

#### 4.18 TRAFFIC, CIRCULATION, AND PARKING

The Department of Transportation has commended the UC Merced LRDP for its focus on integrating land use and transportation to minimize reliance on the automobile (comment SA14-1). The Campus will develop transportation services starting with the first phase of the Campus to encourage a transportation culture focused on alternate modes of travel. The Department also supports the Campus for its participation in funding mechanisms as means to mitigate regional traffic impacts (comment SA14-5). The City of Merced agrees with the mitigation measures identified in the Draft EIR, including the process of traffic monitoring so that the improvements are constructed before or with related development (comment LA6-7). The sections that follow address other issues various commenters raised.

##### 4.18.A Traffic Analysis and Scope of Study

###### 4.18.A.1 Clarification of Terminology and Assumptions

This response addresses comments FA1-29, LA6-12, O13-13, O13-16, O13-21, O13-23b, O13-32, and SA14-4, which seek information about terminology used in the Draft EIR and clarification of assumptions related to the RTP. Other issues raised in comment FA1-29 are addressed in Section 4.18.E.2.

A list of references for Section 4.14 of the Draft EIR appears in Appendix C of this Final EIR.

As discussed on pages 4.14-46 through 4.14-48 of the Draft EIR, the Governing Board of MCAG adopted an updated RTP a few weeks before the Draft EIR was published. The 1998 RTP was in effect when the Draft EIR analysis was performed. Table 4.14-13 in the Draft EIR and the accompanying text describe the primary differences between the improvement projects listed in the 1998 RTP and the 2001 RTP. A commenter identified an additional difference in the project lists. Modifications have been made to Table 4.14-13 in response to that comment; see Volume 2, Section 7 of the Final EIR for the text changes. It also has been suggested that the relevant goals, objectives, and policies from the 2001 RTP be added to the Draft EIR text. In response to that comment, the text of the Draft EIR has been changed (see Volume 2, Section 7 of this Final EIR).

As described in the Draft EIR, the 2001 RTP contains the following project categories: “Funded,” “Other Funding,” “Tier 1,” and “Tier 2.” The cumulative analysis in the Draft EIR generally assumed the existence of Funded and Tier 1 projects, but did not assume the existence of the Other Funding and Tier 2 projects (see pages 4.14-46 through 4.14-48 of the Draft EIR for a full description). Therefore, the University’s fair-share contributions were defined in terms of support for necessary Tier 2 and Other Funding projects as mitigation measures. See Section 4.18.B.1 for additional information about fair-share contributions and Tier 1 projects.

The Draft EIR sometimes used the term “programmed” to describe an improvement project on the Tier 1 list. Some commenters have argued that this choice of terminology may not have been appropriate. (See Section 4.18.B.1 for more details about the status of Tier 1 projects.) One commenter also inquired about the term “partially included” in relation to a proposed improvement project. This term was used once in the text, on page 4.14-4, to describe how an

improvement envisioned in the SSEIR has subsequently been split into two projects, one of which is included in the RTP and the other is identified as a project mitigation measure.

Comments were received regarding assumptions about the width of Highway 59. The Draft EIR's traffic analysis assumed that Highway 59 between Yosemite Avenue and Bellevue Road was two lanes, consistent with the comments received (see Table 4.14-3 in the Draft EIR). Highway 59 between Yosemite Avenue and Olive Avenue was assumed at four lanes; but a commenter correctly points out that this section should have been two lanes. Given the facility type of Highway 59, this change will result in the "Future Plus Campus and Community" service level in Table 4.14-11 changing to level of service (LOS) D for the segment of Highway 59 between Yosemite Avenue and Olive Avenue. This does not meet the standards of significance for a project impact, so it does not change the overall assessment of significant impacts.

As described in Mitigation Measures 4.14-4(a) and 4.14-10(a), one of the Tier 2 improvements needed to mitigate significant impacts in these scenarios is the widening of Highway 59 between Yosemite Avenue and Bellevue Road. The definition of that project in the 2001 RTP is slightly different than in the 1998 RTP, and includes widening a longer segment of Highway 59, from Olive Avenue to Bellevue Road. Therefore, to be consistent with the project definitions in the 2001 RTP, Mitigation Measures 4.14-4(a) and 4.14-10(a) have been modified to refer to improvements to the section of Highway 59 between Olive Avenue and Bellevue Road (see Volume 2, Section 7 of the Final EIR for the text changes).

#### **4.18.A.2**      *Connections to Mariposa County and Other Areas*

This response addresses comments LA7-3 and LA7-4, which raise questions about travel to and from the east of Merced, specifically to Mariposa County.

During preliminary planning processes for the Campus and University Community, the Campus was envisioned to be located approximately 3 miles northeast of the Bellevue Road/Lake Road intersection, and La Paloma Road was anticipated to be one of the major access routes to Campus. However, before the Draft EIR was initiated, the location of the proposed Campus was shifted to the south on the VST site, to the northeast of the Bellevue Road/Lake Road intersection. This shift in location will lessen the need for the La Paloma Road connection by placing the Campus and University Community closer to existing major facilities such as Highways 140 and 99.

From the proposed Campus site, La Paloma Road is not a viable option for interregional travel. La Paloma Road could be used to access Mariposa County only in one of two ways: by requiring several miles of out-of-direction travel on Bellevue Road and G Street, or by constructing a new road between the Campus and the existing La Paloma right-of-way. Out-of-direction travel is unappealing to most travelers because of its inefficiency, and the area between the Campus and the La Paloma corridor where a new road might be constructed is biologically sensitive. In addition, the La Paloma corridor itself traverses areas of high biological sensitivity with many known wetlands.

The G Street and Highway 59 corridors north of the proposed Campus are expected to have sufficient capacity to accommodate anticipated travel demands, even under full LRDP development conditions, thus providing access to parts of Mariposa County. Improvements have been proposed to Highway 140 to accommodate increased traffic along that corridor, which is

the primary route between Merced and Mariposa Counties. It is not anticipated that the La Paloma corridor would be necessary to accommodate expected traffic between the Campus and Mariposa County. Adequate emergency access to the Campus and University Community can be provided without developing the La Paloma corridor.

#### **4.18.A.3 Growth Assumptions**

This response addresses comments LA7-5, O13-12, O24-27, and O24-40, requesting clarification of the growth assumptions used in the analysis and the growth-inducing impacts of the proposed project. Other issues raised in comment O13-12 are addressed in Section 4.18.A.4. Some issues raised in comment O24-40 are addressed in Sections 4.18.B.1 and 4.18.B.3.

The Draft EIR's cumulative analysis is directly based on the adopted regional growth forecasts and the travel forecasting methodology used by MCAG. The growth and development projections were reviewed and accepted by MCAG's member jurisdictions and adopted by the MCAG Board. They are the basis of the Merced County 2001 RTP. As the adopted regional growth forecasts, they meet CEQA requirements for cumulative transportation analysis. The forecasts do not anticipate build-out of the City of Merced by 2025.

The Draft EIR transportation analyses include the effects of induced traffic. To address the potential growth-inducing effects of the Campus, the Draft EIR evaluates two scenarios, as described in "Treatment of the University Community in Analysis Scenarios" on page 4.14-28 of the Draft EIR. The Cumulative scenario assumes that additional housing and commercial demand directly generated by the University would be located within a new adjoining University Community. The Future plus Full LRDP Development scenario assumes that the additional housing and commercial demand directly generated by the Campus would be distributed throughout the City of Merced and nearby cities and county areas in a pattern predicted by real estate market experts. The growth that represents the direct effects of the Campus includes residences needed to accommodate students, faculty, and staff not housed on Campus, as well as the employment necessary to serve the demand for retail goods and services generated by students, faculty, and staff.

Indirect effects of the Campus include the employment opportunities generated by the presence of the people who fill the jobs that are directly related to Campus development. The housing locations for the employees in these indirect jobs are not known. However, regional growth generally is accounted for in the traffic model used to assess project and cumulative impacts. Further, many of the holders of these indirect jobs have already been accounted for in the analysis of direct effects; many of these jobs may be held by college students working part-time, by spouses of those who hold direct Campus jobs, or by existing Merced County residents who are currently unemployed. In addition, as explained in the Draft EIR (Sections 3.1.2.3 and 6.2.5), the University Community can provide some additional capacity for housing new workers in these indirect jobs. Thus, the Cumulative and the Future plus Full LRDP Development scenarios present a reasonable analysis of the transportation effects of the growth generated by the Campus.

Travel to and from the Campus from other counties is accounted for using conventional transportation forecasting methods, including the validated MCAG travel demand model and commute travel distances found at other UC Campuses. The analysis includes student, faculty and staff commutes to the Campus from outside Merced County.

All of the road widenings specified as mitigation measures in the Draft EIR are needed in order to reduce the severity of the significant impacts identified in the Draft EIR. The analysis of significant impacts was based on the project characteristics described in the Draft EIR, including project size, trip generation, and mode split factors. The road improvements specified as mitigation measures are drawn from the list of improvement projects in the RTP; therefore, these are improvements that have been anticipated and analyzed through the regional planning process.

Use of Highway 140 for travel to Yosemite National Park and other destinations is included in the calibrated MCAG travel model. The travel model predicts substantial growth in travel on Highway 140, even without the development of the Campus or University Community. Between the years 2000 and 2025, the model predicts an approximate 60 percent growth in traffic along Highway 140 on the east side of Merced and almost 70 percent growth along the section of Highway 140 that leads into Mariposa County. Traffic from the Campus and University Community would produce additional volume increases along these segments. As mentioned above, improvements to Highway 140 on the east side of Merced are planned in the RTP; the improved facility is expected to have adequate capacity to accommodate future demand, including traffic generated by the Campus.

Merced County participates in the Yosemite Area Regional Transportation System (YARTS), which provides transit service throughout the Yosemite region. As reported in the YARTS Short Range Transit Plan, February 5, 2001, the mission of the system is as follows:

YARTS will provide a positive alternative method of access to Yosemite National Park, carrying visitors, employees and residents. YARTS service is not intended to replace auto access or trans-Sierra travel, but is intended to provide a viable alternative that offers a positive experience, emphasizing comfort and convenience for riders while guaranteeing access to the Park.

YARTS service operates along Highway 140 from downtown Merced to Yosemite Valley, as well as along Highway 120 between Mariposa and Mono Counties. The Short Range Transit Plan estimates that, in the 2001–2002 season, the total number of private vehicles removed from the road on a typical summer day because of the YARTS service would be 117. By 2005–2006, after service improvements and expansion, the number of vehicles removed is projected to be 153. Even if all of these vehicles were removed from Highway 140, the reduction in traffic volume on that facility would not be sufficient to avoid the need for planned improvements.

Also, see Section 4.18.B.1 for discussion of Tier 1 roadway projects.

#### **4.18.A.4      *Questions about Traffic Forecasts***

This response addresses comments O13-12, O13-14, O13-22, O13-23a, SA14-7, and SA14-8, which ask about the traffic forecasts presented in the Draft EIR.

In response to Comment O13-14, the description of G Street in Section 4.14.2.1 of the Draft EIR has been modified to reflect that the highest volume on that street within the City of Merced is approximately 30,000 vehicles per day (see Volume 2, Section 7 of this Final EIR). Projections of cumulative future volumes are based on model growth estimation and therefore are not affected by this change to the setting.

As described in the Draft EIR, the traffic forecasts for the full development of the LRDP were prepared by applying the Merced County regional travel demand model. The results of the

traffic forecasts are summarized in Tables 4.14-9, 4.14-10, and 4.14-11, for Existing plus Campus, Future plus Campus, and Future plus Campus and University Community scenarios, respectively. These tables summarize average daily traffic and LOS information for the road segments where significant impacts were identified, as well as for segments adjacent to impacted segments or otherwise of interest. The full development of the LRDP would produce a large amount of new travel, with the potential to change the distribution of vehicle trips throughout the greater Merced area.

Therefore, the traffic experts who prepared the EIR's traffic analysis determined that the most appropriate and consistent method for assessing the possible impacts of the future Campus would be to use the calibrated regional model. The procedures in the model are designed to capture changes in origin-destination pairs that might result from major changes in local land uses. For each of the scenarios listed above, the model was used to predict future traffic patterns at least twice: once without any Campus-related land uses, and again with the Campus (and, in some scenarios, the University Community) included. For the model runs in which the Campus was included, a select link procedure was also applied to track the number of trips on each roadway that were related to the Campus. The results of that select link application were used to calculate the percentage of Campus-related trips on each link, and thus to determine whether the Campus volumes met the threshold defined in the standards of significance (i.e., adding at least 5 percent to the volume).

Table 4.14-9 in the Draft EIR summarizes the forecasts for the Existing and Existing plus Campus scenarios. Some commenters note that traffic volumes on certain routes shown in this table do not increase dramatically between the two scenarios and question whether the amount of Campus traffic was adequately estimated. In many cases, this apparent effect is likely due to the selection of road segments that are shown in Table 4.14-9 and the subsequent tables summarizing other scenarios. As noted above, the tables include segments that experience a significant project impact in any of the scenarios analyzed, along with other segments that might be of interest for regional planning purposes. Therefore, not all segments are affected under each scenario.

Figures 4.18-1 and 4.18-2 show the daily traffic volumes projected under Existing Conditions and Existing plus Campus Conditions, respectively. As shown on these figures, the Campus causes substantial increases in traffic volumes on a number of routes. For example, a summary of north-south traffic volumes in the City of Merced between Yosemite Avenue and Olive Avenue, from Highway 59 to McKee Road, shows that the addition of the Campus causes an increase in total traffic volume of approximately 67 percent (from about 45,000 daily vehicles under Existing Conditions to almost 75,000 daily vehicles in the Existing plus Campus scenario). However, the primary routes that experience potentially significant impacts from this volume increase are G Street and Highway 59. Segments of these streets are described in Draft EIR Table 4.14-9 in the Draft EIR. Other north-south streets, such as R Street and M Street, also experience volume increases, but not of sufficient magnitude to trigger a potentially significant impact. The volumes presented in Table 4.14-9 are accurate reflections of the results of the Existing plus Campus scenario for all segments, including the segments mentioned in Comment O13-22. Most of the roadways mentioned in that comment are identified as significant impact locations in later scenarios, as described below.

The use of Future Conditions as a baseline presents a more realistic assessment of project effects than does Existing Conditions, and therefore it is the scenario used to determine project impacts

and mitigations. By the year 2025, a substantial amount of new development is expected throughout the Merced area. Comparing the Without Project volumes from Table 4.14-10 to the Existing Conditions volumes from Table 4.14-9 in the Draft EIR clarifies the effects of this development; all roadways studied show substantial increases in projected traffic volumes under Future Without Project conditions. The Future Conditions scenario also provides additional roadway capacity by applying the expected improvement projects to the model network based upon the best information available at this time. The combination of additional land uses and additional network capacity means that the effect of the Campus when compared against Future Conditions will be different than when compared against Existing Conditions. This is why the growth in traffic along Highway 99 under the With Project scenario differs between Tables 4.14-9 and 4.14-10 in the Draft EIR, as pointed out in comment SA14-7.

As described above, the results of the select link analysis were used to determine whether the proportion of Campus trips met the 5 percent threshold specified in the standards of significance. Figure 4.18-3 shows the select link results, with the percentage of future volume represented by Campus trips under the Future plus Campus scenario. These results were the basis for the footnote in Draft EIR Table 4.14-10, which states, "Campus traffic does not represent 5 percent of future volume, so not a significant project impact." That footnote was applied to links where the projected level of service exceeded the threshold but select link analysis showed that Campus-related trips did not make up the proportion of traffic necessary for a significant impact to be identified.

For example, volumes on Highway 59 between Olive Avenue and 16th Street were projected to increase by approximately 8 percent between the Future Without Project and Future With Campus scenarios, as shown in Draft EIR Table 4.14-10. However, the select link analysis showed that Campus-related trips generally made up less than 5 percent of the volume on that segment (as shown on Figure 4.18-3), and therefore that particular road segment did not meet the standards of significance. Similar results were found on Highway 99. Volumes increased by 7 to 8 percent under the With Project scenario but the select link analysis showed a less than 5 percent contribution from the Campus, so the standards of significance were not met. On the other hand, total volumes along Santa Fe Drive between Highway 59 and Beachwood Drive increased by less than 2 percent. However, the select link analysis showed that Campus trips made up more than 5 percent of the volume, and so that segment was identified as a significant project impact and a mitigation measure was recommended. These results are indications of the potential redistributive effects of a major new project such as the UC Merced Campus.

The Cumulative analysis (as presented in Table 4.14-11 of the Draft EIR) was conducted in the same manner. For the reasons described above, the cumulative effect of Campus and University Community travel on Highway 99 did not meet the standards of significance. In general, the regional travel model shows that Campus and University Community trips that use the freeway tend not to travel through downtown Merced. Trips going to or from the south will use the new interchange at Mission Avenue and the new Campus Parkway, and those going to or from the north are likely to use the realigned Highway 59 and its new interchange. Thus, relatively small numbers of Campus- or Community-related trips will travel on the downtown Merced portion of Highway 99. In the Cumulative analysis scenario, overall traffic volumes on Highway 99 between R Street and Martin Luther King Jr. Way grew by around 3 percent when the Campus and Community trips were added to the network.

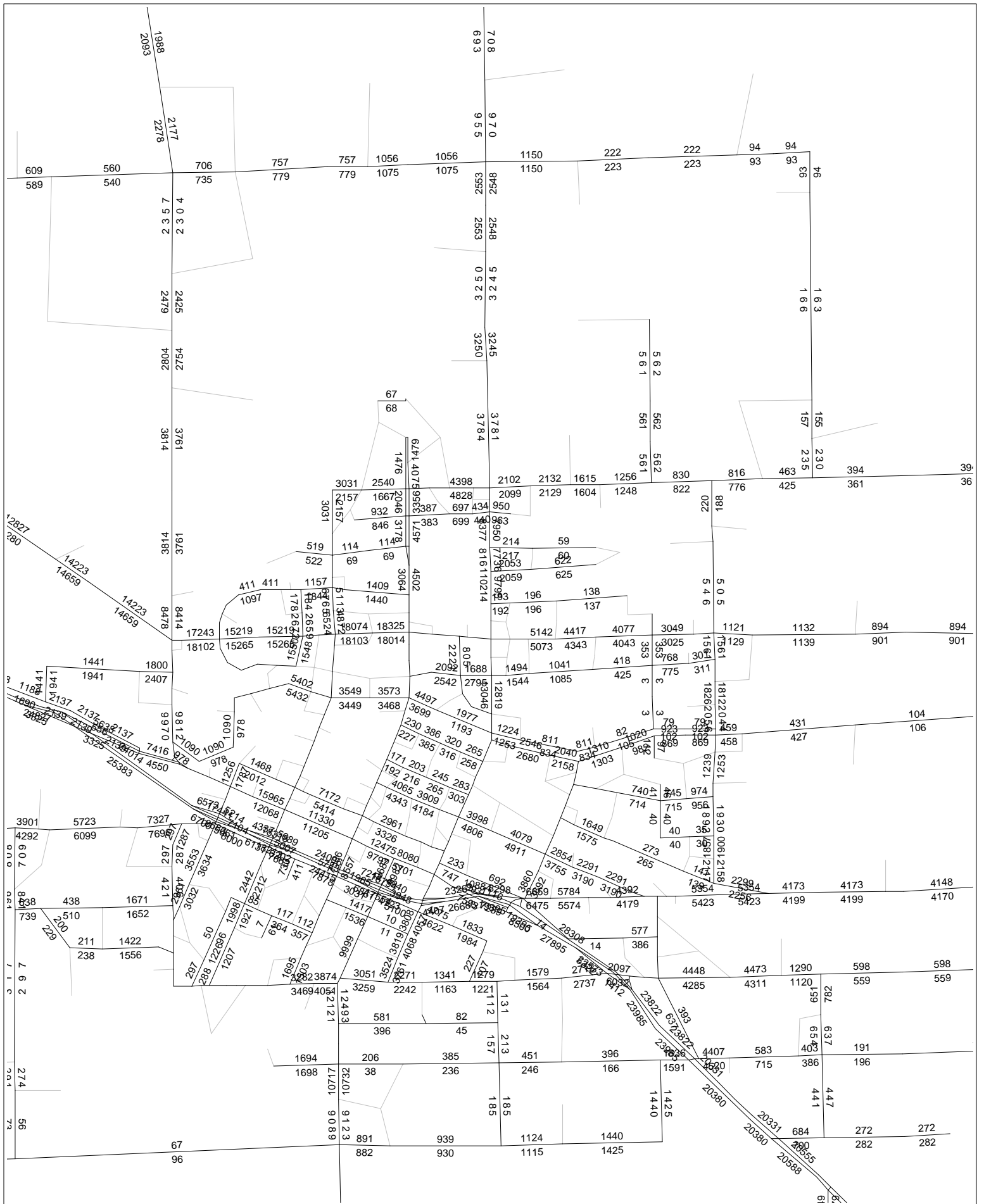


Figure 4.18-1

Existing Conditions

Average Daily Traffic Volume

Viper Software by The Urban Analysis Group

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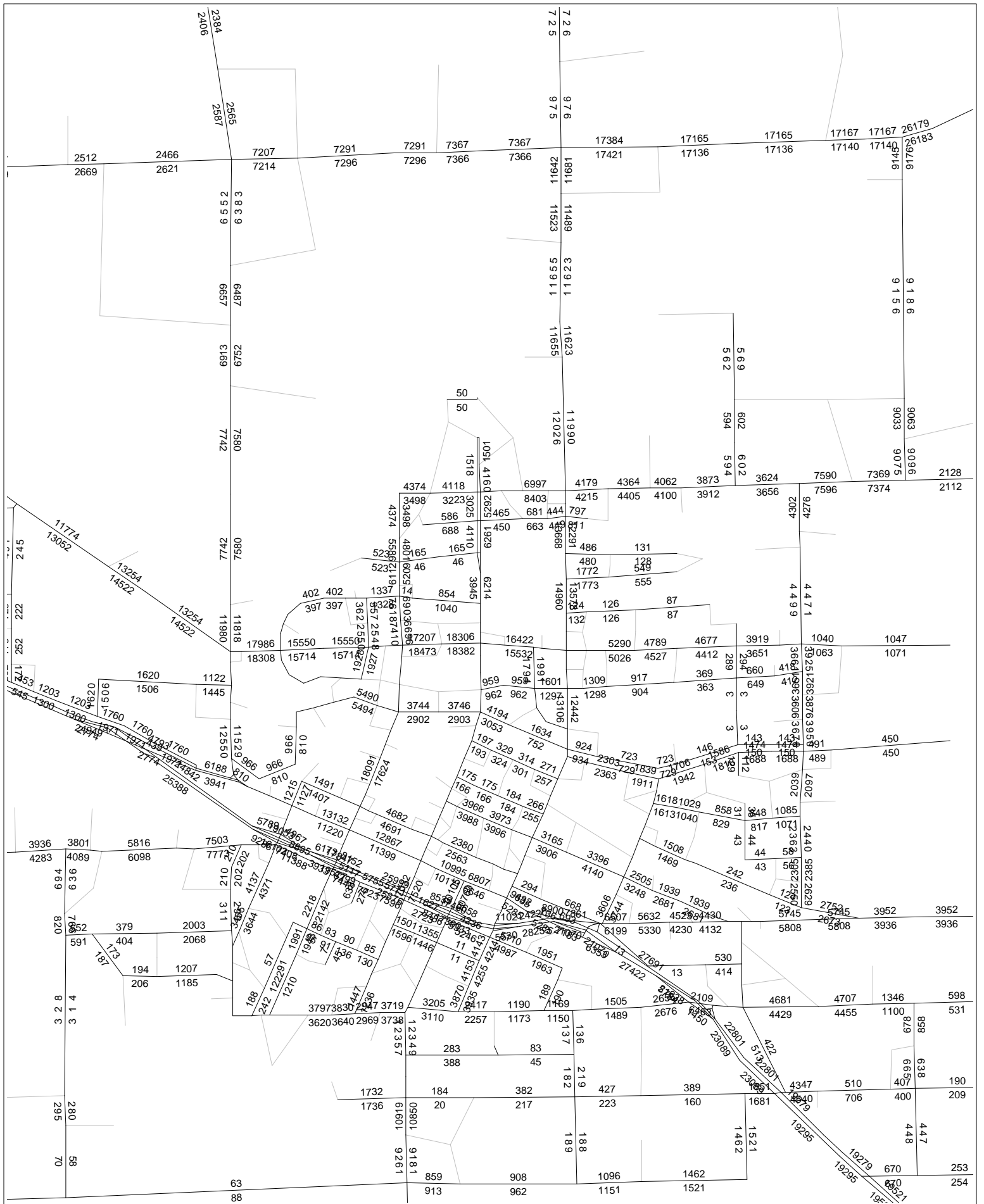


Figure 4.18-2  
 Existing Conditions plus Campus Full Development  
 Average Daily Traffic Volume  
 Viper Software by The Urban Analysis Group

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See Section 4.18.B.1 for a discussion of fair-share contribution toward transportation improvement projects.

#### **4.18.A.5      *Requests for Additional Analysis***

This response addresses comments LA9-1 and O13-15, which request additional analyses beyond those presented in the Draft EIR.

One commenter requested that several intersections be added to the analysis of the Phase 1 Campus impacts and mitigations. In the Draft EIR, 14 intersections were analyzed in the Phase 1 scenario, and the results of the analysis were presented in Table 4.14-8. The following additional intersections have been mentioned in the comments received:

1. Highway 99/Childs Avenue
2. Highway 99/Martin Luther King Jr. Way
3. Martin Luther King Jr. Way (Highway 59)/Childs Avenue
4. McKee Road/Yosemite Avenue
5. McKee Road/Olive Avenue
6. McKee Road/Bear Creek Drive
7. Santa Fe Drive/Highway 140

The intersection of Highway 99/Martin Luther King Jr. Way (intersection 2, above) is included in the analysis presented in Table 4.14-8 in the Draft EIR. For intersections 1, 3, and 7 above, the amount of traffic added by the Phase 1 Campus represents a very small percentage increase over the No Project conditions and thus would not approach the standard of significance specified in the Draft EIR. McKee Road (intersections 4, 5, and 6) is likely to carry some Campus-related traffic during the early years of Campus activity, but the completion of Campus Parkway between Highway 99 and Yosemite Avenue should alleviate this effect. Thus, if Campus Parkway development proceeds according to the schedule available at this time, these intersections would not experience significant effects in the Phase 1 build-out year analyzed in the EIR. However, if Campus Parkway development is substantially delayed, McKee Road may suffer adverse effects from Campus-related traffic. In that sense, McKee Road is similar to Lake Road, Yosemite Avenue, and other facilities that provide access to the Campus. As with those other facilities no significant impact is expected but monitoring will be conducted to determine whether it is desirable to provide spot remedies and safety improvements along McKee Road to address the effects of additional traffic volumes related to the Campus pending completion of Campus Parkway. Therefore, McKee Road has been added to the discussion of Impact 4.14-6 and will be subject to annual monitoring of traffic conditions and potential remedial upgrades until the completion of Campus Parkway (see Volume 2, Section 7 of this Final EIR).

Another commenter proposed specific improvements to the following intersections in the vicinity of the Campus: Lake Road/Bellevue Road, Lake Road/Yosemite Avenue, and G Street/Bellevue Road. The responses to these comments are provided below:

- **Lake Road/Bellevue Road.** The comment proposes installation of a traffic signal and construction of a left-turn pocket on the eastbound Bellevue Road approach. These improvements were recommended in the Draft EIR. Specific design elements of the

improvements will be submitted to Merced County as part of the standard review process for design and construction of off-site improvements. The intersection improvements suggested in the comment will be constructed as called for in Mitigation Measure 4.14-1.

- **Lake Road/Yosemite Avenue.** The comment proposes installation of a traffic signal, construction of a left-turn pocket on the Yosemite Avenue approach, and improvement of the turning radius at the northeast corner. Additional analysis of this intersection has been conducted using assumptions that are consistent with those presented in the Draft EIR. Under 2008 With Project conditions, the intersection is expected to operate at LOS A. Therefore, it does not meet the threshold for a significant project impact. However, the Draft EIR acknowledges that it is difficult to predict future traffic patterns at this intersection largely because it will be affected by the pace of Campus Parkway development, which is unknown at this time. Therefore, the Draft EIR recommends monitoring of the intersection at frequent intervals to determine the type and timing of capacity improvements that might be needed. The suggested intersection improvements will be considered if capacity improvements are found to be needed. Mitigation Measure 4.14-2 has been modified accordingly, and the text changes can be found in Volume 2, Section 7 of this Final EIR. The improvement of the turning radius at the northeast corner is included in the Draft EIR under Mitigation Measure 4.14-3(b) (pages 4.14-32 and 4.14-33), which has been modified to identify the location of this improvement (see Volume 2, Section 7 of this Final EIR).
- **G Street/Bellevue Road.** The comment proposes installation of a traffic signal and construction of a left-turn pocket on the westbound Bellevue Road approach. The analysis presented in the Draft EIR finds that the signal warrant is not met at this intersection and that the addition of a left-turn pocket is not needed for purposes of capacity enhancement. However, the Draft EIR does recommend ongoing monitoring of Bellevue Road and G Street in Mitigation Measure 4.14-6 to determine the type and timing of improvements that might be needed as Campus development progresses. The suggested intersection improvements will be considered if capacity improvements are found to be needed at this location. Mitigation Measure 4.14-6 has been modified accordingly, and the text changes can be found in Volume 2, Section 7 of this Final EIR.

#### 4.18.A.6 *Trip Generation and Internalization Assumptions*

This response addresses comments O13-33 and O24-26, which request clarification of the assumptions regarding trip generation and trip distribution.

The Campus trip generation estimates were derived from data gathered at UC Davis and UC Santa Cruz. UC Davis is considered to be the closest in overall character to a fully developed UC Merced LRDP, with its adjacent and integrated community as well as its emphasis on alternative modes of transportation. However, some characteristics of UC Davis are not an exact match to UC Merced, and UC Santa Cruz has more similarities. For example, UC Davis houses less than 25 percent of its students on campus, whereas UC Santa Cruz houses 50 percent (similar to the goal for UC Merced). For off-campus residents and employees, both the communities of Davis and Santa Cruz provide nearby housing. At UC Santa Cruz, 56 percent of nonresidential students, faculty, and staff live within 3 miles of the campus core (Campus Transportation Planning Study, May 1994). At UC Davis, 47 percent of campus employees live within the City of Davis (UC Davis Planning and Budget Office 1993). An even higher

percentage of nonresidential students live within the City of Davis, as suggested by the student mode split to campus of approximately 78 percent for walking, bicycling, and transit combined (UC Davis Draft EIR, 1994). Davis provides substantial commercial and retail opportunities directly adjacent to the campus, which is not the case in Santa Cruz.

Based on these factors, UC Davis and UC Santa Cruz have some clear similarities with UC Merced. Both UC Davis and UC Santa Cruz generate vehicle trips at a rate of approximately 2 daily trips per enrolled student. (To clarify, these are vehicular trips that cross the campus boundary and thus have the potential to affect the regional road system; intracampus trips are not considered.) Therefore, a basic Campus trip generation rate of 2 trips per student was assumed in the Draft EIR.

Trip internalization assumptions were described in basic terms in the Draft EIR. As shown in Tables 4.14-6 and 4.14-7 of the Draft EIR, “local” trips are those that remain within the Campus/University Community area, and “regional” trips are those that travel to other parts of the region. In the full development scenario, it was assumed that 65 percent of Campus-generated trips would be local, and 35 percent regional, which was partially based on the residence location information described above. As mentioned above, 56 percent of UC Santa Cruz’s faculty, staff, and nonresidential students live within 3 miles of the campus core, and 23 percent live within 5 miles. Similar information from UC Davis indicates that approximately half of the faculty and staff live in Davis, as do a high proportion of nonresidential students. Given that the proposed University Community is designed to directly support the needs of the UC Merced Campus, it is likely that, in the long run, sizeable percentages of Campus employees and nonresidential students will live within the University Community and travel between the University Community and the Campus. While alternative modes of transportation will be strongly encouraged, some of this travel will inevitably be by automobile. Even in Davis, where approximately one-half of the faculty and staff live in town, only about one-quarter of faculty and staff walk, bike or take transit travel to campus.

Another component of local travel between the Campus and University Community would come from students and faculty and their family members who live on Campus. UC Merced has a stated goal of providing housing for 50 percent of students and 50 percent of faculty. Graduate students and faculty members who live in on-Campus housing are likely to have spouses and children living with them, many of whom will need to leave Campus to accomplish daily tasks. For example, the elementary and secondary schools to serve those children will be located in the University Community, as will many of the retail and employment opportunities for the spouses. In the context of the considerations outlined here, the traffic experts who prepared the EIR’s traffic analysis have determined that the overall Campus trip internalization assumptions are reasonable.

#### **4.18.A.7      *Agricultural Traffic***

This response addresses comment O17-2, which expresses concerns about the effect of Campus-related traffic on roads that serve agricultural uses; and comment I27-1, which concerns the effect of Campus Parkway and Campus development on agricultural land.

The potential effects of full Campus development if Campus Parkway is not constructed are discussed on page 4.14-37 of the Draft EIR. As described in that section, without Campus Parkway, traffic volumes would increase on several roads that serve agricultural uses, such as

Yosemite Avenue, Arboleda Drive, and others. Increases in traffic along these roads would also be expected during the early years of Campus development prior to completion of Campus Parkway, although the magnitude of the traffic increases would be less than that discussed on page 4.14-37 of the Draft EIR, since the Campus population would be relatively small. Mitigation Measure 4.14-6 calls for the University to contribute to the regular monitoring of traffic conditions along approach routes to Campus and to the implementation of warranted interim improvements. This mitigation measure would assure that roads that are substantially affected by Campus traffic are monitored, and that capacity or safety upgrades are implemented as needed. Once Campus Parkway is completed as a high-capacity expressway, it is expected that the Parkway will become the primary connection between the Campus and points south and southeast.

It should be noted that Campus Parkway is a County of Merced, Caltrans, and Federal Highway Administration project, and its final alignment will be determined by these agencies. The University has examined alternative locations for the Campus, including North Merced/Bellevue Ranch, in its consideration of alternatives in the Draft EIR and has considered alternatives that minimize impacts to agricultural lands.

#### **4.18.B Mitigation**

##### ***4.18.B.1 Fair-share of Transportation Improvement Projects***

This response addresses comments LA6-8, LA9-3, LA9-6, O13-1, O13-4, O13-6, O13-9, O13-11, O13-13, O13-17, O13-20, O13-24, O13-25, O13-27, O13-30, O24-40, and SA14-6. These comments pertain to the definition of “fair-share” contributions toward roadway improvement, as described in the mitigation measures in the Draft EIR, and the application of those fair-share contributions to the categories of improvements listed in the RTP.

The UC Merced LRDP EIR and the UCP EIR employ consistent approaches to funding roadway improvement projects listed in the current RTP. They conform to the RTP identification of which projects can reasonably be expected to be funded from established federal, state and regional sources and which could reasonably require additional funding. MCAG, the officially designated Regional Transportation Planning Agency for Merced County, prepares the RTP for Caltrans and the California Transportation Commission in accordance with the requirements of state and federal legislation. The RTP and its Finance Element are adopted by the MCAG Governing Board every 3 years and represent the region’s official transportation planning and programming document.

The Merced County 2001 RTP identifies “Funded” and “Tier 1” roadway improvements based on the regional consensus on the highest-priority projects, and reasonable projections of funding availability over the next 20 to 25 years. The RTP Finance Element estimates expected funding amounts from regional as well as state and federal sources. The anticipated state and federal revenues are based on Merced County’s historic receipts from Caltrans and the California Transportation Commission. Based on Merced’s experience, the Finance Plan assumes a moderate, rather than optimistic, share of discretionary allocations. Furthermore, funding for Tier 1 projects does not assume that Merced County adopts a regional sales tax or development fee program, either to provide more local funds for roadway projects or to leverage greater discretionary allocations from the state.

The projects included in Tier 1 are prioritized based on a set of rational evaluation criteria established by MCAG, including:

- Creation of an integrated balanced road system serving community needs
- Consistency with adopted regional plans and local General Plans
- Maximization of improvement in traffic flow and safety
- Minimization of impacts on the environment and on agricultural lands.

Given the RTP's moderate (rather than conservative or optimistic) assumptions, its experience-based estimates of anticipated revenues, its rational prioritization of projects, and the recent adoption of both its project list and financial element by the Governing Board of Merced's official Regional Transportation Planning Agency, the completion of its designated Tier 1 and Funded projects represents a reasonable assumption upon which to base the LRDP environmental analysis. Therefore, the LRDP EIR mitigations do not include University contributions to RTP Tier 1 or Funded projects. The LRDP EIR mitigations do, however, include potential fair-share contributions to RTP Tier 2 projects needed to accommodate campus traffic.

Although the Tier 1 and Funded projects can be reasonably expected to be funded from other sources and built within the next 20 to 25 years, future funding availability and project readiness are not guaranteed. Highway funding cycles are shorter than 25 years and several of the potential federal and state funding sources are discretionary. Construction cost estimates for roadway projects will also be updated periodically, and higher-than-expected price escalation may result in funding shortfalls. Such situations will be identified in future RTP updates, anticipated every 3 years during development of the LRDP. If Tier 1 and Other Funding projects are not built due to funding shortfalls or other reasons, and it appears that significance thresholds will be crossed on those roadway segments in the near term due to Campus traffic, then subsequent project-level environmental documents will need to address this change in circumstances, consistent with the requirements of CEQA. It would be speculative, at this point, to attempt to predict (1) whether such an event will happen and (2) which roadways would be affected. If future environmental documents prepared on individual building projects within the LRDP identify additional impacts based on changed circumstances or new information, then additional mitigation measures may be required. This may include redefinition of the list of roadway project costs toward which the University would contribute its fair share (as described in Section 4.14.3.2 of the Draft LRDP EIR).

As explained in Section 4.14.3.2 of the Draft EIR (page 4.14-29):

[F]air share is defined to mean that the University has agreed to negotiate for a contribution to the roadway or intersection improvement pursuant to procedures similar to those described in Government Code Sections 54999 et seq. for contributions to utilities. In addition, in each case a fair-share payment is agreed upon, the University will pay its fair-share only if the applicable jurisdiction has established and implemented a mechanism for collecting funds from any other developers and entities contributing to traffic impacts, and the jurisdiction builds the relevant roadway or intersection improvement.

Many factors may be taken into account in determining the University's fair-share contribution to a roadway project, including the timing of the improvements, the timing of payments by the University, the timing of payments by other parties, other contributions by the state, relative amount of peak hour usage, other sources of funding available, participation by the parties in securing other sources of funding, and other such relevant factors. The amount will be established after the cost of the roadway project has been finalized and/or the negotiations with the applicable agency have been completed.

The four-lane Campus Parkway that is planned for construction would accommodate all traffic from full LRDP development and the regional traffic assumed in the traffic model for the year 2025. The extension of Campus Parkway from Yosemite Avenue to Bellevue Road is not included in the RTP and is expected to be constructed as part of the University Community. The Draft EIR also includes the extension of Campus Parkway as a mitigation measure in the event that the University Community is not built. If either portion of Campus Parkway is proposed to be expanded in the future, then fees collected from the new development projects that create the need for the expansion likely would offset the cost of the expansion projects.

Concerning the specific mechanism used to fund transportation improvements from sources other than the University, MCAG, the City of Merced, and Merced County will have several options available to them. One option will be a traffic impact mitigation fee that will conform with the requirements of Government Code 66000. The City of Merced Public Facilities Impact Fee is an existing example of a fair-share fee program. This approach would stipulate that each development project will pay a fee upon issuance of a building permit or at intervals tied to build-out rate. The fee amount at any given time would be based on the then-most-current assessment of remaining future cumulative development units (expressed as equivalent capacity units or equivalent trip generation units). It would also be based on the inflation-adjusted estimates of cost to construct remaining roadway facilities in the then-current RTP, less other federal, state, regional and local funding sources. An alternative mechanism the County may implement would require development projects to enter an agreement to pay a certain total amount toward completion of the 2001 RTP, either prior to completion of a certain development threshold or at defined development milestones through the build-out cycle.

#### **4.18.B.2      *University Responsibility for Other Mitigations***

This response addresses comments LA9-1a, LA9-2, LA9-4, LA9-5, O13-3, O13-10, O13-19, and O13-26. These comments raise questions regarding the appropriate responsibility of the Campus toward mitigations other than roadway improvements discussed in the Draft EIR.

As described in Section 4.14.3.2 of the Draft EIR, the University will contribute its fair-share toward the cost of the improvements needed to mitigate significant project impacts, including pavement patching along construction routes to repair damage caused by Campus construction vehicles. As discussed in Comment O13-26, such remediation of construction impacts is not limited to roads within the County's jurisdiction; Mitigation Measure 4.14-3(a) has been revised to reflect this (see Volume 2, Section 7 of this Final EIR).

The Draft EIR describes the University's mitigation responsibilities associated with Phase 1 of Campus construction and operation. Project environmental documents on subsequent phases of Campus build-out will identify additional specific mitigations for each subsequent phase in the context of concurrent cumulative development. As described in Impact 4.14-5 in the Draft EIR,

this may lead, for example, to a requirement that the Campus establish road connections through the planned University Community to provide Campus access if Campus development outpaces expected University Community development based on information currently available.

As an “existing deficiency” relative to Caltrans standards, the University is not required to fund repair of the Lake Road bicycle path. The existing deficiencies should be corrected by the County of Merced pursuant to its Regional Bicycle Plan. The Regional Bicycle Plan also calls for ongoing maintenance and improvement of the bicycle paths, and the University anticipates that this will occur regardless of campus-related bicycle use. Many off-campus bicycle paths are located within roadways, and would be maintained at the same time as the roadways are maintained. Paths that are separate from roadway may be eligible for grant money to fund maintenance and expansion. The LRDP supports and encourages bicycle use.

#### **4.18.B.3      *Mitigation Scheduling and Monitoring***

This response addresses comments LA9-1, LA9-7, O13-5, O13-7, O13-25, O13-28, O13-31, and O24-40, regarding timing and implementation of the mitigations proposed in the Draft EIR. Other issues raised in comment LA9-1 are addressed in Section 4.18.A.5. Other issues raised in comment O24-40 are addressed in Sections 4.18.A.3 and 4.18.B.1.

Mitigations such as traffic signals should be installed only when officially adopted “warrants” are met. These warrants, promulgated by Caltrans and the American Association of State Highway and Transportation Officials, indicate traffic volume and accident thresholds at which traffic signals become effective capacity management and safety measures. Installation substantially prior to meeting these warrants can place a responsible agency in a more vulnerable position with respect to liability claims; an example of such a liability issue might be a rear-end collision involving a vehicle stopped at an unwarranted signal. Therefore, the Draft EIR recommends that annual warrant analysis be conducted to determine the academic year for which traffic signals and related improvements should be installed. In some cases, installation is expected prior to completion of Phase 1, but not prior to initiation of the first year’s classroom activities.

Many roadways within the Campus will not be designed to highway standards. The Campus will contain a variety of street types designed to serve primarily pedestrian and bike travel, as well as local, low-speed movement of autos, shuttle buses, and service vehicles. The Caltrans Highway Design Manual does not address these types of streets. These facilities will be designed to standards shown to provide safe, effective circulation in other communities and on other university campuses in California. On larger Campus access streets, Caltrans standards will be consulted along with those of the American Association of State Highway Transportation Officials, and the Federal Highway Administration in their new Context Sensitive Design initiative. Caltrans’s latest practice evolution will also be considered, which recognizes that, even on arterials, Caltrans does grant exceptions to its highway design standards if they can be shown to provide context-sensitive design treatments without compromising safety or capacity. Because these designs will be consistent with practice in other counties, communities, and campuses and, on major roads, in accordance with appropriate guidelines promulgated by recognized agencies and organizations, the Campus circulation design will not result in a significant impact.

Monitoring to ensure timely implementation of Phase 1 improvements will be performed by Merced County, and the Campus will work with the County to finalize monitoring protocols. County monitoring will include: (1) annual counts of daily and peak traffic volumes at Bellevue Road/G Street and Lake Road/Yosemite Avenue intersections relevant to analysis of traffic signal warrants, (2) annual monitoring of daily traffic volumes and speeds on Lake Road south of Bellevue and Bellevue Road west of Lake Road, (3) monitoring of accident records along Lake and Bellevue Roads, and (4) continuous monitoring of complaints from residents of Lake and Bellevue Roads concerning difficulties with driveway access/egress maneuvers. In addition, the University will perform video monitoring of pavement condition along access routes where Campus construction vehicles represent more than 5 percent of daily traffic prior to and within two months following completion of Phase 1 construction. The County will also perform analysis to determine whether standard Caltrans, American Association of State Highway Transportation Officials, or Manual of Uniform Traffic Control Devices warrants are met for traffic signals at Bellevue Road/G Street and Lake Road/Yosemite Avenue intersections, or for left-turn lanes or acceleration/deceleration lanes at driveways on Lake or Bellevue roads. The University will also provide a standard test to determine whether pavement repair is required along truck routes.

Prior to the construction of long-term roadway improvements specified in the Draft EIR, critical steps will need to be taken to delineate and protect the necessary rights-of-way and access restrictions. While all of the required mid-range and long-range projects and mitigation measures are included in the current MCAG RTP and many are within the RTP's higher-priority Tier 1 group, many improvements are not scheduled to be built until 2015, 2025, or beyond. Responsible agencies, including the City and County of Merced and Caltrans, will need to prepare corridor concept plans, route alignment studies, precise-plan-line adoption, and project study reports to ensure that rights-of-way are preserved and property access needs are anticipated and accommodated in a manner that is acceptable both before and after construction of the widened facilities. County and City Planning Departments will also need to adopt development-review and entitlement-granting procedures that establish and protect setback standards, as well as driveway consolidation and management standards. Preliminary and final design studies will also need to be performed sufficiently in advance to assure that the mitigations can be constructed by the dates specified. To ensure the effectiveness of the mitigations, principal streets for which this process will be required include Bellevue Road, Yosemite Avenue, G Street, M Street, and Highway 59. The University will participate in these planning processes.

Because the right-of-way delineation and preservation process and the establishment of access management controls are the responsibility of other agencies, the University must rely on the County and the affected cities to implement the roadway improvement projects specified in the Draft EIR. Although the University will support these actions through its fair-share contribution to road system expansion, performance is under the jurisdiction of the County and cities, and the University cannot assure a successful outcome. For this reason, the roadway impacts described in the Draft EIR (Impacts 4.14-4 and 4.14-10) are designated as significant and unavoidable.

#### **4.18.B.4      *Construction of Additional Capacity***

This response addresses comments LA6-9, LA6-11, O13-11, and O13-29, which raise questions about the Campus's responsibility for constructing additional capacity along major access routes. Other issues raised by comment LA6-11 are addressed in Section 4.18.C.1.

As described in Section 4.18.A.3, the cumulative transportation analysis presented in the Draft EIR is based on forecasts of development in the year 2025 throughout Merced County, in combination with full development of the proposed Campus and University Community. After the mitigations proposed in the cumulative scenario are included, Bellevue Road, Campus Parkway, and Yosemite Avenue have sufficient capacity to accommodate the expected levels of cumulative development.

Cardella Road is not expected to be a primary route for Campus access for a number of years, particularly prior to the completion of substantial amounts of development in north Merced. For many years, Yosemite Avenue will continue to be an important connection from the existing developed areas of Merced to the Lake Road/Campus Parkway corridor. The concept of converting Cardella Road into a ring road as suggested by a commenter is not entirely consistent with the urban design principles of the LRDP and the UCP. In addition, further significant impacts to sensitive biological resources may result if such a loop road were to be developed around the Campus and University Community. The primary regional facilities in the vicinity of the Campus and University Community will serve the function described in the comment. As envisioned in the RTP, the connections achieved by Campus Parkway, Bellevue Road, and a new section of Highway 59 would form a loop that would serve as a master distributor of traffic throughout northern Merced.

Additional capacity along any or all of the routes mentioned here might be needed once development in Merced progresses beyond the levels expected by 2025. For example, Cardella Road is likely to eventually become an important route as further development occurs in north Merced, serving to relieve demand on Bellevue Road and Yosemite Avenue. Therefore, it is important that adequate rights-of-way be preserved and plan-line studies be conducted in cooperation with the City and County. The analysis in this EIR is based upon the best information currently available. As Merced grows, the City will continue to assess its circulation needs.

#### **4.18.B.5**      *Land Use Policies as Mitigations*

This response addresses comment SA14-2, which suggests the addition of some LRDP policies as mitigations in the Draft EIR.

As discussed in the comment, successful implementation of the traffic, circulation, and parking policies included in Section 4.14.2.4 of the Draft EIR will depend in part on the achievement of specific land use and sustainable planning policies included in the LRDP. The comment specifically identifies policies CLU-5, CLU-7, and SUST-1 as being particularly relevant to transportation issues. These policies are part of the project being proposed for approval, that is, the LRDP. As with any policies, if they are amended in the future, CEQA analysis would be conducted to determine whether new or substantially more severe impacts would occur.

#### **4.18.C**      **Suggestions for Additional/Modified Circulation System Improvements**

This response addresses comments LA6-10 and LA6-11, regarding the potential for shared access between the Campus and Lake Yosemite Regional Park. Other issues raised by comment LA6-11 are addressed in Section 4.18.B.4.

As shown in the LRDP, Lake Road north of Bellevue will provide major access to the Campus, and to Lake Yosemite Regional Park. Lake Road will be improved to accommodate the traffic volumes generated by these combined uses. Because the periods of heaviest Campus activity (i.e., weekdays during the school year) do not generally coincide with the heaviest periods of recreational usage of the regional park, frequent or recurring conflicts are not anticipated to arise between the two user groups. Conflicts will be further minimized by restricting Campus access to certain intersections along Lake Road. For example, during Phase 1 of the Campus, access to the parking lots along the east side of Lake Road will be provided only from internal Campus roadways, not from Lake Road itself.

The Campus plans to develop Lakeshore Drive only to the extent needed to serve Campus uses, while coordinating with the County on access to the regional park. Because of the presence of important biological resources, Lakeshore Drive is not likely to be extended around the lake as a scenic drive loop. In any event, such a project is not proposed as part of the LRDP or UCP.

#### 4.18.D Mass Transit and Other Traffic Alternatives

##### 4.18.D.1 Light Rail

This response addresses comments I37-1 and O30-5, which ask about the applicability of light rail transit.

The City of Merced General Plan identifies M Street and Bellevue Road as “transit corridors,” logical locations for public transit to provide convenient access to many of the major destinations in Merced. The General Plan states that “transit corridors that are effectively preserved could become the location of a light rail system” or other alternative transit mode, if such a mode becomes economically viable. The RTP prepared by MCAG does not anticipate development of light rail within the 25-year time horizon encompassed by the plan. The transit portion of the RTP envisions enhanced transit service in Merced County through improved bus route frequencies, increased numbers of transit vehicles, and extended operating hours.

The primary transportation theme of the LRDP for the UC Merced Campus is to allow safe and efficient travel by a full variety of modes while minimizing reliance on the automobile. The LRDP circulation policies are designed to provide maximum flexibility to adapt to changing conditions by planning to accommodate multiple modes and to allow shifts between modes over time. Nothing in the LRDP or Merced’s regional planning documents precludes the development of a light rail system, but the components necessary for a successful rail transit system are not anticipated to be in place within the planning horizons of these documents. In order for the substantial investments necessary for light rail to be justified, the rail system should be supported by compatible land use patterns, including high activity levels, limited parking, and good pedestrian access. As described in “A Guide to Land Use and Public Transportation” (U.S. Department of Transportation, December 1989), relatively high levels of residential and employment density are needed to support a rail transit system. The threshold for high-capacity transit such as light rail is approximately 24 housing units per acre for residential developments or more than 60 employees per acre for commercial. Having a mixture of land uses, such as retail, restaurants, and entertainment establishments, can also help to support rail transit service.

The density of development in north Merced by 2025 is not anticipated to support a high-capacity transit mode such as light rail. Transit systems based on buses are generally less

expensive to build and operate and more flexible to respond to changing development patterns than rail systems. By not including a speculative mode such as light rail, the traffic analysis contained in the Draft EIR represents a reasonably conservative assessment of the traffic impacts of the UC Merced Campus.

#### **4.18.D.2      *Bus Transit***

This response addresses comments LA9-18 and O13-18, regarding funding for bus service to the Campus.

It is reasonable, based upon the policies of the LRDP and experience at other campuses, to conclude that a level of transit service will be provided that is sufficient to achieve the level of transit use called for in the LRDP policies and in the Draft EIR impact assessment. This service will be provided either through a University operated and funded transit system or through use of services provided by the regional transit agency. Use of the regional agency service will be compensated through fees paid by students, faculty, and staff. Revenues to support the transit services for the Campus may be derived, at least in part, from student fees, parking fees, parking fines, or other Campus sources. The LRDP (Policy CIRC-20) calls for development of a transit fare or pass system that provides maximum incentive for transit ridership among students and Campus employees, ideally one that allows free boarding for such individuals. This does not mean that the service would be entirely free to those user groups, but rather that transit fees would be paid through other means than at the farebox, such as student fees or regular payroll deductions.

#### **4.18.D.3      *Integration of Alternative Modes***

This response addresses comments O24-28, SA4-1, SA14-9, SA14-10, SA14-11, and SA14-12, which comment on connectivity between the Campus and the region through alternative modes and request clarification on the promotion of alternative modes on Campus.

Primary themes of the LRDP are connectivity and encouragement of alternate modes. Both the downtown Merced intermodal station (Transpo) and the Amtrak station offer opportunities for convenient transfers between travel modes that might serve the UC Merced Campus. The University agrees with the comment that all buses that connect the Campus to Merced should stop at both of these stations. As at other college Campuses, the University also would consider a potential demonstration project at either of these stations in which drivers share vehicles, which might be similar to the CarLink project at the California Avenue Caltrain station in Palo Alto. Participants may save money on car payments and other vehicle costs, while the community benefits from reduced traffic congestion and air pollution. A program like CarLink might be successful with a large Campus student population with needs for flexible and economical transportation. Such a program is not proposed for the initial phase of Campus development. The demand for such a service is likely to be quite low when the Campus population is small, and the planned bus service can accommodate travel between the Campus and the downtown modal transfer stations, providing traffic reduction and air quality benefits. The potential for a program similar to CarLink can be reassessed as the Campus matures. Implementation of such a system could be used to reduce traffic generation to levels below those reported in this EIR. They would not be necessary to reduce traffic generation to below the levels addressed in this EIR.

As with other UC Campuses, the University will establish a permanently funded and staffed transportation services office to provide ongoing transportation demand management services, including marketing of alternative modes, design and management of transportation control measures, and assurance of efficient connections between the Campus and the region. Because the University program would be equally or more effective than those normally operated by a Transportation Management Association, a Transportation Management Association would not be needed. The transportation office will coordinate with the transportation service organization(s) designated to provide similar services within the City and the University Community and will be established in the initial stages of campus operations.

#### 4.18.E Parking

##### 4.18.E.1 *"Spillover" Parking Mitigation*

This response addresses comment LA9-17, which requests clarification of Campus responsibility for addressing potential spillover parking problems.

The Campus intends to provide adequate parking to serve the anticipated demand. Because of state financing regulations, the Campus must cover the costs of providing parking by charging users. Therefore, the Campus will likely become the first parking provider in Merced County to charge for parking. Spillover parking is a possibility not because of an anticipated shortage in Campus parking, but rather because of the difference in fees between on-Campus and off-Campus parking, and also because much of the Campus commuter parking will be placed at relatively remote locations to preserve the attractiveness of the Campus core for pedestrians and bicyclists. Thus, the addition of more parking on Campus may not solve any potential spillover parking problems, which are discussed in Impact 4.14-9 of the Draft EIR.

The LRDP contains a number of policies regarding parking management, including cooperative efforts to manage parking near the Campus through time restrictions and/or permit systems (see LRDP policies CIRC-24 through CIRC-29 and CIRC-37). The Campus has committed to addressing any spillover parking issues that arise by working with the agencies that have jurisdiction over the affected areas. If spillover parking occurs, it will be the duty of all affected entities to work together to develop a solution depending on where or how the spillover condition exists. Solutions may include permit parking systems on off-campus roadways.

##### 4.18.E.2 *Parking Demand and Supply*

This response addresses comments FA1-9, FA1-29, O24-39, O28-62, and SA14-3, pertaining to the amount of parking provided on Campus, the methods envisioned to reduce parking demand, and the distribution of parking between surface lots and parking structures.

The parking supply planned for the full development of the UC Merced Campus was estimated based on parking supply and demand data from other UC Campuses. As with other components of the transportation analysis, UC Davis was chosen as a comparable because of its Central Valley, small-town location and its emphasis on TDM to reduce automobile dependence. Because of its effective TDM and bicycling programs, the Davis example represents the low end of the likely range of parking needs for UC Merced. UC Riverside is a newer suburban Campus with lower TDM effectiveness. It represents the mid-range of the likely needs at UC Merced.

UC Davis provides parking at a ratio of 0.57 spaces per student, while the UC Riverside ratio is 0.62. Both UC Irvine and UC San Diego provide parking at higher ratios than UC Riverside. The lower ratio found at UC Davis was not considered to be a reasonable assumption given current information. The City of Davis has an advanced TDM program that works in concert with the University to reduce vehicle trips, while the City of Merced does not have a similarly developed program to complement UC Merced LRDP policies. UC Merced will implement TDM strategies from the earliest phases of Campus development. Those strategies tend to gain effectiveness as Campus population increases and as other local agencies promote complementary policies. Based on these considerations, a parking supply ratio of 0.62 spaces per student, as at UC Riverside, was applied for the UC Merced Campus. With a projected Campus enrollment of 25,000, the specified parking ratio results in 15,500 parking spaces, which is the total amount of parking to be provided at full development of the Campus under the LRDP, including spaces for commuting employees and students, visitors, and vendors, as well as parking associated with on-Campus housing for faculty and students. As described in Section 2.6.1.8 of the Draft EIR, the total acreage used for parking at the full development of the LRDP is estimated to be approximately 147 acres.

The LRDP contains a number of policies related to TDM, including incentives for use of alternate modes, provision of convenient transit services, joint use parking development, and many others. Both the LRDP and UCP envision joint use of parking facilities whenever possible between the Campus and the University Community. The transportation system of the Campus is designed to allow safe and efficient travel by a full variety of modes while minimizing reliance on the automobile. For planning purposes, it was not reasonable to assume substantially lower levels of automobile use than is achieved at UC Davis, which is a small-town campus that is nonetheless recognized as a leader in promoting alternate modes. UC Berkeley, for example, provides much less parking (0.2 space per student) than UC Davis, but many aspects of the Berkeley campus combine to make that possible, including a highly urbanized setting near the core of a major metropolitan area and multiple modes of available transit. UC Merced will be much more similar to UC Davis in terms of location, surrounding uses, and user expectations.

UC campuses have between 9 percent and 75 percent of their parking in structures. The typical range for smaller-community campuses is 11 percent to 14 percent. In the early phases of UC Merced development, all parking would be in surface lots. Some of those lots would be converted to academic uses over time, and the parking supply lost would be replaced with parking structures. (See Section 2.6.1.8 of the Draft EIR for further description.) Ultimately, the LRDP envisions that at full development of the Campus approximately 20 percent of the commuter parking on Campus will be provided in parking structures, with the remainder in surface lots. This percentage of structured parking is higher than provided at UC Davis, UC Santa Cruz, or UC San Diego. Construction of parking structures is expensive, so campuses with higher proportions of structured parking must generally charge higher parking fees to support their programs. For example, UC Davis charged an average of \$41 per month for parking in 2000, when it had about 6 percent of its parking supply in structures, while UC Berkeley charged about \$62 per month and had over 30 percent of its supply in structures. In addition, Campuses tend to add parking structures relatively late in their progression, when demand makes structures economically feasible; for example, UC Davis reached enrollment of 23,000 before building its first parking garage in 1993. As UC Davis continues to expand the number of structured parking spaces over the next few years, it will also raise parking rates to cover the construction costs.

The expectation is that monthly parking fees at UC Davis will increase from an average of \$41 in the year 2000 to around \$65 by 2005.

At UC Merced, as at other campuses, issues of land consumption and pedestrian design principles must be balanced with the need to assess reasonable parking fees and manage construction costs when determining an appropriate proportion of structured parking. Furthermore, UC receives no public funds to build or subsidize parking. Construction and operating costs for parking must be covered by user charges. Keeping parking fees reasonable at UC Merced, and consistent with other campuses, will be an important factor in determining the timing and number of parking structures that are built.