

FINAL REPORT

STANFORD UNIVERSITY
TRAFFIC MONITORING REPORT
2015

Prepared for:

**Santa Clara County
Department of Planning and Development**



**December 2015
Approved by the Planning Commission June 23, 2016**

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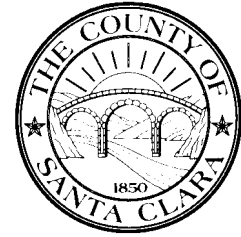
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FOREWORD FROM THE COUNTY OF SANTA CLARA PLANNING OFFICE

Background

The purpose of this report is to compare traffic volumes entering and exiting the Stanford campus during the inbound AM commute peak hour and the outbound PM commute peak hour to a traffic baseline. This comparison is performed 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 trips” standard as defined in the GUP and EIR.

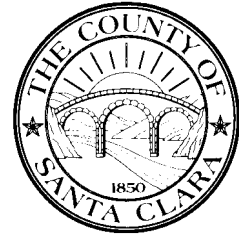
The Process

Following the adoption of the GUP by the County Board of Supervisors in December 2000, the County Planning Office selected AECOM 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 saving time in Spring 2001. The data collection involved three two-week periods in the Spring and one two-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 cordon line counts, adjusted for cut-through traffic and parking.

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. For example, an increase in AM peak traffic beyond the 1% trigger 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 (beyond the 1% trigger) in the PM for the following year would



not trigger additional mitigation. Detailed information on the count results for each year 2001 to the present is displayed in the Summary and Comparison of Previous Reports section of this report.

Activities Related to Traffic Baseline and Annual Monitoring Counts to Date

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Contact Information

For further information, regarding this document or other Stanford University Community Plan and General Uses Permit policy issues, contact the County Planning Office by phone or visit our web site.

PHONE: (408) 299-5770 **WEB SITE:** www.sccplanning.org

INTRODUCTION

This report presents traffic and parking data that have been collected at Stanford University by AECOM during the monitoring period of 2015. Traffic volumes were collected for six weeks during the Spring 2015 and two weeks during the Fall 2015. The Spring counts were conducted for the weeks of April 13, April 20, April 27, May 4, May 11, and May 18. The Fall counts were conducted during the weeks of September 21 and September 28. 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 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 2015 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

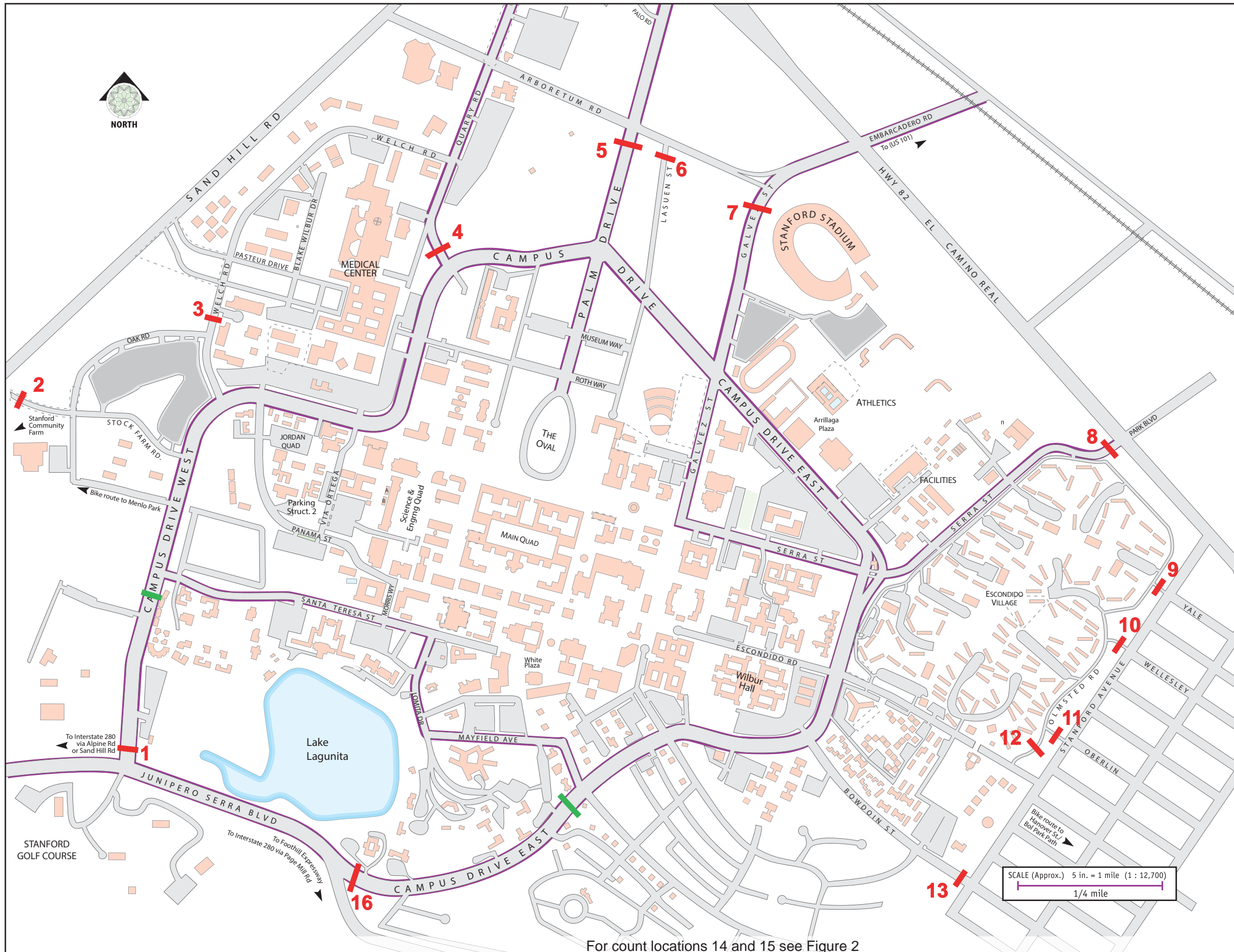
Data collection is a critical component of the traffic monitoring program. The following work elements were conducted to collect all relevant traffic data for the monitoring program.

Task 1.1 Machine Cordon Line Traffic Counts

Directional traffic counts were collected at Stanford University for eight weeks in 2015 on each of the 16 roadways that provide access to and from the campus. The locations of the 16 cordon counts are listed below and shown graphically in Figure 1 and Figure 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. Lasuen 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

* Lasuen Street was converted into one-way northbound roadway from Campus Drive to Arboretum Road on May 5, 2012. This change would shift inbound traffic from Lasuen Street to other roadways.



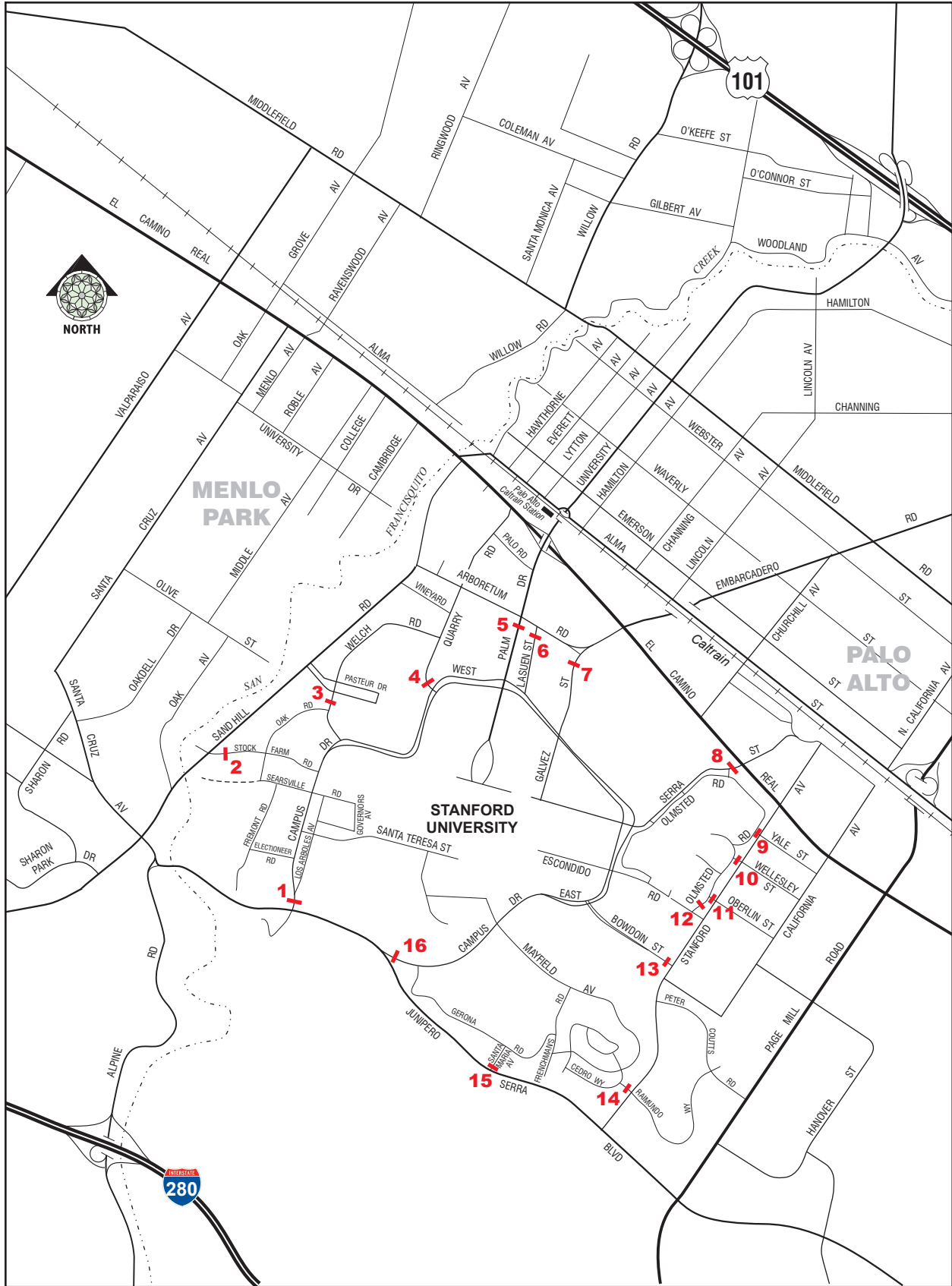
- ### Cordon Count Locations
1. Campus Drive West north of Junipero Serra Blvd.
 2. Stock Farm Road east of Sand Hill Road
 3. Welch Road north of Oak Road
 4. Quarry Road north of Campus Drive
 5. Palm Drive south of Arboretum Road
 6. Lasuen Street south of Arboretum Road
 7. Galvez Street south of 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 west of Stanford Avenue
 14. Raimundo west of Stanford Avenue
 15. Santa Maria Avenue north of Junipero Serra Blvd.
 16. Campus Drive East east of Junipero Serra Blvd.

NOTES

- █ License plate survey for Location 1 and Location 16 shifted for more accurate recording. Cordon tube counts continued at campus boundary.
- Escondido Drive no longer continuous street from Campus Drive East to Stanford Avenue.
- Lasuen Street has been converted into one-way northbound roadway from Campus Drive to Arboretum Road.

SCALE (Approx.) 5 in. = 1 mile (1 : 12,700)
 1/4 mile

For count locations 14 and 15 see Figure 2



06/15/12

STANFORD UNIVERSITY TRAFFIC MONITORING REPORT

Figure 2
DAILY MACHINE CORDON COUNT LOCATIONS

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 the 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 3,604 on Friday, May 22 to a high of 4,102 on Thursday, April 23. The PM peak hour traffic volumes ranged from a low of 3,671 on Friday, May 22 to a high of 4,377 on Friday, May 8.

Task 1.2 Parking Lot Driveway Counts

There are two parking lots (L1 – Rectangle Lot and L2 – Quarry Lot) and one parking structure (S-9) outside the cordon line that serve some campus uses. Parking Structure S-9, also known as Hoover Pavilion Garage, is adjacent to parking lot L1. There are also two parking lots (L3 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 4 (L4) no longer exists. Traffic was counted by direction into and out of these parking lots during the entire count period. Appendix B includes the detailed count sheets for the driveway traffic at these lots.

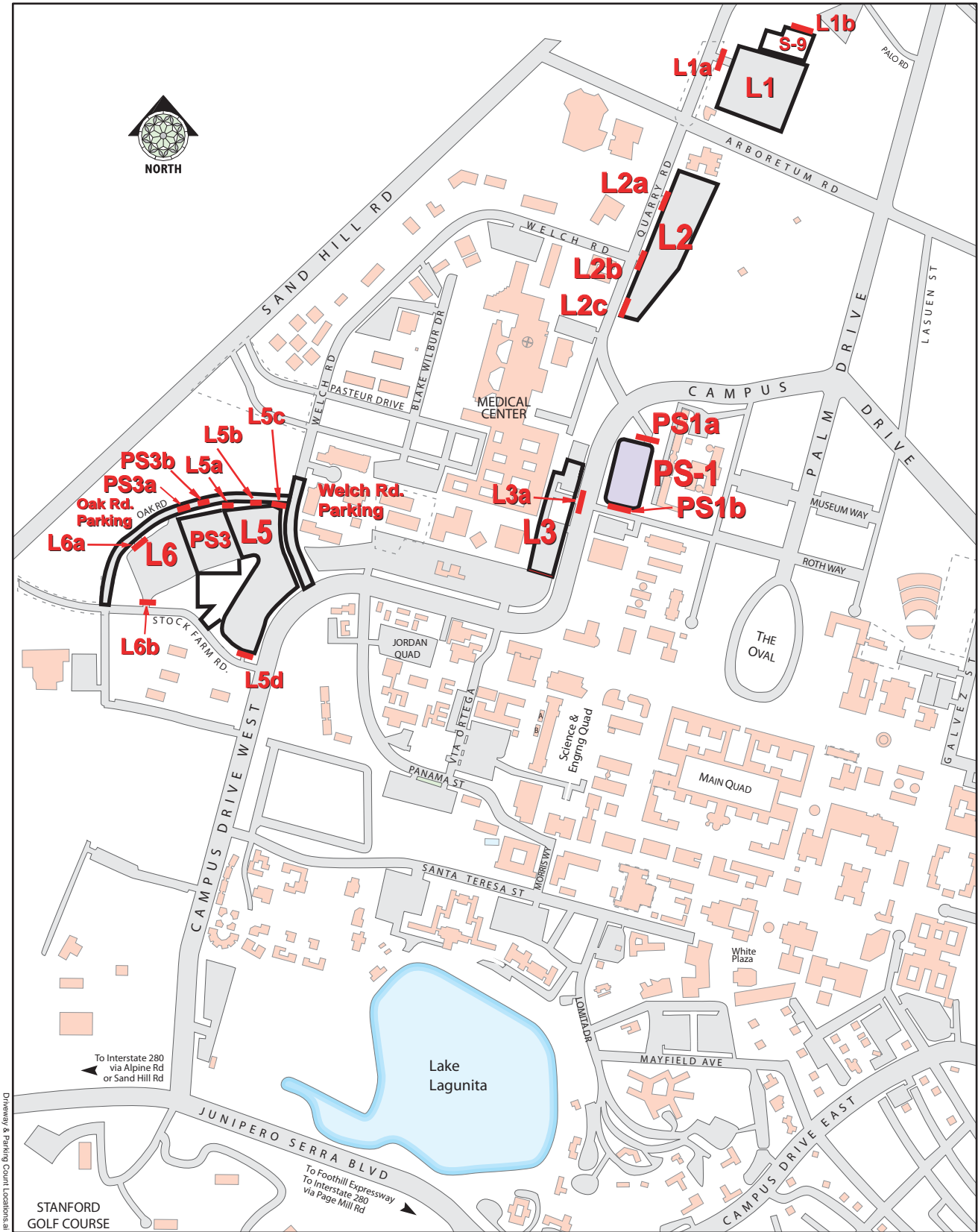
The driveway count locations are presented below and in Figure 3.

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 – Near Medical Drive, west of Campus Drive
11. L5a – West Driveway to Lot 5 from Oak Road
12. L5b – Center Driveway to Lot 5 from Oak Road
13. L5c – East Driveway to Lot 5 from Oak Road
14. L5d – East Driveway to Lot 5 from Stock Farm Road
15. L6a – West Driveway to Lot 6 from Oak Road
16. L6b – South Driveway to Lot 6 from Stock Farm Road

Based on the sticker surveys (which identify campus and Hospital trip vehicles) described later in this report, 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 cordon counts. This was done to properly account for all trips generated by Stanford University and to differentiate them from trips generated by other adjacent land uses, particularly the medical complex.

Table 1 2015 Raw Traffic Count Summary

Date	AM Inbound			PM Outbound		
	Weather	Volume	Period	Weather	Volume	Period
Week 1						
April 13, 2015	Scattered Clouds	3812	7:45 to 8:45	Clear	3817	4:45 to 5:45
April 14, 2015	Clear	3910	7:45 to 8:45	Clear	3918	5:00 to 6:00
April 15, 2015	Clear	3963	7:45 to 8:45	Clear	3930	5:00 to 6:00
April 16, 2015	Clear	3870	8:00 to 9:00	Clear	4038	5:00 to 6:00
April 17, 2015	Clear	3782	8:00 to 9:00	Clear	3818	4:45 to 5:45
Week 2						
April 20, 2015	Overcast	3869	7:45 to 8:45	Partly Cloudy	3705	5:00 to 6:00
April 21, 2015	Overcast	3952	7:45 to 8:45	Scattered Clouds	3849	4:30 to 5:30
April 22, 2015	Mostly Cloudy	3958	8:00 to 9:00	Mostly Cloudy	3916	5:00 to 6:00
April 23, 2015	Mostly Cloudy	4102	8:00 to 9:00	Scattered Clouds	4087	4:30 to 5:30
April 24, 2015	Scattered Clouds	4042	8:00 to 9:00	Partly Cloudy	4111	4:45 to 5:45
Week 3						
April 27, 2015	Clear	3872	8:00 to 9:00	Partly Cloudy	3855	4:45 to 5:45
April 28, 2015	Overcast	4065	8:00 to 9:00	Scattered Clouds	4042	5:00 to 6:00
April 29, 2015	Mostly Cloudy	3856	8:00 to 9:00	Clear	3982	5:00 to 6:00
April 30, 2015	Clear	3962	8:00 to 9:00	Clear	4257	4:30 to 5:30
May 1, 2015	Clear	3685	8:00 to 9:00	Clear	4080	4:30 to 5:30
Week 4						
May 4, 2015	Overcast	3817	8:00 to 9:00	Clear	4026	4:45 to 5:45
May 5, 2015	Partly Cloudy	3914	7:45 to 8:45	Clear	4008	5:00 to 6:00
May 6, 2015	Partly Cloudy	3782	8:00 to 9:00	Partly Cloudy	4110	5:00 to 6:00
May 7, 2015	Mostly Cloudy	3872	8:00 to 9:00	Mostly Cloudy	3999	5:00 to 6:00
May 8, 2015	Clear	3610	7:45 to 8:45	Partly Cloudy	4377	4:45 to 5:45
Week 5						
May 11, 2015	Scattered Clouds	3858	7:45 to 8:45	Scattered Clouds	4013	4:45 to 5:45
May 12, 2015	Partly Cloudy	3998	7:45 to 8:45	Partly Cloudy	4195	5:00 to 6:00
May 13, 2015	Mostly Cloudy	3896	8:00 to 9:00	Scattered Clouds	4299	5:00 to 6:00
May 14, 2015	Mostly Cloudy	3920	7:45 to 8:45	Light Rain	3986	4:45 to 5:45
May 15, 2015	Scattered Clouds	3735	8:00 to 9:00	Scattered Clouds	3919	4:30 to 5:30
Week 6						
May 18, 2015	Overcast	3772	8:00 to 9:00	Mostly Cloudy	3953	4:45 to 5:45
May 19, 2015	Overcast	4030	7:45 to 8:45	Scattered Clouds	4272	5:00 to 6:00
May 20, 2015	Overcast	3956	7:45 to 8:45	Mostly Cloudy	4147	5:00 to 6:00
May 21, 2015	Mostly Cloudy	3858	7:45 to 8:45	Mostly Cloudy	4260	5:00 to 6:00
May 22, 2015	Mostly Cloudy	3604	8:00 to 9:00	Mostly Cloudy	3671	5:00 to 6:00
Week 7						
September 21, 2015	Clear	3875	8:00 to 9:00	Clear	3849	4:30 to 5:30
September 22, 2015	Scattered Clouds	4037	7:45 to 8:45	Clear	3924	4:30 to 5:30
September 23, 2015	Partly Cloudy	3837	7:45 to 8:45	Clear	3866	5:00 to 6:00
September 24, 2015	Mostly Cloudy	4007	8:00 to 9:00	Scattered Clouds	4062	5:00 to 6:00
September 25, 2015	Scattered Clouds	3872	7:45 to 8:45	Scattered Clouds	3857	4:45 to 5:45
Week 8						
September 28, 2015	Mostly Cloudy	3798	7:45 to 8:45	Scattered Clouds	3721	4:45 to 5:45
September 29, 2015	Mostly Cloudy	3897	8:00 to 9:00	Mostly Cloudy	3926	5:00 to 6:00
September 30, 2015	Overcast	4043	8:00 to 9:00	Overcast	4136	5:00 to 6:00
October 1, 2015	Mostly Cloudy	4012	8:00 to 9:00	Scattered Clouds	4245	4:30 to 5:30
October 2, 2015	Clear	3823	7:45 to 8:45	Clear	4129	5:00 to 6:00



Driveway & Parking Count Locations

STANFORD GOLF COURSE

08/20/13

Figure 3
DRIVEWAY AND PARKING
COUNT LOCATIONS

Task 1.3 Parking Permit Scanning/Count

At the beginning and end of both the morning and evening peak periods, the number of vehicles in each of the lots identified in Figure 3 was counted. Each vehicle permit was also scanned to determine if it was related to campus or hospital uses. Campus and Medical Center vehicles were identified by windshield stickers stating Campus or Hospital. Also, Parking and Transportation Services (P&TS) permits were issued to construction crews involved in Stanford Hospital expansion activities. Vehicles displaying P&TS permits were treated as hospital-related vehicles. In the Hoover Pavilion Structure (S-9), vehicles without permits in the “Visitor Only” area were assumed to be hospital-related.

If campus parking permits were observed in lots outside the cordon area, they were added to the cordon count. If hospital-related vehicles 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.

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 from the cordon count and no adjustment was made to add in campus trips.

AECOM used the parking counts described in Task 1.2 and Task 1.3 to adjust the raw traffic counts. The parking lot and on-street parking occupancy data are included in Appendix B along with the parking counts.

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 20 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 13.91 percent and 15.04 percent, respectively. During the Fall counts, the average AM cut-through percentage was 10.73 percent while the average PM cut-through percentage was 15.24 percent. The average Spring and Fall percentages were used to adjust their respective vehicle counts. Appendix E displays this raw data.

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 80 daily cordon count spreadsheets (40 AM and 40 PM). Appendix C displays these spreadsheets.

Task 2.2 Daily Parking Spreadsheets

The number of vehicles entering and exiting 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 to adjust the cordon count spreadsheets. Since Lot 1, Lot 2, and parking structure S-9 are outside of the cordon boundary, some campus-related vehicles would park in these lots and not get counted in the cordon count. To add these vehicles to the cordon count, the respective average percentages of campus vehicles in these lots were multiplied by the relevant volumes (either AM inbound or PM outbound, depending on the peak period) at each lot entrance (from Task 2.2), and the results then added to the cordon counts.

Lot 3, Lot 5 and Lot 6, 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 respective average percentages of hospital-related vehicles were multiplied by the either AM inbound or PM outbound volumes (depending on the peak period) at each respective lot entrance (from Task 2.2), and then the resulting values 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 13.91 percent in the AM peak hour and 15.04 percent in the PM peak hour. During the Fall counts, the average AM cut-through percentage was 10.73 percent while the average PM cut-through percentage was 15.24 percent. 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.

The 80 cordon counts adjusted for parking lot factors and cut-through traffic are shown in Table 2 with the average AM inbound and PM outbound traffic volumes and the peak hour time periods. Table 3 shows the traffic data collected in the 2001 baseline Stanford Traffic Monitoring Program, including the baseline average and the 90-percent confidence interval.

Table 2 2015 Adjusted Traffic Totals

Date	AM Inbound		PM Outbound	
	Volume	Period	Volume	Period
Week 1				
April 13, 2015	3023	7:45 to 8:45	3111	4:45 to 5:45
April 14, 2015	3075	7:45 to 8:45	3181	5:00 to 6:00
April 15, 2015	3132	7:45 to 8:45	3188	5:00 to 6:00
April 16, 2015	3071	8:00 to 9:00	3272	5:00 to 6:00
April 17, 2015	2996	8:00 to 9:00	3111	4:45 to 5:45
Week 2				
April 20, 2015	3109	7:45 to 8:45	3007	5:00 to 6:00
April 21, 2015	3155	7:45 to 8:45	3116	4:30 to 5:30
April 22, 2015	3147	8:00 to 9:00	3168	5:00 to 6:00
April 23, 2015	3288	8:00 to 9:00	3322	4:30 to 5:30
April 24, 2015	3276	8:00 to 9:00	3340	4:45 to 5:45
Week 3				
April 27, 2015	3078	8:00 to 9:00	3136	4:45 to 5:45
April 28, 2015	3262	8:00 to 9:00	3301	5:00 to 6:00
April 29, 2015	3111	8:00 to 9:00	3213	5:00 to 6:00
April 30, 2015	3182	8:00 to 9:00	3459	4:30 to 5:30
May 1, 2015	2981	8:00 to 9:00	3323	4:30 to 5:30
Week 4				
May 4, 2015	3056	8:00 to 9:00	3254	4:45 to 5:45
May 5, 2015	3149	7:45 to 8:45	3244	5:00 to 6:00
May 6, 2015	3091	8:00 to 9:00	3339	5:00 to 6:00
May 7, 2015	3139	8:00 to 9:00	3249	5:00 to 6:00
May 8, 2015	2906	7:45 to 8:45	3590	4:45 to 5:45
Week 5				
May 11, 2015	3100	7:45 to 8:45	3240	4:45 to 5:45
May 12, 2015	3195	7:45 to 8:45	3390	5:00 to 6:00
May 13, 2015	3117	8:00 to 9:00	3453	5:00 to 6:00
May 14, 2015	3163	7:45 to 8:45	3222	4:45 to 5:45
May 15, 2015	2997	8:00 to 9:00	3168	4:30 to 5:30
Week 6				
May 18, 2015	3030	8:00 to 9:00	3216	4:45 to 5:45
May 19, 2015	3248	7:45 to 8:45	3476	5:00 to 6:00
May 20, 2015	3172	7:45 to 8:45	3348	5:00 to 6:00
May 21, 2015	3096	7:45 to 8:45	3437	5:00 to 6:00
May 22, 2015	2875	8:00 to 9:00	2990	5:00 to 6:00
Week 7				
September 21, 2015	3233	8:00 to 9:00	3225	4:30 to 5:30
September 22, 2015	3365	7:45 to 8:45	3270	4:30 to 5:30
September 23, 2015	3162	7:45 to 8:45	3189	5:00 to 6:00
September 24, 2015	3326	8:00 to 9:00	3340	5:00 to 6:00
September 25, 2015	3215	7:45 to 8:45	3201	4:45 to 5:45
Week 8				
September 28, 2015	3155	7:45 to 8:45	2975	4:45 to 5:45
September 29, 2015	3201	8:00 to 9:00	3141	5:00 to 6:00
September 30, 2015	3330	8:00 to 9:00	3314	5:00 to 6:00
October 1, 2015	3308	8:00 to 9:00	3418	4:30 to 5:30
October 2, 2015	3173	7:45 to 8:45	3344	5:00 to 6:00
Average	3,142		3,257	

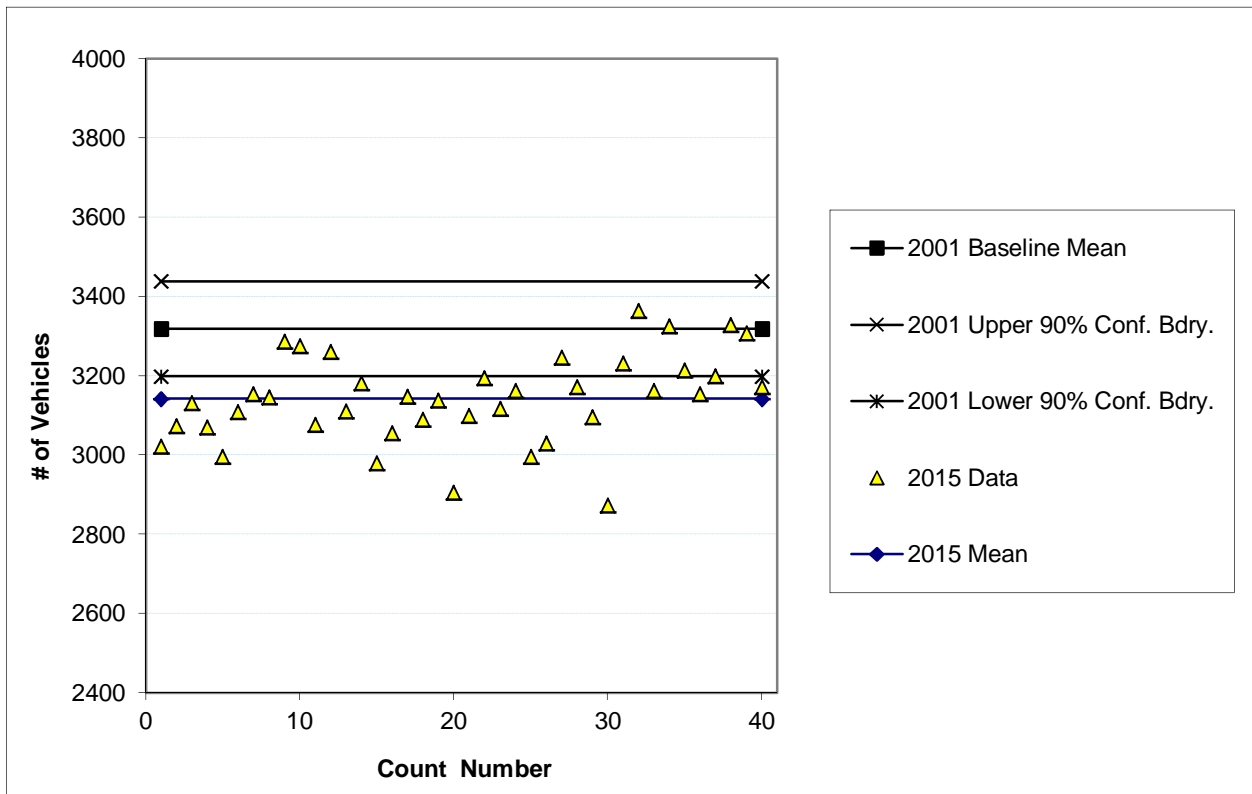
Table 3 2001 Baseline Adjusted Traffic Totals

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	

INBOUND AM TRAFFIC

The 2001 baseline counts determined that an average of 3,439 inbound vehicles during the AM peak hour would constitute a significant increase in traffic at the 90-percent confidence level. The 2015 AM inbound adjusted average of 3,142 vehicles falls below the +90-percent confidence interval by 297 vehicles. The one-percent significant increase trigger was developed from 2001 baseline counts as 3,474 vehicles. The average 2015 AM outbound volume is below the one-percent significant increase trigger by 332 vehicles. Figure 4 graphically displays the 2015 AM inbound data where the y-axis is the number of cars, and the x-axis is the day when the AECOM team counted that number of cars (on weekdays between April 13 to May 22 and September 21 to October 2, 2015). Lines representing the baseline average, baseline 90-percent confidence interval, and 2015 average are also shown in this figure. As shown in Figure 4, the average 2015 AM inbound volume is lower than the 90-percent confidence interval boundary established in 2001.

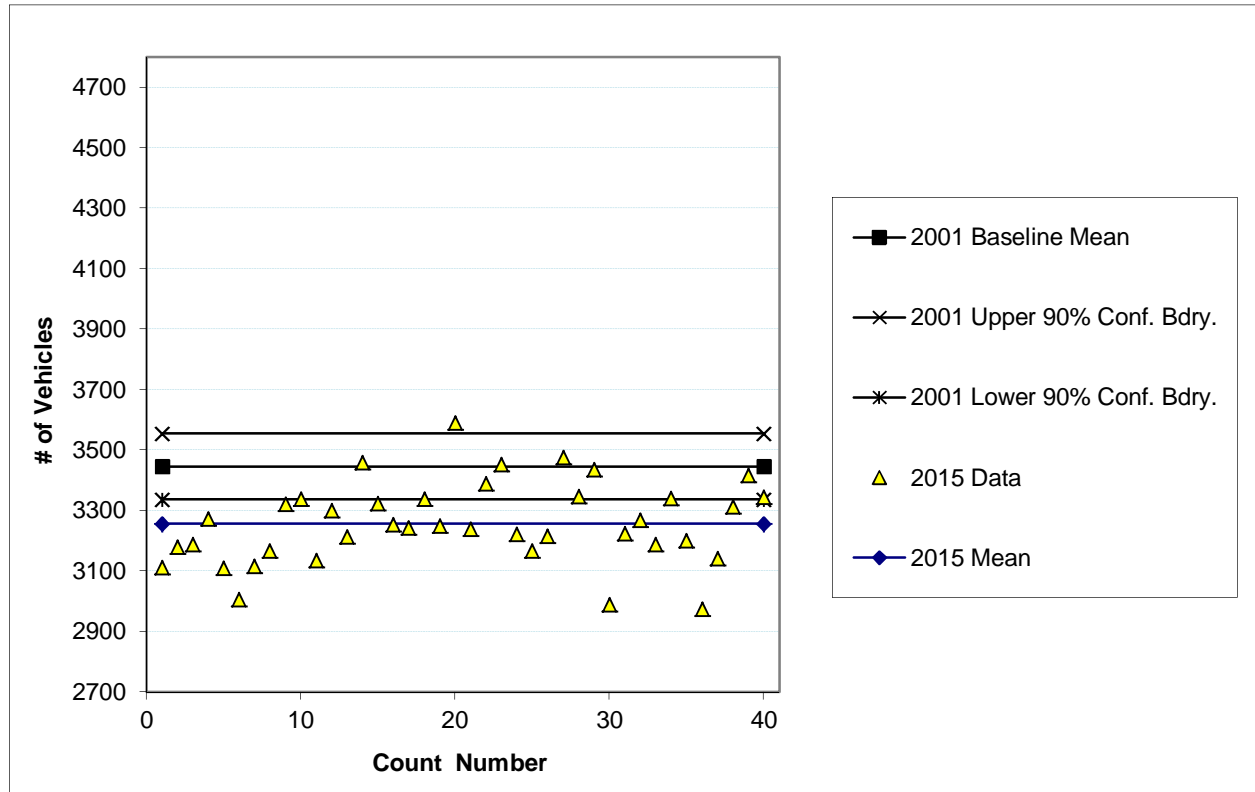
Figure 4 2015 AM Peak Inbound vs. 2001 Baseline



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-percent confidence level. The 2015 PM outbound adjusted average of 3,257 vehicles falls below the +90-percent confidence interval by 298 vehicles. The one-percent significant increase trigger was developed from 2001 baseline counts as 3,591 vehicles. The average 2015 PM outbound volume is below the one-percent significant increase trigger by 334 vehicles. Figure 5 graphically displays the 2015 PM outbound data where the y-axis is the number of cars, and the x-axis is the day when the AECOM team counted that number of cars (on weekdays between April 13 to May 22 and September 21 to October 2, 2015). Lines representing the baseline average, baseline 90-percent confidence interval, and 2015 average are also shown in this figure. As shown in Figure 5, the average 2015 PM outbound volume is above the +90-percent confidence interval boundary established in 2001.

Figure 5 2015 PM Peak Outbound vs. 2001 Baseline



CONCLUSION

The 2015 AM inbound count of 3,142 vehicles is 177 vehicles lower than the baseline 2001 AM inbound count, 297 vehicles lower than the upper boundary of the 90-percent confidence interval, and 332 vehicles lower than the established one-percent trigger. The established 1% increase trigger requirement is not met; so, as a result no mitigation is required.

The 2015 PM outbound count of 3,257 vehicles is 189 vehicles lower than the baseline 2001 PM outbound count, 298 vehicles lower than the upper boundary of the 90-percent confidence interval, and 334 vehicles lower than the established one-percent trigger. The established 1% increase trigger requirement is not met; so, as a result no mitigation is required.

Table 4 summarizes the comparison between the baseline 2001 counts and the 2015 monitoring counts.

Table 4 2015 Monitoring Comparison to Baseline

Inbound AM:

Adjusted average 2015 count	3,142
2001 baseline	3,319
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 297 vehicles)	-297
Result (falls below the 1% increase trigger by 332 vehicles)	-332

Outbound PM:

Adjusted average 2015 count	3,257
2001 baseline	3,446
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 298 vehicles)	-298
Result (falls below the 1% increase trigger by 334 vehicles)	-334

SUMMARY AND COMPARISON OF PREVIOUS REPORTS

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 University is required to attain a “no net new commute trip” standard as defined in the GUP and EIR.

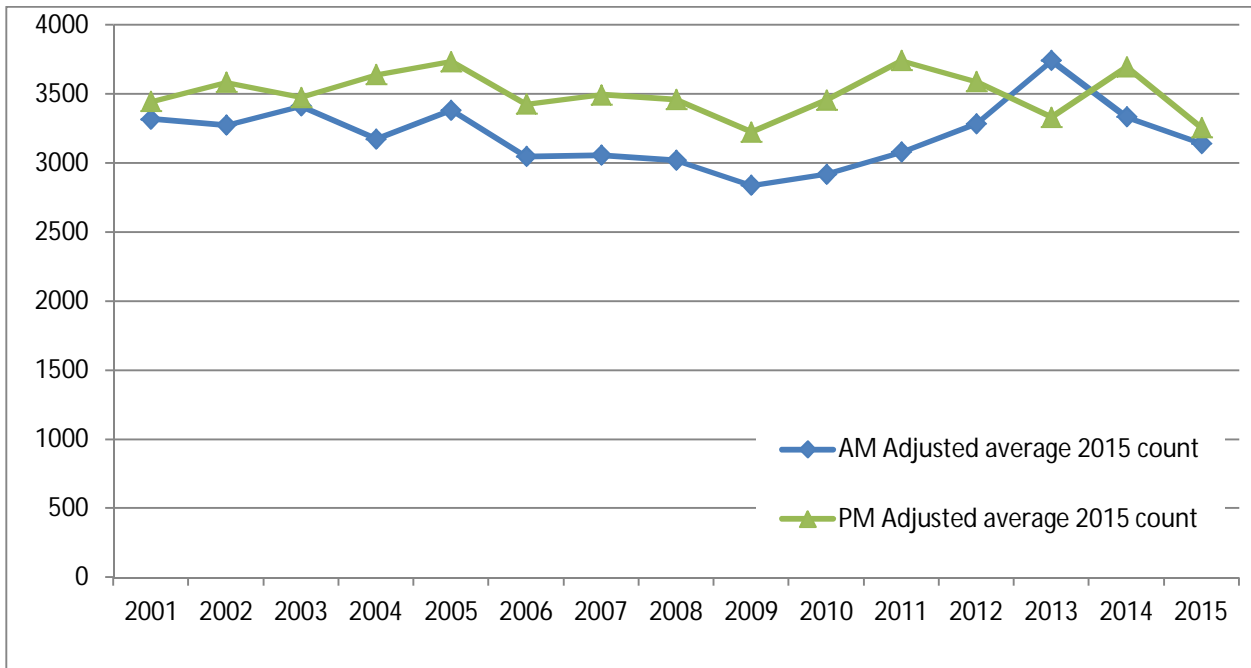
Condition of Approval G.7 outlines the process for establishing the baseline counts and for continuing monitoring in subsequent years. The process can be summarized as follows:

- 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.

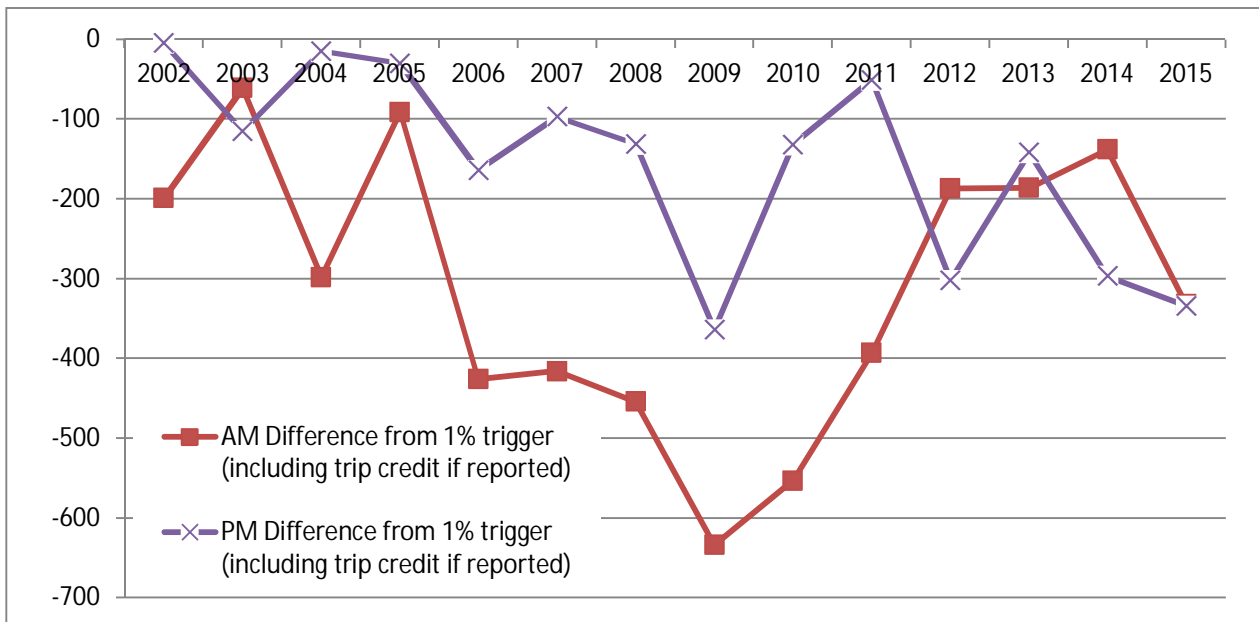
These data collection efforts have taken place for the last 15 years allowing opportunity to look for trends over time. Figure 6 displays the total traffic counts for the AM and PM peak periods from 2001 through 2015. As shown, volumes have remained relatively consistent over time with a slight dip in 2009 and increases in subsequent years.

Figure 6 Peak Period (AM and PM) Traffic Volume Trends 2001-2015



Similarly, Figure 7 displays the difference between the adjusted volume and the 1% trigger (reflecting any trip credits reported). As shown, the dip in 2009 is more pronounced on the smaller y-axis scale. When taken as a whole, volumes seem to be trending downward despite the overall increase in the past 5 years. There was a significant economic downturn around 2009 with a slow economic recovery ever since. These trends in traffic volumes may reflect a normal correlation between driving and economic conditions – i.e., more people drive when the economy is stronger.

Figure 7 Results (difference from 1% trigger with trip credits if reported) Trends 2001-2015



The following is a summary of the Baseline report prepared in 2001 and the subsequent 14 years of monitoring from 2002 through 2015.

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.

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. No conclusions were drawn from this report.

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% increase trigger	3,591

Stanford University Traffic Monitoring Report – 2002 Monitoring Report #1

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

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

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.

The PM outbound 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.

Stanford University Traffic Monitoring Report – 2003 Monitoring Report #2

The following summarizes 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 #3

The following summarizes the 2004 Monitoring Report. The count dates for the 2004 Monitoring Report were as follows:

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

Outbound PM:

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

Outbound PM:

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

Stanford University Traffic Monitoring Report – 2005 Monitoring Report #4

The following summarizes the 2005 Monitoring Report. The count dates for the 2005 Monitoring Report were as follows:

- Week of April 4, 2005
- Week of April 11, 2005
- Week of April 18, 2005
- Week of April 25, 2005
- Week of May 2, 2005
- Week of May 9, 2005
- Week of September 26, 2005
- Week of October 3, 2005

The 2005 Monitoring Report concluded that the adjusted AM inbound count totaled 3,383 vehicles. This represented an increase of 64 vehicles, which fell within the 90% confidence interval and did not represent a significant AM inbound traffic increase. The PM outbound count totaled 3,735 vehicles which was an increase of 289 vehicles from the baseline, which is above the 90% confidence interval by 180 vehicles and above the 1% increase trigger by 144 vehicles. The following is a summary of the results of the 2005 Monitoring Report.

Inbound AM:

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

Outbound PM:

Adjusted average 2005 count	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

The 2000 Stanford GUP Condition G.8. specifies that the County will recognize and “credit” Stanford off-campus trip reduction efforts within defined geographic boundaries. These credits will be applied to Stanford’s attainment of the “no net new commute trip” standard. In 2003, Stanford and the County discussed potential methodologies for providing credits to Stanford. The County developed draft guidelines, which were reviewed by the Community Resource Group, and the Planning Office approved the final guidelines on October 9, 2003. These guidelines are presented in the “Stanford Traffic Cordon Count Credit Guidelines” dated October 28, 2003.

On April 24, 2006, Stanford submitted a 2005 trip credit report that was reviewed by AECOM. This report documented a credit of 174 trips for the increase in the number of bus trips across the cordon points and the number of transit passengers served outside the cordon area in the PM peak hour between the 2001 baseline and 2005. Using the new Marguerite shuttle Automated Transportation Management System, the number of passengers getting on and off the shuttle at each stop was counted. Most of the trip credits claimed are for passengers (primarily Stanford Hospital employees) getting on the shuttle outside the cordon area and traveling to the Palo Alto Caltrain station. As outlined in the adopted guidelines, full credits are claimed for trips in the peak commute direction and 1/3 credit claimed for trips in the reverse direction. Pass through credits are claimed for those passengers who board outside the cordon, pass through the campus, and then alight outside the campus based on onboard surveys. As summarized below, with the trip credit of 174 trips Stanford did not exceed the no net new commute trip standard based on the 2005 monitoring program.

Outbound PM:

Adjusted average 2005 count	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

Stanford University Traffic Monitoring Report – 2006 Monitoring Report #5

The following summarizes 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% 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% confidence interval and 164 vehicles below the 1% 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 #6

The following summarizes 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

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% confidence interval and 97 vehicles below the 1% 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

Stanford University Traffic Monitoring Report – 2008 Monitoring Report #7

The following summarizes the 2008 Monitoring Report. The count dates for the 2008 Monitoring Report were as follows:

- Week of April 7, 2008
- Week of April 14, 2008
- Week of April 21, 2008
- Week of April 28, 2008
- Week of May 5, 2008
- Week of May 12, 2008
- Week of October 13, 2008
- Week of October 20, 2008

The 2008 Monitoring Report concluded that the adjusted AM inbound count totaled 3,020 vehicles. This represented a decrease of 299 vehicles from baseline, which falls within the 90% confidence interval and does not represent a significant AM inbound traffic increase. The PM outbound count totaled 3,460 vehicles which is an increase of 14 vehicles from the baseline, which is 95 vehicles below the 90% confidence interval and 131 vehicles below the 1% established trigger. The following is a summary of the results of the 2008 Monitoring Report.

Inbound AM:

Adjusted average 2008 count	3,020
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 419 vehicles)	-419
Result (falls below the 1% increase trigger by 454 vehicles)	-454

Outbound PM:

Adjusted average 2008 count	3,460
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 95 vehicles)	-95
Result (falls below the 1% trigger by 131 vehicles)	-131

Stanford University Traffic Monitoring Report – 2009 Monitoring Report #8

The following summarizes the 2009 Monitoring Report. The count dates for the 2009 Monitoring Report were as follows:

- Week of April 13, 2009
- Week of April 20, 2009
- Week of April 27, 2009
- Week of May 4, 2009
- Week of May 11, 2009
- Week of May 18, 2009
- Week of October 5, 2009
- Week of October 12, 2009

The 2009 Monitoring Report concluded that the adjusted AM inbound count totaled 2,840 vehicles. This represented a decrease of 479 vehicles from baseline, which falls within the 90% confidence interval and does not represent a significant AM inbound traffic increase. The PM outbound count totaled 3,227 vehicles which is a decrease of 219 vehicles from the baseline, which is 328 vehicles below the 90% confidence interval and 364 vehicles below the 1% established trigger. The following is a summary of the results of the 2009 Monitoring Report.

Inbound AM:

Adjusted average 2009 count	2,840
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 599 vehicles)	-599
Result (falls below the 1% increase trigger by 634 vehicles)	-634

Outbound PM:

Adjusted average 2009 count	3,227
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 328 vehicles)	-328
Result (falls below the 1% increase trigger by 364 vehicles)	-364

Stanford University Traffic Monitoring Report – 2010 Monitoring Report #9

The following summarizes the 2010 Monitoring Report. The count dates for the 2010 Monitoring Report were as follows:

- Week of April 5, 2010
- Week of April 19, 2010
- Week of April 26, 2010
- Week of May 3, 2010
- Week of May 10, 2010
- Week of May 17, 2010
- Week of October 25, 2010
- Week of November 1, 2010

The 2010 Monitoring Report concluded that the adjusted AM inbound count totaled 2,921 vehicles. This represented a decrease of 398 vehicles from baseline, which falls below the 90-percent confidence interval and does not represent a significant AM inbound traffic increase. The PM outbound count totaled 3,459 vehicles which is an increase of 13 vehicles from the baseline, which is 96 vehicles below the 90-percent confidence interval and 132 vehicles below the one-percent established trigger. The following is a summary of the results of the 2010 Monitoring Report.

Inbound AM:

Adjusted average 2010 count	2,921
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 518 vehicles)	-518
Result (falls below the 1% increase trigger by 553 vehicles)	-553

Outbound PM:

Adjusted average 2010 count	3,459
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 96 vehicles)	-96
Result (falls below the 1% increase trigger by 132 vehicles)	-132

Stanford University Traffic Monitoring Report – 2011 Monitoring Report #10

The following summarizes the 2011 Monitoring Report. The count dates for the 2011 Monitoring Report were as follows:

- Week of April 18, 2011
- Week of May 16, 2011
- Week of April 25, 2011
- Week of May 23, 2011
- Week of May 2, 2011
- Week of October 24, 2011
- Week of May 9, 2011
- Week of October 31, 2011

The 2011 Monitoring Report concluded that the adjusted AM inbound count totaled 3,081 vehicles. This represents a decrease of 238 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 3,743 vehicles, which is an increase of 297 vehicles from the baseline, which is above the 90-percent confidence interval by 188 vehicles and above the one-percent increase trigger by 152 vehicles. The following is a summary of the results of the 2011 Monitoring Report.

Inbound AM:

Adjusted average 2011 count	3,081
2001 baseline	3,319
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 358 vehicles)	-358
Result (falls below the 1% increase trigger by 393 vehicles)	-393

Outbound PM:

Adjusted average 2011 count	3,743
2001 baseline	3,446
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (exceeds the 90% confidence interval by 188 vehicles)	+188
Result (exceeds the 1% trigger by 152 vehicles)	+152

The 2000 Stanford GUP Condition G.8. specifies that the County will recognize and “credit” Stanford off-campus trip reduction efforts within defined geographic boundaries. These credits will be applied to Stanford’s attainment of the “no net new commute trip” standard. In 2003, Stanford and the County discussed potential methodologies for providing credits to Stanford. The County developed draft guidelines, which were reviewed by the Community Resource Group, and the Planning Office approved the final guidelines on October 9, 2003. These guidelines are presented in the “Stanford Traffic Cordon Count Credit Guidelines” dated October 28, 2003.

On February 24, 2012, Stanford submitted a 2011 trip credit report that was reviewed by AECOM. This report documented a credit of 203 trips for the increase in the number of bus trips across the cordon points and the number of transit passengers served outside the cordon area in the PM peak hour between the 2001 baseline and 2011. As outlined in the adopted guidelines, full credits are claimed for trips in the peak commute direction and 1/3 credit claimed for trips in the reverse direction. As summarized below, with the trip credit of 203 trips Stanford does not exceed the no net new commute trip standard based on the 2011 monitoring program.

Outbound PM:

Adjusted average 2011 count	3,743
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2001 baseline	3,446
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (exceeds the 90% confidence interval by 188 vehicles)	+188
Result (exceeds the 1% trigger by 152 vehicles)	+152
2011 trip credit	-203
Result with trip credit (falls below the 1% trigger by 51 vehicles)	-51

Stanford University Traffic Monitoring Report – 2012 Monitoring Report #11

The following summarizes the 2012 Monitoring Report. The count dates for the 2012 Monitoring Report were as follows:

- Week of April 9, 2012
- Week of May 7, 2012
- Week of April 16, 2012
- Week of May 14, 2012
- Week of April 23, 2012
- Week of October 22, 2012
- Week of April 30, 2012
- Week of October 29, 2012 (not used)

The 2012 Monitoring Report concluded that the adjusted AM inbound count totaled 3,287 vehicles. This represents a decrease of 32 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 3,590 vehicles which is an increase of 144 vehicles from the baseline, which is above the 90-percent confidence interval by 35 vehicles and below the one-percent established trigger by one vehicle. Week of October 29, 2012 (Week 8) count information was not used due to irregular traffic volumes caused by the construction on Junipero Serra Boulevard. As noted earlier in this Foreword, monitoring is only required for a minimum of six weeks per year. Therefore, the data collection for 2012 meets the requirements of Condition of Approval G.7.

The following is a summary of the results of the 2012 Monitoring Report.

Inbound AM:

Adjusted average 2012 count	3,287
2001 baseline	3,319
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 152 vehicles)	-152
Result (falls below the 1% increase trigger by 187 vehicles)	-187

Outbound PM:

Adjusted average 2012 count	3,590
2001 baseline	3,446
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (exceeds the 90% confidence interval by 35 vehicles)	+35
Result (falls below the 1% trigger by 1 vehicle)	-1

The 2000 Stanford GUP Condition G.8. specifies that the County will recognize and “credit” Stanford off-campus trip reduction efforts within defined geographic boundaries. These credits will be applied to Stanford’s attainment of the “no net new commute trip” standard. In 2003, Stanford and the County discussed potential methodologies for providing credits to Stanford. The County developed draft guidelines, which were reviewed by the Community Resource Group, and the Planning Office approved the final guidelines on October 9, 2003. These guidelines are presented in the “Stanford Traffic Cordon Count Credit Guidelines” dated October 28, 2003.

On January 22, 2013, Stanford submitted a 2012 trip credit report that was reviewed by AECOM. This report documented a credit of 301 trips for the increase in the number of bus trips across the cordon points and the number of transit passengers served outside the cordon area in the PM peak hour between the 2001 baseline and 2012. As outlined in the adopted guidelines, full credits are claimed for

trips in the peak commute direction and 1/3 credit claimed for trips in the reverse direction. The following is a summary of the 2012 Outbound PM results with the trip credit of 301 trips.

Outbound PM:

Adjusted average 2012 count	3,590
2001 baseline	3,446
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (exceeds the 90% confidence interval by 35 vehicles)	+35
Result (falls below the 1% trigger by 1 vehicle)	-1
2012 trip credit	-301
Result with trip credit (falls below the 1% trigger by 302 vehicles)	-302

Stanford University Traffic Monitoring Report – 2013 Monitoring Report #12

The following summarizes the 2013 Monitoring Report. The count dates for the 2013 Monitoring Report were as follows:

- Week of April 8, 2013
- Week of May 6, 2013
- Week of April 15, 2013
- Week of May 13, 2013
- Week of April 22, 2013
- Week of October 21, 2013
- Week of April 29, 2013
- Week of October 28, 2013

The 2013 Monitoring Report concluded that the adjusted AM inbound count totaled 3,332 vehicles. This represents an increase of 13 vehicles from baseline, which is 107 vehicles below the 90-percent confidence interval and 142 vehicles below the one-percent established trigger. The PM outbound count totaled 3,744 vehicles, which is an increase of 298 vehicles from the baseline and is above the 90-percent confidence interval by 189 vehicles and above the one-percent increase trigger by 153 vehicles.

The following is a summary of the 2013 Monitoring Report results.

Inbound AM:

Adjusted average 2013 count	3,332
2001 baseline	3,319
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 107 vehicles)	-107
Result (falls below the 1% increase trigger by 142 vehicles)	-142

Outbound PM:

Adjusted average 2013 count	3,744
2001 baseline	3,446
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (exceeds the 90% confidence interval by 189 vehicles)	+189
Result (exceeds the 1% trigger by 153 vehicles)	+153

The 2000 Stanford GUP Condition G.8. specifies that the County will recognize and “credit” Stanford off-campus trip reduction efforts within defined geographic boundaries. These credits will be applied to Stanford’s attainment of the “no net new commute trip” standard. In 2003, Stanford and the County discussed potential methodologies for providing credits to Stanford. The County developed draft guidelines, which were reviewed by the Community Resource Group, and the Planning Office approved the final guidelines on October 9, 2003. These guidelines are presented in the “Stanford Traffic Cordon Count Credit Guidelines” dated October 28, 2003.

On January 31, 2014, Stanford submitted a 2013 trip credit report that was reviewed by AECOM. This report documented a credit of 339 trips for the increase in the number of bus trips across the cordon points and the number of transit passengers served outside the cordon area in the PM peak hour between the 2001 baseline and 2013. As outlined in the adopted guidelines, full credits are claimed for trips in the peak commute direction and 1/3 credit claimed for trips in the reverse direction. The following is a summary of the 2013 Outbound PM results with the trip credit of 339 trips.

Outbound PM:

Adjusted average 2013 count	3,744
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2001 baseline	3,446
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (exceeds the 90% confidence interval by 189 vehicles)	+189
Result (exceeds the 1% trigger by 153 vehicles)	+153
2013 trip credit	-339
Result with trip credit (falls below the 1% trigger by 186 vehicles)	-186

Stanford University Traffic Monitoring Report – 2014 Monitoring Report #13

The following summarizes the 2014 Monitoring Report. The count dates for the 2014 Monitoring Report were as follows:

- Week of April 7, 2014
- Week of April 14, 2014
- Week of April 21, 2014
- Week of April 28, 2014
- Week of May 5, 2014
- Week of May 12, 2014
- Week of September 29, 2014
- Week of October 6, 2014 (October 10, 2014 data not used)

The 2014 Monitoring Report concluded that the adjusted AM inbound count totaled 3,336 vehicles. This represents an increase of 17 vehicles from baseline, which is 103 vehicles below the 90-percent confidence interval and 138 vehicles below the one-percent established trigger. The PM outbound count totaled 3,696 vehicles, which is an increase of 250 vehicles from the baseline and is above the 90-percent confidence interval by 141 vehicles and above the one-percent increase trigger by 105 vehicles. Friday, October 10, 2014 (Week 8) count information was not used because of irregular traffic volumes likely attributable to the Palo Alto Unified School District (PAUSD) not being in session due to a staff development day and to a Stanford home football game. As noted earlier in this Foreword, monitoring is required for a minimum of six weeks per year. Therefore, the data collection for 2014 meets the requirements of Condition of Approval G.7.

The following is a summary of the 2014 Monitoring Report results.

Inbound AM:

Adjusted average 2014 count	3,336
2001 baseline	3,319
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 103 vehicles)	-103
Result (falls below the 1% increase trigger by 138 vehicles)	-138

Outbound PM:

Adjusted average 2014 count	3,696
2001 baseline	3,446
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (exceeds the 90% confidence interval by 141 vehicles)	+141
Result (exceeds the 1% trigger by 105 vehicles)	+105

The 2000 Stanford GUP Condition G.8. specifies that the County will recognize and “credit” Stanford off-campus trip reduction efforts within defined geographic boundaries. These credits will be applied to Stanford’s attainment of the “no net new commute trip” standard. In 2003, Stanford and the County discussed potential methodologies for providing credits to Stanford. The County developed draft guidelines, which were reviewed by the Community Resource Group, and the Planning Office approved the final guidelines on October 9, 2003. These guidelines are presented in the “Stanford Traffic Cordon Count Credit Guidelines” dated October 28, 2003.

On March 5, 2015, Stanford submitted a 2014 trip credit report that was reviewed by AECOM. This report documented a credit of 402 trips for the increase in the number of bus trips across the cordon points and

the number of transit passengers served outside the cordon area in the PM peak hour between the 2001 baseline and 2014. As outlined in the adopted guidelines, full credits are claimed for trips in the peak commute direction and 1/3 credit claimed for trips in the reverse direction. The following is a summary of the 2014 Outbound PM results with the trip credit of 402 trips.

Outbound PM:

Adjusted average 2014 count	3,696
2001 baseline	3,446
Baseline-established 90% confidence interval (2001)	+/- 109
Baseline-established significant traffic increase (2001)	3,555
Baseline-established 1% increase trigger (2001)	3,591
Result (exceeds the 90% confidence interval by 141 vehicles)	+141
Result (exceeds the 1% trigger by 105 vehicles)	+105
2014 trip credit	-402
Result with trip credit (falls below the 1% trigger by 297 vehicles)	-297

Stanford University Traffic Monitoring Report – 2015 Monitoring Report #14

The following summarizes the 2015 Monitoring Report. The count dates for the 2015 Monitoring Report were as follows:

- Week of April 13, 2015
- Week of April 20, 2015
- Week of April 27, 2015
- Week of May 4, 2015
- Week of May 11, 2015
- Week of May 18, 2015
- Week of September 21, 2015
- Week of September 28, 2015

The 2015 Monitoring Report concluded that the adjusted AM inbound count totaled 3,142 vehicles. This represents a decrease of 177 vehicles from baseline, which is 297 vehicles below the 90-percent confidence interval and 332 vehicles below the one-percent established trigger. The PM outbound count totaled 3,257 vehicles, which is a decrease of 189 vehicles from the baseline and is below the 90-percent confidence interval by 298 vehicles and below the one-percent increase trigger by 334 vehicles.

The following is a summary of the 2015 Monitoring Report results.

Inbound AM:

Adjusted average 2015 count	3,142
2001 baseline	3,319
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 297 vehicles)	-297
Result (falls below the 1% increase trigger by 332 vehicles)	-332

Outbound PM:

Adjusted average 2015 count	3,257
2001 baseline	3,446
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 298 vehicles)	-298
Result (falls below the 1% trigger by 334 vehicles)	-334