EXECUTIVE SUMMARY

Purpose

The purpose of this study was to analyze the traffic impacts associated with the proposed West Entry Parking Structure (WEPS) on the roadway, transit, bicycle, and pedestrian systems in the vicinity of the project site under existing and cumulative conditions and to identify improvements that would offset those impacts.

The key findings of each chapter are summarized below.

I. Introduction

- The WEPS will replace Lot 45 located on the north side of Hutchison Drive between Dairy Road and Kleiber Hall Drive. The proposed WEPS will provide 1,500 parking spaces and will displace 290 spaces from the existing surface parking in Lot 45, resulting in a net increase of 1,210 parking spaces. The main driveway entrance/exit to the WEPS will be provided by extending Dairy Road north of Hutchison Drive and the secondary driveway will provide access onto Kleiber Hall Drive.

II. Existing Conditions

- Each of the study intersections currently operate acceptably during both the a.m. and p.m. peak hours except for the Hutchison Drive/Kleiber Hall Drive intersection, which operates at LOS E during the p.m. peak hour.

- The ramp junctions at the SR 113/Hutchison Drive interchange currently operate acceptably during the a.m. and p.m. peak hours.

III. Existing Plus Project Conditions

- The WEPS is expected to generate 975 total a.m. peak hour trips and 765 total p.m. peak hour trips.

- The existing plus project conditions analysis assumed that full access would be provided to/from both WEPS driveways and stop signs would be placed at each driveway exit. Vehicular access to the south (i.e., towards Old Davis Road) was evaluated under the following three scenarios: 1. Dairy Road only; 2. Bioletti Way only; and Dairy Road and Bioletti Way.
• The following intersections will operate unacceptably with the construction of the WEPS under each access scenario: Hutchison Drive/La Rue Road; Hutchison Drive/Dairy Road; and New Davis Road/California Avenue.

• The ramp junctions at the SR 113/Hutchison Drive interchange will continue to operate acceptably under existing plus project conditions.

• Although the bicycle facilities in the study area consist of off-street bike paths, bicyclists would be adversely affected by the construction of the WEPS on Lot 45. The main driveway entrance/exit to the WEPS would cross the bicycle path on the north side of Hutchison Drive increasing the number of conflicts between vehicles and bicyclists. In addition, pedestrians crossing Hutchison Drive at Dairy Road would experience significantly higher delays waiting for a gap in traffic.

IV. Cumulative Conditions

• The thirteen study intersections will continue to meet the minimum LOS standards under Year 2005 “no project” conditions during the a.m. and p.m. peak hours except for the Hutchison Drive/Kleiber Hall Drive intersection, which will operate at LOS E during the a.m. peak hour, and New Davis Road/California Avenue intersection, which will operate at LOS F during the a.m. and p.m. peak hours.

• The following intersections will operate unacceptably with the construction of the WEPS under Year 2005 conditions: Hutchison Drive/La Rue Road; Hutchison Drive/Dairy Road; and New Davis Road/California Avenue.

• Cumulative (Year 2025) peak hour traffic volumes on SR 113 at Hutchison Drive were generated using the SACMET regional travel demand model. The SR 113/Hutchison Drive ramp junctions are expected to operate acceptably under Year 2025 conditions with and without the construction of the WEPS.

V. Mitigation Measures and Recommended Improvements

• Figure ES-1 displays the improvements recommended for study intersections that operate unacceptably with the construction of the WEPS under existing and Year 2005 conditions. These mitigations would restore operations to acceptable levels at each intersection under Year 2005 “with project” conditions.

• If Dairy Road is selected to provide access to/from the south, it will need to be widened to include a minimum of 11-foot travel lanes, curbs, gutters, sidewalks, and on-street bicycle lanes with a minimum width of 5 feet.
• The La Rue Road/Dairy Road intersection is located just east of the horizontal curve on La Rue Road. Based on its design characteristics, the minimum required “corner” sight distance on the Dairy Road approach to La Rue Road is 400 feet. The line of sight for drivers on Dairy Road exceeds the 400-foot minimum (see Figure 12). However, obstructions and landscaping along La Rue Road need to be kept to a minimum to maintain an appropriate line of sight.

• Improvements along Hutchison Drive were recommended (see Figure 13) to accommodate the additional traffic generated by the WEPS and serve bicyclists and pedestrians traveling to the central campus.

• The southbound approach at the La Rue Road/Bioletti Way and La Rue Road/Dairy Road intersections will operate at LOS E or F under Year 2005 conditions with the construction of the WEPS. Operations at these intersections could be improved by providing exclusive left and right-turn lanes on the southbound approach or by constructing a roundabout (see note below for right-of-way constraints and roundabout operations).

• At the request of UC Davis staff, the feasibility and resulting traffic operations of constructing roundabouts at the La Rue Road/Dairy Road and La Rue Road/Bioletti Way intersections were evaluated. The roundabouts would have approximately a 100-foot diameter and would operate acceptably under Year 2005 plus project conditions. The La Rue Road/Dairy Road intersection has adequate right-of-way available to construct a roundabout. However, the La Rue Road/Bioletti Way intersection has limited right-of-way due to the building located directly south of the intersection and the tree located on the northeast corner of the intersection.

• The UC Davis Fire and Police Stations are located on Kleiber Hall Drive north of Hutchison Drive. Emergency vehicles currently travel through the Kleiber Hall Drive/Hutchison Drive intersection to access the surrounding campus. Construction of the WEPS would add traffic to the Kleiber Hall Drive/Hutchison Drive intersection and may cause additional delays to emergency vehicles during peak hours. Therefore, prior to the opening of the WEPS, UC Davis should conduct a study to determine measures to ensure adequate access for emergency vehicles during peak hours.

VI. Project Access

• Although providing southern access on Dairy Road would require more improvements than Bioletti Way, Dairy Road would: 1) provide direct access to the
main WEPS driveway and would reduce the number of vehicles traveling on Hutchison Drive between Dairy Road and Bioletti Way, 2) better accommodate the increase in vehicle and bicycle traffic generated by anticipated growth, and 3) be easier to improve (than Bioletti Way) due to the undeveloped land on the west side of Dairy Road.

- Restricting access to right-turns only from the main WEPS driveway onto Hutchison Drive and installing a traffic signal at the Hutchison Drive/Dairy Road intersection will provide acceptable operations during the a.m. and p.m. peak hours. The Hutchison Drive/Kleiber Hall Drive intersection would be able to accommodate the additional traffic utilizing the secondary driveway if access is restricted at the main driveway (see Chapter VII note below).

VII. Pedestrians & Bicyclists at Unsignalized Intersections

- Since the HCM methodology does not consider the effects of bicyclists and pedestrians on unsignalized intersections, the VISSIM micro-simulation software program was used to determine the additional vehicle delay contributed by bicyclists and pedestrians at the Hutchison Drive/Dairy Road and Hutchison Drive/Kleiber Hall Drive intersections under Year 2005 plus project conditions. Since the Hutchison Drive/Dairy Road intersection would operate at LOS F with or without the addition of bicyclists and pedestrians under Year 2005 plus project conditions, the VISSIM analysis assumed that Dairy Road and the main WEPS driveway only allowed right-turns onto Hutchison Drive to determine if restricting access to/from the main WEPS driveway would eliminate the need for a traffic signal at this intersection.

- Bicyclists and pedestrians at the Hutchison Drive/Dairy Road intersection would increase the average delay by approximately 30 seconds per vehicle (LOS D) during the a.m. peak hour and by 10 seconds per vehicle (LOS C) during the p.m. peak hour. Although the results indicate that the intersection would operate acceptably with the addition of bicyclists and pedestrians, leaving this intersection as unsignalized could create conflicts between vehicles, bicyclists, and pedestrians. Installing a traffic signal at this intersection will improve traffic operations during both peak hours and will provide a protected crossing for bicyclists and pedestrians.

- Bicyclists and pedestrians at the Hutchison Drive/Kleiber Hall Drive intersection would increase the average delay by approximately 80 seconds per vehicle (LOS F) during the a.m. peak hour and by 20 seconds per vehicle (LOS D) during the p.m. peak hour. Installing a traffic signal at the Hutchison Drive/Dairy Road intersection would allow vehicles to access the main WEPS driveway from Dairy Road. This would decrease the number of vehicles turning left from Hutchison Drive onto

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Kleiber Hall Drive and would decrease the average delay by approximately 20 seconds per vehicle. However, the intersection would continue to operate at LOS F during the a.m. peak hour.

VIII. Hutchison Drive Access

- Eliminating access on Hutchison Drive just east of Bioletti Way was evaluated to determine if the decrease in traffic volumes along Hutchison Drive would reduce the improvements needed at the Hutchison Drive/Dairy Road intersection.

- The Hutchison Drive/Dairy Road intersection would continue to operate unacceptably with the elimination of all campus vehicles, buses, and pick-up/drop-off trips on Hutchison Drive. Installing a traffic signal is still recommended to provide acceptable operations during the peak hours with the construction of the WEPS.

IX. Roundabout Dimensions & Operations

- Dimensions for a roundabout at the Hutchison Drive/Bioletti Way intersection should include a 100-foot inscribed circle diameter with a 23-foot circulating lane, a 6-foot truck apron, and a landscaped median. The roundabout would operate below capacity under Year 2005 conditions with the construction of the WEPS.
### 3. Hutchison Drive/Health Sciences Drive

**Existing Conditions**

**Recommended Mitigation**

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<th>Hutchison Dr.</th>
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### 5. Hutchison Drive/La Rue Road

**Existing Conditions**

**Recommended Mitigation**

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### 6. Hutchison Drive/Dairy Road

**Existing Conditions**

**Recommended Mitigation – Option 1**

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**Recommended Mitigation – Option 2**

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### 10. New Davis Road/California Avenue

**Existing Conditions**

**Recommended Mitigation**

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**Legend**

- Stop Sign
- Traffic Signal
- Turn Lane
- Significantly Impacted Intersection
- Recommended Mitigation Measures for Significantly Impacted Intersections

**Figure 11**

**Recommended Mitigation**

NOT TO SCALE