

MERCED SHORT RANGE TRANSIT PLAN



Prepared for:



County Association of Governments

Prepared by:



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SECTION 1 - EXECUTIVE SUMMARY

The Short Range Transit Plan provides direction for Merced County Transit (MCT) for Fiscal years 2005/06 through 2009/10. It addresses all aspects of the transit operation and provides a financial blueprint for the planning horizon. All transit services have been evaluated and recommendations on improving transit service to increase ridership, improve productivity and improve reliability are included.

1.1 Existing Conditions

Overview

Merced County currently operates an urban and rural bus transit services, known as “The Bus”. “The Bus” operates on 15 fixed route lines and demand response services. Demand response services include services open to the general public in rural areas where fixed route service is limited or non-existent, and is limited to senior citizens and disabled customers in urban areas such as Merced where extensive fixed route service is provided. “The Bus” currently operates 36 buses with 21 assigned to fixed routes and the remaining 15 providing Dial-A-Ride service to all of Merced County and a small portion of the City of Turlock in Stanislaus County. Generally, “The Bus” fixed route services operate from 7:00 AM to 6:00 PM Monday through Friday, and from 9:15 AM to 5:30 PM on Saturdays.

Urban Services

Merced County is currently served by seven urban transit lines (Lines 1,2,3,4,5,11 and 12). All urban lines are located within the City of Merced and provide service to local shopping centers, schools, medical facilities and the Merced Transpo, where transfers to other urban and rural lines may be made. All lines operate weekdays and Saturdays, with no service provided on Sundays.

Rural Services

The remaining eight lines (Lines 6, 7, 8, 9, 10, 10A, 14, and 16) are classified as rural lines, which, along with providing services to shopping centers, schools and medical facilities also provide service to neighboring cities and unincorporated areas of Merced County. All lines operate weekdays and Saturdays, except for lines 6, 10A, and 16, which do not operate on Saturday.

Market Served

The County of Merced currently has a population of 210,554 with an annual growth of 1.7 percent. Making up more than 20 percent of this population are the elderly (age 60+) with a population of 26,307, and the youth (age 10 to 14) with a population of 21,543 for a combined total of 47,850, or 22.7 percent of the entire population of Merced County. The mobility-limited population (age 16 to 64) makes up 7.2 percent of the entire population of Merced County, while 21.4 and 10.4 percent make up the low-income population and zero-vehicle households, respectively.

In 2000, the civilian labor force for Merced County was approximately 85,200. Of those in the labor force, approximately 14.4 percent were unemployed. For the remaining employed, about



512 or 0.7 percent used MCT as means of transportation to work. Additional information on existing conditions is included in Appendix 1.

On-Board Survey

A survey of existing customers was conducted on board all 15 routes in late January/early February 2004. It is estimated that over 70% of the transit customers riding during that period were surveyed. Appendix 2 includes a detailed summary of the survey. Key findings that were used in the preparation of the SRTP include:

- Over 75% of customers would walk an extra block to catch a bus route that is more direct and can get them to their destination faster.
- Over 80% would walk further to catch a bus that operated more frequently than the bus they are currently using
- Customers are very satisfied with the service. The two areas needing the most improvement are improved information about transit service and improved reliability.

1.2 Goals and Objectives

Goals and objectives serve as guidelines for sound decision making regarding transit development.

Mission Statement

To provide an efficient, coordinated, and convenient regional transit system that serves both urban and rural populations, including the transit disadvantaged.

Goals and Objectives

The following goals describe the general purpose and focus of transit services in Merced County:

GOAL 1 Provide increased mobility in Merced County

Objective 1a - Provide quality and efficient transit service throughout Merced County with “The Bus” – Merced County Transit

Objective 1b - Coordinate the fixed route system with regional service

Objective 1c - Ensure Dial-A-Ride service meets the special needs of the disabled, seniors, ADA eligible and those not served by fixed route service

Objective 1d - Meet all transit needs that are reasonable to meet within the adopted definition of reasonableness, as set by the MCAG Governing Board

GOAL 2 Provide effective service

Objective 2a - Provide convenient transit service

Objective 2b - Provide reliable transit service

Objective 2c - Provide safe transit service

Objective 2d - Increase service based on market demand



Objective 2e Promote transit use as an alternative mode

GOAL 3 **Provide efficient service**

Objective 3a - Minimize operating costs

Objective 3b - Minimize capital costs for vehicle acquisition

Objective 3c - Maximize use of state and federal funds

Objective 3d - Provide productive service

Objective 3e - Minimize subsidy per passenger trip

For the most part MCT is successfully achieving the goals and objectives. Areas where additional action is needed are discussed in Section 2.2 with further recommendations outlined below.

Growth and Change in Merced County

It is anticipated that Merced County will experience dramatic growth throughout the time period of this plan and beyond. Although there are many factors fueling this growth two stand out, the new University of California Merced Campus (UC) and the high cost of housing along the coastal areas of California. Despite rapid growth that will have other impacts on the nature of Merced County, current growth plans call for converting only 2% of existing agricultural land, meaning Merced County will retain its rural agricultural character outside of its cities.

A more detailed discussion of growth and change in Merced County is presented in Section 2.4. Recommendations in this section are as follows:

Recommendations

- 1) MCT should continue to be actively working with UC administration to assure that these auto limitations are enacted, the campus is pedestrian and transit friendly and that funding mechanisms are secured to assure adequate levels of transit service is available to meet university travel needs.
- 2) Conduct a study to evaluate revenue sources to provide service to future growth areas.
- 3) Conduct a study of the feasibility of establishing commuter express service over the Pacheco Pass.
- 4) Consider converting Dial-A-Ride service to flex route service in rural communities such as Livingston, Delhi, Gustine, etc, when each community grows outward and the existing service configuration becomes less effective.

Recommended Fixed Route Service – Existing Development

The SRTP includes a detailed alternatives analysis of the fixed route network. The full analysis is contained in Appendix 3.

The intent of the alternatives analysis is to achieve the following goals:

- Increase ridership
- Improve productivity



- Improve reliability

In designing alternatives that achieve these goals the following planning principles are followed:

- 1) Optimize frequency
- 2) Maximize two way service
- 3) Maximize directness to key transfer points/destinations
- 4) Coordinate transfers – pulse where possible or utilize high frequency (15 minutes or less) where market warrants
- 5) Minimize competition between routes for same customer (1/2 mile spacing)
- 6) Minimize turns – maximize use of major streets
- 7) Provide reasonable runtimes to allow for reliability
- 8) Efficient use of equipment (deadhead and layover kept to the minimum necessary for reliability and movement to/from yard)
- 9) Simplify routes

Each of these principles is discussed in detail in Appendix 3.

In addition to achieving the overarching goals described above several pressing issues needing to be addressed include:

- The four least productive routes are also the four routes that are giant one-way loops. Each route (Route 5 and 11 in the City of Merced, Route 14 in Los Banos, and Route 16 serving Atwater and Winton) take a 60 minute cycle to complete, meaning most customers will require a 60 minute ride to complete a round trip on the bus. In other words a person whose trip may take 10 minutes in one direction will take 50 minutes in the opposite direction for a 60-minute roundtrip whereas with two way service the round trip would be only 20 minutes on the bus. At the very least these four routes need to be restructured to provide direct two way service.
- Findings of unmet needs from previous Unmet Need Hearings need to be incorporated into the plan. This includes providing service to the new Juvenile Court south of the City of Merced, restoring fixed route bus service to Gustine and Santa Nella, and increasing service in Atwater, Winton and Livingston by adding a bus to Routes 7, 8, and 16.
- Improve reliability, which based on both the on-board customer survey conducted as part of this project and the Comprehensive Operations Analysis is a top concern of customers.
- Lay a foundation for extension of service to UC Merced and significant growth in North Merced and Los Banos.

Based on public input and a further refinement of costs a recommended network was developed containing elements of all three alternatives in the alternatives analysis. The recommended network is designed to achieve the three goals stated above and adheres to the planning principles also outlined above. The recommended network will achieve the following:



- It will reduce travel times for many trips. Three quarters of the respondents in the On-Board Customer Survey indicated they would walk further to catch a bus if it were more direct and provided faster service.
- It will serve as the foundation for growth. Routes have been designed so that they can be extended into growing areas as these areas develop and resources become available without requiring changes in the existing segment of the routes. In other words, MCT can make the radical changes to local routes now and there will not be a need to do so again in the foreseeable future.
- The simplicity and directness of the routes will attract more new customers over time. Typically transit systems have a turnover of 20 to 30%. That is 20 to 30% of the customers stop riding because they move, retire, acquire a car, etc. Therefore, these customers need to be replaced just to maintain ridership levels. This alternative can be more successful in attracting new riders both to replace lost riders and to grow ridership further.
- Even if there were no turnover, The City of Merced will grow dramatically over the timeframe of this study and beyond. In particular, UC Merced and the growth in North Merced will present opportunities to attract totally new customers to the system. This simplicity and directness of routes of the recommended network will better attract these riders.
- The recommended network is designed to include more recovery time on every round trip to improve reliability.

A detailed description of the proposed changes and maps illustrating the proposed changes are contained in section 2.5. Appendix D includes detailed route descriptions for each proposed route, conceptual schedules for each route and a summary of vehicle needs and revenue vehicle hours.

Recommended Fixed Route Service – UC Merced and New Development

Section 2.6 summarizes the issue related to extending service to the new UC Merced Campus and the growth area west and south of the campus and north of the existing City of Merced City limits. Recommendations from this section include:

Recommendations

- 1) Phase in implementation of the recommended network, initially starting with an extension of Route 3.
- 2) Include all students staff and faculty in a U-Pass Program
- 3) When service is expanded to more than four buses per hour over tow alignments, limit service when classes are not in session to four buses per hour (two buses per alignment).
- 4) Obtain additional funding from UC Administration to keep the U-Pass affordable. This could come in the form of a U-Pass subsidy. This will be phased out as the campus grows and the U-Pass can fully fund service.
- 5) Work with UC Administration to assure a pedestrian and transit friendly environment throughout campus. This would include keeping autos from the center of campus by providing parking on the periphery, but allow buses to directly serve the center of the campus.



Dial-A-Ride Service

MCT Dial-A-Ride (DAR) service is very productive with urban productivity as measured by customer per revenue vehicle hour that is almost double the national average. While rural DAR productivity is lower, due to longer trip distances, it also is well above the national average. There is high customer satisfaction with DAR based on a customer survey, although most customers have at least one experience with a long wait for a vehicle. More detail on DAR operations is contained in Section 2.7. Some changes to DAR service are recommended due to changes recommended for improved fixed route service as described in Section 2.5. Recommendations for DAR service are as follows:

Recommendations

- 1) Convert Los Banos DAR to general public service to serve areas of the city losing fixed route service and to serve growing areas until such time as fixed route service can be provided.
- 2) Convert Atwater and Winton DAR service from general public to seniors and disabled only. Improved fixed route service and the addition of the urbanized designation and higher farebox requirements that results (senior and disabled DAR service is exempt from farebox recovery requirements).
- 3) DAR service in Dos Palos and Gustine will transition to a more localized service feeding expanded fixed route rural intercity bus service and providing intra community trips.
- 4) Modify the penalties in the contract with MV Transportation to be more realistic.

Employer Based Transit

Employer Based Transit (EBT) is a new concept of providing customized home to work or home to school service to major employers and educational institutions. A successful demonstration is now underway at Merced College. EBT has the potential of better utilizing resources during traditional peak period when ridership on local in city fixed routes is low. Section 2.8 provides a more detailed discussion of this concept.

Recommendation

- 1) Ascertain market for EBT Service and implement expansion in FY05/06 in conjunction with fixed route service restructuring.

Marketing Plan

Of the six measures of service quality customers were asked to measure in the On-Board survey, availability of transit information ranked lowest. Adhering to a marketing strategy is critical to growing ridership and meeting community needs.

Section 2.9 provides a detailed analysis of the need for improved marketing and public information. The Financial Plan (Section 3.4) includes allocating 1.5% of the operating budget for these initiatives. Beginning in FY 05/06, a detailed marketing plan should be developed during the current fiscal year.



Recommendations

- 1) Develop Marketing Plan in FY 04/05.
- 2) Devote no less than 1.5% of Operating budget to marketing efforts.

Bus Stop Policy

MCT has a policy in which customers can flag down a bus at any intersection in which it is safe to stop. Designated bus stops are located at major destinations and selected locations along major streets. On a lightly used system, this policy reduces the cost to install and maintain additional bus stop signs. Moreover, the customer does not need to search out the bus stop sign to determine where to catch the bus, since they can board at the point most convenient to them.

Offsetting these advantages are a number of drawbacks:

- Customers may not be able to judge if the point they are standing is indeed a safe place for a bus to stop.
- It is difficult to notify customers of route changes, whereas with designated bus stops, signs can be posted notifying the customer. For example when Route 2 was recently rerouted to make a left turn onto 16th Street, customers would be waiting for the bus on G Street before 16th Street, unaware that the bus could no longer stop there since it needed to be in the left lane
- As ridership grows, a flag stop system may result in the bus making too many stops, therefore, slowing down service.

Although the current policy appears to be customer friendly, adopting a policy that allows buses to stop only at designated stop locations is recommended for the following reasons:

- New customers may be more reassured about catching the bus if there is a sign designating that the bus stops at that location.
- Bus stop signs can be a marketing tool, particularly if they are distinctive and noticed by passers-by.
- The use of bus stop signs allows MCT to post additional information about the service to that location, which can be particularly helpful to new or occasional customers.
- Liability can be reduced if a process is in place to approve bus stop locations, thus providing "design immunity".

Section 2.10 discusses bus stop issues further.

Recommendations

- 1) Discontinue flag stop policy and designate all bus stops with bus stop signs.
- 2) Develop a procedure for locating bus stops to minimize liability.

Consider developing an advertising bench and shelter program to generate revenue, reduce costs and increase the number of amenities available to transit customers throughout the MCT service area.



Land Use Integration

Providing quality transit service requires more than superior bus service. The experience the customer has accessing the transit stop and waiting for a bus is as important. Since the transit agency usually does not control many of these factors it can be a weak point. Section 2.11 discusses this issue in detail. Recommendations include:

Recommendations

- 1) Develop a bus stop improvement program that includes improvements to several bus stops per year, improving the conditions transit customers experience while waiting for and alighting from the bus.

Continually work with local governments to make sure that transit is considered in all new development and redevelopment. In particular this would include assuring direct, safe and pleasant pedestrian access from all building entrances to the nearest bus stop.

Maintenance Program

Currently maintenance is performed by the County of Merced Public Works staff on a weekday daytime only shift. The result of this practice is the need to have a much larger fleet than required and longer downtime for buses when undergoing maintenance work including routine Preventative Maintenance Inspections. As MCT grows, this condition will become more problematic. Section 2.12 addresses this issue.

Recommendation

- 1) At a minimum, add a second maintenance shift, and if possible, a third shift so that the spare ratio can be reduced to 20% without sacrificing vehicle reliability.

Fare Policy

Simplification of the fare policy, in particular as it relates to rural intercity service, is warranted particularly in relation to recommended changes to the fixed route network in which some intercity routes will also be providing local in-city service. The details are discussed in Section 2.13.

Recommendations

- 1) Institute a new zone fare system to make fares uniform based on distance traveled, allow local rides on any route for the same base fare, and eliminate penalties for customers who must use multiple vehicles.
- 2) Modify the local day pass to be good for unlimited travel in any single zone on any route. The existing rural day pass will be good for all multi-zone travel.
- 3) Consider selling a single zone monthly pass at a 10% discount over the system wide monthly pass.
- 4) Consider instituting a short-term pass – For the base local fare customers can receive a receipt that allow unlimited travel in the zone they board for 90 minutes.

Service Delivery

As stated above there is high customer satisfaction with MCT service. The area of greatest concern regarding actual service delivery is reliability. Most routes do not have recovery time



built into the schedule at the end of each trip - an industry practice. The recommended network is designed to include recovery time on all schedules. A further discussion of service delivery is in Section 2.14.

Recommendations

- 1) Incorporate recovery time on every round trip to improve reliability
- 2) Modify incentives and penalties to be realistic and enforceable. Expected performance should not be subject to either an incentive or penalty. However, exceeding expectations will earn the contractor an incentive and failing to meet the expected performance will warrant levying a penalty.

Add an incentive and penalty based on customer complaints.

Capital and Financial Plan

MCT has the resources necessary to implement all of the recommendations listed above. The Capital Plan also includes a replacement schedule for buses that need to be retired.

The only unfunded program is providing the full level of expanded fixed route service to serve new growth particularly in North Merced and Los Banos. One table was prepared to identify this shortfall. A study to develop strategies of funding this service is recommended. If funding can be provided, MCT will have sufficient vehicles to operate the service.

Section 3 provides details of the financial and capital plans, and impacts on each community.



SECTION 2 – SYSTEM GOALS & OBJECTIVES

This section identifies the goals and objectives that were established to serve as guidelines for sound decision making regarding transit development. They were developed by the Transit Joint Powers Authority of Merced County several years ago and should be useful tools to transit policy makers.

2.1 Mission Statement

To provide an efficient, coordinated, and convenient regional transit system that serves both urban and rural populations, including the transit disadvantaged.

2.2 Goals and Objectives

The following goals describe the general purpose and focus of transit services in Merced County:

GOAL 1 **Provide increased mobility in Merced County**

Objective 1a - Provide quality and efficient transit service throughout Merced County with “The Bus” – Merced County Transit.

Objective 1b - Coordinate the fixed route system with regional service

Objective 1c - Ensure Dial-A-Ride service meets the special needs of the disabled, seniors, ADA eligible and those not served by fixed route service

Objective 1d - Meet all transit needs that are reasonable to meet within the adopted definition of reasonableness, as set by the MCAG Governing

GOAL 2 **Provide effective service**

Objective 2a - Provide convenient transit service

Objective 2b - Provide reliable transit service

Objective 2c - Provide safe transit service

Objective 2d - Increase service based on market demand

Objective 2e - Promote transit use as an alternative mode

GOAL 3 **Provide efficient service**

Objective 3a - Minimize operating costs

Objective 3b - Minimize capital costs for vehicle acquisition

Objective 3c - Maximize use of state and federal funds

Objective 3d - Provide productive service

Objective 3e - Minimize subsidy per passenger trip



2.3 Performance Standards and Evaluation of System Performance

Table 2-1 shows current system performance as compared to goals, objectives and performance standards established over time. The table functions as a quick reference guide for weaknesses and strengths and allows transit managers and governing members to recognize where the system is meeting goals and objectives and where improvement is needed.

This chapter sets the stage for more detailed analysis of each component of the transit system: Urban fixed route, Rural fixed route, Urban Dial-A-Ride, and Rural Dial-A-Ride.

A brief narrative recommending improvements for objectives, which are not being met, follows table 2-1. Subsequent sections, however, offer more detailed solutions for meeting or exceeding system standards over the next five years.

Table 2.1: System Goals, Performance Measures & Standards

GOAL	OBJECTIVE	PERFORMANCE MEASURE	PERFORMANCE STANDARD
GOAL 1: PROVIDE INCREASED MOBILITY IN MERCED COUNTY	Provide quality and efficient transit service throughout Merced County with “The Bus” – Merced County Transit.	Geographic coverage	The F/R system shall be designed such that 90% of the rural population is within 1 mile of a bus route and 100% of the urban population is within ¼ mile of a bus route. DAR will serve all others.
	Coordinate the fixed route system with regional services.	Opportunity for passengers to transfer to transit services of neighboring counties, as well as long-distance carriers	“The Bus” will work with Stanislaus and Madera Counties to provide regional connectivity. Connection should be made with AMTRAK Trains and Greyhound Buses.
	Ensure that dial-a-Ride service meets the special needs of the disabled, seniors, ADA eligible, and those not served by fixed route service.	Number of turndowns for ADA service requests	0% Turndowns
		Number of turndowns for other than ADA trips	0% Turndowns
		Pick up time for scheduled DAR service	90% of pickups within a range of 15 minutes.
		Response time for DAR - immediate pickup request	95% within 0-30 minutes - urban 90% within 0-45 minutes - rural
		No shows as % of passengers carried	No more than 5% no shows
		Total ride time to reach destination or customer perception of ride time	100% within 0-40 minutes
		Hours of operation	Hours must match those of fixed route for ADA Service
	Meet all transit needs that are reasonable to meet within the adopted definition of reasonableness, as set by the MCAG governing Board.	Hold annual Unmet Needs Public Hearings to determine unmet transit needs	If the remedy for any identified unmet need is deemed reasonable to meet by the Board approved definition, it must be implemented



GOAL	OBJECTIVE	PERFORMANCE MEASURE	PERFORMANCE STANDARD
GOAL 2: PROVIDE EFFECTIVE SERVICE	Provide convenient transit service	Fixed route transit/auto travel time ratio	Transit travel should take no longer than 1.25 (urban) or 1.75 (rural) times the equivalent auto trip during peak commute hours
		Frequency of fixed route service	Minimum headway should be 30 minutes for urban routes and 60 minutes for 100% of rural routes.
		Passenger accessibility on buses, both fixed route and DAR	100% of vehicles equipped with fully operational wheelchair lifts
		Fixed route bus stop convenience	All bus stops will be designated with bus stop signs, and shelter and seating where heavily used (>25 daily boarding).
		Passenger complaints	<1 per 5,000 passengers FR <1 per 2,000 passengers DAR
		Bicycle carrying capability on fixed route buses	All buses to have capability to safely and securely carry bikes
	Provide reliable transit service	Fixed route scheduled departures "on time" (0-5 minutes late)	>95% systemwide
		Fixed route missed trips	Less than 1% of trips missed or more than 15 minutes late
		Miles between road calls FR & DAR	>7,500 miles on FR and DAR
	Provide safe transit service	Miles between preventable accidents FR & DAR	More than 40,000 miles FR More than 100, 000 miles DAR
		Passenger safety FR & DAR	Vehicle load factor (#of customers to # of seats) 100% max. on DAR, 150% max on FR
	Increase service based on market demand	Annual growth in ridership & proposed service expansions	Annual rate of ridership growth should exceed annual rate of population growth. Routes that consistently miss schedule due to high ridership should have priority for added service.
	Promote transit as alternative mode	Ongoing promotional efforts with target groups	All major employers, organizations and agencies should be provided with maps and timetables
		Portion of total transit budget devoted to system marketing/promotion	Up to 1.5% annually for marketing



GOAL	OBJECTIVE	PERFORMANCE MEASURE	PERFORMANCE STANDARD
GOAL 3: PROVIDE EFFICIENT SERVICE	Minimize operating costs	Operating cost increase per vehicle service hour	Annual increase should be no greater than the Consumer Price Index
		Operating cost per boarding passenger	
		Active fixed route fleet age	All buses should be <12 years; Average age should be <6 years old.
		Maximum bus mileage	Should be less than 500,000 miles; Fleet average less than 300,000 miles
		Administrative costs as a percent of total operating costs	15% or less
	Minimize capital costs for vehicles and facilities	Percent preventative maintenance completed on schedule	100% within 500 miles of scheduled
	Maximize use of state and federal funds	Proportion of state and federal funds awarded/used	Use maximum amount of state and federal funds available
	Provide productive service	Passengers per revenue vehicle mile	1.25 Urban, 1.0 Rural FR 0.30 Urban, .30 Rural DAR
	Minimize subsidy per passenger trip	Passengers per revenue vehicle hour	21.0 FR 4.0 DAR
		Farebox recovery ratio	25% FR 10% DAR

Evaluation of System Performance

In general, “The Bus” fixed route and demand response services are meeting standards, with the exception of the following areas:

- **Objective 1a – Provide improved transit service throughout Merced County with “The Bus” Merced County Transit.**

Even though Dial-A-Ride provides transit service to all citizens not served by fixed route service, ridership in some areas currently only served by Dial-A-Ride is at levels which warrant introduction of fixed route service. The West Side of Merced County would support increased fixed route service, particularly Volta, Gustine, and Santa Nella. Such service would allow for a reduction of the more costly Dial-A-Ride in those areas.

- **Objective 1b – Coordinate “The Bus’ with regional service.**

“The Bus” should continue attempting to coordinate service with Madera County and improve and expand existing connections with Stanislaus County, particularly in light of recommended fixed route service to Gustine and additional fixed route service to Turlock.

- **Objective 1c – Ensure Dial-A-Ride service meets the special needs of the disabled, seniors, ADA eligible, and those not served by fixed route service.**

Although 75% of DAR customers rate the service excellent or good based on a March 2004 customer survey, 37% indicated that they were picked up late three or more times and 4% indicated they were picked up late every time they ride. It should be noted that a customer



may consider a late pick-up when the bus does not show up at the designated time when a window of 30 minutes (Atwater, Merced and Los Banos) and 40 minutes (elsewhere) is consistent with DAR systems throughout the country. More telling is the response that 5% of customers state that they regularly wait 45 minutes or more for a DAR ride and nearly 60% of customers have experienced a wait longer than 45 minutes at least once including 1/3 who had to wait over an hour. DAR hours also do not match those of fixed route service 100% of the time. Though a relatively popular service, DAR is not meeting all the set standards. The DAR service should be closely monitored for improvement and the contractor should be rewarded for meeting or exceeding standards.

- **Objective 1d - Provide convenient transit service.**

Transit travel time must be improved to meet the standard of not taking longer than 1.25 times the equivalent auto trip. As the service grows, re-routing or more frequent routing will help meet this standard.

All urban routes should have 30-minute headways. Only half of the urban routes, including the Atwater-Livingston routes, do now. All rural routes should be brought into compliance with standards for 60-minute headways. As the budget allows, these improvements should be made.

Customer service improvements must be made on Dial-A-Ride as complaint levels far exceed the standard of <1 per 2,000. Again, rewards for the contractor for providing superior customer service should be considered.

- **Objective 1e - Provide reliable service.**

Improve “on time” departures on fixed routes. Only 85% of the buses leave on time. The standard calls for a 95% “on time” percentage. Ridership will grow if people feel they can trust the timetable. Drivers should be offered incentives for meeting the on time standard, while maintaining safety and service.

About 4% of all fixed route bus trips are missed or running more than 15 minutes late. The standard calls for a missed trip rate of less than 1%. Again, driver incentives should improve performance in this area. Implementation of new technology called an Automated Vehicle Locator System will help drivers maintain schedules and help managers monitor timeliness.

- **Objective 1f - Increase service in response to market demand.**

If a bus route grows to the point that it is regularly carrying more than 20 passengers per busload, decreased headways and/or a second bus should be provided. All routes should be closely monitored for these situations.

In areas where Dial-A-Ride is the only transit option, DAR ridership should be monitored to determine when it would be more cost effective to begin fixed route service.

- **Objective 1g - Implement marketing campaign to increase ridership.**

To meet standards for budget devoted to marketing, Merced County Transit must increase expenditure to over 1.5% of the total budget. An advertising/promotion budget of, at least, \$80,000 per year is reasonable.



More effort should be made to distribute transit literature to major employers, agencies and organizations.

- **Objective 1h - Provide productive service.**

On the fixed route service, passengers per revenue mile and per revenue hour fall below the established standards. For most purposes using a measurement of passenger per revenue mile is not very useful as this transit system is relatively small and serves a very large area. However, it is important to track it from year to year to watch for improvements or sudden decline. As this comparatively new transit system becomes more established and expands regular service, these standards will be met.

- **Objective 1i - Minimize subsidy per passenger trip.**

Farebox recovery ratios fall below the standard for both fixed route and Dial-A-Ride. However, the system is meeting minimum requirements set by the Transportation Development Act. The self-imposed standards are higher and will be met as the system matures and expands. Fare restructuring is recommended.

PROJECTED PERFORMANCE

Table 2-2 on the following page shows past and current performance on fixed route and Dial-A-Ride services for six key performance indicators: farebox recovery ratio, net cost per passenger, cost per revenue vehicle hour, cost per vehicle revenue mile, passengers per hour, and passengers per mile. The last two columns of the table offers projected performance for the first and last year of the SRTP Planning Horizon. This benchmark can be used to evaluate performance in the intervening years and may be adjusted to account for service, demand, and cost changes.



Table 2.2: Past and Current Performance on Fixed Route and Dial-A-Ride Services

Fixed Route

Indicator	1999 - 2000	2000 - 2001	2001 - 2002	2002 - 2003	Projected FY 05/06	Projected FY 09/10
Farebox Recovery Ratio	22.09% urban 26.49% rural	19.29% urban 20.48% rural	22.00% urban 20.29% rural	22.06% urban 18.40% rural	21% urban 17% rural	25% urban 27% rural
Net Subsidy/Passenger	\$2.91 urban \$2.32 rural	\$3.33 urban \$3.10 rural	\$3.32 urban \$3.89 rural	\$3.66 urban \$5.13 rural	\$3.94 urban \$5.52 rural	\$4.37 urban \$6.22 rural
Net Cost/Revenue Hour	\$55.05 urban \$44.88 rural	\$60.40 urban \$49.85 rural	\$61.18 urban \$51.70 rural	\$64.60 urban \$61.27 rural	\$68.54 urban \$65.00 rural	\$77.15 urban \$73.16 rural
Net Cost/Revenue Mile	\$3.82 urban \$1.92 rural	\$4.08 urban \$2.00 rural	\$4.10 urban \$2.22 rural	\$4.29 urban \$2.65 rural	\$4.55 urban \$2.81 rural	\$5.12 urban \$3.16 rural
Passengers/Revenue Hour	14.72 urban 14.25 rural	14.62 urban 12.81 rural	14.39 urban 10.58 rural	13.75 urban 9.74 rural	12.00 urban 9.00 rural	20.00 urban 15.00 rural
Passengers/Revenue Mile	0.98 urban 1.64 rural	1.01 urban 1.94 rural	1.04 urban 2.20 rural	1.10 urban 2.37 rural	1.00 urban 2.20 rural	1.20 urban 2.40 rural

Dial-A-Ride

Indicator	1999 - 2000	2000 - 2001	2001 - 2002	2002 - 2003	Projected FY 05/06	Projected FY 09/10
Farebox Recovery Ratio	7.83% urban 8.56% rural	6.11% urban 7.69% rural	7.27% urban 9.49% rural	7.64% urban 9.43% rural	7.70% urban 9.50% rural	7.80% urban 9.60% rural
Net Subsidy/Passenger	\$9.06 urban \$7.61 rural	\$10.57 urban \$8.60 rural	\$10.54 urban \$9.26 rural	\$10.98 urban \$10.61 rural	\$11.31 urban 11.26 rural	\$12.73 urban \$12.68 rural
Net Cost/Revenue Hour	\$55.05 urban \$44.88 rural	\$60.40 urban \$49.85 rural	\$61.18 urban \$51.70 rural	\$64.49 urban \$57.72 rural	\$68.54 urban \$65.00 rural	\$77.15 urban \$73.16 rural
Net Cost/Revenue Mile	\$3.29 urban 2.35 rural	\$3.66 urban \$2.70 rural	\$4.10 urban \$2.70 rural	\$4.29 urban \$3.11 rural	\$4.55 urban \$2.81 rural	\$5.12 urban \$3.16 rural
Passengers/Revenue Hour	5.60 urban 5.40 rural	5.37 urban 5.35 rural	5.38 urban 5.05 rural	5.42 urban 4.97 rural	5.42 urban 5.25 rural	5.42 urban 5.40 rural
Passengers/Revenue Mile	2.99 urban 3.55 rural	3.07 urban 3.45 rural	2.78 urban 3.80 rural	2.70 urban 3.74 rural	2.80 urban 3.80 rural	2.90 urban 3.90 rural

The drop in performance in relation to farebox recovery and passengers per revenue vehicle hour is due to the increase in service planned for that fiscal year. Ridership does not instantly grow with increased service – it often takes two to three years for ridership to mature. The influence of ridership growth resulting from these changes and growth of UC Merced and the county at large is reflected in the FY 09-10 figures.



2.4 Growth and Change in Merced County

It is anticipated that Merced County will experience dramatic growth throughout the time period of this plan and beyond. Although there are many factors fueling this growth two stand out, the new University of California Merced Campus (UC) and the high cost of housing along the coastal areas of California. Despite rapid growth that will have other impacts on the nature of Merced County, current growth plans call for converting only 2% of existing agricultural land, meaning Merced County will retain its rural agricultural character outside of its cities.

The UC campus under construction just outside the existing Merced City limits is designed to be a major research university, meaning that in addition to the influx of students, staff and faculty to the area, it is likely to serve as an incubator of new industries benefiting from the research being undertaken on the campus. The student population itself is expected to grow at about 1,000 students per year beginning in the fall of 2005 until a projected build out of 25,000.

A swath of land that is mostly agricultural stretching for three miles to the north from Yosemite Ave., and stretching east from Highway 59 to Lake Road is slated for intense development over the next several years (Figure 1). The UC Campus is located east of Lake Road about two miles north of Yosemite Avenue. The area east of Lake Road between Yosemite Ave and the UC campus is slated for a planned university related community (Figure 2).

This growth creates opportunities for MCT. There are indications that freshman students will be required to live on campus (unless they are commuting locally from home) and will not be allowed to have an automobile. It is also conceivable that the UC administration will pursue a policy common at most major universities restricting or discouraging all automobiles on campus. (See Section 2.6)

The adjacent growth areas also provide opportunities for MCT. MCT should continue to closely monitor planning for all greenfield development and work with the city, county and developers to assure that the developments are pedestrian and transit friendly (see Section 2.11). The restructured route network recommended for the City of Merced was designed to allow for incremental extension of services into the North Merced/UC Campus growth area (see section 2.5). This growth creates a challenge in that funding has not yet been identified for non-UC related service increases. Although the growth in population results in a growth in TDA revenues, the increase is insufficient to support the appropriate levels of service and receipt of funds usually follow actual population growth by one to two years.

The high cost of housing along coastal regions of Californian is expected to generate population growth in most central valley counties. Merced County is poised to accommodate a larger share of this growth because of the UC Campus increasing its attractiveness and proximity to Silicon Valley through the Pacheco Pass. Los Banos, the second largest city in Merced County and currently the fastest growing, will likely continue down this path. The south west area of Los Banos (south of Highway 152) and the northeastern sector (north of Highway 152 and east of Mercey Springs Road), which are currently dotted with new subdivisions, will fill out over the next few years. If funding can be identified two additional buses are recommended to provide additional fixed route service to these growth areas.

Because Los Banos is becoming a bedroom community to the Silicon Valley, it is recommended that the feasibility of express service between western Merced County and the Silicon Valley be determined.



Each of the remaining communities in Merced County will also experience outward expansion of their boundaries to accommodate new housing development. These communities are generally served by a single fixed route bus operating through the center of existing development. MCT may have to expand Dial-A-Ride service to accommodate growth and feed the rural intercity fixed route bus service in the community. As each community spreads out more, converting DAR into a flex route system providing local service and feeding the intercity route should be considered.

Recommendations

- 1) MCT should continue to be actively working with UC administration to assure that these auto limitations are enacted, the campus is pedestrian and transit friendly and that funding mechanisms are secured to assure adequate levels of transit service is available to meet university travel needs.
- 2) Conduct a study to evaluate revenue sources to provide service to future growth areas.
- 3) Conduct a study of the feasibility of establishing commuter express service over the Pacheco Pass.
- 4) Consider converting Dial-A-Ride service to flex route service in rural communities such as Livingston, Delhi, Gustine, etc, when each community grows outward and the existing service configuration becomes less effective.



Figure 1: Future Development



Figure 2: Future UC Merced



2.5 Recommended Fixed Route Service – Existing Development

The SRTP includes a detailed alternatives analysis of the fixed route network. The full analysis is contained in Appendix 3.

The intent of the alternatives analysis is to achieve the following goals:

- Increase ridership
- Improve productivity
- Improve reliability

In designing alternatives that achieve these goals the following planning principles were followed:

- 1) Optimize frequency
- 2) Maximize two way service
- 3) Maximize directness to key transfer points/destinations
- 4) Coordinate transfers – pulse where possible or utilize high frequency (15 minutes or less) where market warrants
- 5) Minimize competition between routes for same customer (1/2 mile spacing)
- 6) Minimize turns – maximize use of major streets
- 7) Provide reasonable runtimes to allow for reliability
- 8) Efficient use of equipment (deadhead and layover kept to the minimum necessary for reliability and movement to/from yard)
- 9) Simplify routes

Each of these principles is discussed in detail in Appendix 3.

In addition to achieving the overarching goals described above several pressing issues needing to be addressed include:

- The four least productive routes are also the four routes that are giant one-way loops. Each route (Route 5 and 11 in the City of Merced, Route 14 in Los Banos, and Route 16 serving Atwater and Winton) take a 60 minute cycle to complete, meaning most customers will require a 60 minute ride to complete a round trip on the bus. In other words a person whose trip may take 10 minutes in one direction will take 50 minutes in the opposite direction for a 60-minute roundtrip whereas with two way service the round trip would be only 20 minutes on the bus. At the very least these four routes need to be restructured to provide direct two way service.
- Findings of unmet needs from previous Unmet Need Hearings need to be incorporated into the plan. This includes providing service to the new Juvenile Court south of the City of Merced, restoring fixed route bus service to Gustine and Santa Nella, and increasing service in Atwater, Winton and Livingston by adding a bus to Route's 7, 8, and 16.
- Improve reliability, which based on both the on-board customer survey conducted as part of this project and the Comprehensive Operations Analysis is a top concern of customers.



- Lay a foundation for extension of service to UC Merced and significant growth in North Merced and Los Banos.

Three distinct alternatives for local service within the City of Merced were developed as part of the alternatives analysis. Three alternatives were also developed for rural intercity routes. Two alternatives were developed for local service in the Atwater-Winton area and in Los Banos a basic alternative was developed with variations to one route. Public input was obtained during the month of May from stakeholders including the public at a series of meetings.

Based on the outcome of the public input and further refinement of operating costs the following alternatives have been developed:

- For local service within the City of Merced two alternatives have been developed – The Recommended Network is a hybrid of the three alternatives in the alternatives analysis and an alternate network is based on the existing route structure. These will be described in greater detail below.
- The rural intercity alternative that extends Route 10 to Santa Nella, Gustine and Turlock is recommended. Due to cost constraints, Route 10 is recommended to operate every two hours over the entire route and a new express service from Turlock to Merced has been added to complement local service on Route 7.
- In Atwater/Winton Alternative 1 was chosen as it provides the best coverage and provides direct intercity service to Merced from more of the community. This alternative was modified to improve access to the areas west of Winton Blvd. in Atwater.
- In Los Banos it is recommend that Route 14 continue to serve the existing developed area south of 152 and that a new route serves newly developed residential areas when they are built.

City of Merced Local Service

As stated above two networks are being presented for local service in the City of Merced. Both networks require the same number of revenue vehicle hours and peak buses. However, the recommended network is expected to produce more benefits.

The recommended network is a more radical restructuring of service and therefore may raise some concern among customers comfortable with the existing system. However, over the long term this network will better achieve the three goals of increasing ridership, improving productivity and improving reliability and will serve the City of Merced long into the future. The recommended network will achieve the following:

- It will reduce travel times for many trips. Three quarters of the respondents in the On-Board Customer Survey indicated they would walk further to catch a bus if it were more direct and provided faster service.
- It will serve as the foundation for growth. Routes have been designed so that they can be extended into growing areas as these areas develop and resources become available without requiring changes in the existing segment of the routes. In other words MCT can make the radical changes to local routes now and there will not be a need to do so again in the foreseeable future.
- The simplicity and directness of the routes will attract more new customers over time. Typically transit systems have turnover a of 20 to 30%. That is 20 to 30% of the



customers stop riding because they move, retire, acquire a car, etc. Therefore, just to maintain ridership levels, these customers need to be replaced. This alternative can be more successful in attracting new riders both to replace lost riders and to grow ridership further.

- Even if there were no turnover, The City of Merced will grow dramatically over the timeframe of this study and beyond. In particular, UC Merced and the growth in North Merced will present opportunities to attract totally new customers to the system. This simplicity and directness of routes of the recommended network will better attract these riders.
- The recommended network is designed to include more recovery time on every round trip to improve reliability. Although an attempt is being made to add recovery time on the alternate network, in many cases it will not be sufficient.

The recommended network is a hybrid of the three alternatives considered in the Alternatives Analysis. However, due to cost constraints, one element that was included in all three alternatives was dropped – the Olive Corridor Shuttle connecting retail and medical offices between Wal-Mart and G Street. The intent of this shuttle, which was to operate every 15 minutes, was to facilitate local trips within the corridor and allow for the streamlining of other local routes providing connections to destinations within the corridor, which lost direct service on the streamlined routes. This proposal is still desired and should be implemented if resources can ever be identified.

However, by taking the best elements of the three alternatives in the Alternatives Analysis and making some additional modifications, it will still be possible to streamline routes and provide convenient access to all destinations in the Olive Corridor. For example, the areas south of 16th Street will either have direct or timed connections at Merced Transpo to all areas of the Olive Corridor and Merced College. All areas east of G Street and north of 16th Street will have direct service to all major Olive Corridor destinations. Areas south of Bear Creek will have timed connections with Route 3 on M Street at 27th or Olive Street for access to Merced College, while the areas north of Bear Creek will have direct service.

Table 2-3 on the following page will illustrate travel time comparisons between the current route network, the recommended alternative and the alternate network.

**Table 2.3: Travel Time Comparison**

From/To	Current Service	Recommended Network	Alternate Network
G Street and Cone to Wal-Mart	37 Min	25 min	25 min
M Street and 8 th Street to Wal-Mart	31 min	20 min	31 min
R Street and 6 th Street to Merced College	24 min	20 min	24 min
Villa Estates to Merced Mall	35 min	29 min	35 min
Alexander and Park to Merced Mall	12/8 min	8 min	8 min
Alexander and Parsons to Wal-Mart	24/36 min	13 min	30 min
R Street and 23 rd Street to Merced College	15 min	10 min	15 min
Amtrak to Merced Transpo	5 min	5 min	5 min

The times shown above include the time on the bus and the time waiting for transfers based on existing or conceptual schedules. Where two times are shown, it indicates the time in one direction differs from the return direction. Where only one time is shown indicates the time is the same in both directions. Only the fastest times are shown in cases where the customer has multiple choices.

The On-Board Survey conducted as part of this SRTP (Appendix 2) asked customers if they would walk further to a bus stop if the route was more direct and provided faster service to their destination. An overwhelming majority of 77% respondents answered yes to this question. In reality, very few customers will have to walk further to catch a bus under the recommended network and except for a small area west of U Street and north of 20th Street, those who do have to walk further will still be within ¼ mile of a bus stop.

City of Merced - Recommended Route Network

Figure 3 illustrates the recommended network. Appendix 4 will include a detailed description of each route and the conceptual schedules for each route. Some route numbers are different from the alternatives analysis to better match existing route numbers. A general summation follows:

Route 1

Route 1 (Route 5 in Alternative 1 and 3 of the Alternatives Analysis) will provide a direct link from the Department of Human Services to Transpo then continue directly to Amtrak and provide two way service on both 21st and 26th Street east of G Street. There will be a coordinated transfer with Route 3 on M Street and 27th (northbound) and M Street and Olive (Southbound) to provide quick access to Merced College. Unlike the route shown in the alternatives analysis, this route will operate via Olive to service Merced Mall, Gottschalk's, Wal-Mart and other retail areas in the Olive Corridor.

Route 2

Route 2 will serve R Street between Childs and Yosemite Ave. as in all alternatives. It will be extended to the Department of Human Services. Unlike the current service, this will result in a single route serving R Street; currently Routes 1, 2, and 12 serve different segments of R Street. Route 2 will terminate at Merced College. When resources are available and the roadway network is complete Route 2 can jog back and continue north on G Street.



Route 3

Route 3 will operate as shown in Alternative 1 of the Alternatives Analysis and will be extended via M Street to Gerard then operate on N Street to the Golden Valley Clinic. It will not serve the Department of Human Services, being replaced by Route 2. Route 3 will terminate at Merced College. Ultimately it can be extended to UC Merced via M Street and Bellevue. Until M Street is extended to Bellevue, Route 3 could use Yosemite Ave and Lake Road to reach UC Merced.

Route 4

Route 4 will also operate as shown in Alternative 1 of the Alternatives Analysis. This will result in a single route serving G Street; currently Routes 1, 2, 4, and 11 serve portions of G Street. Service between Park Street and Social Security and Merced Mall currently provided by Route 4 will be provided by Route 11. Route 4 will terminate at Merced College. When resources become available, Route 4 could be extended by jogging back to G Street and continuing north. It would serve the new medical center under construction on G Street.

Route 5

Route 5 would combine the Sydney and Lopes segment of Route 1 in Alternative 1 and 3 of the Alternatives Analysis with the Coffee Parsons loop of Route 11 in the Alternatives Analysis. It improves upon the existing Route 5 by increasing the amount of two way service along these segments of the route. The areas currently served by Route 5 along 27th and 26th Street are replaced by two way service on the new Route 1.

Route 11

Route 11 (Route 13 in Alternative 1 of the Alternatives Analysis) would operate as shown, however, it will be extended to Merced Mall via Alexander, Park, Olive, Collins and Loughborough, and continue to Wal-Mart via Loughborough. The area east of G Street gains two way service as a result of this change.

Route 12

Route 12 (Route 1 in the Alternatives Analysis) provides service between Merced Transpo and Wal-Mart via Highway 59 then continues to Merced Mall and Merced College. Between Merced Transpo and Wal-Mart service will be staggered with Route 7 to provide 30-minute service. Between Wal-Mart and Merced College service will be staggered with Route 8 to provide 30-minute service. Both Route's 8 and 12 can be extended to UC Merced via G Street and Cardella. In the interim, Yosemite Avenue and Lake Road can be used to access UC Merced.

It may seem counterintuitive to break up Route 1 and 2, which are currently the most productive local routes. However, while the route is broken into several pieces, all areas served by the route will continue to have two-way 30 minute service. Table 2-3 shows that many users of Route 1 and 2 will actually receive faster service as a result of the new structure. The other benefits of the new route structure, particularly directness to Merced Transpo and Merced College (which is recommended to become a timed transfer center see below), are enhanced by the recommended route structure, which the existing Route 1 and 2 is not compatible with. Because of the quality of the replacement service it is not anticipated that any customers will stop riding the bus due to these changes.



City of Merced – Alternative Network

The alternate network does not change the City of Merced local routes as significantly. Figure 4 illustrates these routes and Appendix 4 includes detailed route descriptions and conceptual schedules. A summary of the changes include:

Route 1 and 2

These two routes which compliment each other to provide two way service on a loop would be modified at several locations to improve reliability, simplify the route to make it more attractive and provide better coverage. The recommended changes will result in Route 1 and 2 operating via the same route in opposite directions.

The biggest change is between Merced Transpo and 21st and G Street. Leaving Merced Transpo as Route 1 buses would operate via 16th Street, M Street, 13th Street, C Street, 15th Street, D Street, 16th Street, Yosemite Parkway, and 21st Street. Route 2 will operate via the same streets in the opposite direction. This change will eliminate excessive turns and operations on streets not suitable for bus service in the area east of G Street. It will also better serve the neighborhood with two way service on 21st Street, the street most suitable for bus service. This change also reduces running time and provides new service along Yosemite Parkway.

Route 2 would be modified by operating via 26th, K Street (loop in front of the Amtrak Station) Martin Luther King to 21st Street. This will make Route 1 and Route 2 operate in opposite directions via the same alignment.

Route 1 and 2 would also operate in both directions along R Street, removing service from U and T Street. This simplifies the route and will improve reliability. Most of the neighborhood west of R Street is within walking distance of R Street.

Route 3

The northbound jog to Collins Drive Street and the southbound jog to Amtrak would be eliminated to improve reliability because these jogs are made in one direction only. The area served by the Collins Street jog is in walking distance of the M Street alignment to the route. Route 1 and 2 will continue to provide service to Amtrak.

In south Merced, the jog via Childs and N Street would be eliminated. The residences served by this jog are within walking distance of the M Street and Cartmell stop. When street construction is complete this route will be extended via M Street to Gerard to N street. In the interim Carnell will continue to be used.

Route 4

Service in South Merced would be simplified to reduce running time and allow resuming service to the Merced Transpo. South of Merced Transpo service would be provided via 16th Street, M Street, 13th Street, D Street, Childs, G Street, and a one way loop of G Street, Gerard, Highway 59 and Cone Street. The areas east of G Street that is currently served by Route 4 are within walking distance of G Street.

North of Bear Creek northbound buses would operate via the same alignment as southbound buses. This eliminates duplication with Route 1 on much of G Street, and eliminates the one-way loop in the route. If Route 4 is extended to UC Merced this one-way loop would be in the



middle of the route and become useless to customers. This change reduces the travel time from Park Street to Social Security and Merced Mall.

Route 5

One of the two giant one way loop routes in the City of Merced would be modified to operate in both directions east of Merced Transpo via Main Street, Motel Way, Merced Avenue, Shirley and Yosemite Parkway to Parsons, continuing via the existing Route 5 loop of Parsons, Coffee, Gerard and Parsons. Service north of the Santa Fe tracks including 26th Street would be eliminated. However, Route 11 and modifications to Route 2 would serve the discontinued areas.

West of Merced Transpo the route would be unchanged except in the westbound direction where 11th Street would be used between O Street and X Street.

Route 11

The other one-way loop route would become a two-way route between Merced Mall and 27th Street and Parsons only. Discontinued segments either duplicate other routes such as Route 3 on M street, and Route 8 on Loughborough. The revised route would begin at Merced Mall and operate via Loughborough, M street, Merced College, Yosemite Ave., Parsons (instead of Jorge to provide better access to new residential areas), El Portal, Cherokee, Brookdale, Parsons, Alexander, G Street, 26th Street, and a one way loop via Glen, Santa Fe Ave, Parsons and 27th Street.

Route 12

The one-way loop at the north end of the route would be replaced by two-way route served via R Street and Yosemite Ave. This eliminates duplication with Route 2. The one-way loop will also become dysfunctional if Route 12 is extended to UC Merced and this loop becomes part of the middle of the route. The area along R Street and Yosemite is growing and will be better served by a two-way service.



Figure 3: City of Merced Recommended Network



Figure 4: City of Merced Alternate Network



Route Alternatives – Merced County

The intercity or rural routes are well used. After a thorough evaluation of each route (except for route 10/10A) only minor recommendations are needed. Figure 5 shows the rural route proposal. The changes to each route are described below.

Route 7

This route will be combined with existing Route 6 to provide a single route between Merced and Turlock. Utilizing the additional bus identified in the Unmet Needs Hearings, service will be provided once every hour between Merced and Livingston (a doubling of service) and once every two hours between Livingston and Turlock (approximately the same level of service).

Recommended changes to Route 7 include streamlining the route in Winton to operate via Santa Fe, Central and Walnut to provide a faster trip for through riders. Increased service on Route 8 will compensate for the service not provided on Myrtle and Jones.

In Livingston the route will operate in both directions via Main, I, Prusso, B and Winton Parkway to maximize coverage, minimize overlap between the old Route 6 and 7 and provide for the most direct routing without giving up coverage.

In Hilmar it is recommended that service be removed from Falke and operate on Bloss. Although this removes the stop at the park and community center it will only be a one-block walk to the bus stop on Bloss. At the time of field reconnaissance there was considerable delay at the unsignalized intersection of Falke and Highway 165, which would not occur at the signalized intersection at Bloss.

Route 7X

The inclusion of Delhi in the Turlock urbanized areas results in additional FTA funds, which can increase service. A new express route connecting Turlock, Delhi, Livingston, Atwater and Merced is proposed operating via I-5 making only one or two stops in each community.

Route 8

Utilizing the additional bus identified in the Unmet Needs process, service will be improved to every 60 minutes. The loop serving Winton will be expanded to replace Route 16 (see Atwater local service for details).

Route 9

The following modifications are proposed for this route:

- In Merced, service will be provided to Merced Community Hospital in both directions via 13th Street so that customers do not have to travel through Transpo. This will also serve as a direct local link between the two points.
- In Planada the area south of the railroad track will be served by a different alignment that provides an end to one-way service and provides a faster route that also better penetrates the neighborhoods.
- In Le Grand the route is also modified to provide two way service and better penetration without increasing travel time.



- Through interlining buses with Route 10 at the Merced Transpo service, service can be provided every 60 minutes instead of 90 to 120 minutes without increasing the number of vehicles needed to provide service. This route serves areas with high residential density and low-income households; therefore improving the frequency is warranted.

Route 10

Utilizing two additional buses and additional hours included in the proposed FY 2004-05 budget, service will be increased from two round trips per day on each route to all day service operating every 120 minutes. It is recommended that the route be simplified in Dos Palos to serve the most heavily populated areas and rely on DAR to feed this route from areas not served by the revised route. The revised route reduces the travel time between Merced and Los Banos.

In Los Banos the route will be modified to provide local service connecting the key destinations including Merced College (Los Banos campus), K-Mart, Downtown, Memorial Hospital and Wal-Mart.

The route is extended from Los Banos to Santa Nella, Gustine, Hilmar and Turlock. As in Dos Palos the Dial-A-Ride serving Gustine will become a feeder to this route.

An alternative that was considered operated Route 10 in route deviation service in Dos Palos and Gustine eliminating the need for separate Dial-A-Ride service. However due to the extra time needed to allow for deviation (approximately 30 minutes in each direction or 15 minutes in each community) and eliminating the opportunity to interline buses with Route 7 (in Turlock) and 9 (in Merced) negated any cost savings. The reason interlining is not possible is due to different equipment - a route deviation service should use smaller vehicles where as Route 7 and 9 need to use large buses due to loads; as well as the additional running time no longer meshed with the schedule of the other routes. Therefore a fixed route with Dial-A-Ride feeder service is recommended.

Route 17

Utilizing an additional bus resulting from a previous year's Unmet Needs Finding, this new route connects Merced Transpo with the new juvenile court complex.

Interlining

In developing conceptual schedules for these routes it was found that interlining Route 10 and 7 in Turlock and Route 10 and 9 in Merced allowed for improved efficiency. Route 9 could improve from a 90 to 60 minute headway through interlining with no added equipment. Interlining Route 7 and 10 allowed for one less bus to be used for the level of service designed. It also allows for a schedule that provides the opportunity to stagger headways and timed connections with other routes improving service quality for the customer. For example, Route 7 schedules are staggered with Route 8 and 12 along common segments providing 30-minute service.

Route Alternatives – Los Banos

Local service in Los Banos is the least productive of all MCT fixed routes. Service operates via a one-way loop requiring an hour to complete. Therefore most round trips are one hour while these round trips can be done in 10 to 20 minutes or less via auto.

Two local routes providing two way service are proposed.



Route 14 would duplicate the proposed alignment of Route 10, providing combined service every 30 minutes in both directions between Merced College and Wal-Mart. The combined service will also serve the older parts of town and all other major traffic generators. Sufficient time exists in the schedule for this bus to loop back to Wal-Mart to serve the southern part of the city, either the area currently served by the existing Route 14 (also the least productive portion of Route 14) or when other roads in south Los Banos are built via a totally new alignment serving new development.

Route 15 will serve the northwest area of Los Banos, which is heavily populated via a 12-minute loop that will connect with Route 10 and 14 in Downtown for access to Wal-Mart and the Hospital and a faster route to Merced College. The route would extend to the east along San Luis Road then loop back to K-Mart and Merced College. Service initially would be every 60 minutes but service would be more direct and provided in both directions.

Ultimately another route could serve the northeastern area of the city which is undergoing tremendous growth via a yet to be determined alignment.

Figure 6 illustrates these proposals.

Route Alternatives – Atwater/Winton

As with Los Banos, the local route in Atwater is a giant one way loop that is a 60 minute round trip when riding the bus, while the same trip would take only 1/3 of that time or less by car. Utilizing the extra bus resulting from the Unmet Need Findings, Route 16 would operate as a two-way loop. Route 16 would no longer serve Winton, it would be replaced by more frequent service on both Routes 7 and 8.

A new route (Route 18) would be established that makes a shorter loop, providing new service along Shaffer Road. Along common portions of Route 16 and 18 service will be every 30 minutes on the portion of the loop serving the central core of Atwater and adding service to Shafer Road.

Figure 7 illustrates these proposals.



Figure 5: Merced County Route Alternatives



Figure 6: Los Banos Route Alternatives



Figure 7: Atwater & Winton Route Alternatives



Estimated Ridership

Table 2-4 below presents a snapshot of estimated average weekday ridership in FY 06/07 one year after service changes are recommended to be implemented. The Existing Network column projects ridership if absolutely nothing was done with the service. The other two columns project average weekday ridership if all elements of the networks were implemented. However, excludes extension to UC Merced (see Section 2.6) which will further increase ridership under either network. This approach is used to provide an apples to apples comparison of the three approaches to providing fixed route service. Note that only routes in the City of Merced differ between the recommended and alternate networks. All other routes are the same in both networks.

Table 2.4: Estimated Ridership Comparison

Route	Existing Network	Recommended Network	Alternate Network
1	700	850	750
2	900	700	950
3	800	900	900
4	500	800	600
5	250	450	300
6	150		
7	475	800	800
7X		200	200
8	400	800	800
9	350	500	500
10	80	400	400
11	160	350	200
12	500	400	550
14	150	150	150
15		150	150
16	150	200	200
17		100	100
18		100	100
Total	5,565	7,850	7,650

Merced College Transit Center

Currently Merced College is located at the north end of the development in the City of Merced. Although it is the number one destination on MCT and most local routes currently serve it directly, for recommended and alternate networks, a location on the periphery of a service area does not make an attractive transfer location, since most customers will have to make out of direction travel.

However, as the City grows northward, Merced College will become the ideal location for the prime transit hub. In addition to being a top destination in itself Merced College also has sufficient space that can be developed into a transit hub. It appears that the landscaped barrier along M Street can be designed to provide a large enough transit center without removing parking.



Scheduling Implications

Currently schedules have gaps in service twice a day to account for driver breaks. The problem with not providing recovery time on every round trip, which is standard operating practice at most transit systems, is that an unscheduled delay on one trip will impact subsequent trips. If there are unscheduled delays on subsequent trips the delay is compounded. Unscheduled delays can include (but are not limited to) train crossings, wheelchair boarding's, non-operating traffic lights, road construction, traffic accidents, etc. Recovery time on every trip will in many cases isolate the delay to that trip allowing the next trips to leave on time. With only two breaks per day, there is a five-hour block of time during the mid-day in which many local routes have no opportunity to recover from a delay.

The recommended alternative was designed to factor in recovery time on each trip. The alternate network has factored in recovery on many routes but some routes were not changed significantly enough and could experience poor schedule adherence due to lack of recovery.

Productivity on most local routes has been very unproductive prior to 7 AM. Therefore most local routes will begin service at 9 AM under both the recommended and alternate network with resources being diverted to EBT service (Section 2.8) Service on rural intercity routes, which unlike local routes are very productive, will continue to begin service at 6 AM.

Recommendations

- 1) Implement Recommended Network in FY 05/06
- 2) Develop Merced College as the second hub in the City of Merced
- 3) Incorporate recovery time on every round trip to improve schedule reliability.
- 4) Begin local fixed route service at 9 AM on local routes. Service will continue to begin around 6 AM on Routes 7, 8, 9, and 10 and at 7:45 AM on Route 17.



2.6 Recommended Fixed Route Service – UC Merced and New Development

The tenth University of California Campus is currently under construction in Merced, tentatively scheduled to open in September of 2005. Initially beginning with an enrollment of approximately 1,000 students, the campus will eventually grow to 25,000 students. It will be a major research university which traditionally serves as an incubator for many new business enterprises. Over the course of the S RTP planning horizon and beyond, the University will fuel growth and dramatically change the economy of Merced.

The area immediately south of and adjacent to the UC Campus will be the University Community, a master planned mixed use development supporting the University. The City of Merced anticipates significant growth on lands under its sphere of influence west of the University and University Community and north of the current limits to development, about ½ mile north of Yosemite Avenue.

The new University and adjacent development present a unique opportunity to maximize transit market share, reduce auto use, and serve as a model on how a truly balanced transportation system enhances the quality of life. This is consistent with the University's vision that promotes environment sustainability.

MCT should work with University Administration to develop a funding plan for transit routes serving the campus. The incremental cost of creating new routes, extending existing routes and lengthening the service span of existing routes should be fully funded by University driven funding mechanisms. There are several approaches, but a very common strategy that can be embraced in a time when College budgets are very limited, is to impose a semester fee upon all students. This can be either done on a per student basis or semester unit basis. In exchange for paying the fee each student can ride the entire MCT system at no extra charge for the entire semester. It is recommended that staff and faculty also obtain universal access to MCT services through a small per person per year fee either paid by the staff or faculty member or by the University.

During the first few years of the campus, when enrolment is still relatively small, it may be necessary to supplement the student fee with another funding mechanism. A minimal 30 minute frequency is needed to provide attractive and useful service, however the cost of providing this service may result in a very high per student or semester unit charge because the cost can not be spread over a large number of students. Table 2-5 on the following page illustrates cost per student and semester unit under different enrolment levels.



Table 2.5: Cost per Different Enrollment Levels

	Year 1 1000 Students	Year 2 2000 Students	Year 3 3000 Students	Year 4 4000 Students	Year 5 5000 Students
Student Fee \$50 Per Semester (Typical U-Pass Rate)	\$100,000	\$200,000	\$300,000	\$400,000	\$500,000
Student Fee \$120 Per Semester (Equivalent to four monthly passes)	\$240,000	\$480,000	\$720,000	\$960,000	\$1,200,000
Student Fee \$160 Per Semester (Equivalent to five monthly passes)	\$320,000	\$640,000	\$960,000	\$1,280,000	\$1,600,000

A service proposal based on the existing route network has been presented to the UC Merced Administration. It extends Routes 3, 4, 8, and 12 from Merced College to UC Merced. Two routes would operate via Yosemite Ave. and Lake Road while the other two routes would operate via G Street and Bellevue. Seven bus trips per hour would initially serve the UC Campus.

Another alternative is recommended based on the recommended network described in Section 2.5. This is a component of a larger route plan to serve all of the growth area of North Merced. Under this network, Route’s 3, 8 and 12 would be extended to UC Merced from Merced College and a new express route (designated Route 3X) would connect Merced College with Merced Transpo making stops only at Merced College, M Street and Loughborough, M Street and Olive and Amtrak. Figure 6 illustrates the concept of providing service to the UC Campus and growth area of North Merced, and Figure 7 illustrates a more detailed plan of the University Community. A synopsis of the recommended network and how it compares to the original proposal follows:

- Both the original concept presented to UC Merced and the recommended network requires the same number of revenue vehicle hours and peak vehicle.
- The recommended network would provide six trips per hour whereas the original concept provides seven trips. Initially six trips appear sufficient. Regardless which option is chosen, frequency will increase on the routes serving the UC Campus as the campus grows, increasing demand for transit service, provided resources are available to support the increased service.
- Both networks provide direct access to Merced College, Merced Mall, Wal-Mart and Merced Transpo. The recommended alternative also provides for an express route which provided two-way direct service to Amtrak, faster service to Merced Transpo for connections with Greyhound and could be extended to Merced Airport (if air service expands) or selected trips could be interlined with Route 7X providing service to other communities along SR 99.
- The recommended network proposes using Cardella instead of Yosemite Ave. to access UC Merced. Based on the City of Merced specific plan for north Merced it appears that initially there will be little development along Yosemite Ave. beyond McKee Road. In the more distant future development will undoubtedly occur requiring a transit line at that time. However, for the more immediate future



development is slated to occur along the alignments chosen for the recommended alternative.

- The recommended alternative is a part of a larger plan for a route network serving the anticipated growth in North Merced.

In addition to selecting which route network is chosen to service the UC Campus, the issue of service span needs to be addressed. Many students will live on campus and it is possible that freshman will not be allowed to have autos. The campus will likely have night classes, late hours at libraries, and evening sporting and cultural events. Where there are students living on campus without an auto or students living off campus needing to access the campus during nights and weekends, service will need to be provided during the evening and Sunday hours that MCT currently does not operate. This will increase the operating hours, although either network will be equally compatible with an increased service span.

Table 2-6 below summarizes the cost for extending service to UC Merced. It also indicates what level a student U-Pass would need to be priced to fully fund the extension. This is based on only students receiving a U-Pass, however it is recommended that all staff and faculty also participate thus lowering the cost per person though not the overall revenue received.

Table 2.6: Cost of Extending Service to UC Merced

	Recommended Network Annual Operating Cost	Original Proposal Annual Operating Cost	Year 1 Semester Student Fee
Extend Service During existing Service Span	\$784,000	\$784,000	\$392
Extend Service Including Night and Sunday	\$1,316,860	\$1,316,000	\$658
Implement Route 3X only (including Night and Sunday) during Year 1	\$411,225		\$205
Extend Route 3 only (including Night and Sunday) during Year 1	\$338,225	\$338,225	\$169
Extend Route 3 only during existing service span	\$178,552	\$178,552	\$89

Unfortunately, all of the options for phasing service expansion except extending Route 3 during the existing service span would cost a student on a per semester basis more than charging the equivalent of 5 monthly passes. By Year 5 the full implementation of service would cost the student \$151 per semester slightly below the five month pass equivalency. Including faculty and staff in the U-Pass program would lower the cost per person. Scaling back service when classes are not in session would also produce some savings. However, given the magnitude of the cost in excess to potential revenues as illustrated in the two tables above, neither of these actions will likely be sufficient to fully pay for UC Merced services with a U-Pass Program.

A second area of opportunity is to work with the University to implement transit friendly policies. This could include a pedestrian oriented environment on campus as has become typical at many major universities including other UC campuses. Auto parking should be restricted to the periphery of the campus. Many colleges do not allow freshmen to bring cars on campus, a policy consistent with the environmental sustainability vision of the campus. At the same time transit stops and the route used by buses on campus should be designed to maximize convenience for students, staff and faculty and minimize delay for buses (which both enhances service and minimizes operating cost).



A third strategy is for MCT to be proactive in working with the City, County, UC Administration and developers to create a transit friendly environment in all new development. Section 2.11 provides more detail on transit friendly design.

Recommendations

- 1) Phase in implementation of the recommended network, initially starting with an extension of Route 3.
- 2) Include all students staff and faculty in a U-Pass Program
- 3) When service is expanded to more than four buses per hour over tow alignments, limit service when classes are not in session to four buses per hour (two buses per alignment).
- 4) Obtain additional funding from UC Administration to keep the U-Pass affordable. This could come in the form of a U-Pass subsidy. This will be phased out as the campus grows and the U-Pass can fully fund service.
- 5) Work with UC Administration to assure a pedestrian and transit friendly environment all though campus. This would include keeping autos from the center of campus by providing parking on the periphery, but allow buses to directly serve the center of the campus.



2.7 Dial-A-Ride Service

MCT provides Dial-A-Ride (DAR) service throughout Merced County. In the City of Merced and the City of Los Banos where fixed route service covers most of each community, DAR service is limited to seniors aged 60 and over and disabled individuals. Elsewhere in the county DAR service is open to the general public and in some parts of the County it is the only transit service available. MCT DAR service fulfills the federal requirement (Americans with Disabilities Act or ADA), which requires complimentary DAR service within 3/4 mile of any fixed route service during the hours in which fixed route service is provided.

DAR service is limited to the extent that it can be productive due to the nature of the service. Even with the most expert scheduler or state of the art scheduling software, the physical time it takes for a vehicle to make several pick-up and drop offs over a deviating route limits the number of customers that can be carried in one hour. As a result, the national average for pure DAR service similar to that provided in Merced County is 2.8 passengers per service hour. By contrast MCT averages 5.38 passengers per service hour for Urban DAR service and 4.95 for Rural DAR service, well exceeding the national averages, and exceeding the performance standard in the goals and objectives illustrated in Section 2.1. However, this productivity falls short of the 5.7 and 5.0 passengers per service hour, respectively, indicated in the penalties and incentives of the contract with MCT's service provider MV Transportation.

In addition to being highly productive, the March 2004 DAR customer survey indicated that there is a high customer satisfaction with the service. Over 75% rated the service excellent (25.6%) or good (51.1%) and only 4% rated the service poor or bad. The one weakness that did surface in the survey both among the six respondents rating the service poor or bad, but also among other respondents is late pick-ups. Over 37% have been picked up late 3 or more times, and over 47% have been picked up over 45 minutes late at least once.

Improved scheduling to reduce late pick-ups should be the priority for improving DAR service. MCT provides both significant incentives and penalties for on time and late pick-ups. MCT should work closely with the contractor to improve scheduling to minimize delays, and strictly adhere to paying incentives and levying penalties for on-time or late pick-ups. Additionally the language of the incentive and penalty section (Exhibit C of the service contract) should be clarified. The statement "pick-up time or pick-up window" is confusing and should be replaced by "pick-up window" which is standard for DAR service given the impossibility of an exact pick up time.

There is also concern about the language for the incentives and penalties for productivity. Since the trigger for incentives and penalties is higher than actual practice or past system goals (and as stated above much higher than industry experience), it is acceptable to retain the higher numbers to trigger an incentive (despite high performance the agency should continue to strive for improvement) but use a lower threshold to trigger the penalties. For example, 5.3 and 4.9 does not allow for significant backsliding but retains the incentive for improvement.

In relation to fixed route changes the following changes to DAR service are recommended:

- Convert Los Banos DAR to general public service to serve areas of the city losing fixed route service and to serve growing areas until such time as fixed route service can be provided.
- Convert Atwater and Winton DAR service from general public to seniors and disabled only. Improved fixed route service and the addition of the urbanized



designation and higher farebox requirements that results (senior and disabled DAR service is exempt from farebox recovery requirements).

- DAR service in Dos Palos and Gustine will transition to a more localized service feeding expanded fixed route rural intercity bus service and providing intra community trips.

Recommendations

- 1) Modify the penalties in the contract with MV Transportation to be more realistic.
- 2) Implement modifications to DAR service in conjunction with implementation of fixed route service changes.



2.8 Employer Based Transit

Employer Based Transit (EBT) is a proposed customized transit service designed to attract work trips into transit that are currently not well served by the existing fixed route network. The EBT has the potential of bringing new riders into transit. A demonstration program focused on Merced College began in January 2004 and appears to be very successful. The EBT Program is to be expanded to include other employers in 2005. It is also envisioned that resources be diverted from existing fixed route bus service during the early morning when productivity is currently lower.

MCT staff should ascertain the likely market for EBT services to estimate potential demand and resource requirements. Resource requirements include the number of service hours, vehicles and times of day service would need to be provided. For budgeting purposes the financial plan assumes 8,064 annual hours based on 8 vehicles and 4 hours per vehicle per day.

Although EBT is envisioned as a curb to curb subscription service, MCT staff, while evaluating the potential market for EBT, should also explore as an alternative shuttles connecting the entrances of participating employers with fixed route transfer points, therefore utilizing a combination of regular fixed route and shuttles to improve access to work sites throughout the County.

Recommendation

- 1) Ascertain market for EBT Service and implement expansion in FY05/06 in conjunction with fixed route service restructuring.



2.9 Marketing Plan

Of the six measures of service quality customers were asked to measure in the On-Board Survey, availability of transit information ranked lowest. Adhering to a marketing strategy is critical to growing ridership and meeting community needs.

Marketing is a broad term that includes more elements than the elements discussed in this section. The four “Ps” of marketing are

- Product
- Price
- Promotion
- Packaging

The first "P" - Product, is service design and delivery, which are dealt with in Sections 2.5 and 2.0 of this SRTP respectively. Pricing is also dealt with in its own section (2.13). This section will focus on Promotion which includes public information and will also touch upon Packaging.

There are several interrelated elements of the promotion component of marketing:

- **Public Information for customers with limited travel options:** If citizens who need MCT service because they have limited travel options are not aware of the service MCT provides or have difficulty obtaining or understanding public information materials, MCT is in effect not providing that service to the community.
- **Public Information for customers with more travel options:** Most individuals value time and simplicity. Every added minute a customer spends trying to obtain or understand transit materials, reduces the number of customers who will choose to use transit. In other words if information about transit services is difficult to obtain and/or understand, ridership will suffer.
- **Use branding and promotional activities to create a positive image:** Establishing a positive image does not directly translate into increased ridership but it provides the foundation and framework which allows other ridership inducing activities to flourish. Image building provides a host of intangible benefits that will increase success particularly when seeking partnerships to increase funding, expand services, influence urban design, construct transit facilities (such as transit centers), leverage promotional opportunities, and develop user side subsidies (such as universal passes for college students). Branding and image building promotional activities alone will not succeed in creating a positive image; it will require delivering quality service (clean reliable bus service, friendly drivers, etc.)
- **Use promotions to inform the community of the services provided and encourage them to use it:** This includes a whole range of activities specifically designed to sell the products (transit services) provided. These activities can be categorized into two groups – special campaigns that promote new or changed services and on going efforts to encourage residents to use transit.

It is recommended that during FY 2004/05 a marketing plan be developed that will develop strategies for improved provision of public information, image building and ridership growth driven promotions. Examples of strategies that should be evaluated and if feasible developed further include:



Public Information

- Redesign the system timetable to include a system map (similar to the system maps used in this document) in addition to individual maps accompanying each timetable.
- Increase the availability of system timetable/maps to include prominent display racks at all public facilities and at all major private facilities that will cooperate. The list includes but is not limited to senior centers, libraries, hospital and medical offices, major retailers, post offices, court houses, other government buildings, transportation stations, colleges, etc.
- Post the system map and timetables for routes serving the stop at all stops near major trip generators.
- Upgrade the web site to include the system map, how to reach key destinations and improve the user friendliness of the site.
- Establish links to the website from home pages of web sites for major local destinations (e.g. Merced College, Merced Mall) and other public agencies serving Merced County.
- Provide training for all staff who deal with the public tailored to their specific task (e.g. driver training will be slightly different than phone operator training) specifically focused on the best ways to communicate transit information to customers seeking information.
- Explore for later year implementation interactive trip planning for the website and developing real time information of bus arrivals for access via hand-held technology and electronic signage at major stops.
- Separate the Dial-A-Ride reservations phone number from the general public information phone number. Both have distinct uses and having separate lines will reduce the wait time for both sets of customers. There could be an increase of cost if additional personnel need to be hired. However, to give the necessary attention to each customer there should be both a dedicated Dial-A-Ride scheduler and public information staffer. There should also be specific voice mail responses tailored to the nature of the line (Dial-A-Ride or Fixed Route information) that the customer hears when all phone lines are active or during hours in which no one is on duty.

Image

- Conduct special holiday themed events. For example, “Stuff A Bus” where individuals bring food, clothing or toys for a food pantry, women’s shelter or other program to help the less fortunate. They stuff the bus at designated shopping centers during specified hours on a Saturday or Sunday.
- Conduct a contest to develop a design for holiday themed buses. Besides using the selected design, award prizes (donated by local businesses) to the top finalists.
- Participate in parades and fairs. Use these events to circulate information as well as to project a positive image. During parades, volunteers from a local youth group could walk alongside the bus handing out timetables and free ride coupons.
- Examine attitudes towards the system logo and color scheme. Determine if changes will result in a more positive image of the transit system.



- Develop a print campaign utilizing testimonials of existing MCT customers. The customers should be diverse in terms of age, ethnicity, gender, and lifestyle. However, all should be interesting individuals who present a positive image of the MCT customers. This campaign puts a face on the MCT user and demystifies who rides the bus.

Promotion

- Initiate a new resident program. Each resident would receive a personal welcome letter, system timetable book and two or more free ride coupons (or free day passes) to sample the service. Work with management firms of major apartment complexes to distribute similar packets to new tenants since they are often not included in new resident mailing label services.
- Develop realtor packets that can be distributed by real estate agents to prospective buyers. (Note these would be distributed before the customer moves in, the new resident mailers would be after. If residents receive both, the new resident mailer reinforces the realtor packet. Often it requires more than one exposure with a promotion piece for the customer to respond).
- Identify target groups with a high potential for using transit. Targets can include locations with constrained parking or groups that are visiting and don't have access to a car. Successful programs at other transit agencies include jurors at a courthouse with constrained parking or major retailers who restrict employee parking to keep parking spaces free for customers. Another off-beat campaign would target truck drivers who were on layovers in which they could not use their truck to go shopping or attend a movie. On the surface, parking seems to be plentiful throughout Merced County; however, through brainstorming with various stakeholders, there may be unique opportunities to target a very specific group who could benefit from using transit. In such cases, specific brochures and other material would be prepared. Include free ride coupons or day passes with the special material.
- Establish targeted direct mail campaigns. These can reach all addresses in a particular geographic promoting specific service improvements or acquainting a neighborhood with the service provided. The material distributed would be tailored to the audience and include free ride coupons or day passes.
- Explore co-operative marketing programs. These can include in-kind trades where free advertising is provided on buses in exchange for the business promoting MCT in their businesses and in their advertising. It may be possible to leverage more paid advertising by co-oping or sharing the advertising with another business.
- Consider a summer youth pass good for the months of June, July and August for all youth 18 and under that is priced equal to two monthly passes. Work with local businesses to provide discounts during this three month period to any youth displaying the pass and promote this business in all pass promotions.
- Utilize free ride coupons or free day passes with all print promotional material. It will draw individuals to the promotion and will serve to gauge the effectiveness of the program.
- Seek out other inexpensive channels to distribute promotional material including free ride coupons on the back of grocery receipts or in direct mail coupon books. Discounts on monthly passes could be offered once or twice a year also.
- Offer free rides during the first few days of any new or significantly changed service.



An agency the size of MCT should devote no less than 1.5% of its budget to marketing efforts. Annual expenditure of about \$80,000 (based on the FY 04/05 budget – this amount increases in subsequent years to keep pace with growth) is reasonable for the Merced County market.

Recommendations

- 1) Develop Marketing Plan in FY04/05.
- 2) Devote no less than 1.5% of Operating budget to marketing efforts.



2.10 Bus Stop Policy

MCT has a policy in which customers can flag down a bus at any intersection in which it is safe to stop. Designated bus stops are located at major destinations and selected locations along major streets. On a lightly used system, this policy reduces the cost to install and maintain additional bus stop signs. Moreover, the customer does not need to search out the bus stop sign to determine where to catch the bus, since they can board at the point most convenient to them.

Offsetting these advantages are a number of drawbacks:

- Customers may not be able to judge if the point they are standing is indeed a safe place for a bus to stop.
- It is difficult to notify customers of route changes, whereas with designated bus stops, signs can be posted notifying the customer. For example when Route 2 was recently rerouted to make a left turn onto 16th Street, customers would be waiting for the bus on G Street before 16th Street, unaware that the bus could no longer stop there since it needed to be in the left lane.
- As ridership grows, a flag stop system may result in the bus making too many stops, slowing down service.

Although the current policy appears to be customer friendly, adopting a policy that allows buses to stop only at designated stop locations is recommended for the following reasons:

- New customers may be more reassured about catching the bus if there is a sign designating that the bus stops at that location.
- Bus stop signs can be a marketing tool, particularly if they are distinctive and noticed by passers-by.
- The use of bus stop signs allows MCT to post additional information about the service to that location, which can be particularly helpful to new or occasional customers.
- Liability can be reduced if a process is in place to approve bus stop locations, thus providing “design immunity”.

Designating all bus stops with, at minimum, distinctive bus stop signs that indicate which route serves the stop, will increase both capital and operating costs slightly. MCT may seek to install additional benches and provide schedule, route and fare information at transfer points and major destinations. This cost can be offset if MCT is allowed to institute an advertising program to replace existing shelters and benches and for all new installations. In a practice that is common throughout the country, transit agencies contract with firms that take full responsibility for shelters and benches, including all maintenance, in exchange for the right to sell advertising. Most of the advertising revenue goes to the firm to cover costs and provide a profit; however a percentage of the revenue can be allocated to the transit agency. Existing MCT resources devoted to shelters and benches can then be reallocated to maintaining bus stop signs.

Factors to consider in locating bus stops

- In urban areas, locate bus stops approximately 750 to 1,000 feet apart.



- In rural areas, locate bus stops at major intersections or destinations, but no closer than about 1,000 feet.
- Ensure ease of accessing stops from surrounding areas.
- Ensure ease and safety of customers who must cross the street to access a bus stop with appropriate traffic control measures.
- Ease and safety of customers while boarding and alighting the bus. Minimize the need for transit customers to stand or step in landscaping or puddles while waiting for or getting off buses.
- Facilitate wheelchair access
- Delay to bus after customers have boarded and alighted. (i.e. how long does it take the bus to re-enter traffic when ready to leave the bus stop?)
- Surrounding land uses should be compatible with the stop (e.g., single-family residences may object to a stop in front of the home, certain nearby uses like bars may make waiting patrons feel uncomfortable, etc.)
- Minimize walking distance between bus stops at transfer centers.

To assure customer safety and minimize liability, MCT will need to adopt a process for selecting bus stops. The agency should obtain legal advice from an attorney familiar with case law relating to bus stop liability before formally implementing it.

Appendix 5 includes suggested bus stops for each recommended route. These are presented for conceptual purposes only and should be subject to a formal bus stop selection process before installation.

Recommendations

- 1) Discontinue flag stop policy and designate all bus stops with bus stop signs.
- 2) Develop a procedure for locating bus stops to minimize liability.
- 3) Consider developing an advertising bench and shelter program to generate revenue, reduce costs and increase the number of amenities available to transit customers throughout the MCT service area.



2.11 Land Use Integration

Nationally, over the past several decades, most new development, both residential and commercial, has been designed primarily with the premise that the auto is the sole mode of transport. Even when sidewalks are included (typical for residential areas but often missing in commercial districts), there are still many barriers, both real and perceived, which discourage walking and accommodating pedestrians. These include sidewalks next to fast moving traffic without any buffers provided by landscaping or parked cars, inability to safely cross busy roadways, a street pattern that requires indirect paths between residences and the nearest bus stop, vast parking lots separating transit stops from business and commercial activities, long super blocks in business parks, and a lack of hard surface available to customers at bus stops for waiting for or stepping off a bus. Since virtually all transit riders walk at one or both ends of the transit trip, for a neighborhood or business district to be transit-friendly it must be pedestrian-friendly. Even if the transit customer drives to access transit or transfers from another bus, there is a need for a pedestrian link between modes.

Accommodating transit in the urban fabric also includes the design of streets. This includes designing roads to be wide enough to accommodate buses while not being so wide as to create the kinds of barriers mentioned above. For the most efficient routing of buses, such roads should be spaced approximately $\frac{1}{2}$ mile apart. The $\frac{1}{2}$ mile spacing provides adequate pedestrian access to nearby activities, since transit riders will generally walk up to $\frac{1}{4}$ mile to catch a bus. In addition to $\frac{1}{2}$ mile spacing for east-west and north-south bus routes, the street pattern should allow for relatively straight routes that can be integrated into already built areas as well as in planned areas yet to be built. The street system should also include the ability to locate bus stops on average every 750 feet, wherever possible near major intersections and important destinations.

A third area of integrating transit and land use is the relationship of particular uses and densities to transit stops. Ideally, the highest densities are located closest to transit stops and the lowest densities furthest. Certain uses in which the users or residents are likely to have a higher propensity to use transit should be sited close to bus stops. However, often these facilities are not located near transit. This may result in transit service that is too distant from the facility or the deviation of routes to serve the destination inconveniencing existing riders and/or adding to the operating cost.

In many ways, conditions in Merced County, particularly in the City of Merced, are favorable for transit. Cul-de-sacs that abut streets with transit service (or that could accommodate transit service at some future date) have pedestrian linkages allowing transit customers to walk directly between their home and the nearest transit stop. In addition, the existence of class 1 bike trails and other greenways (particularly in northern area of the City of Merced) provide additional direct links for transit users. The flat geography of Merced County is also favorable for transit users. However, despite being better than average in the area of transit friendliness, there are challenges.

These include:

- There are pockets of high-density mobile home and apartment residences along Highway 59 between 16th Street and Olive. However, there are no sidewalks along this stretch of road, and intersecting streets are generally unsignalized “T” intersections.



- In rainy weather, areas along the side of the road where transit customers will wait or get off the bus are often flooded or muddy. There are other similar examples in each city in the County, particularly along state highways.
- Even where sidewalks exist, landscaping or dirt separates the sidewalk from the curb, forcing transit customers to step in potentially muddy conditions and damaging the landscaping that exists.
- The new Juvenile Court has been constructed 11 miles from the Merced Transpo, requiring the creation of a totally new route to provide service.
- Most shopping centers are set back from the street, requiring transit customers to cross large parking lots to reach store entrances. Although MCT operates into Wal-Mart parking lots in both Merced and Los Banos, as well as into Merced Mall, this is not practical at all shopping centers and may not be desirable due to increased running time.
- In the City of Merced, the dominant travel pattern is north-south. Bear Creek creates a geographical barrier, as only five roads cross the creek in a north-south direction, two of which are located at the east and western boundaries of Merced (McKee and Highway 59). The other three, G Street, M Street, and R Street, are ideally located ½ mile apart and provide for efficient routing of buses that will allow for future extension as the City grows northward. However, there is no through north-south street for two miles between G Street and McKee to the east. Ultimately, Parsons will provide a through north-south alignment, but there will still be a 1 1/2 mile gap in north-south access.

Some of these challenges are intractable. The Juvenile Court is brand new and will remain at that location for many years to come. There is no funding available for additional north-south major roads in the City of Merced, and the cost of constructing additional linkages would be extra costly, since property would need to be acquired and residences demolished. Opposition to new roads due to neighborhood disruption could prevent such construction even if funds were available.

However, the financial and capital plan includes establishing a program that will incrementally address the most critical pedestrian access and bus stop issues along the established network.

Finally, it is recommended that MCT continue to be vigilant in influencing the design of all future development (including redeveloping of existing built sites) to achieve the following outcomes:

- Secure equal status with other public services and infrastructure entities that are consulted by each city and the County for all future development within each jurisdiction.
- Identify roadways on which buses are likely to operate. Consider how these routes will integrate with existing served areas, as well as those slated for future service. These streets should be designed to withstand bus weight and accommodate the safe operation of buses.
- Encourage the highest densities to be closest to bus stops and the lowest densities further away.
- Identify bus stop locations on all new roadways. Work with the developer or municipality and the transit operator to make sure transit stops are designed to provide sufficient pavement for transit customers. Avoid situations where customers



will have to walk or stand in landscaping or dirt while waiting for or getting off buses. Also ensure that sufficient space exists for desired amenities such as transit shelters, benches, trash receptacles, etc. (See Appendix DD).

- Bus stop locations should balance the objectives of safety, reduced bus delay, and good pedestrian access from the surrounding area.
- Examine proposed development plans for pedestrian access to bus stops. All transit customers should be able to access the nearest bus stop from any residential or building entrance by using a clearly delineated, safe and pleasant sidewalk or pedestrian path that will not require out-of-direction travel. Cul-de-sacs abutting transit streets should have a direct pedestrian link to that street. Where walls surround a community, the community should be designed to allow for a pedestrian link at intersections where bus stops are located.
- Assure that necessary traffic engineering treatments are in place to allow for safe crossing of all streets at bus stop locations.
- Encourage all retail, medical, office and other commercial or public use development to have their main entrance facing the street, with no parking separating the structure from the street. Parking should be on the side or in the rear. If parking must be in the front, a well landscaped pedestrian path should connect the sidewalk along the street to the entrance of the buildings.
- Business parks should not have super blocks. If they do, pedestrian paths should bisect the blocks near bus stop locations (approximately every 750 feet).

Recommendations

- 1) Develop a bus stop improvement program that includes improvements to several bus stops per year, improving the conditions transit customers experience while waiting for and alighting from the bus.
- 2) Continually work with local governments to make sure that transit is considered in all new development and redevelopment. In particular this would include assuring direct, safe and pleasant pedestrian access from all building entrances to the nearest bus stop.



2.12 Maintenance Program

The spare ratio for MCT buses and vans is 32%. This is much higher than the national standard advocated by the Federal Transit Administration (FTA), which is 20%. The FTA allows MCT to maintain a high spare ratio because maintenance is carried out by Merced County Public Works Maintenance staff on a weekday daytime only shift. Typically, transit maintenance shops operate with two or three shifts per day and carry out most maintenance in the evening when most buses are at the yard. Relying on one weekday daytime shift, as MCT does, lengthens the time in which vehicles are out of service regardless of the reason. This includes Preventive Maintenance Inspections (PMI) and other routine maintenance as well as acute maintenance.

The SRTP anticipates 24 peak large buses growing to 36 large buses to serve UC Merced and the northward growth of City of Merced, assuming all City of Merced fixed route and all rural intercity bus routes are operated with large buses. A 20% spare ratio requires maintaining at least 29 buses growing to 43. However, a 32% spare ratio requires maintaining 32 buses growing to 48.

The SRTP anticipates a peak requirement of 27 smaller "cut away" vehicles growing by 5 assuming Atwater/Winton local service, Los Banos local service, Dial-A-Ride and EBT service is provided with these vehicles. A 20% spare ratio requires 32 vehicles, growing to 38 while a 32% spare ratio requires 36 to 42 vehicles.

The implication of a 32% spare ratio over the time frame of this SRTP includes:

- Increased capital cost of \$3,240,000 for additional buses
- The need for nine additional bus parking spaces. This is on top of the approximately 28 additional spaces that will be needed with a 20% spare ratio
- Longer down time when buses need routine or unscheduled maintenance possibly creating the need for an even larger spare ratio, due to more buses needing to be maintained by the same size crew.

Recommendation

- 1) At minimum add a second maintenance shift, and if possible, a third shift so that the spare ratio can be reduced to 20% without sacrificing vehicle reliability.



2.13 Fare Policy

It is recommended that all routes serve all stops along the route alignment and be allowed to carry a customer locally between any two stops. Therefore rural intercity routes may carry customers locally within each city it serves. This practice will maximize the travel opportunities of transit customers and will also allow for the most efficient use of resources. For example, by coordinating the frequency of a local route and a rural intercity route that share the same alignment within a city, service can be provided every 30 minutes. Otherwise service would be provided once an hour or an additional bus would have to be deployed to maintain 30-minute service.

Current fare policy is inconsistent in relation to the fare charged on rural intercity buses. It is recommended that a zone fare system be developed and travel within each zone will be at the base cash fare regardless which route is used. For each zone line crossed the fare will increase by the base fare.

Recommended zones are as follows:

- Zone 1 City of Merced, Atwater and Winton
- Zone 2 Livingston, Delhi, Hilmar and Turlock
- Zone 3 Planada and La Grand
- Zone 4 El Nido and Dos Palos
- Zone 5 Los Banos
- Zone 6 Santa Nella and Gustine

This policy will be administered by the introduction of a hat check system on buses serving multiple zones (note this will apply to three routes only – 7, 9, and 10) Customers traveling through more than one zone will inform the driver when boarding of their ultimate destination. They will pay the appropriate fare and the driver will issue a hatchcheck that indicates the zone the customer is boarding in, zone they are destined to and any intermediate zones (using the fastest routes). The amount of zones indicated determines the fare charged. The hatchcheck will be proof that the appropriate fare has been charged.

If the customer's trip begins and ends on the same bus, the hatchcheck will be surrendered upon getting off the bus. If the customer must use two buses to reach their destination, a transfer option will be included on the hat check and the date and time expiration for boarding the second bus (within two hours of boarding the first bus) will be designated.

To have a customer friendly fare system, customers should be allowed to purchase multi zone hatchchecks on any bus. This will allow them to pay their fare only once for each one way trip and customers are not penalized if their trip requires the use of two buses.

As indicated above there are only three routes that actually cross-zone lines and will need a proof of payment when exiting the bus. On these routes all customers, even those riding local will need to be issued a hatchcheck. For local customers only the zone they are traveling in will be designated. Unless the transfer option is designated, hatchchecks will always be surrendered upon exiting the bus. Hatchchecks will not need to be issued for customers boarding and alighting in the first zone of travel.



Other recommended changes, all designed to make transit more attractive for more trips and customer friendly include

- Modify the local day pass to be good for unlimited travel in any single zone on any route. The existing rural day pass will be good for all multi-zone travel.
- Consider selling a single zone monthly pass at a 10% discount over the system wide monthly pass
- Consider instituting a short-term pass – For the base local fare customers can receive a receipt that allow unlimited travel in the zone they board for 90 minutes.

The above actions are designed to encourage customers to consider transit when they must do trip chaining (making stopovers) and to encourage more use for short trips. Attractive pricing arrangements can attract additional boardings more than offsetting any revenue loss from a lower fare. Indeed the experience of most transit systems is that when liberalizing transfer or pass options, fare revenue actually increases, while making such instruments more restrictive actually reduced, or at best, does not increase revenue.

Recommendations

- 1) Institute new zone fare system to make fares uniform based on distance traveled, allow local rides on any route for the same base fare, and eliminate penalties for customers who must use multiple vehicles.
- 2) Modify the local day pass to be good for unlimited travel in any single zone on any route. The existing rural day pass will be good for all multi-zone travel.
- 3) Consider selling a single zone monthly pass at a 10% discount over the system wide monthly pass.
- 4) Consider instituting a short-term pass – For the base local fare customers can receive a receipt that allow unlimited travel in the zone they board for 90 minutes.



2.14 Service Delivery

Overall MCT provides excellent service to the community. Customer satisfaction from the On Board Survey conducted by our team as part of preparing this SRTP and the survey of DAR customers (see Section 2.7) both presented high customer satisfaction ratings. The weakest areas of system performance were reliability and public information. The latter is covered in Section 2.9.

Several factors contribute to low reliability. Most schedules are written without recovery time at the end of each one way or round trip. As a result, whenever a delay occurs (accident, fire or other incident not involving the bus occurring along the route; wheelchair boardings; higher than normal traffic due to factors such as special events; malfunctioning traffic lights or weather; train crossings, etc.) there is no time at the end of the trip or roundtrip for the bus to recover the lost time. There are two 10 minute break periods built into the schedule of most routes, however, up to five hours can elapse between these breaks. As a result, the drivers may not get a deserved break or will take the break anyway perpetuating the lateness.

The incentives and penalties section of the contract between MCT and its service provider includes generous incentives and stiff penalties for failing to provide on-time performance. It requires a 98% on time standard with on time being defined as never early and no more than 4 minutes late. It excludes delays due to trains, passenger incidents, mechanical breakdowns (except those caused by driver error), traffic delays, accidents not involving Merced County buses, or wheelchair boardings. By contrast, most transit systems set a goal of 95% on time defined as never early to no more than 5 minutes late, with no exclusions. After all, a delayed bus is an inconvenience to the customer regardless of the reason and the acknowledgement that delays beyond the control of the transit operator can occur at anytime is the reason that recovery time is normally built into schedules and there are no exceptions to the on time performance goal.

The conceptual schedules written for the Recommended Network incorporated recovery time into each schedule. Depending on the nature of the route, this recovery time may occur at the end of the route, at Merced Transpo or both. It is recommended that MCT adopt this policy for all future schedules.

It is also recommended that all incentives and penalties be examined and modification be considered at time of contract renegotiation. In general, these incentives and penalties provide strong carrots and sticks for the contractor to provide superior service. However, they are meaningless unless MCT has a method to verify performance and collect all penalties and pay all incentives. If MCT finds that verifying performance is not doable within resources, changes that can be enforced should be adopted. One consideration is creating a window of expected performance in which case neither penalties will be assessed nor incentives paid. Incentives would be paid when performance exceeds the expected performance and penalties assessed when performance falls below this expectation.

One incentive and penalty that should be added to the list relates to complaints about service regarding factors that are under the contractor's control - establish an acceptable rate of complaints per 100,000 boardings. A penalty should be assessed for every complaint received above the upper range of the acceptance level and incentives for receiving fewer complaints.



Recommendations

- 1) Incorporate recovery time on every round trip to improve reliability
- 2) Modify incentives and penalties to be realistic and enforceable. Expected performance should not be subject to either an incentive or penalty, however exceeding expectations will earn the contractor an incentive and failing to meet the expected performance will warrant levying a penalty.
- 3) Add an incentive and penalty based on customer complaints.



SECTION 3 - FINANCIAL & CAPITAL PLANS

3.1 Revenue Distribution

The urbanized area of Merced has been expanded to include Atwater and Winton. As a result annual Federal Transit Administration (FTA) Section 5307 Formula funds will grow almost 44.6% from \$1,030,000 to an estimated \$1,489,738. The change in the Merced urban boundary requires a review of the methodology for allocating revenues in the City of Merced, City of Atwater and the County of Merced.

Prior to this change, only the City of Merced was considered urban and all 5307 funds have been allocated to transit operations within the city. In both the City of Merced and rural area (which currently applies to all of Merced County outside of the City of Merced) Transportation Development Account (TDA) (aka Local Transportation Funds or LTF) back fill any difference between all other revenues and total costs. The state law establishing the TDA program dedicated $\frac{1}{4}$ cent of the state sales tax to be returned to the county in which it was collected specifically for transportation purposes. Counties in turn usually allocate TDA revenues to each city or region of the county in proportion to population. In counties with a population over 400,000 in the 1970 decennial census (the TDA law specifically states the 1970 census, not the most recent decennial census) all TDA revenue must be used for transit purposes. However in counties with a 1970 population under 400,000, which includes Merced County, funds may be used for streets and roads if there are no unmet transit needs. Annual unmet needs hearings are required by law to determine if there are any unmet needs.

Currently Merced County TDA/LTF funds collected in the County are allocated to each city and the county (for unincorporated areas) based on population. The County is then divided into two areas – the City of Merced (urban) and the remaining cities and unincorporated areas of the County (rural). Revenues that relate to the area where they are generated, such as fares or federal formula funds, are allocated to those respective areas. Revenues that don't have a specific tie to a region, such as advertising revenue, are split evenly between urban and rural areas. Bus routes and Dial-A-Ride vans primarily serving the City of Merced are considered urban routes; all other services are considered rural. To determine the amount of TDA/LTF that is allocated to transit, all other revenues are deducted from total operating costs in each of the urban and rural area. Since historically The City of Merced was the only entity in the urban area the difference between costs and revenues determines the City of Merced's TDA/LTF contribution. However, in the rural area there are five cities and the county. The percentage of service hours in each community determines what percentage of TDA/LTF is allocated for transit. In other words, in rural areas the percentage of TDA/LTF a city or the county receives is based on population, but the percentage allocated to transit is based on service hours.

Currently, service levels and therefore operating costs, are split nearly evenly between the urban and rural area. Also, countywide about 50% of TDA funds are used for transit, with the remaining used for local roads. However, until now the City of Merced generates over \$1 million in FTA 5307 funds annually while the remainder of the county generates about 10% of that amount in FTA 5311 funds, the rural counterpart to 5307.

With the City of Atwater and the County of Merced eligible to share FTA 5307 revenues there will need to be changes in the designation of rural and urban service and this will have implications on revenue allocation. Factors to consider:



- All revenues except FTA 5307 and TDA/LTF will be allocated to the new urban area as a whole. Fare revenues increase because 55% of Route 7 and all of Route 8 and 16 are now urban instead of rural routes. Also Atwater/Winton Dial-A-Ride becomes urban.
- FTA 5307 revenues can be allocated to each city or the county based on the percentage urban population living with the community or the percentage of service hours provided in each community. The other option is to allocate FTA funds to the urban area as a whole and not allocate by community. It was determined that the method of allocating FTA funds has no bearing on the amount of TDA/LTF funds each community needs to expend on transit, therefore it is recommended that FTA funds be treated like all other revenue and allocated to the entire urbanized area as a whole.
- To determine how much TDA/LTF each community in the urbanized area needs to contribute, two approaches have been tested – one based on the percent of population residing in the community, the other based on the percentage of service hours provided to the community. The FY 04/05 operating budget is used with the addition of Unmet Needs services committed to Route 7, 8, and 16. These three additional services will increase the overall demand on TDA/LTF funds by about \$38,000 per year. Therefore no matter how revenues are allocated at least one entity will have to contribute more TDA/LTF revenue to transit.

Table 3.1 below illustrates the impact of each formula.

Table 3.1: TDA/LTF Funds

Table 1	Population %	LTF share	Service Hour %	LTF Share	FY 04/05 LTF Share ¹
Merced City	58.18%	\$ 708,958.88	72.00%	\$ 901,735.26	\$ 760,177
Merced County	20.77%	\$ 253,095.15	12.00%	\$ 134,041.73	\$ 162,206 ²
Atwater	21.05%	\$ 256,507.12	16.00%	\$ 182,784.17	\$ 258,319
Total	100.00%	\$ 1,218,561.16	100.00%	\$ 1,218,561.16	\$1,180,702

As Table 3-1 shows, each method of calculating the TDA/LTF impacts each community differently. Using population percentages reduces the City of Merced and Atwater’s LTF contribution while increasing the County’s. Using a percentage of service reduces Atwater and the County’s contribution while increasing the City of Merced’s.

To determine if another approach would have a more equal impact among the three entities a table was developed that calculates the TDA/LTF share by 50% population and 50% service hours as shown in the table on the following page.

¹ FY 04/05 LTF share excludes additional unmet needs service, which are included in other columns.

² Approximately 13% of the County rural service is part of the new urbanized area. This dollar amount equals 13% of the total FY 04/05 LTF allocation for transit in the rural areas - which excludes unmet needs services).

**Table 3.2: TDA/LTF Share by Population and Service Hours**

Table 2	Population %	LTF share	Service Hour %	LTF Share	Total
Merced City	58.18%	\$ 354,479.44	72.00%	\$ 438,682.02	\$ 793,161.46
Merced County	20.77%	\$ 126,547.58	12.00%	\$ 73,113.67	\$ 199,661.25
Atwater	21.05%	\$ 128,253.56	16.00%	\$ 97,484.89	\$ 225,738.45
Total	100.00%	\$ 609,280.58	100.00%	\$ 609,280.58	\$1,218,561.16

This approach increases the City of Merced contribution by about \$33,000 per year and the county contribution by about \$37,000 per year while Atwater's contribution decreases by about \$33,000 per year.

Points to consider in determining the appropriate methodology for allocating TDA/LTF funds in the urbanized area are:

- The increased service hours to operate the unmet needs services (Route 7, 8 and 16) will primarily benefit the City of Atwater and the unincorporated area of the new urbanized area. Therefore it would seem appropriate that Atwater and the County contributed additional TDA/LTF funds to support this service expansion. In future years any service expansion that disproportionately benefits a community should be funded by that community. However, ironically in the initial years, a service-based formula places a heavier burden on the City of Merced.
- Consideration of the need for consistency between how TDA/LTF funds are allocated in the urbanized area and the rural area. If, for example, a population based or hybrid methodology is adopted, it would differ from the remainder of the County where TDA/LTF funds are now allocated by percent of service hours.
- All service in the urbanized area will need to adhere to an average 20% farebox recovery. Prior to the urbanization designation the Atwater-Winton area only needed to meet a 10% farebox recovery. Route 7 and 8 currently exceeded that amount generating 43% and 27% respectively. Route 16 falls short, however the improvements recommended should increase farebox recovery and the good performance of other routes should offset any shortfall.
- Atwater-Winton Dial-A-Ride will also have to meet this 20% requirement. Currently it is about 9%, which may be difficult to meet. One alternative is to convert the DAR into a senior and disabled service therefore exempt from the Farebox Recovery requirement and consistent with the service in the City of Merced. Significant increases in fixed routes service as a result of the Unmet Needs recommendation will offset the loss of General Public Dial-A-Ride.



3.2 Bus Replacement Plan

MCT currently has 53 buses and vans for use on both fixed route and Dial-A-Ride service – 31 Cut-Aways seating between 14 and 20 passengers and 22 heavier duty buses seating between 20 and 43 passengers. The larger buses can allow passengers to stand increasing each vehicle's capacity 20 to 25 passengers. The larger vehicles are used exclusively on fixed route service. The smaller vehicles are used for Dial-A-ride service and on some lighter used fixed routes. All but eight of the small vehicles have a rolling head sign that allows for use on both fixed route and paratransit service.

Ten of the larger buses are heavy-duty buses built by the Gillig Corporation. The other 12 are medium duty buses built by the Blue Bird Corp. The cut-aways were built by three different manufacturers all using a Ford chassis. Typically heavy-duty buses have a 12-year life span, medium duty 8 to 10 years and cut-aways 5 years. The MCT replacement plan developed in July 2003 retires heavy-duty buses after 15 years, medium duty buses after 11 years and cut-aways after 8 to 9 years. This longer life span can be sustained with a quality maintenance program. Indeed most transit agencies that retire buses at the end of the recommended life span as described above sell to other parties (including other transit agencies in need of vehicles for immediate expansion) where the vehicle operates for many more years. In Merced many other factors can lengthen the life of the buses including a benign climate, flat geography, larger spare ratio and short service day resulting in lower mileage being accrued per vehicle.

Given the environment that MCT operates in, as long as a model of vehicle is not creating severe problems the extended life can be retained during this planning period. If recommendations to add a second or third maintenance shift are implemented and the spare ratio for vehicles is reduced; and serving UC Merced results in establishing longer service spans on selected routes; the average mileage per vehicle will increase. At that point it may be prudent to plan on replacing vehicles on a five and 12-year cycle. This would occur in the period just beyond the time frame of this plan.

While the replacement cycle is not recommended for change in the short term, the policy for type of replacement vehicle is. Two types of vehicles are recommended for future uses – 20 passenger cut-aways and 40-foot heavy-duty vehicles. The latter must be Altoona certified for at least 12 years.

The rationale for relying on 20-passenger small vehicle is the flexibility that it provides. While this seating capacity will not be required for Dial-A-Ride service, these vehicles can also be used for EBT service, and on fixed routes that have lower demand or use narrow residential streets. These uses are more likely to need the added capacity that a 20-passenger vehicle provides yet they are still small enough to use on Dial-A-Ride service. Acquiring smaller vehicles or a mix of vehicles will limit flexibility in assigning vehicles.

The need for larger heavy-duty buses is necessitated by the heavy passenger loads anticipated from UC Merced as it grows. In addition, many trips on intercity rural routes are currently operating at or near capacity. As the communities of Merced County grow ridership on these routes will grow. Currently MCT does not carry secondary school student from home to school in any significant degree, nor is a shift of students from school to transit bus anticipated. However, in many cities throughout California, local transit systems carry large numbers of secondary students as school bus service is curtailed. Often these decisions are done on short notice and as a result some smaller systems like MCT that relied on smaller vehicles were not prepared for the sudden increase in demand due to lack of capacity. Finally, low floor transit



buses, which are becoming standard, have fewer seats, therefore the longer bus can compensate for the loss of seats.

Operating larger buses often result in the “empty bus syndrome” where citizens complain about empty buses traveling about town. However, it does not increase the cost to operate a bus with some empty seats (the primary cost of operating a bus is labor), but it is impossible to increase the size of the vehicle to accommodate higher ridership.

The vehicle replacement plans (including the current fiscal year) is outlined in the following table:

Table 3.3: Vehicle Replacement Plan

Replacement Year	Vehicles to be Replaced	Capacity ³	Replacement Vehicle	Replacement Cost
2004/2005	M-64 and M-65	58	20 passenger ⁴	\$171,500
2004/2005	M-40 to M-47	14	20 passenger	\$686,000
2005/2006	M-9 to M-15	16 ⁵	20 passenger	\$623,000
2006/2007	M-1 to M-6, M-16	20	20 passenger	\$675,500
2007/2008	M-50 to M-60	48	40 foot	\$3,950,000
2008/2009	M-21 to M-24	20	20 passenger	\$396,000
2009/2010	M-25 to M-29	20	20 passenger	\$525,000

The CMAQ Program includes funds for 8 35-foot buses in the current fiscal year and 7 35-foot buses in FY 2005/06. These vehicles are not replacement vehicles and will provide sufficient capacity to provide additional Unmet Needs service (6 buses) and extension to UC Merced (up to 7 buses as the campus grows). The decision to acquire 35-foot buses instead of 40-foot buses was made prior to the preparation of this plan.

In addition the CMAQ program includes acquiring 7 smaller vehicles – 5 in the current fiscal year and 2 in FY 05/06. These can be used to replace existing vehicles provided that their emissions are significantly lower.

Section 3.3 summarizes the entire capital plan including bus replacement and the CMAQ program.

³ Includes 20 standees on all vehicles with a seating capacity greater than 20 passengers

⁴ Plans to replace these vehicles with 20 passenger buses were made before preparing this plan. Additional larger vehicles will be purchase through the CMAQ program

⁵ M-15 has 20 seats



3.3 Capital Plan

Most capital projects have been discussed elsewhere in the SRTP. This section summarizes all capital and other one time costs. Table 3-1 summarizes the costs and potential revenues for these projects.

Bus replacement and buses needed for growth are discussed in Section 3-2.

Route Match Tracking System and Electronic Validating Farebox Systems with Automatic Vehicle Locator System will significantly improve the management of the transit system and improve customer service. Real time information on bus location can become available to transit customers allowing them to know exactly when a bus will show up. It will also greatly assist dispatchers and road supervisors to better manage the system. Dispatchers can have the capability of seeing exactly where each bus is, allowing them to react quicker, or in some cases, be proactive to restore reliability to the bus service on the street. This technology will also have the ability to better track customer activity and schedule adherence which will help in planning and scheduling service to be more responsive to customer needs and operate more efficiently.

All buses should have bike racks and the bike rack program assures that all new buses will have this feature. Providing bike racks on buses is a cost effective and simple method of extending the reach of transit service to individuals whose residence or destination is beyond walking distance of a bus stop.

It is recommended that the policy of flag stops be eliminated and all bus stop locations be designated with a distinctive bus stop sign easily visible from the distance by both customers on foot and bus drivers. This is discussed in more detail in Section 2.10. A program to acquire approximately 1,000 bus stop signs is included in the Capital Plan in FY 05/06.

It is also recommended that bus stop improvement program be implemented. This program would become an annual effort. Specifically this would create paved waiting areas at bus stops with no off road impermeable surfaces, or creating paved walkways linking bus stops with nearby sidewalks or intersections.

The continued installation of shelters, benches and trash receptacles annually is also included. Consideration of contracting with a media company to install and maintain benches and shelters should be considered. The media company would install and maintain the shelters and benches. MCT would be able to select a design for shelters and style for benches that is esthetically pleasing. Revenue from advertising would cover the company's expense, provide them with a profit and also provide MCT with revenue. Therefore the financial impact on MCT is both a reduction of capital and operating costs and an increase of revenue.

As the City of Merced grows northward, Merced College will become more centrally located instead of at the northern boundary of the City as at present. This location will make it ideal as a second transit node. It is recommended that a transit center be constructed in the vicinity of the current College stop. Funds for design and construction are allocated in FY 07/08 and FY 08/09. It is recommended that MCT negotiate with the College for a donation of the land needed on a \$1 per year lease utilizing the current landscaped area adjacent to the existing bus stop so that no parking will need to be removed. The recommended network has been designed so as routes are extended northward they can pulse at this location providing for timed transfers between routes.



In Section 2.4, two studies are recommended. One to identify methods of funding bus service needed to serve the growing areas of the City of Merced and Los Banos and to facilitate a community discussion to reach consensus on selecting a funding mechanism. The other study would determine if commuter express bus service over Pacheco Pass is warranted. Both studies are included in the program.

The Capital Plan takes a conservative approach in that it does not assume any grants except for the land donation related to the Merced College Transit Center. Otherwise existing formula funds are used for all capital expenditures. Securing specific grants, such as planning grants for the planning studies, federal earmarks or other specific grants may reduce the need to tap CMAQ, TDA/LTF or FTA 5307/5311 funds to carry out the recommended projects.



Table 3.4: Capital Plan

Project	FY 04/05	FY 05/06	FY06/07	FY 07/08	FY08/09	FY09/10	Total
Expenditures							
Replace buses M-40 through M-47 and buses M-62 and M-63	\$ 857,500.00						\$ 857,500.00
Replace buses M-9 through M-15		\$ 623,000.00					\$ 623,000.00
Replace buses M-1 through M-6 and M-16			\$ 675,500.00				\$ 675,500.00
Replace buses M-50 through M-60				\$ 3,950,000.00			\$ 3,950,000.00
Replace buses M-21 through M-24					\$ 396,000.00		\$ 396,000.00
Replace buses M-25 through M-29						\$ 625,000.00	\$ 625,000.00
Buses for expansion	\$ 3,000,000.00	\$2,625,000.00					\$ 5,625,000.00
Route Match Tracking System with Automatic Vehicle Locator capability	\$ 177,000.00						\$ 177,000.00
Electronic Validating Farebox System with Automatic Vehicle Locator capability	\$ 675,000.00						\$ 675,000.00
Transit Fare Subsidy Program	\$ 622,500.00						\$ 622,500.00
Bike Racks for new buses		\$ 43,864.00					\$ 43,864.00
Bus Stop signs		\$ 50,000.00					\$ 50,000.00
Bus Stop Improvement Program			\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 400,000.00
Merced College Transit Center				\$ 500,000.00	\$3,300,000.00		\$ 3,800,000.00
Transit Facility Payment	\$ 279,500.00	\$ 279,500.00	\$ 279,500.00	\$ 279,500.00	\$ 279,500.00	\$ 279,500.00	\$ 1,677,000.00
Bus Passenger Shelters	\$ 68,000.00	\$ 70,040.00	\$ 72,141.20	\$ 74,305.44	\$ 76,534.60	\$ 78,830.64	\$ 439,851.87
Bus Benches	\$ 6,120.00	\$ 6,303.60	\$ 6,492.71	\$ 6,687.49	\$ 6,888.11	\$ 7,094.76	\$ 39,586.67
Trash Receptacles	\$ 6,375.00	\$ 6,566.25	\$ 6,763.24	\$ 6,966.13	\$ 7,175.12	\$ 7,390.37	\$ 41,236.11
Hands free Base Radio Kits	\$ 3,000.00						\$ 3,000.00
Equipment Shop Upgrades	\$ 408,000.00						\$ 408,000.00
Express Planning Study			\$ 75,000.00				\$ 75,000.00
Growth Funding Study		\$ 75,000.00					\$ 75,000.00
Total Capital Needs	\$ 6,102,995.00	\$3,779,273.85	\$1,215,397.15	\$ 4,917,459.06	\$4,166,097.83	\$1,097,815.77	\$21,279,038.85
Revenues							
CMAQ Carryover	\$ 4,888,181.00						\$ 4,888,181.00
Minus non Transit CMAQ funded Projects	\$ (722,688.00)						\$ (722,688.00)
CMAQ Apportionment	\$ 2,490,005.00	\$2,539,805.00	\$2,590,601.00	\$ 2,642,413.02	\$2,695,261.28	\$2,749,166.51	\$15,707,251.81
TDA/LTF Capital Allocation (Local Match)	\$ 795,169.00	\$ 921,949.85	\$ 775,537.00	\$ 731,184.07	\$ 870,837.03	\$ 544,503.27	\$ 4,639,180.22
TDA/LTF Capital Allocation Carryover from FY 03/04(Local Match)	\$ 153,298.00						\$ 153,298.00
Prop 10 Grant for Spare the Air Local Match	\$ 71,401.00						\$ 71,401.00
In Kind Land Donation - (Local Match)					\$ 600,000.00		\$ 600,000.00
FTA 5307/5311 Capital Allocation	\$ 402,847.00						\$ 402,847.00
							\$ -
Fund Balance (surplus/deficit from previous year)		\$1,975,218.00	\$1,657,699.00	\$ 3,808,439.85	\$2,264,577.88	\$2,264,578.36	\$11,970,513.10
							\$ -
Total Capital Revenues	\$ 8,078,213.00	\$5,436,972.85	\$5,023,837.00	\$ 7,182,036.94	\$6,430,676.19	\$5,558,248.14	\$37,709,984.12
							\$ -
Fund Balance (Deficit)	\$ 1,975,218.00	\$1,657,699.00	\$3,808,439.85	\$ 2,264,577.88	\$2,264,578.36	\$4,460,432.37	\$16,430,945.47
Local Match Requirements							
Local Match Requirements	\$ 1,019,868.00	\$ 921,949.85	\$ 775,537.00	\$ 731,184.07	\$1,470,837.03	\$ 544,503.27	\$ 5,463,879.22
TDA/LTF Carryover	\$ (153,298.00)						\$ (153,298.00)
Prop 10 Grant	\$ (71,401.00)						\$ (71,401.00)
In Kind Property Donation					\$ (600,000.00)		\$ (600,000.00)
Total TDA/LTF Needed for Capital	\$ 795,169.00	\$ 921,949.85	\$ 775,537.00	\$ 731,184.07	\$ 870,837.03	\$ 544,503.27	\$ 4,639,180.22



Table 3.5: FY04 - 05

Project	Total Cost	CMAQ Share (88.53%)	FTA 5307/5311 Share (80%)	Local Share CMAQ (11.47%)	Local Share FTA (20%)	Local Share (100%)	Total Local Share
Replace buses M-40 through M-47 and buses M-62 and M-63	\$ 857,500.00	\$ 442,650.00	\$ 286,000.00	\$ 57,350.00	\$ 71,500.00		\$ 128,850.00
Buses for expansion	\$ 3,000,000.00	\$ 2,655,900.00		\$ 344,100.00			\$ 344,100.00
Route Match Tracking System with Automatic Vehicle Locator capability	\$ 177,000.00	\$ 156,698.00		\$ 20,302.00			\$ 20,302.00
Electronic Validating Farebox System with Automatic Vehicle Locator capability	\$ 675,000.00	\$ 597,578.00		\$ 77,422.00			\$ 77,422.00
Transit Fare Subsidy Program	\$ 622,500.00	\$ 551,099.00		\$ 71,401.00			\$ 71,401.00
Transit Facility Payment	\$ 279,500.00					\$ 279,500.00	\$ 279,500.00
Bus Passenger Shelters	\$ 68,000.00		\$ 32,000.00		\$ 36,000.00		\$ 36,000.00
Bus Benches	\$ 6,120.00					\$ 6,120.00	\$ 6,120.00
Trash Receptacles	\$ 6,375.00					\$ 6,375.00	\$ 6,375.00
Hands free Base Radio Kits	\$ 3,000.00					\$ 3,000.00	\$ 3,000.00
Equipment Shop Upgrades	\$ 408,000.00	\$ 361,202.00		\$ 46,798.00			\$ 46,798.00
Total	\$ 6,102,995.00	\$ 4,765,127.00	\$ 318,000.00	\$ 617,373.00	\$ 107,500.00	\$ 294,995.00	\$ 1,019,868.00

Table 3.6: FY 05 - 06

Project	Total Cost	CMAQ Share (88.53%)	FTA 5307/5311 Share (80%)	Local Share CMAQ (11.47%)	Local Share FTA (20%)	Local Share (100%)	Total
Replace buses M-9 through M-15	\$ 623,000.00	\$ 177,060.00	\$ 338,400.00	\$ 22,940.00	\$ 84,600.00		\$ 107,540.00
Buses for expansion	\$ 2,625,000.00	\$ 2,323,913.00		\$ 301,088.00			\$ 301,088.00
Bike Racks for new buses	\$ 43,864.00	\$ 38,833.00		\$ 25,912.00			\$ 25,912.00
Bus Stop signs	\$ 50,000.00					\$ 50,000.00	\$ 50,000.00
Transit Facility Payment	\$ 279,500.00					\$ 279,500.00	\$ 279,500.00
Bus Passenger Shelters	\$ 70,040.00					\$ 70,040.00	\$ 70,040.00
Bus Benches	\$ 6,303.60					\$ 6,303.60	\$ 6,303.60
Trash Receptacles	\$ 6,566.25					\$ 6,566.25	\$ 6,566.25
Growth Funding Study	\$ 75,000.00					\$ 75,000.00	\$ 75,000.00
Total	\$ 3,779,273.85	\$ 2,539,806.00	\$ 338,400.00	\$ 349,940.00	\$ 84,600.00	\$ 487,409.85	\$ 921,949.85



Table 3.7: FY 07 - 08

Project	Total Cost	CMAQ Share (88.53%)	FTA 5307/5311 Share (80%)	Local Share CMAQ (11.47%)	Local Share FTA (20%)	Local Share (100%)	Total
Replace buses M-50 through M-60*	\$ 3,950,000.00	\$ 1,592,883.99		\$ 206,375.01			\$ 206,375.01
Bus Stop Improvement Program	\$ 100,000.00					\$ 100,000.00	\$ 100,000.00
Merced College Transit Center	\$ 500,000.00	\$ 442,650.00		\$ 57,350.00			\$ 57,350.00
Transit Facility Payment	\$ 279,500.00					\$ 279,500.00	\$ 279,500.00
Bus Passenger Shelters	\$ 74,305.44					\$ 74,305.44	\$ 74,305.44
Bus Benches	\$ 6,687.49					\$ 6,687.49	\$ 6,687.49
Trash Receptacles	\$ 6,966.13					\$ 6,966.13	\$ 6,966.13
Total	\$ 4,917,459.06	\$ 2,035,533.99	\$ -	\$ 263,725.01	\$ -	\$ 467,459.06	\$ 731,184.07

Table 3.8: FY 08 - 09

Project	Total Cost	CMAQ Share (88.53%)	FTA 5307/5311 Share (80%)	Local Share CMAQ (11.47%)	Local Share FTA (20%)	Local Share (100%)	Total
Replace buses M-21 through M-24	\$ 396,000.00	\$ 350,578.80		\$ 45,421.20			\$ 45,421.20
Bus Stop Improvement Program	\$ 100,000.00					\$ 100,000.00	\$ 100,000.00
Merced College Transit Center	\$ 3,300,000.00	\$ 2,344,682.00		\$ 355,318.00		\$ 600,000.00	\$ 955,318.00
Transit Facility Payment	\$ 279,500.00					\$ 279,500.00	\$ 279,500.00
Bus Passenger Shelters	\$ 76,534.60					\$ 76,534.60	\$ 76,534.60
Bus Benches	\$ 6,888.11					\$ 6,888.11	\$ 6,888.11
Trash Receptacles	\$ 7,175.12					\$ 7,175.12	\$ 7,175.12
Total	\$ 4,166,097.83	\$ 2,695,260.80	\$ -	\$ 400,739.20	\$ -	\$ 1,070,097.83	\$ 1,470,837.03

Table 3.9: FY 09 - 10

Project	Total Cost	CMAQ Share (88.53%)	FTA 5307/5311 Share (80%)	Local Share CMAQ (11.47%)	Local Share FTA (20%)	Local Share (100%)	Total
Replace buses M-25 through M-29	\$ 625,000.00	\$ 553,312.50		\$ 71,687.50			\$ 71,687.50
Bus Stop Improvement Program	\$ 100,000.00					\$ 100,000.00	\$ 100,000.00
Transit Facility Payment	\$ 279,500.00					\$ 279,500.00	\$ 279,500.00
Bus Passenger Shelters	\$ 78,830.64					\$ 78,830.64	\$ 78,830.64
Bus Benches	\$ 7,094.76					\$ 7,094.76	\$ 7,094.76
Trash Receptacles	\$ 7,390.37					\$ 7,390.37	\$ 7,390.37
Total	\$ 1,097,815.77	\$ 553,312.50	\$ -	\$ 71,687.50	\$ -	\$ 472,815.77	\$ 544,503.27



3.4 Financial Plan

The tables in this section summarize the financial Plan for MCT through FY 09/10.

Table 3-10 is a fully funded plan. Unit costs are assumed to increase by 3% per year. It assumes the following regarding the provision of service:

- Either the Recommended Network or Alternate Network is implemented at the beginning of FY 05/06. (Both networks have the same operating costs).
- Service on all fixed routes except 7, 7X, 8, 9, 10, and 17 will begin at 9 AM.
- Unmet Needs service including the extension of Route 10 to Santa Nella, Gustine and Turlock with two hour service all day long; adding a bus to each of Route 7, 8, and 16; and providing service to the new Youth Court south of the City of Merced.
- Introduction of a new Route 7X express service along Highway 99 partially funded with new FTA 5307 revenue resulting from including Delhi in the Turlock urbanized area.
- Introduction of EBT service in FY 05/06. It assumes 8 vehicles operating four hours per day – two hours in the AM peak and two hours in the PM peak.
- Extension of Route 3 to UC Merced, including new night and Sunday Service in FY 05/06; Extending Route 8 and 12 to UC Merced in FY 07/08 and establishing new Route 3X (or extend Route 4 in the alternate network) in FY 09/10. This service would be fully funded by UC Merced student fees or other UC subsidies.

An additional expense for establishing a marketing program is included for each fiscal year beginning in FY 05/06. As recommended in Sections 2.0 and 2.9, 1.5% of the annual operating budget should be devoted to marketing.

As a general rule on-going revenues increase by 3% per year. As of this writing the reauthorization of the Federal Transportation Funding Program (TEA-21) has not occurred so it is not known exactly how much funding will be provided. There are no plans for significant cuts in funding and all legislative versions being considered include some increase in funding each year with a continuation of a firewall to assure at least a portion of the allocated funds are indeed appropriated for transit use each year.

State funding is more questionable. Restoring funding to state transportation accounts including the State Transit Assistance (STA) program is contingent on compacts signed with several Indian tribes not being nullified by two initiatives on the November ballot. If either one passes, the compacts will be nullified and the amount of funds available to the STA will be less. Also, this year's state budget continues to rely on deferrals and borrowing to keep it in balance. The pressure to cut funds or divert transportation funds to other uses will continue to be great in future years.

Table 3-11 has the same assumptions; however, it assumes that UC Merced Students will only pay a \$50 per semester pass fee creating an unfunded balance for extending service to the campus. It also includes phasing in additional fixed route service to serve North Merced and growth areas of Los Banos that are not funded. This table illustrates the funding needs to provide these levels of service. It is recommended that a funding study be conducted to develop funding alternatives and facilitate a discussion among the stakeholders to develop a consensus on how to fully fund transit service generated by growth in the County.



Table 3-12 takes Table 1 and breaks expense and revenue by urban and rural areas. Based on the expansion of the Merced urbanized area, Atwater and Winton are now considered urban. Although Delhi is now part of the Turlock urbanized area for Federal funding purposes, it still considered rural for MCT budget purposes.

Table 3-13 breaks down the service hour per year and provides background information on the service hours used in developing Table 1 and 2. Appendix 4 includes conceptual schedules and a summary of vehicle and revenue hours by route, with further breakdowns by community.

Table 3-14 illustrates the amount of TDA/LTF funds each community will need to contribute based on a population formula. As Section 3.1 mentions, the issue of allocating TDA/LTF funds take on new significance because a methodology to allocate funds within the Merced urbanized area needs to be developed now that Atwater and Winton are included. If a populating based formula is pursued in the urbanized area, should a similar process be pursued Countywide? This is an issue that needs to be discussed by the communities. It should be noted that under this formula, the cities of Atwater, Merced and Los Banos and the County of Merced will have more funds available for streets and roads than they do in FY 04/05 in each future year. Livingston will have slightly less in each year. However, Dos Palos and Gustine will lose about \$20,000 per year for road purposes. It should be noted that they would loose a comparable or higher amount under a service based formula since they will both have a significant increase in service with the extension of Route 10 service.



Table 3.10: Fully Funded Plan

OPERATING EXPENDITURES							
	BUDGETED FY 04-05	PROJECTED FY 05-06	PROJECTED FY 06-07	PROJECTED FY 07-08	PROJECTED FY 08-09	PROJECTED FY 09-10	TOTAL 06-10
Salaries-Benefits	\$ 352,730.00	\$ 363,311.90	\$ 374,211.26	\$ 385,437.59	\$ 397,000.72	\$ 408,910.74	\$ 1,928,872.22
Services - Base	\$ 4,914,966.00	\$ 5,660,317.38	\$ 5,858,428.49	\$ 6,062,370.27	\$ 6,275,695.06	\$ 6,495,344.38	\$ 30,352,155.57
Services - UC Merced		\$ 339,312.51	\$ 351,188.45	\$ 816,864.86	\$ 845,455.13	\$ 1,511,192.54	\$ 3,864,013.49
Services -Growth			\$ -	\$ -	\$ -	\$ -	\$ -
Marketing Program		\$ 89,994.45	\$ 93,144.25	\$ 103,188.53	\$ 106,817.25	\$ 120,098.05	\$ 513,242.54
Total Expenditures	\$ 5,267,696.00	\$ 6,452,936.24	\$ 6,676,972.45	\$ 7,367,861.25	\$ 7,624,968.16	\$ 8,535,545.72	\$ 36,658,283.81
OPERATING REVENUES							
Farebox	\$ 830,000.00	\$ 994,178.14	\$ 1,065,863.80	\$ 1,261,056.45	\$ 1,444,796.58	\$ 1,720,099.01	\$ 6,485,993.98
UC Merced Revenue	\$ -	\$ 339,312.51	\$ 351,188.45	\$ 816,864.86	\$ 845,455.13	\$ 1,511,192.54	\$ 3,864,013.49
State Transit Assistance	\$ 336,000.00	\$ 336,000.00	\$ 336,000.00	\$ 336,000.00	\$ 336,000.00	\$ 336,000.00	\$ 1,680,000.00
FTA 5307 Merced	\$ 1,489,738.00	\$ 1,534,430.14	\$ 1,580,463.04	\$ 1,627,876.94	\$ 1,676,713.24	\$ 1,727,014.64	\$ 8,146,498.00
FTA 5307 Turlock	\$ 113,109.00	\$ 116,502.27	\$ 119,997.34	\$ 123,597.26	\$ 127,305.18	\$ 131,124.33	\$ 618,526.37
FTA 5311 Rural	\$ 160,000.00	\$ 164,800.00	\$ 169,744.00	\$ 174,836.32	\$ 180,081.41	\$ 185,483.85	\$ 874,945.58
FTA CMAQ Rural Demo	\$ 312,000.00	\$ 312,000.00	\$ 312,000.00				\$ 624,000.00
FTA CMAQ Clear the Air Demo		\$ 183,700.00	\$ 183,700.00	\$ 183,700.00		\$ -	\$ 551,100.00
FTA Job Access			\$ -	\$ -	\$ -	\$ -	\$ -
FTA High Intensity Small Urban		\$ 100,000.00	\$ 103,500.00	\$ 107,122.50	\$ 110,336.18	\$ 114,197.94	\$ 535,156.62
Personal Services	\$ 40,000.00	\$ 40,000.00	\$ 41,400.00	\$ 42,849.00	\$ 44,134.47	\$ 45,679.18	\$ 214,062.65
Sale of Surplus Fixed Assets			\$ -	\$ -	\$ -	\$ -	\$ -
Advertising Revenue	\$ 32,000.00	\$ 32,000.00	\$ 33,120.00	\$ 34,279.20	\$ 35,307.58	\$ 36,543.34	\$ 171,250.12
Shelter Revenue			\$ -	\$ -	\$ -	\$ -	\$ -
Lease Revenue	\$ 5,500.00	\$ 5,500.00	\$ 5,692.50	\$ 5,891.74	\$ 6,068.49	\$ 6,280.89	\$ 29,433.61
Interest	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 75,000.00
Sub Total Revenues	\$ 3,333,347.00	\$ 4,173,423.06	\$ 4,317,669.13	\$ 4,729,074.26	\$ 4,821,198.25	\$ 5,828,615.72	\$ 23,869,980.42
Less Capital Outlays	\$ 402,847.00	\$ 247,553.00		\$ -	\$ -	\$ -	\$ 247,553.00
Sub Total Revenues	\$ 2,930,500.00	\$ 3,925,870.06	\$ 4,317,669.13	\$ 4,729,074.26	\$ 4,821,198.25	\$ 5,828,615.72	\$ 23,622,427.42
TDA/LTF	\$ 2,337,196.00	\$ 2,527,066.17	\$ 2,359,303.32	\$ 2,638,786.99	\$ 2,803,769.91	\$ 2,706,930.00	\$ 13,035,856.39
Total Operations Financing	\$ 5,267,696.00	\$ 6,452,936.24	\$ 6,676,972.45	\$ 7,367,861.25	\$ 7,624,968.16	\$ 8,535,545.72	\$ 36,658,283.81



Table 3.11: Unfunded Plan

OPERATING EXPENDITURES							
	BUDGETED FY 04-05	PROJECTED FY 05-06	PROJECTED FY 06-07	PROJECTED FY 07-08	PROJECTED FY 08-09	PROJECTED FY 09-10	TOTAL FY 06-10
Salaries-Benefits	\$ 352,730.00	\$ 363,311.90	\$ 374,211.26	\$ 385,437.59	\$ 397,000.72	\$ 408,910.74	\$ 1,928,872.22
Services - Base	\$ 4,914,966.00	\$ 5,660,317.38	\$ 5,858,428.49	\$ 6,062,370.27	\$ 6,275,695.06	\$ 6,495,344.38	\$ 30,352,155.57
Services - UC Merced		\$ 339,312.51	\$ 351,188.45	\$ 816,864.86	\$ 845,455.13	\$ 1,511,192.54	\$ 3,864,013.49
Services -Growth		\$ -	\$ 611,122.72	\$ 1,265,024.03	\$ 1,745,733.17	\$ 2,261,168.50	\$ 5,883,048.42
Marketing Program		\$ 89,994.45	\$ 102,311.09	\$ 122,163.89	\$ 133,003.25	\$ 154,015.58	\$ 601,488.26
Total Expenditures	\$ 5,267,696.00	\$ 6,452,936.24	\$ 7,297,262.01	\$ 8,651,860.64	\$ 9,396,887.33	\$ 10,830,631.74	\$ 42,629,577.96
OPERATING REVENUES							
Farebox	\$ 830,000.00	\$ 994,178.14	\$ 1,091,318.35	\$ 1,303,081.47	\$ 1,418,701.34	\$ 1,642,832.87	\$ 6,450,112.16
UC Merced Student Fees @\$50 per semester		\$ 100,000.00	\$ 200,000.00	\$ 300,000.00	\$ 400,000.00	\$ 500,000.00	\$ 1,500,000.00
State Transit Assistance	\$ 336,000.00	\$ 336,000.00	\$ 336,000.00	\$ 336,000.00	\$ 336,000.00	\$ 336,000.00	\$ 1,680,000.00
FTA 5307 Merced	\$ 1,489,738.00	\$ 1,534,430.14	\$ 1,580,463.04	\$ 1,627,876.94	\$ 1,676,713.24	\$ 1,727,014.64	\$ 8,146,498.00
FTA 5307 Turlock	\$ 113,109.00	\$ 116,502.27	\$ 119,997.34	\$ 123,597.26	\$ 127,305.18	\$ 131,124.33	\$ 618,526.37
FTA 5311 Rural	\$ 160,000.00	\$ 164,800.00	\$ 169,744.00	\$ 174,836.32	\$ 180,081.41	\$ 185,483.85	\$ 874,945.58
FTA CMAQ Rural Demo	\$ 312,000.00	\$ 312,000.00	\$ 312,000.00				\$ 624,000.00
FTA CMAQ Clear the Air Demo		\$ 183,700.00	\$ 183,700.00				\$ 367,400.00
FTA Job Access			\$ -	\$ -	\$ -	\$ -	\$ -
FTA High Intensity Small Urban		\$ 100,000.00	\$ 103,500.00	\$ 107,122.50	\$ 110,336.18	\$ 114,197.94	\$ 535,156.62
Personal Services	\$ 40,000.00	\$ 40,000.00	\$ 41,400.00	\$ 42,849.00	\$ 44,134.47	\$ 45,679.18	\$ 214,062.65
Sale of Surplus Fixed Assets			\$ -	\$ -	\$ -	\$ -	\$ -
Advertising Revenue	\$ 32,000.00	\$ 32,000.00	\$ 33,120.00	\$ 34,279.20	\$ 35,307.58	\$ 36,543.34	\$ 171,250.12
Shelter Revenue			\$ -	\$ -	\$ -	\$ -	\$ -
Lease Revenue	\$ 5,500.00	\$ 5,500.00	\$ 5,692.50	\$ 5,891.74	\$ 6,068.49	\$ 6,280.89	\$ 29,433.61
Interest	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 75,000.00
Sub Total Revenues	\$ 3,333,347.00	\$ 3,934,110.55	\$ 4,191,935.23	\$ 4,070,534.42	\$ 4,349,647.88	\$ 4,740,157.04	\$ 21,286,385.11
Less Capital Outlays	\$ 402,847.00	\$ 247,553.00		\$ -	\$ -	\$ -	\$ 247,553.00
Sub Total Revenues	\$ 2,930,500.00	\$ 3,686,557.55	\$ 4,191,935.23	\$ 4,070,534.42	\$ 4,349,647.88	\$ 4,740,157.04	\$ 21,038,832.11
TDA/LTF	\$ 2,337,196.00	\$ 2,766,378.68	\$ 3,105,326.78	\$ 4,581,326.23	\$ 5,047,239.45	\$ 6,090,474.71	\$ 21,590,745.85
Total Operations Financing	\$ 5,267,696.00	\$ 6,452,936.24	\$ 7,297,262.01	\$ 8,651,860.64	\$ 9,396,887.33	\$ 10,830,631.74	\$ 42,629,577.96
Unfunded Operations		\$ 239,312.51	\$ 746,023.47	\$ 1,942,539.24	\$ 2,243,469.54	\$ 3,383,544.70	\$ 8,554,889.46



Table 3.12: Expense & Revenue by Rural & Urban Areas

	OPERATING EXPENDITURES												TOTAL FY 06-10
	BUDGETED FY 04-05		PROJECTED FY 05-06		PROJECTED FY 06-07		PROJECTED FY 07-08		PROJECTED FY 08-09		PROJECTED FY 09-10		
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	
Salaries-Benefits	\$ 177,070.00	\$ 175,660.00	\$ 232,882.93	\$ 130,428.97	\$ 239,869.42	\$ 134,341.84	\$ 247,065.50	\$ 138,372.09	\$ 254,477.47	\$ 142,523.26	\$ 262,111.79	\$ 146,798.95	\$ 1,928,872.22
Services - Base	\$2,467,346.00	\$2,447,620.00	\$3,628,263.44	\$2,032,053.94	\$3,737,111.34	\$2,093,015.56	\$3,849,224.68	\$2,155,806.02	\$3,964,701.42	\$2,220,480.21	\$4,083,642.47	\$2,287,094.61	\$30,051,393.70
Services - UC			\$ 339,312.51		\$ 351,188.45		\$ 816,864.86		\$ 845,455.13		\$1,511,192.54		\$ 3,864,013.49
Services -Growth					\$ -		\$ -		\$ -		\$ -		\$ -
Marketing Program			\$ 63,006.88	\$ 32,437.24	\$ 64,922.54	\$ 33,410.36	\$ 73,697.33	\$ 34,412.67	\$ 75,969.51	\$ 35,445.05	\$ 87,854.20	\$ 36,508.40	\$ 537,664.19
Total Expenditures	\$2,644,416.00	\$2,623,280.00	\$4,263,465.76	\$2,194,920.15	\$4,393,091.75	\$2,260,767.76	\$4,986,852.37	\$2,328,590.79	\$5,140,603.53	\$2,398,448.51	\$5,944,800.99	\$2,470,401.97	\$36,381,943.60
OPERATING REVENUES													
Farebox	\$ 470,000.00	\$ 360,000.00	\$ 689,370.05	\$ 304,808.09	\$ 710,051.16	\$ 355,812.64	\$ 808,337.18	\$ 452,719.27	\$ 911,881.33	\$ 532,915.25	\$1,102,583.47	\$ 617,515.55	\$ 6,485,993.98
UC Merced Revenue	\$ -		\$ 339,312.51		\$ 351,188.45		\$ 816,864.86		\$ 845,455.13		\$1,511,192.54		\$ 3,864,013.49
State Transit	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 167,989.00	\$ 1,679,890.00
FTA 5307 Merced	\$1,489,738.00		\$1,534,430.14		\$1,580,463.04		\$1,627,876.94		\$1,676,713.24		\$1,727,014.64		\$ 8,146,498.00
FTA 5307 Turlock		\$ 113,109.00		\$ 116,502.27		\$ 119,997.34	\$ -	\$ 123,597.26	\$ -	\$ 127,305.18	\$ -	\$ 131,124.33	\$ 618,526.37
FTA 5311 Rural		\$ 160,000.00		\$ 164,800.00		\$ 169,744.00	\$ -	\$ 174,836.32	\$ -	\$ 180,081.41	\$ -	\$ 185,483.85	\$ 874,945.58
FTA CMAQ Rural		\$ 312,000.00		\$ 321,360.00		\$ 312,000.00							\$ 633,360.00
FTA CMAQ Clear the Air Demo			\$ 183,700.00		\$ 183,700.00		\$ 183,700.00				\$ -		\$ 551,100.00
FTA Job Access				\$ -		\$ -		\$ -		\$ -		\$ -	\$ -
FTA High Intensity			\$ 100,000.00		\$ 103,500.00		\$ 107,122.50		\$ 110,336.18		\$ 114,197.94		\$ 535,156.62
Personal Services	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,700.00	\$ 20,700.00	\$ 21,424.50	\$ 21,424.50	\$ 22,067.24	\$ 22,067.24	\$ 22,839.59	\$ 22,839.59	\$ 214,062.65
Sale of Surplus					\$ -		\$ -		\$ -		\$ -		\$ -
Advertising Revenue	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00	\$ 16,000.00	\$ 16,560.00	\$ 16,560.00	\$ 17,139.60	\$ 17,139.60	\$ 17,653.79	\$ 17,653.79	\$ 18,271.67	\$ 18,271.67	\$ 171,250.12
Shelter Revenue					\$ -		\$ -		\$ -		\$ -		\$ -
Lease Revenue	\$ 2,750.00	\$ 2,750.00	\$ 2,750.00	\$ 2,750.00	\$ 2,846.25	\$ 2,846.25	\$ 2,945.87	\$ 2,945.87	\$ 3,034.24	\$ 3,034.24	\$ 3,140.44	\$ 3,140.44	\$ 29,433.61
Interest	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 75,000.00
Sub Total	\$2,173,977.00	\$1,159,348.00	\$3,061,051.70	\$1,121,709.36	\$3,144,497.90	\$1,173,149.23	\$3,760,900.45	\$ 968,151.81	\$3,762,630.15	\$1,058,546.10	\$4,674,729.29	\$1,153,864.43	\$23,879,230.42
Less Capital Outlays	\$ 289,738.00	\$ 113,109.00	\$ 247,553.00				\$ -		\$ -		\$ -		\$ 247,553.00
Sub Total	\$1,884,239.00	\$1,046,239.00	\$2,813,498.70	\$1,121,709.36	\$3,144,497.90	\$1,173,149.23	\$3,760,900.45	\$ 968,151.81	\$3,762,630.15	\$1,058,546.10	\$4,674,729.29	\$1,153,864.43	\$23,631,677.42
TDALTF	\$ 760,177.00	\$1,577,041.00	\$1,449,967.06	\$1,073,210.79	\$1,248,593.85	\$1,087,618.53	\$1,225,951.92	\$1,360,438.98	\$1,377,973.39	\$1,339,902.41	\$1,270,071.71	\$1,316,537.54	\$12,750,266.17
Total Operations	\$2,644,416.00	\$2,623,280.00	\$4,263,465.76	\$2,194,920.15	\$4,393,091.75	\$2,260,767.76	\$4,986,852.37	\$2,328,590.79	\$5,140,603.53	\$2,398,448.51	\$5,944,800.99	\$2,470,401.97	\$36,381,943.60
					\$ -		\$ -		\$ -		\$ -		\$ -

Table 3.13: Service Hours Per Year

	FY 04-05		FY 05-06		FY 06-07		FY 07-08		FY 08-09		FY09-10							
	88917	\$ 55.28	\$ 4,915,331.76	98931	\$ 57.21	\$ 5,660,317.38	98913	\$ 59.22	\$5,858,428.49	98913	\$ 61.29	\$6,062,370.27	98931	\$ 63.44	\$ 6,275,695.06	98931	\$ 65.66	\$ 6,495,344.38
BASE	88917	\$ 55.28	\$ 4,915,331.76	98931	\$ 57.21	\$ 5,660,317.38	98913	\$ 59.22	\$5,858,428.49	98913	\$ 61.29	\$6,062,370.27	98931	\$ 63.44	\$ 6,275,695.06	98931	\$ 65.66	\$ 6,495,344.38
UC MERCED		\$ 55.28	\$ -	5931	\$ 57.21	\$ 339,312.51	5931	\$ 59.21	\$ 351,188.45	13329	\$ 61.28	\$ 816,864.86	13329	\$ 63.43	\$ 845,455.13	23019	\$ 65.65	\$ 1,511,192.54
GROWTH		\$ 55.28	\$ -		\$ 57.21	\$ -	10320	\$ 59.22	\$ 611,122.72	20640	\$ 61.29	\$1,265,024.03	27520	\$ 63.44	\$ 1,745,733.17	34440	\$ 65.66	\$ 2,261,168.50
Total	88917	\$ -	\$ 4,915,331.76	104862	\$ 5,999,629.89	115182	\$6,820,739.66	132882	\$8,144,259.16	139780	\$ 8,866,883.36	156390	\$ 10,267,705.42					



Table 3.14: TDA/LTF Appointments

TDA-LTF APPORTIONMENTS							
	FY 04-05	FY05-06	FY06-07	FY07-08	FY08-09	FY09-10	Total
Total							
Apportionment	\$ 5,077,500.00	\$ 5,229,825.00	\$ 5,386,719.75	\$ 5,548,321.34	\$ 5,714,770.98	\$ 5,886,214.11	\$ 32,843,351.19
County Auditor	\$ 2,284.88	\$ 2,353.42	\$ 2,424.02	\$ 2,496.74	\$ 2,571.65	\$ 2,648.80	\$ 14,779.51
MCAG							
Administration	\$ 46,713.00	\$ 48,114.39	\$ 49,557.82	\$ 51,044.56	\$ 52,575.89	\$ 54,153.17	\$ 302,158.83
MCAG Planning	\$ 116,274.75	\$ 119,762.99	\$ 123,355.88	\$ 127,056.56	\$ 130,868.26	\$ 134,794.30	\$ 752,112.74
Capital Transit Purchases	\$ 795,169.00	\$ 921,949.85	\$ 775,537.00	\$ 731,184.07	\$ 870,837.03	\$ 544,503.27	\$ 4,639,180.22
Total expenditures	\$ 960,441.63	\$ 1,092,180.65	\$ 950,874.73	\$ 911,781.93	\$ 1,056,852.83	\$ 736,099.54	\$ 5,708,231.30
Remainder	\$ 4,117,058.38	\$ 4,137,644.35	\$ 4,435,845.02	\$ 4,636,539.42	\$ 4,657,918.16	\$ 5,150,114.57	\$ 27,135,119.89

JURISDICTIONAL SHARE FY 05-06 Rural and Urban Population Percentage								
Jurisdiction	Population	% of Population	MCAG Planning Share	Share of Remainder	% of rural Population	% of Urban Population	Transit Share Deduction	Amount Available to Claim
Atwater	26000	11.55%	\$ 13,832.63	\$ 477,897.92		21.05%	\$ 305,218.07	\$ 172,679.86
Dos Palos	4790	2.13%	\$ 2,550.95	\$ 88,131.82	4.41%		\$ 47,328.60	\$ 40,803.23
Gustine	5125	2.28%	\$ 2,730.60	\$ 94,338.29	4.72%		\$ 50,686.13	\$ 43,652.16
Livingston	11050	4.90%	\$ 5,868.39	\$ 202,744.57	10.18%		\$ 109,284.24	\$ 93,460.33
Los Banos	29150	12.95%	\$ 15,509.31	\$ 535,824.94	26.86%		\$ 288,292.81	\$ 247,532.13
Merced	67600	30.03%	\$ 35,964.83	\$ 1,242,534.60		58.18%	\$ 843,590.84	\$ 398,943.76
Unincorporated	81400	36.16%	\$ 43,306.30	\$ 1,496,172.20	53.82%	20.77%	\$ 878,732.78	\$ 617,439.41
Total	225115	100.00%	\$ 119,762.99	\$ 4,137,644.35	1.00	1.00	\$ 2,523,133.46	\$ 1,614,510.89

Rural Population 108515
 TDA Needed for Rural Service \$ 1,073,210.79
 TDA Needed for Urban Service \$ 1,449,967.06

JURISDICTIONAL SHARE FY 06-07 Rural and Urban Population Percentage								
Jurisdiction	Population	% of Population	MCAG Planning Share	Share of Remainder	% of rural Population	% of Urban Population	Transit Share Deduction	Amount Available to Claim
Atwater	26000	11.55%	\$ 14,247.60	\$ 512,340.10		21.05%	\$ 262,829.01	\$ 249,511.09
Dos Palos	4790	2.13%	\$ 2,627.48	\$ 94,483.50	4.41%		\$ 47,963.98	\$ 46,519.52
Gustine	5125	2.28%	\$ 2,812.51	\$ 101,137.27	4.72%		\$ 51,366.58	\$ 49,770.68
Livingston	11050	4.90%	\$ 6,044.44	\$ 217,356.41	10.18%		\$ 110,751.37	\$ 106,605.04
Los Banos	29150	12.95%	\$ 15,974.59	\$ 574,441.93	26.86%		\$ 292,163.11	\$ 282,278.82
Merced	67600	30.03%	\$ 37,043.77	\$ 1,332,084.26		58.18%	\$ 726,431.90	\$ 605,652.36
Unincorporated	81400	36.16%	\$ 44,605.49	\$ 1,604,001.56	53.82%	20.77%	\$ 844,661.44	\$ 759,340.12
Total	225115	100.00%	\$ 123,355.88	\$ 4,435,845.02	100.00%	100.00%	\$ 2,336,167.39	\$ 2,099,677.63

Rural Population 108515
 TDA Needed for Rural Service \$ 1,087,618.53
 TDA Needed for Urban Service \$ 1,248,593.85

JURISDICTIONAL SHARE FY 07-08 Rural and Urban Population Percentage								
Jurisdiction	Population	% of Population	MCAG Planning Share	Share of Remainder	% of rural Population	% of Urban Population	Transit Share Deduction	Amount Available to Claim
Atwater	26000	11.55%	\$ 14,675.03	\$ 535,520.30		21.05%	\$ 258,062.88	\$ 277,457.42
Dos Palos	4790	2.13%	\$ 2,706.30	\$ 98,758.29	4.41%		\$ 59,995.36	\$ 38,762.93
Gustine	5125	2.28%	\$ 2,896.89	\$ 105,713.10	4.72%		\$ 64,251.48	\$ 41,461.61
Livingston	11050	4.90%	\$ 6,225.77	\$ 227,190.43	10.18%		\$ 138,532.47	\$ 88,657.96
Los Banos	29150	12.95%	\$ 16,453.82	\$ 600,431.85	26.86%		\$ 365,449.90	\$ 234,981.95
Merced	67600	30.03%	\$ 38,155.08	\$ 1,392,352.79		58.18%	\$ 713,258.83	\$ 679,093.96
Unincorporated	81400	36.16%	\$ 45,943.65	\$ 1,676,572.65	53.82%	20.77%	\$ 986,783.71	\$ 689,788.94
Total	225115	100.00%	\$ 127,056.56	\$ 4,636,539.42	100.00%	100.00%	\$ 2,586,334.63	\$ 2,050,204.79

Rural Population 108515
 TDA Needed for Rural Service \$ 1,360,438.98
 TDA Needed for Urban Service \$ 1,225,951.92

JURISDICTIONAL SHARE FY 08-09 Rural and Urban Population Percentage								
Jurisdiction	Population	% of Population	MCAG Planning Share	Share of Remainder	% of rural Population	% of Urban Population	Transit Share Deduction	Amount Available to Claim
Atwater	26000	11.55%	\$ 15,115.28	\$ 537,989.55		21.05%	\$ 290,063.40	\$ 247,926.15
Dos Palos	4790	2.13%	\$ 2,787.49	\$ 99,213.66	4.41%		\$ 59,089.70	\$ 40,123.96
Gustine	5125	2.28%	\$ 2,983.80	\$ 106,200.53	4.72%		\$ 63,281.57	\$ 42,918.96
Livingston	11050	4.90%	\$ 6,412.54	\$ 228,237.99	10.18%		\$ 136,441.24	\$ 91,796.75
Los Banos	29150	12.95%	\$ 16,947.44	\$ 603,200.40	26.86%		\$ 359,933.24	\$ 243,267.16
Merced	67600	30.03%	\$ 39,299.74	\$ 1,398,772.82		58.18%	\$ 801,704.92	\$ 597,067.91
Unincorporated	81400	36.16%	\$ 47,321.96	\$ 1,684,303.21	53.82%	20.77%	\$ 1,007,306.31	\$ 676,996.90
Total	225115	100.00%	\$ 130,868.26	\$ 4,657,918.16	100.00%	100.00%	\$ 2,717,820.38	\$ 1,940,097.78

Rural Population 108515
 TDA Needed for Rural Service \$ 1,339,902.41
 TDA Needed for Urban Service \$ 1,377,973.39

JURISDICTIONAL SHARE FY 09-10 Rural and Urban Population Percentage								
Jurisdiction	Population	% of Population	MCAG Planning Share	Share of Remainder	% of rural Population	% of Urban Population	Transit Share Deduction	Amount Available to Claim
Atwater	26000	11.55%	\$ 15,568.74	\$ 594,838.23		21.05%	\$ 267,350.09	\$ 327,488.14
Dos Palos	4790	2.13%	\$ 2,871.12	\$ 109,697.44	4.41%		\$ 58,059.31	\$ 51,638.13
Gustine	5125	2.28%	\$ 3,073.31	\$ 117,422.61	4.72%		\$ 62,178.08	\$ 55,244.53
Livingston	11050	4.90%	\$ 6,604.92	\$ 252,355.61	10.18%		\$ 134,062.02	\$ 118,293.60
Los Banos	29150	12.95%	\$ 17,455.86	\$ 666,939.84	26.86%		\$ 353,656.82	\$ 313,283.02
Merced	67600	30.03%	\$ 40,478.73	\$ 1,546,579.41		58.18%	\$ 738,927.72	\$ 807,651.69
Unincorporated	81400	36.16%	\$ 48,741.62	\$ 1,862,281.43	53.82%	20.77%	\$ 972,320.75	\$ 889,960.67
Total	225115	100.00%	\$ 134,794.30	\$ 5,150,114.57	100.00%	100.00%	\$ 2,586,554.79	\$ 2,563,559.78