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LBRE Replacement Building GUP EIR Intersection Evaluation

Prepared for:
Stanford Department of Project Management

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Table of Contents

1. Introduction	1
1.1 Background	1
1.2 Project Description	1
New LBRE Building	1
Equipment Shed	2
Fleet Parking	2
Summary	2
2. Methodology	3
2.1 Stage A Screening Analysis	3
2.2 Stage B Impact Assessment and Mitigation Approach	3
3. Stage A: Screening Analysis	4
3.1 Parking Space Allocation	4

Appendix

Appendix A: Scoping of Project-Specific Traffic Studies Under Stanford GUP Condition of Approval G11 (1/16/02)

List of Tables

Table 1 GUP Parking Space Allocation with Project	5
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1. Introduction

1.1 Background

This report presents the external traffic impact portion of the environmental assessment for the proposed LBRE Replacement Building Project (Project). This report has been prepared because the Project proposes a re-distribution of 73,000 square feet of floor space from the DAPER Development District to the West Campus Development District. GUP Conditions of Approval D.5.a and D.6 require that an environmental assessment of such projects be prepared, and GUP Condition of Approval G.11 describes the scope of traffic studies for the environmental assessment. Further detail on the scope and methodology of the studies is provided in the memorandum of understanding (MOU) entitled *Scoping of Project-Specific Transportation Studies under Stanford GUP Condition of Approval G.11*. The MOU is included in Appendix A.

1.2 Project Description

The Project, located in the West Campus Development District in the vicinity of Fremont Road and Electioneer Road, includes three components: a new 73,000 square-foot building to serve as a consolidated facility for the on-campus Lands, Buildings and Real Estate (LBRE) functions; a shed to house large equipment; and a conversion of a portion of the Searsville parking lot to maintenance vehicle storage.

New LBRE Building

Facility

The new building will house the majority of the on-campus LBRE employees. The new facility will foster a diverse set of job functions including office, shop technicians, field technicians, grounds teams, warehouse, and event services. The new building and program will replace LBRE's four large buildings and the several small ancillary buildings on Bonair Siding, which are nearing the end of their useful life. The new building will be constructed on a vacant site west of Fremont Road and south of the Central Energy Facility. It will be three stories above grade and will include eight loading docks for trucks, as well as space for two to three tractor-trailer (large-wheelbase) trucks along the north edge of the building. The site includes a turnaround at the northwest corner for vehicle and truck maneuvering.

Uses

Desk employees will relocate from Bonair Siding buildings to work in the new building, and shops/grounds/trades workers will check in at the beginning of the work day (typically 5:30 – 6:00 AM) and check out at the end of the work day (2:30 – 3:00 PM).



The building will also facilitate on-campus logistics for the Buildings, Grounds and Maintenance (BGM) group, including event set-up and take-down and other activities. These trips currently occur at the Bonair Siding site, and would relocate to the new building. These trips are all internal to the campus. An estimated 20 to 25 round trips per day are typically made.

Approximately 5 to 15 external deliveries per day to the LBRE facilities warehouse typically occur at the Bonair site, and these would relocate to the new building. Most deliveries are in single-unit trucks, with occasional large tractor-trailer truck deliveries.

Equipment Shed

A shed to house heavy equipment will be constructed on the western portion of Electioneer Road, with access/egress to be provided both from Fremont Road and Electioneer Road; through traffic on Electioneer Road will no longer be allowed. A turn-around at the new western end of Electioneer Road will serve drivers needing to turn around as well as trucks/heavy equipment access and egress. The construction of the shed will eliminate up to 55 parking spaces on Electioneer Road.

Maintenance Vehicle Parking

A portion of Searsville Lot (L22) will be converted from commuter and resident parking to maintenance vehicle storage. The estimated loss of parking spaces is 250 spaces out of the total 611-space parking supply.

Summary

For the purposes of the GUP EIR Intersection Evaluation, the relevant project characteristic is the net change in parking, consistent with the methodology in the MOU. This methodology acknowledges that parking supply and distribution around campus is the primary driver of trip generation and distribution to campus gateways. This is discussed in Sections 2 and 3 below.



2. Methodology

The GUP EIR Intersection Impact Evaluation involves two stages, as described below (refer also to Appendix A).

2.1 Stage A Screening Analysis

The Stage A screening analysis provides a description of the Project's effect on the running total of parking spaces added to the Campus under the 2000 GUP. The "cumulative running totals" of built/approved parking spaces by campus development district are compared to the totals analyzed in the GUP EIR. Under the methodology agreed upon by Stanford and the County of Santa Clara, if the running total exceeds the GUP EIR build-out total in any area, a Stage B analysis would be prepared as described below.

2.2 Stage B Impact Assessment and Mitigation Approach

The intent of the Stage B analysis is to provide a comparison of the intersection volumes at the GUP analysis intersections using the GUP EIR trip generation and distribution assumptions with the intersections volumes that would result from the cumulative running totals identified in the Stage A screening analysis. As originally envisioned in the Conditions of Approval, the report would identify the number of trips the Project would add to each GUP intersection, as well as the cumulative running total of other GUP projects approved to date. The running total would be compared to the GUP build-out trip total as reported in the GUP EIR. If the current total exceeds the GUP EIR build-out total at any intersection, further Stage B impact analysis would be conducted at the affected intersections.

As individual projects have been assessed under the GUP, none have yet required a Stage B assessment, because the projects have all been shown to be consistent with the original GUP EIR traffic analysis assumptions. Therefore, there is no cumulative running total of project trips at external intersections.



3. Stage A: Screening Analysis

This section compares the GUP parking space allocation by district as originally set forth in the GUP EIR, to the allocation with the Project.

3.1 Parking Space Allocation

The Project will reduce the West Campus Development District permit parking supply by up to 305 spaces (up to 250 spaces in the Searsville parking lot, and up to 55 spaces on Electioneer Road). **Table 1** shows the effect of the parking loss on the current parking space allocation by district, under the GUP. The total campus parking allocation remains under the cap, with a post-project unused allocation of 4,334 spaces. The unused parking allocation for the West Campus Development District would be 342 spaces. Since the West Campus Development District parking allocation under the GUP is not exceeded with the Project, a Stage B Impact Assessment is not required.



**TABLE 1
 GUP PARKING SPACE ALLOCATION WITH PROJECT**

Development District	Base Parking (GUP EIR)	2000 GUP Allowed Change in Parking Spaces	AR 18 Contribution	Previous AR 1-17 Contribution	Cumulative (AR 1-18)	EIR Base + Cumulative Change (Current Parking Capacity)	Unused 2000 GUP Allocation	LBRE Replacement Building Project	EIR Base + Cumulative Change + Project (New Parking Capacity)	Unused 2000 GUP Allocation with Project
West Campus	191	622	0	585	585	776	37	(305)	471	342
Lathrop	0	50	0	0	0	0	50		0	50
Foothills	0	0	0	0	0	0	0		0	0
Lagunita	1,745	700	5	-532	-527	1,218	1,227		1,218	1,227
Campus Center	8,743	-511	-147	-1,100	-1,247	7,496	736		7,496	736
Quarry	1,058	800	-516	-61	-577	481	1,377		481	1,377
Arboretum	134	36	0	-138	-138	-4	174		-4	174
DAPER & Administrative	2,209	1,092	-11	240	229	2,438	863		2,438	863
East Campus	4,731	1,611	6	48	54	4,785	1,557		4,785	1,557
San Juan	540	100	-4	-104	-108	432	208		432	208
Total	19,351	2,300	-667	-1,062	-1,729	17,622	4,029	(305)	17,317	4,334

Note: This table does not reflect parking adjustments for the parking that is being constructed in the Center for Academic Medicine and Escondido Village Graduate Residences projects. Those adjustments will be reflected in the Annual Reports 20 and 21.



Appendix A:

Scoping of Project-Specific Traffic Studies Under Stanford GUP Condition of Approval G11 (1/16/02)



Scoping of Project-Specific Transportation Studies under Stanford GUP Condition of Approval G11

1/16/02

Background

On December 12, 2000, Santa Clara County approved Stanford University's draft Community Plan and General Use Permit application and certified the associated Environmental Impact Report (2000 GUP EIR). This EIR analyzed the impacts associated with the construction of approximately 2 million gross square feet of academic and academic support uses, approximately 3,000 new housing units, and approximately 2,900 new parking spaces (the number of new parking spaces was limited to 2,300 in the final approval).

The traffic study in the 2000 GUP EIR estimated the new trips "generated" by additional students, faculty, and staff on campus and additional resident population from new housing. The additional generated trips were then "distributed" within the network and were allocated among traffic analysis zones, taking into consideration the anticipated location of housing areas and parking lots, as well as existing traffic patterns.

Mitigation measures to address the impacts of the 2000 GUP development were developed, and Conditions of Approval were attached to the 2000 GUP. These mitigation measures and conditions approached the impacts in a comprehensive manner, so that individual projects that were approved under the 2000 GUP would already have identified required mitigations. A summary of these comprehensive conditions follow:

- Condition G3: Stanford will meet a no net new commute trips standard
- Condition G9: If Stanford does not meet the no net new commute trip standard for any 2 out of 3 years, it will contribute funding for its proportional impacts at 15 intersections.
- Condition G10: If a neighborhood traffic study (of "cut-through traffic") is initiated by a local jurisdiction, Stanford will participate in the study
- Condition G11: Certain projects will require project-specific traffic studies
- Condition H2: Stanford will allocate funding of \$100,000 to the City of Palo Alto for a residential parking permit program

This memorandum outlines a proposed methodology for defining the scope of project-specific traffic studies required under Stanford GUP Condition of Approval G11. The scoping process recognizes that the project-specific traffic studies for projects that are fully consistent with the assumptions used in completing the 2000 GUP EIR should be limited to evaluation of site-specific impacts that were not previously addressed in the Program EIR (such as site access and safety). On the other hand, projects that could result in a substantially different trip distribution than evaluated in the 2000 GUP EIR, or that could substantially increase overall traffic beyond that evaluated in the 2000 GUP EIR, should receive a more detailed level of analysis. This more-detailed analysis, if warranted, would be documented in the project-specific traffic study, and would include analysis of intersection congestion. This memorandum describes the methods to be used for applying Condition G11 to future Stanford development. It defines: 1) applicable projects, 2) the intent of the Condition regarding the potential impacts of such projects, and 3) the methods through which the impacts of potential concern under Condition G11 should be examined. This memorandum is meant to be a guidance document that can evolve over the life of the 2000 GUP.

Projects Triggering Condition G11

The following Stanford GUP projects will require project-specific transportation studies under Condition G11.

- Projects specifically defined as items (a) through (f) in the Condition. This includes: additional housing in Escondido Village exceeding 100 units, West Campus and Lagunita faculty/staff housing development, basketball arena expansion or replacement, performing arts center, Stanford Avenue faculty/staff housing, parking lots or structures with a net increase of 400 spaces or more, and
- Projects of similar size and scale to those listed above. This includes: new or enlarged event venues that would result in peak hour traffic generation equal or greater than that of the basketball arena (assumed 12,000 seats) or performing arts center (1,500 to 1,800 seats in main hall and two smaller halls of 200 and 800 seats), or housing projects of more than 100 units near the border of campus.

As described below, the site-specific traffic study for projects meeting these criteria would include both: 1) an analysis of localized vehicular, bicycle and pedestrian access operations and safety, and 2) a screening analysis to determine whether the project might result in new or substantially more severe impacts on intersections than the impacts identified in the 2000 GUP EIR. If the screening analysis finds possible new or substantially more severe

intersection impacts than were disclosed in the 2000 GUP EIR, then a detailed intersection impact and mitigation analysis will also be prepared.

Academic projects not meeting any of the above criteria would not be subject to project-specific traffic studies under Condition G11. As discussed above, the traffic impacts of academic projects in the core of the campus have been assessed in the programmatic 2000 GUP EIR. In addition, traffic impacts are not dependent on the location of academic projects, because the occupants of these buildings will travel to parking areas, not to the buildings themselves, and large parking areas are subject to Condition G11. In addition, the County's design review procedures address pedestrian, bicycle, delivery and vehicular access safety and efficiency for academic projects.

Intent of Condition G11

Condition G11 was imposed to address two potential situations: I.) projects that could increase congestion if new driveways would slow passing traffic, or would conflict with pedestrians and bicycles using bicycle paths, and II.) projects differing substantially from the assumptions in the 2000 GUP EIR, such that they would necessitate possible re-evaluation of GUP off-site impacts at the intersections previously studied in the 2000 GUP EIR.

I. The first concern was that, at a more micro-scale than the program-level issues addressed in the GUP EIR, a specific development project could affect conditions at individual site access points or along frontages at or near (i.e. within 1/4 mile) the project site. For example, in the case of EV 5/6, new traffic using the Escondido Village driveways could potentially slow passing traffic on Stanford Avenue or could conflict with pedestrians and bicycles using the adjoining bicycle path. To address this concern, Condition G11 calls for analysis of the effects within a project site, at project driveways, along project frontages, and at crossings up to about 1/4 mile of the site. Such an analysis typically covers project design details related to operations and safety of driveways, parking lots, access-point dimensions and access controls, emergency access, loading areas for passengers and material deliveries/ pick-up, street frontages, on-street parking/ loading, and bus stops. It also addresses bike lanes, bike racks and storage, sidewalks, and paths adjacent to and near the project site. This type of study will be performed for all projects subject to Condition G11.

II. The second concern addressed by Condition G11 is that the scale or location of a specific building or parking lot could change relative to the GUP EIR assumptions, so that GUP traffic could exceed the EIR's projection of buildout GUP traffic at EIR intersections. In addition, large-scale special event projects could create off-peak traffic impacts that were

not analyzed in the GUP EIR. To address these concerns, the Condition calls for a project-specific traffic study to:

- A. assess whether the characteristics of each applicable project might cause impacts at a GUP EIR intersection in excess of what the GUP EIR predicted would occur, and
- B. if additional significant impact might reasonably occur, to quantify the impact and, if significant, identify appropriate mitigations.

Procedure for Defining Study Scope and Content

I. Localized Access and Circulation Studies

Localized access and circulation studies will address traffic, transit, pedestrian and bicycle safety and efficiency within a project site, at project driveways, along project frontages, and at crossings up to about 1/4 mile of the site. The analysis will cover project design details related to operations and safety of driveways, parking lots, access-point dimensions and access controls, emergency access, loading areas for passengers and material deliveries/pick-up, street frontages, on-street parking/ loading, and bus stops. It will also address bike lanes, bike racks and storage, sidewalks, and paths adjacent to and near the project site. Analysis methods will involve application of relevant County, City and/or Caltrans design standards, and techniques described in AASHTO and the Highway Capacity Manual. Stanford will submit the proposed scope of work to the County for comment prior to commencing the study. Stanford will also identify the proposed source of design standards and analysis techniques to be applied to the particular situation, for County acceptance prior to the study.

II. GUP EIR Intersection Impacts

Stage A: "Screening" Analysis

The Condition is fairly explicit on the methods for determining whether any excess impacts could reasonably be expected. However, to assure concurrence on assumptions and methods, Stanford will re-confirm the study scope with the County prior to initiating any Stage A analysis. This will include the assumptions on completed GUP projects to be included in the running-total cumulative analysis.

In general, the Stage A study scope will address the following.

1. Whether the project type and scale is similar to the examples listed as (a) through (f) in the Condition, *and*
2. Whether trip distribution analysis indicates that the location or size of the applicable project would differ substantially from the assumptions in the GUP EIR in a manner that would increase the expected amount of GUP buildout traffic at one or more GUP EIR intersection(s).

Each screening analysis report will contain a cumulative running total, by campus planning area, of the parking spaces created and removed under the GUP, and the number and type of housing units constructed under the GUP. These running cumulative totals will be compared to the area-specific buildout housing and parking totals assumed in the GUP EIR. If the running total exceeds the GUP EIR buildout total in any area, Stage B impact analysis will be conducted to determine the potential effects on EIR intersection(s).

This type of screening analysis should be performed for each project subject to Condition G11 in the site-specific traffic study. If a Stage A "Screening" analysis indicates that a specific project would raise the level of GUP parking or housing in any area of campus to a level greater than anticipated in the GUP EIR, then a Stage B analysis of the impact significance and mitigation would become necessary.

Stage B: Impact Assessment and Mitigation Approach

Like each Stage A report, each Stage B analysis report will contain the cumulative running total of parking spaces, housing and the student, faculty and staff population used to calculate project trip generation. It will compare those figures to the assumptions in the GUP EIR used to calculate trip generation and trip distribution. Each report will indicate the number of trips that the applicable project would add to each GUP intersection as well as the cumulative running-total of other GUP projects approved to date, using the same trip generation and distribution methods used in the EIR. The running cumulative trip total for each intersection will be compared to the GUP buildout trip total as reported in the GUP EIR. If the current total exceeds the GUP EIR buildout total at any EIR intersection, further Stage B impact analysis will be conducted at the affected intersection(s).

For consistency with the 2000 EIR, the further Stage B analysis will adhere to the established CEQA criteria for standards of significance, analysis methods, and mitigation selection. Stanford will prepare a draft scope of work for the Stage B project-specific traffic analysis and submit it to the County for review and comment. The scope will adhere to the following guidelines:

1. For housing and parking projects, the assessment of traffic impacts at GUP intersections will use the same peak periods and same horizon year as used in the 2000 GUP EIR. The Condition G11 analysis will focus on the commute traffic peak periods, consistent with the 2000 GUP EIR. For special-event projects, such as the performing arts center, whose specific peaks would occur outside the normal area-wide traffic peaks studied in the 2000 GUP EIR, event-related time periods would also be addressed. -
2. The assessment of traffic impacts at GUP intersections will use the same assumptions concerning changes in non-GUP background growth as used in the GUP EIR, unless new information shows a substantial increase or decrease in background traffic levels relative to those assumed for 2010 in the 2000 GUP EIR.
3. Once any changes in background assumptions necessitated under Step 2 have been taken into consideration, the amount of project-specific traffic at any 2000 GUP EIR intersection will be added. The resulting traffic will only represent a new significant impact if, when added to traffic from other already-approved GUP projects, the cumulative running-total GUP impact exceeds the threshold of significance stated in 2000 GUP EIR.
4. Mitigation required for any new significant impact would first look to the ability of mitigations already identified in the 2000 GUP EIR to mitigate the impact to less-than-significant, including both EIR-listed intersection modifications and "no net new commute trip" accomplishment.
5. Any mitigation required beyond measures already identified in the GUP EIR would include two alternative approaches: further intersection modification and further reduction in commute-trip generation.

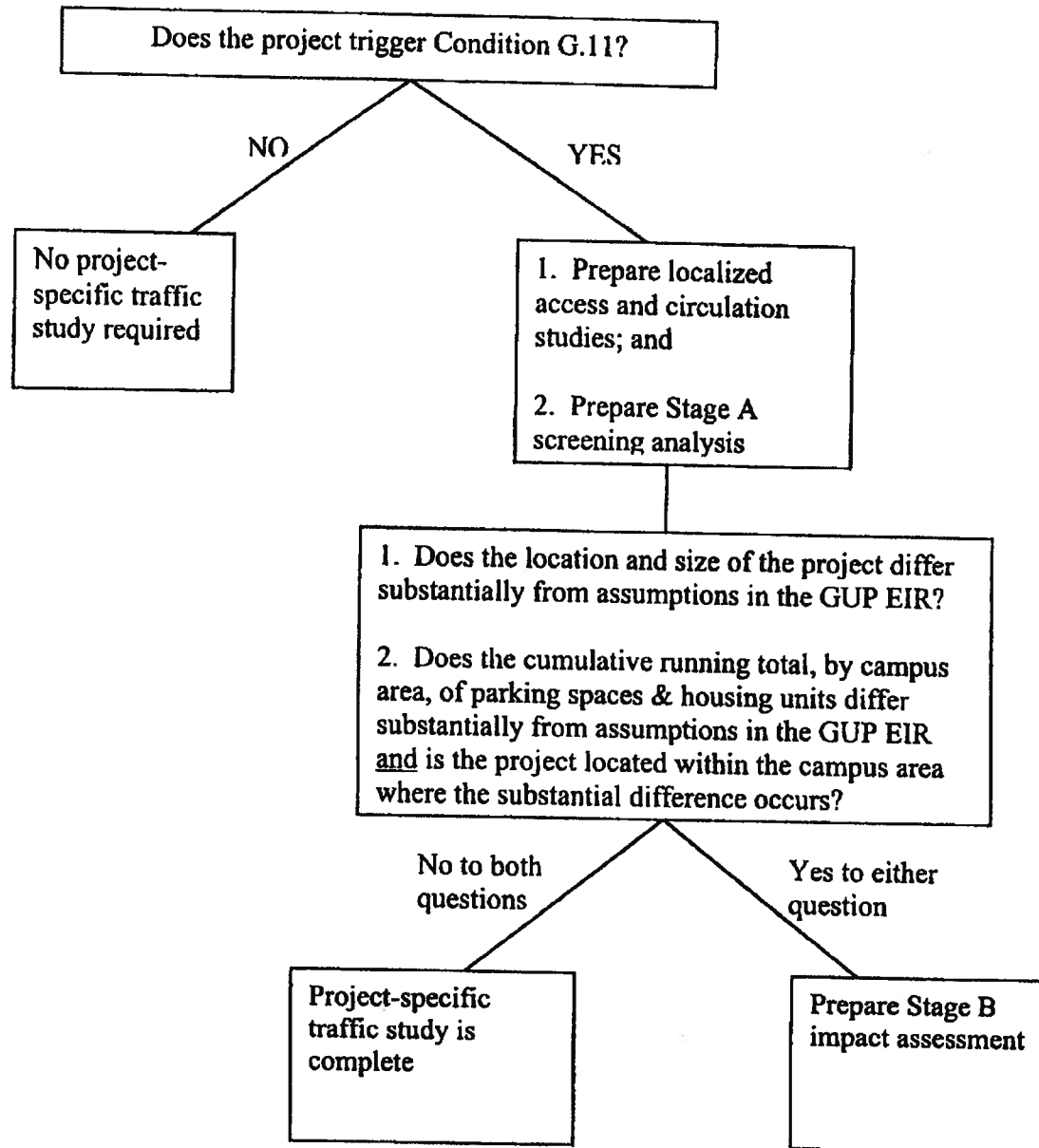
Stanford will also meet with County as necessary to discuss and refine the proposed scope of work and will obtain County approval before proceeding with the study.

Summary

Condition G11 specifies which projects will require project-specific traffic studies. Project-specific traffic studies will include 1) localized circulation impacts, and 2) screening analysis of whether there might be additional significant impacts beyond those identified in the 2000 GUP EIR. If screening analysis indicates changes in total GUP trip distribution compared to the EIR, then a re-analysis of impacts will be undertaken at affected intersections, using 2000 GUP EIR methodology, to determine whether significant impacts would result and to identify mitigations.

Stanford will prepare a scope of work for any project-specific traffic study and review it with the County and its consultant prior to beginning work.

**Stanford GUP
Condition G.11 Flow Chart**



Sample Table of Contents for Project-Specific Studies
Prepared under
Stanford GUP Condition of Approval G11
1/16/02

I Background and Study Purpose (for example, see page 3)

II. Project Description (*all projects triggering Condition G.11*)

- A. Location
- B. Purpose, Function
- C. Size
- D. Parking and Access

III. Peak Period Trip Generation and Distribution

- A. Comparison of project type and location to GUP EIR assumptions(*all projects triggering Condition G.11*)
- B. Assessment of project generation and distribution (*only included if project differs from 2000 GUP EIR assumptions*)
 - 1. GUP trip rates
 - 2. Project-generated trips
 - 3. Trip distribution pattern
 - 4. Comparison of distributed trips to GUP assumptions
- C. Assessment of peak hour intersection volumes (*only included if distributed trips differ from 2000 GUP EIR distribution*)
 - 1. Intersection-specific traffic assignments at GUP buildout from EIR
 - 2. Intersection-specific assignment of traffic from GUP projects approved to date.
 - 3. Project intersection-specific traffic assignment
 - 4. Comparison of aggregate intersection-specific assignments to buildout 2000 GUP EIR estimates

IV. Peak Hour Impacts and Mitigations (*only included for intersections at which distributed trips of project plus approved projects exceed 2000 GUP EIR buildout estimates*)

1. Cumulative 2010 intersection LOS per 2000 GUP EIR
2. Peak hour intersection traffic projection and LOS with proposed project and other GUP projects approved to date.
3. Additional mitigations, if needed, to remain within 2000 GUP EIR cumulative LOS.

V. Off-Peak Impacts (*large-scale special event venues only*)

1. Time(s) of special events
2. Traffic generation at peak event times
3. Traffic distribution
4. Extent of affected area
5. Impacted locations
6. Significance, duration and frequency of impact
7. Temporary mitigations, transportation management plan
8. Mitigation through street modifications, if needed

VI. Site Access and Circulation (*all projects triggering Condition G11*)

A. Internal Site Circulation

1. parking lot layout and circulation patterns
2. access-point dimensions and access controls
3. project driveway stacking lengths, operations and safety
4. emergency access/egress routes
5. loading areas and maneuvering areas
6. bike circulation, racks and storage
7. sidewalks and pedestrian circulation

B. Site Frontages

1. project driveways,
2. loading areas for passengers and material deliveries/ pick-up
3. on-street parking
4. bus stops
5. sidewalks
6. bike lanes and paths

C. Local Surrounding Area (within about 1/4 mile of the site)

1. intersection safety and traffic-control warrants
2. emergency access routes
3. on-street parking/ loading
4. bus routes and stops
5. bike circulation
6. sidewalks and pedestrian crossings

Example of Chapter I

On December 12, 2000, Santa Clara County approved Stanford University's draft Community Plan and General Use Permit application and certified the associated Environmental Impact Report (2000 GUP EIR). This EIR analyzed the impacts associated with the construction of approximately 2 million gsf of academic and academic support uses, approximately 3,000 new housing units, and approximately 2,900 new parking spaces (the number of new parking spaces was limited to 2,300 in the final approval).

The traffic study in the 2000 GUP EIR estimated the new trips "generated" by additional students, faculty, and staff on campus and additional resident population from new housing. The additional generated trips were then "distributed" within the network and were allocated among traffic analysis zones, taking into consideration the anticipated location of housing areas and parking lots, as well as existing traffic patterns.

Mitigation measures to address the impacts of the 2000 GUP development were developed, and Conditions of Approval were attached to the 2000 GUP. These mitigation measures and conditions approached the impacts in a comprehensive manner, so that individual projects that were approved under the 2000 GUP would already have identified required mitigations. One of these comprehensive conditions (Condition G11) calls for a project-specific traffic study for certain projects.

This report presents a study, performed according to the requirements of Condition G11, for the proposed _____ project.