MERCED COUNTY UNIVERSITY COMMUNITY PLAN
POLICY DISCUSSION PAPER

Transportation

For CPAC Discussion: April 26, 2001Meeting

INTRODUCTION

This report presents a series of objectives for inclusion in the Transportation Element of the Merced County University Community Plan, and discusses policy options for each objective. The report is presented for discussion purposes only and will be updated and refined based on continuing analysis and stakeholder input.

PLANNING CONSIDERATIONS

Planning for the University Community provides a unique opportunity to integrate land use and transportation to minimize reliance on the automobile while maintaining high levels of accessibility and personal mobility. Taking advantage of this opportunity will require coordination of a variety of macro- and micro-level land use planning objectives and transportation supply and demand management strategies for the campus and the greater University Community:

For the University Community as a whole, the diversity of the land use mix will be one of the primary means of minimizing transportation capacity requirements. A suitably diverse land use mix will include the following uses: academic, housing, employment, commercial, R&D (for university-related start-up businesses), recreational and cultural. Given the large size of the University Community relative to the City of Merced, any imbalance between campus population (enrollment, faculty and staff levels) and the amount of available nearby housing will translate directly to heightened transportation impacts. The same will be true of any lack of opportunity to develop needed services, amenities, and university-related spin-off activities such as incubator space for new businesses.

Secondary, but important, land use factors will be density and design, including population and employment density, density of the transportation network**,** walkability, transit orientation, and amenities for bicyclists and pedestrians. All of these factors must work together in order to be effective. Communities and university campuses with higher densities, traditional urban design forms, and effective demand management strategies that encourage walking and bicycling have traffic generation levels that are substantially lower than less dense, large-scale developments.

POLICY SETTING

Key planning and policy documents affecting the University Community – local general plans, the Regional Transportation Plan, and others – acknowledge the UC campus and have planned for the development of the campus in a number of ways. Some external funding for infrastructure development has already been secured, and the groundwork has been laid for additional funding requests. Further, the scale of development anticipated in the University Community presents an excellent opportunity for public/private partnerships.

There are a number of established policies, trends, and plans that present an opportunity to design a community that relies less on single-occupant automobile travel than would traditionally occur. The "Villages" concept for north Merced emphasizes transit-oriented development, supported by the M Street Transitway. An enhanced M Street transit corridor with connections to Bellevue Road and the University Community could offer convenient non-auto access to nearly every major destination in Merced. In addition, the extensive system of existing and planned bicycle facilities, the nature of University-related traffic, and the development opportunities around the campus all point toward a significant component of transit and bicycle travel.

The development of the University Community will present some challenges in terms of transportation infrastructure. The existing roadway system extending to the University Community will require upgrades in some areas, and new regional links must be constructed to serve the level of development anticipated. Given the time lines associated with the environmental review, design, financing and construction of new infrastructure, very ambitious scheduling will be necessary to provide the basic system for travel to the University and University Community area. At the same time, many of the local improvements necessary for adequate circulation to and from the University Community will be partially or fully funded from sources with uncertain availability. For example, improvements funded partially or completely by new development will be tied to the pace and location of that development. These constraints are not unusual in a development project of this magnitude, but careful planning will be required to make the current plans a reality.

GOALS AND POLICIES

Issue: Provision of a circulation system that ensures the safe and efficient movement of people and goods throughout the University Community Plan (UCP) area, in a manner that supports the land use goals of the UCP.

The contiguous development of UC Merced and the University Community offers unparalleled opportunities to use innovative circulation concepts to help define local identity and promote quality of life. The land use concepts of the UCP emphasize community livability, and the circulation plan can support those concepts.

The University Community will be a unique area, different in many respects from other communities in Merced County. In terms of the transportation system, the proximity of the University means that there is likely to be much greater usage of bicycling, walking, and public transit than is found in other unincorporated areas of the County. The higher density and the fine-grained mixture of land uses planned for the Community will also support more extensive use of alternative modes, and will allow residents to satisfy many of their everyday needs without long-distance travel. The UCP land use concept strongly promotes neighborhood cohesiveness and quality of life.

Following is a description of the primary circulation concepts in the UCP, and the policy options available for each one.

1. The layout and configuration of the street system is a critical component of the UCP. The placement of certain street types at different locations can affect the amount of vehicular travel on each street, the comfort and safety of pedestrian travel along and across the street, the success of abutting land uses, and many other characteristics of community life.

   Policy Option 1.1

   Construct a Community street system that approximates a grid pattern. The primary characteristic of such a pattern is connectivity, where multiple routes are available for a given trip. While it is not necessary that every local street be a strict part of the grid, a large proportion of streets must fulfill their function within the grid for the connectivity benefits of such a system to be realized.

   A sufficient number of main roads (arterials, boulevards, and major collectors) would be provided to carry heavy vehicles and to serve major traffic generators and parking reservoirs. The main roads would be designed as "flexible corridors," with sufficient right-of-way set aside for the ultimate end-state of the road, such that it could accommodate a mix of travel modes. These main roads would be supported by a complete grid of minor neighborhood streets for residential, school, local commercial, and recreational access. Bicycle and transit routes would be possible on almost all streets. Regional traffic destined to the Campus or the Community would be accommodated on the proposed Campus Parkway and on several primary entryways connecting the Parkway to the Campus/Community area. Through traffic would use the proposed Campus Parkway, and would not enter the main Campus or Community areas.

   Advantages

   - A grid system provides multiple path choices for most trips, thus dispersing local traffic across the entire system. Therefore, most streets can be only two lanes wide, minimizing their impact on the adjoining land uses.
   - Travel distances would be shorter (whether walking, cycling, or driving), with less out-of-direction travel than on most suburban cul-de-sac systems.
   - The multiple path choices of a grid system allow travelers flexibility in responding to incidents or other disruptions.

Disadvantages

- May require more total roadway area, because providing many narrow streets may consume more land than fewer wider streets.

Policy Option 1.2

Construct a Community street system that contains a strict hierarchy of roadway types, with just a few corridors designated to carry high traffic volumes, and local neighborhoods following a standard suburban pattern of collectors enclosing groupings of small streets and cul-de-sacs.

Advantages

- Traffic volumes on many neighborhood streets can be very low.
- Short cul-de-sacs promote low speed travel.
- Residential neighborhoods can generally be protected from through traffic.

Disadvantages

- The major corridors will be wide roadways carrying traffic at relatively high speeds, thus creating barriers in terms of pedestrian crossing comfort and visual effect.
- Noise levels and spot emissions levels along major corridors may be incompatible with certain abutting land uses, and require greater setbacks, buffering, and sound attenuation.
- In most cases, there is lack of flexibility in route choice for motorists, bicyclists, and transit vehicles, and more out-of-direction travel within neighborhoods.

<u>Recommendation</u>

Pursue Policy Option 1.1 (see Figure 1). A traditional grid street system with sufficient primary roads to serve major uses supports the land use goals of the UCP, and best serves the large numbers of bicyclists and pedestrians that are expected to travel within the Community and between the Community and Campus.

2. Street design standards set the local requirements for the geometric design of roadways. Examples of design components that are generally included in these standards include: right-of-way width, lane width, turn radii, and more structural components such as cross slope and material type. The definition of street design standards, particularly the right-of-way and lane width components of those standards, can influence many aspects of travel behavior that affect neighborhood livability, including travel volumes and speeds.

   Policy Option 2.1

   Retain the street design standards currently used by Merced County. For most street types, the current standards call for 12-foot travel lanes in most applications, 14-foot lanes adjacent to center medians, and 6- to 8-foot paved

shoulders. Minimum right-of-way widths are 52 feet for residential streets and 70 feet for collectors and arterials.

Advantages

- Consistency with other County-approved developments.
- Some safety advantages related to sight distances, and maneuvering of bicycles and moving vehicles around parked cars (although these may be offset by higher travel speeds).

Disadvantages

- In some cases, could result in street widths that are excessive given amount of traffic carried, thus encouraging higher travel speeds and discouraging bicycle and pedestrian travel. Higher speeds are less compatible with many types of adjoining land use and reduce perceived neighborhood comfort, convenience and safety.
- Wide streets are associated with: higher land consumption, increased impervious surface, greater difficulty in providing tree canopy, more radiant heat, and in some opinions, less neighborhood cohesion.

Policy Option 2.2

Define a set of street design standards, consistent with guidelines published by AASHTO, the City of Merced, and other organizations, that are intended to minimize paved area while providing facilities that are safe and adequate for the expected volumes of motorists, bicyclists and pedestrians. Integrate traffic calming measures into neighborhood street design, choosing measures that are modest and have been proven effective and acceptable in many communities. Examples of such integrated traffic calming treatments could include: street curvature, slightly narrowed lanes, roundabouts, on-street parking, raised crosswalks, curb bulb-outs, etc.

Advantages

- Promotes community livability and neighborhood quality of life by minimizing roadway impacts and integrating roadways into neighborhood fabric.
- Improves comfort, convenience, and safety for pedestrians and cyclists.
- Increases likelihood of community acceptance when calming treatments are built into the street system. Later retrofits to address local concerns often require more extreme measures and can antagonize motorists, shift traffic to other locations, and polarize neighborhoods.

Disadvantages

- Lack of consistency with existing County guidelines.
- Potential resistance of emergency response agencies.

<u>Recommendation</u>

Pursue Policy Option 2.2. As discussed above, the University Community will be substantially different from other developments in Merced County, and thus the

adoption of different roadway design standards can be justified. Criteria for adoption of the different standards can be defined such that the standards will only be applicable to the University Community, or other communities that offer prescribed levels of traffic dispersion, traffic calming, pedestrian and bicycle accommodation, and vehicle trip-making reduction. These criteria will help to diminish concerns about consistency for future developments in unincorporated Merced County.

3. Level of service (LOS) standards are used to define acceptable volumes of travel on roadways. They are also used to determine the significance of a proposed development's impacts on the roadway system, so the definition of these standards can influence the types and densities of land uses permitted in a given area.

   Policy Option 3.1

   Apply the level of service standards from the Merced County General Plan without change.

   Advantages

   - Consistency with adopted County regulations.

   Disadvantages

   - The standards focus exclusively on measuring the ease of automobile travel, and thus do not capture the travel characteristics of other modes.

   Policy Option 3.2

   In addition to the traditional "Vehicle LOS" standard, define a "Person LOS" standard to measure the travel characteristics of all modes, and apply it in conjunction with the existing County LOS standard. To maintain fundamental consistency with adopted County General Plan policies, in no case would a roadway be designed to operate below the existing County minimum LOS standard. However, in those cases where improvements to walk, bicycle, or transit modes could be made without causing the roadway to deteriorate below the County standard, such improvements would increase the "Person LOS" measure and would be encouraged.

   Advantages

   - Allows the traffic analysis to include travel characteristics of all modes, thus placing non-automobile modes on a more equal footing. Reflects the UCP's commitment to supporting and encouraging use of alternate modes.

   Disadvantages

   - Does not replicate the past application of LOS standards in the County.

Recommendation

Pursue Policy Option 3.2. While the "Person LOS" standard is new in Merced County, it is not intended to replace the current standards, but instead to be used in conjunction with them.

4. Public transit is an important mode of travel in most communities that adjoin university campuses. Provision of a comprehensive public transit system can reduce dependence on private automobiles, and thus help to support the UCP's goals of community livability.

Policy Option 4.1

Define a system of local bus routes that will serve travel within the Community and between the Community and the City of Merced, and will connect to the major transportation hub in the interface area between the Town Center and Campus core. Investigate the options for subsidizing University-related transit use, either for students alone or for students, faculty, and staff.

Advantages

- Reflects the UCP's commitment to supporting and encouraging use of alternate modes.
- Recognizes the fact that towns adjacent to university campuses generally have higher public transit ridership than other similar-sized towns.

Disadvantages

- Cost will be more than the County currently spends on public transit services.
- System can serve travel needs between the City of Merced and the Community, but it is not guaranteed to be well integrated with the on-campus transit system.

Policy Option 4.2

Work closely with Campus transportation planners to design a comprehensive system of local bus routes that seamlessly serve the Community and the Campus. The bus system would be jointly operated, such that there is no visible difference in service between the Community and the Campus. This local transit system would be focused on the major transportation hub in the interface area between the Town Center and Campus core. The Town Center hub would also be connected via public transit service to the major destinations in the City of Merced and the rest of the region. Investigate the options for subsidizing University-related transit use, either for students alone or for students, faculty, and staff.

Advantages

- Seamless transit service will be more competitive with the automobile, and will support the UCP's goals of encouraging alternate modes.
- Joint Campus/Community service is likely to be cheaper and more effective in the long run. Many universities that provide on-campus transit services are

being asked to expand the service to their adjacent communities, but retrofitting a developed area with transit service is generally less satisfactory than including the service in the initial design.

Disadvantages

- Cost will be more than the County currently spends on public transit services (although there are opportunities for cost-sharing with the University).

Recommendation

Pursue Policy Option 4.2. The County is pursuing funding opportunities to support extended transit services, and the benefits of a jointly-operated, seamless transit system will accrue to all residents, not only those living within the Community.

5. The availability, convenience, and cost of parking can have a substantial impact on travel behavior and mode choice. Providing sufficient and well-designed on-street and off-street parking is a goal of most communities.

Policy Option 5.1

Retain current Merced County standards for provision of parking in new developments.

Advantages

- Consistency with current County regulations.

Disadvantages

- May require excessive parking provision, thus encouraging more automobile use.

Policy Option 5.2

Promote sharing of parking facilities among compatible uses. Investigate the possibility of reducing parking standards for certain types of uses, especially those located in close proximity to the Campus or to primary transit corridors. Institute standards for provision of bicycle parking in the Town Center and in all off-street parking facilities. Design a neighborhood parking permit program for those Community neighborhoods adjacent to Campus, to discourage overflow parking.

Advantages

- Reflects the UCP's commitment to supporting and encouraging use of alternate modes.
- Includes location-specific considerations of parking demand in the calculation of needed supply.

Disadvantages

- May not be consistent with current County regulations.

- Enforcement costs will be higher.

Recommendation

Pursue Policy Option 5.2. Parking management is key to promoting community livability. Because the University Community will be substantially different from other areas in Merced County, investigation of alternative parking provision and management strategies is justified.

6. The funding of transportation improvements is a key concern in any major development effort. In this instance, the development of the University Campus and Community will trigger the need for upgrades to the regional transportation system, outside the immediate UCP area. For those necessary improvement projects for which funding has not yet been identified, the University Community will be expected to contribute its fair share to those costs, based on the expected usage of those facilities by Community residents and employees.