																
<b>Conclusion</b>	The Traffic Baseline Report established the baseline thresholds, no conclusions are drawn from this report.																

## Traffic Report #1

Traffic Report #1 was the first year of monitoring compared back to the Traffic Baseline Report.

<b>Data Collection:</b>	Week of April 15, 2002 through week of May 20 2002 and week of October 14, 2002 through week of October 21, 2002.																				
<b>Final Report Issued:</b>	July 2003																				
<b>Final Report Revised:</b>	October 2003																				
<b>Findings:</b>	<p>The following were the results of the Report #1, 2002 Traffic Monitoring:</p> <p><u>Inbound AM:</u></p> <table> <tr> <td>Adjusted Average 2002 Count</td><td>3,275</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 120</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,439</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,474</td></tr> <tr> <td>Result (Falls below the 1% Trigger by 199)</td><td>-199</td></tr> </table> <p><u>Outbound PM:</u></p> <table> <tr> <td>Adjusted Average 2002 Count</td><td>3,586</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 109</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,555</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,591</td></tr> <tr> <td>Result (Falls below the 1% Trigger by 5 vehicles)</td><td>-5</td></tr> </table>	Adjusted Average 2002 Count	3,275	Baseline-established 90% Confidence Interval (2001)	+/- 120	Baseline-established Significant Traffic Increase (2001)	3,439	Baseline-established 1% Increase Trigger (2001)	3,474	Result (Falls below the 1% Trigger by 199)	-199	Adjusted Average 2002 Count	3,586	Baseline-established 90% Confidence Interval (2001)	+/- 109	Baseline-established Significant Traffic Increase (2001)	3,555	Baseline-established 1% Increase Trigger (2001)	3,591	Result (Falls below the 1% Trigger by 5 vehicles)	-5
Adjusted Average 2002 Count	3,275																				
Baseline-established 90% Confidence Interval (2001)	+/- 120																				
Baseline-established Significant Traffic Increase (2001)	3,439																				
Baseline-established 1% Increase Trigger (2001)	3,474																				
Result (Falls below the 1% Trigger by 199)	-199																				
Adjusted Average 2002 Count	3,586																				
Baseline-established 90% Confidence Interval (2001)	+/- 109																				
Baseline-established Significant Traffic Increase (2001)	3,555																				
Baseline-established 1% Increase Trigger (2001)	3,591																				
Result (Falls below the 1% Trigger by 5 vehicles)	-5																				
<b>Conclusion</b>	<p>The AM inbound adjusted average shows a decrease of 44 vehicles from the baseline, this decrease falls within the 90% confidence interval of +/- 120. The established 1% increase trigger requirement is not met and no additional mitigation is required.</p> <p>The PM inbound adjusted average shows an increase of 140 vehicles from the baseline count, this increase falls above the +90% confidence interval by 31 vehicles. This increase falls below the 1% increase trigger by 5 vehicles. Since the established 1% increased trigger requirement is not met, no additional mitigation is required. The 2002 volumes compared to 2001 baseline volumes do not constitute a statistical significant increase in either the AM or the PM peak hours and no mitigation measure is required.</p>																				

## Traffic Report #2

Traffic Report #2 was the second year of monitoring compared back to the Traffic Baseline Report.

<b>Data Collection:</b>	Week of April 7, 2003 and week of April 21, 2003 through week of May 19, 2003, week of September 29, 2003 and week of October 20, 2003.																								
<b>Final Report Issued:</b>	January 2004																								
<b>Final Report Revised:</b>	October 2004																								
<b>Findings:</b>	<p>The following were the results of the Report #2, 2003 Traffic Monitoring:</p> <p><u>Inbound AM:</u></p> <table> <tr> <td>Adjusted Average 2003 Count</td><td>3,413</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 120</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,439</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,474</td></tr> <tr> <td>Result (Falls below the 90% Confidence Interval by 26)</td><td>-26</td></tr> <tr> <td>Result (Falls below the 1% Trigger by 61 vehicles)</td><td>-61</td></tr> </table> <p><u>Outbound PM:</u></p> <table> <tr> <td>Adjusted Average 2003 Count</td><td>3,476</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 109</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,555</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,591</td></tr> <tr> <td>Result (Falls below the 90% Confidence Interval by 79 vehicles)</td><td>-79</td></tr> <tr> <td>Result (Falls below the 1% Trigger by 115 vehicles)</td><td>-115</td></tr> </table>	Adjusted Average 2003 Count	3,413	Baseline-established 90% Confidence Interval (2001)	+/- 120	Baseline-established Significant Traffic Increase (2001)	3,439	Baseline-established 1% Increase Trigger (2001)	3,474	Result (Falls below the 90% Confidence Interval by 26)	-26	Result (Falls below the 1% Trigger by 61 vehicles)	-61	Adjusted Average 2003 Count	3,476	Baseline-established 90% Confidence Interval (2001)	+/- 109	Baseline-established Significant Traffic Increase (2001)	3,555	Baseline-established 1% Increase Trigger (2001)	3,591	Result (Falls below the 90% Confidence Interval by 79 vehicles)	-79	Result (Falls below the 1% Trigger by 115 vehicles)	-115
Adjusted Average 2003 Count	3,413																								
Baseline-established 90% Confidence Interval (2001)	+/- 120																								
Baseline-established Significant Traffic Increase (2001)	3,439																								
Baseline-established 1% Increase Trigger (2001)	3,474																								
Result (Falls below the 90% Confidence Interval by 26)	-26																								
Result (Falls below the 1% Trigger by 61 vehicles)	-61																								
Adjusted Average 2003 Count	3,476																								
Baseline-established 90% Confidence Interval (2001)	+/- 109																								
Baseline-established Significant Traffic Increase (2001)	3,555																								
Baseline-established 1% Increase Trigger (2001)	3,591																								
Result (Falls below the 90% Confidence Interval by 79 vehicles)	-79																								
Result (Falls below the 1% Trigger by 115 vehicles)	-115																								
<b>Conclusion</b>	<p>Although the AM inbound adjusted average shows an increase of 94 vehicles from the Baseline count, this increase falls within the 90% confidence interval of <math>\pm 120</math>. Therefore, this 94-vehicle increase does not represent a significant increase in traffic during the AM peak hour and no additional mitigation is required.</p> <p>The PM peak outbound adjusted average increased by 30 vehicles from the Baseline PM counts. This increase is also not significant because it falls within the 90% confidence boundary of <math>\pm 109</math>, no additional mitigation is required. The 2003 volumes compared to 2001 baseline volumes do not constitute a statistical significant increase in either the AM or the PM peak hours.</p>																								

## Traffic Report #3

Traffic Report #3 was the third year of monitoring compared back to the Traffic Baseline Report.

<b>Data Collection:</b>	Week of April 12, 2004 through week of May 17, 2004 and week of September 27, 2004 through week of October 4, 2004.																												
<b>Final Report Issued:</b>	March 2005																												
<b>Findings:</b>	<p>The following were the results of the Report #3, 2004 Traffic Monitoring:</p> <p><u>Inbound AM:</u></p> <table> <tr> <td>Adjusted Average 2004 Count</td><td>3,176</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 120</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,439</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,474</td></tr> <tr> <td>Result (Falls below the 90% Confidence Interval by 263)</td><td>-263</td></tr> <tr> <td>Result (Falls below the 1% Trigger by 298 vehicles)</td><td>-298</td></tr> </table> <p><u>Outbound PM:</u></p> <table> <tr> <td>Adjusted Average 2004 Count</td><td>3,642</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 109</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,555</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,591</td></tr> <tr> <td>Result (Falls above the 90% Confidence Interval by 87 vehicles)</td><td>+87</td></tr> <tr> <td>Result (Falls above the 1% Trigger by 51 vehicles)</td><td>+51</td></tr> <tr> <td>2004 Trip Credit</td><td>-66</td></tr> <tr> <td>Result with Trip Credit (Falls below the 1% Trigger by 15 vehicles)</td><td>-15</td></tr> </table>	Adjusted Average 2004 Count	3,176	Baseline-established 90% Confidence Interval (2001)	+/- 120	Baseline-established Significant Traffic Increase (2001)	3,439	Baseline-established 1% Increase Trigger (2001)	3,474	Result (Falls below the 90% Confidence Interval by 263)	-263	Result (Falls below the 1% Trigger by 298 vehicles)	-298	Adjusted Average 2004 Count	3,642	Baseline-established 90% Confidence Interval (2001)	+/- 109	Baseline-established Significant Traffic Increase (2001)	3,555	Baseline-established 1% Increase Trigger (2001)	3,591	Result (Falls above the 90% Confidence Interval by 87 vehicles)	+87	Result (Falls above the 1% Trigger by 51 vehicles)	+51	2004 Trip Credit	-66	Result with Trip Credit (Falls below the 1% Trigger by 15 vehicles)	-15
Adjusted Average 2004 Count	3,176																												
Baseline-established 90% Confidence Interval (2001)	+/- 120																												
Baseline-established Significant Traffic Increase (2001)	3,439																												
Baseline-established 1% Increase Trigger (2001)	3,474																												
Result (Falls below the 90% Confidence Interval by 263)	-263																												
Result (Falls below the 1% Trigger by 298 vehicles)	-298																												
Adjusted Average 2004 Count	3,642																												
Baseline-established 90% Confidence Interval (2001)	+/- 109																												
Baseline-established Significant Traffic Increase (2001)	3,555																												
Baseline-established 1% Increase Trigger (2001)	3,591																												
Result (Falls above the 90% Confidence Interval by 87 vehicles)	+87																												
Result (Falls above the 1% Trigger by 51 vehicles)	+51																												
2004 Trip Credit	-66																												
Result with Trip Credit (Falls below the 1% Trigger by 15 vehicles)	-15																												
<b>Conclusion:</b>	<p>The AM inbound adjusted average shows a decrease of 143 vehicles from the Baseline, this decrease falls below the +90% confidence interval by 263. The established 1% increase trigger requirement is not met, no additional mitigation is required.</p> <p>The PM peak outbound adjusted average increased by 196 vehicles from the Baseline counts. This increase is above the +90% confidence interval by 87 vehicles. This increase is significant because it falls above the 1% increase trigger by 51 vehicles. However, after applying 66 trip credits the PM peak outbound traffic was within the 1% trigger, therefore, no additional mitigation is required.</p>																												

## Traffic Report #4

Traffic Report #4 was the fourth year of monitoring compared back to the Traffic Baseline Report.

<b>Data Collection:</b>	Week of April 4, 2005 through week of May 9, 2005 and week of September 26 through week of October 3, 2005.																												
<b>Final Report Issued:</b>	May 2006																												
<b>Findings:</b>	<p>The following were the results of the Report #4, 2005 Traffic Monitoring:</p> <p><u>Inbound AM:</u></p> <table> <tr> <td>Adjusted Average 2005 Count</td><td>3,383</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 120</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,439</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,474</td></tr> <tr> <td>Result (Falls below the 90% Confidence Interval by 56)</td><td>-56</td></tr> <tr> <td>Result (Falls below the 1% Trigger by 91 vehicles)</td><td>-91</td></tr> </table> <p><u>Outbound PM:</u></p> <table> <tr> <td>Adjusted Average 2005 Count (Including 2 modifications)</td><td>3,735</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 109</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,555</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,591</td></tr> <tr> <td>Result (falls above the 90% confidence Interval by 180 vehicles)</td><td>+180</td></tr> <tr> <td>Result (falls above the 1% trigger by 144 vehicles)</td><td>+144</td></tr> <tr> <td>2005 trip credit</td><td>-174</td></tr> <tr> <td>Result with trip credit (falls below the 1 %trigger by 30 vehicles)</td><td>-30</td></tr> </table>	Adjusted Average 2005 Count	3,383	Baseline-established 90% Confidence Interval (2001)	+/- 120	Baseline-established Significant Traffic Increase (2001)	3,439	Baseline-established 1% Increase Trigger (2001)	3,474	Result (Falls below the 90% Confidence Interval by 56)	-56	Result (Falls below the 1% Trigger by 91 vehicles)	-91	Adjusted Average 2005 Count (Including 2 modifications)	3,735	Baseline-established 90% Confidence Interval (2001)	+/- 109	Baseline-established Significant Traffic Increase (2001)	3,555	Baseline-established 1% Increase Trigger (2001)	3,591	Result (falls above the 90% confidence Interval by 180 vehicles)	+180	Result (falls above the 1% trigger by 144 vehicles)	+144	2005 trip credit	-174	Result with trip credit (falls below the 1 %trigger by 30 vehicles)	-30
Adjusted Average 2005 Count	3,383																												
Baseline-established 90% Confidence Interval (2001)	+/- 120																												
Baseline-established Significant Traffic Increase (2001)	3,439																												
Baseline-established 1% Increase Trigger (2001)	3,474																												
Result (Falls below the 90% Confidence Interval by 56)	-56																												
Result (Falls below the 1% Trigger by 91 vehicles)	-91																												
Adjusted Average 2005 Count (Including 2 modifications)	3,735																												
Baseline-established 90% Confidence Interval (2001)	+/- 109																												
Baseline-established Significant Traffic Increase (2001)	3,555																												
Baseline-established 1% Increase Trigger (2001)	3,591																												
Result (falls above the 90% confidence Interval by 180 vehicles)	+180																												
Result (falls above the 1% trigger by 144 vehicles)	+144																												
2005 trip credit	-174																												
Result with trip credit (falls below the 1 %trigger by 30 vehicles)	-30																												
<b>Conclusion:</b>	<p>The AM inbound adjusted average shows an increase of 64 vehicles from the Baseline, this increase falls below the + 90% confidence interval by 56. The established 1% increase trigger requirement is not met, no additional mitigation is required.</p> <p>The PM peak outbound adjusted average increased by 289 vehicles from the Baseline counts. This increase is above the +90% confidence interval by 180 vehicles. This increase is significant because it falls above the 1% increase trigger by 144 vehicles. However, after applying 174 trip credits the PM peak hour outbound traffic was within the 1% trigger, therefore, no additional mitigation is required.</p>																												

## Traffic Report #5

Traffic Report #5 was the fifth year of monitoring compared back to the Traffic Baseline Report.

<b>Data Collection:</b>	Week of April 17, 2006 through week May 22, 2006 and week of October 16 and October 23, 2006.																								
<b>Final Report Issued:</b>	November 2006																								
<b>Findings:</b>	<p>The following were the results of the Report #5, 2006 Traffic Monitoring:</p> <p><u>Inbound AM:</u></p> <table> <tr> <td>Adjusted Average 2006 Count</td><td>3,048</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 120</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,439</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,474</td></tr> <tr> <td>Result (Falls below the 90% Confidence Interval by 391)</td><td>-391</td></tr> <tr> <td>Result (Falls below the 1% Trigger by 426 vehicles)</td><td>-426</td></tr> </table> <p><u>Outbound PM:</u></p> <table> <tr> <td>Adjusted Average 2006 Count</td><td>3,427</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 109</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,555</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,591</td></tr> <tr> <td>Result (falls below the 90% confidence Interval by 128 vehicles)</td><td>-128</td></tr> <tr> <td>Result (falls below the 1% trigger by 164 vehicles)</td><td>-164</td></tr> </table>	Adjusted Average 2006 Count	3,048	Baseline-established 90% Confidence Interval (2001)	+/- 120	Baseline-established Significant Traffic Increase (2001)	3,439	Baseline-established 1% Increase Trigger (2001)	3,474	Result (Falls below the 90% Confidence Interval by 391)	-391	Result (Falls below the 1% Trigger by 426 vehicles)	-426	Adjusted Average 2006 Count	3,427	Baseline-established 90% Confidence Interval (2001)	+/- 109	Baseline-established Significant Traffic Increase (2001)	3,555	Baseline-established 1% Increase Trigger (2001)	3,591	Result (falls below the 90% confidence Interval by 128 vehicles)	-128	Result (falls below the 1% trigger by 164 vehicles)	-164
Adjusted Average 2006 Count	3,048																								
Baseline-established 90% Confidence Interval (2001)	+/- 120																								
Baseline-established Significant Traffic Increase (2001)	3,439																								
Baseline-established 1% Increase Trigger (2001)	3,474																								
Result (Falls below the 90% Confidence Interval by 391)	-391																								
Result (Falls below the 1% Trigger by 426 vehicles)	-426																								
Adjusted Average 2006 Count	3,427																								
Baseline-established 90% Confidence Interval (2001)	+/- 109																								
Baseline-established Significant Traffic Increase (2001)	3,555																								
Baseline-established 1% Increase Trigger (2001)	3,591																								
Result (falls below the 90% confidence Interval by 128 vehicles)	-128																								
Result (falls below the 1% trigger by 164 vehicles)	-164																								
<b>Conclusion:</b>	<p>The AM inbound adjusted average shows a decrease of 271 vehicles from the Baseline, this decrease falls below the + 90% confidence interval by 391 vehicles. The established 1% increase trigger requirement is not met, no additional mitigation is required.</p> <p>The PM peak outbound adjusted average decreased by 19 vehicles from the Baseline counts. This decrease is below the +90% confidence interval by 128 vehicles. The established 1% increase trigger requirement is not met, no additional mitigation is required.</p>																								

## Traffic Report #6

Traffic Report #6 was the sixth year of monitoring compared back to the Traffic Baseline Report.

<b>Data Collection:</b>	Week of April 9, 2007 through week of May 14, 2007 and week of October 15 and week of October 22, 2007.																								
<b>Final Report Issued:</b>	November 2007																								
<b>Findings:</b>	<p>The following were the results of the Report #6, 2007 Traffic Monitoring:</p> <p><u>Inbound AM:</u></p> <table> <tr> <td>Adjusted Average 2007 Count</td><td>3,058</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 120</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,439</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,474</td></tr> <tr> <td>Result (Falls below the 90% Confidence Interval by 381)</td><td>-381</td></tr> <tr> <td>Result (Falls below the 1% Trigger by 416 vehicles)</td><td>-416</td></tr> </table> <p><u>Outbound PM:</u></p> <table> <tr> <td>Adjusted Average 2007 Count</td><td>3,494</td></tr> <tr> <td>Baseline-established 90% Confidence Interval (2001)</td><td>+/- 109</td></tr> <tr> <td>Baseline-established Significant Traffic Increase (2001)</td><td>3,555</td></tr> <tr> <td>Baseline-established 1% Increase Trigger (2001)</td><td>3,591</td></tr> <tr> <td>Result (falls below the 90% confidence Interval by 61 vehicles)</td><td>-61</td></tr> <tr> <td>Result (falls below the 1% trigger by 97 vehicles)</td><td>-97</td></tr> </table>	Adjusted Average 2007 Count	3,058	Baseline-established 90% Confidence Interval (2001)	+/- 120	Baseline-established Significant Traffic Increase (2001)	3,439	Baseline-established 1% Increase Trigger (2001)	3,474	Result (Falls below the 90% Confidence Interval by 381)	-381	Result (Falls below the 1% Trigger by 416 vehicles)	-416	Adjusted Average 2007 Count	3,494	Baseline-established 90% Confidence Interval (2001)	+/- 109	Baseline-established Significant Traffic Increase (2001)	3,555	Baseline-established 1% Increase Trigger (2001)	3,591	Result (falls below the 90% confidence Interval by 61 vehicles)	-61	Result (falls below the 1% trigger by 97 vehicles)	-97
Adjusted Average 2007 Count	3,058																								
Baseline-established 90% Confidence Interval (2001)	+/- 120																								
Baseline-established Significant Traffic Increase (2001)	3,439																								
Baseline-established 1% Increase Trigger (2001)	3,474																								
Result (Falls below the 90% Confidence Interval by 381)	-381																								
Result (Falls below the 1% Trigger by 416 vehicles)	-416																								
Adjusted Average 2007 Count	3,494																								
Baseline-established 90% Confidence Interval (2001)	+/- 109																								
Baseline-established Significant Traffic Increase (2001)	3,555																								
Baseline-established 1% Increase Trigger (2001)	3,591																								
Result (falls below the 90% confidence Interval by 61 vehicles)	-61																								
Result (falls below the 1% trigger by 97 vehicles)	-97																								
<b>Conclusion:</b>	<p>The AM inbound adjusted average shows a decrease of 261 vehicles from the Baseline, this decrease falls below the -90% confidence interval by 141 vehicles. The established 1% increase trigger requirement is not met, no additional mitigation is required.</p> <p>The PM peak outbound adjusted average increased by 48 vehicles from the Baseline counts. This increase is below the +90% confidence interval by 61 vehicles. The established 1% increase trigger requirement is not met, no additional mitigation is required.</p>																								