

5 A RECOMMENDED MULTIMODAL TRANSPORTATION STRATEGY

Each of the "analysis alternatives" to the highway widening is predicted to result in a reduction in forecast vehicle trips in the Corridor. The packages were intentionally designed to provide substantially different approaches to accommodating travel demand, ones which do not overlap or duplicate each other. In this way, it is possible to assess the degree of effectiveness of the widely different solutions individually, recognizing that the ultimate alternative to the highway widening for the Corridor lies in some combination of each of the three. Implementation strategies identified in Chapter 4 itemize incremental steps which may be used in many combinations to produce an alternative to the Highway 101 widening. While the Pricing/Enhanced TDM "analysis alternative" is forecast to be the most effective in reducing vehicular travel in the Highway 101 Corridor, the two transit-focused alternatives result in a significant increase in transit trips in the Corridor, which was not a result of the Pricing/Enhanced TDM alternative.

A multimodal combination of strategic actions is identified which provides an alternative to widening Highway 101 prior to the year 2015. This chapter proposes a schedule of time frames during which actions should occur. It also identifies the key agencies or participants responsible for the action. Finally, it identifies the planning or funding document in which actions can be programmed, funded, provided and monitored. To the extent possible, existing planning and programming studies {e.g. Regional Transportation Plan (RTP), Congestion Management Plan (CMP), and Regional Transportation Improvement Program (RTIP) updates} are recommended as the tools to address many of the technical needs and policy issues which require future actions. The broad nature of this Highway 101 Alternatives Analysis study necessitates further, more specific studies in order to develop detailed implementation approaches for each of the recommended actions. Where a special study or report is needed, one is identified. More detailed design, environmental, cost and financing studies will be needed to refine recommendations for these plans and programs.

The recommended actions can only be accomplished with changes to the current priorities and distribution of presently available transportation funding set forth in SBCAG's RTP and RTIP, MTD's annual budget and its Short Range Transit Plan (SRTP), as well as in the local jurisdiction's annual budgets and capital improvement programs.

The purpose of this Alternatives Analysis of the Highway 101 Corridor study was to identify alternatives to the widening of Highway 101. The fundamental choice between widening Highway 101 or implementing the recommended alternative cannot be determined in this study report. Inherent in any set of recommended actions are the

underlying policies which must be determined by those who set the region's transportation policies. It remains a fundamental policy issue for SBCAG's Executive Board. There are, however, additional policy issues to be addressed, should this alternative to the Highway 101 widening be selected for the South Coast's near term future. The chapter concludes with key policy issues which SBCAG and local jurisdictions must address as a basis for the successful implementation of a multimodal transportation strategy.

5.1 AN ALTERNATIVE MULTIMODAL TRANSPORTATION STRATEGY TO WIDENING HIGHWAY 101

A multimodal transportation strategy is proposed as one alternative to widening Highway 101 for at least the next fifteen to twenty years. The multimodal transportation strategy builds from key elements of the Pricing/Enhanced TDM "analysis alternative" while incorporating selected elements from the bus and rail transit "analysis alternatives" into an integrated and phased program. Seven elements are recommended as a basic framework for the multimodal transportation strategy:

Enhance the City/County TDM Ordinance and *Traffic Solutions* programs
Expanded transit services

1. Bicycle system improvements
2. Highway 101 operational improvements
3. Land use planning considerations to facilitate use of alternative modes
4. Strategies to reduce visitor/tourist auto trips
5. Performance monitoring of Highway 101

The strategic nature of the alternative approach is achieved by continually using feedback from monitoring and demonstration efforts to make regular adjustments to the action program's priorities, timing and emphasis. Only through such "fine tuning" can this alternative be adjusted and refined to respond to the individual and cumulative effects of its seven components. The recommended actions are proposed to accomplish several objectives:

Introduce multimodal transportation services into the South Coast area

Provide a proportionate level of improvements as congestion increases

Promote a gradual shift in modal choice away from dependence upon the single occupant automobile among travelers

Establish a strategic programming effort of capital and operational changes in response to monitored levels of congestion and shifting mode choice in the South Coast area

Identify responsible agencies and organizations to implement the component actions, and

Incorporate necessary planning, programming, monitoring, promotional/educational and demonstration activities in advance of the actual need for a given action.

The multimodal transportation services strategy sets forth an implementation schedule to guide policy makers, public agencies and residents of the South Coast in the transition from an automobile dependent community to one in which a variety of transportation modes successfully compete to accommodate travel demands and provide acceptable levels of service. Table 5-1 identifies the detailed elements of each of the seven components of the recommended alternative, and the five year time periods within which the actions

should be completed. Recommendations are intended to be phased in over time, as traveler response warrants the expansion of services and programs. While the overall list of recommendations has not been prioritized, within each of the components high priority actions have been identified. The following subsections describe each of the seven elements of the recommended multi-modal transportation strategy in more detail.

5.1.1 Enhance the City/County TDM Ordinance and *Traffic Solutions* Programs Continue to market and enhance the City/County Travel Demand Management (TDM) ordinance (*Traffic Solutions* program) which is oriented to commuter trips to include more employers/employees. Begin to experiment with financial incentives for ridesharing and using transit.

Individual elements recommended to result in an enhanced TDM effort include:

Traffic Solutions in conjunction with local employers, MTD and SBCAG, should collect more and better evaluative data on individual employer strategy effectiveness at reducing HOV trips,

Traffic Solutions should assess the current, most effective, TDM strategies and their applications based on local and national experience. (Comsis et. al.,

Expand Promotional Activities for Enhanced TDM. *Traffic Solutions* should target during the next few years its promotional activities aimed at employers to focus on those TDM strategies which have been identified as effective. Promotional activities should include transit subsidies, a parking cash out program, 4/40 work schedules, and telecommuting.

Traffic Solutions, in coordination with MTD, should encourage employers and MTD to experiment with financial incentives for transit ridership.

SBCAG, in association with the local chambers of commerce, the Santa Barbara Conference and Visitors Bureau, the Santa Barbara Industrial Association, the Coalition for Labor, Agriculture and Business, Grass Roots 101 and other local business and advocacy groups should develop a parking pricing demonstration program in the Highway 101 Corridor. Such a demonstration program should quantify how a parking pricing program affects employee trip reduction and local businesses.

Traffic Solutions should establish a TDM ordinance review committee which includes local business community and citizens group representation to review the existing TDM ordinance provisions.

Traffic Solutions should evaluate the effectiveness of the enhanced TDM ordinance in conjunction with the Congestion Management Plan (CMP), two and five years after the ordinance revision, if pursued.

1. Establish an expanded education effort through *Traffic Solutions* to include broader information targeted at the general public, as well as the tourist, business traveler, and visitor.

SBCAG and its member agencies should develop a funding strategy with identified funding sources for the enhanced TDM activities identified for *Traffic Solutions*.

Each of the specific recommendations is discussed in more detail below.

1. & 2. Enhanced Data Collection and Strategy Effectiveness Assessment

Traffic Solutions has been very successful in achieving employer interest and participation, but has not yet achieved full compliance with the AVR targets of the existing ordinance. However, the level of participation of the employers and their employees in voluntary compliance with the ordinance, in its present structure, may not be sufficient to achieve the regional participation rate of 65% established in the ordinance. Data gathering efforts should focus on which of the individual strategies used by employers under the present ordinance results in the greatest trip reduction shifts in the South Coast. This may vary among employment sectors. Data needs include up-to-date information on current mode of travel, prior mode of travel, travel distance, awareness of alternatives and promotions, program costs, and site characteristics. Current data collection efforts should focus on these elements in order to provide input to the TDM ordinance review planned for 1997 to facilitate possible enhancements. Programs in Phoenix in Maricopa County, and Tucson in Pima County, Arizona evaluate individual employer plans to determine the individual strategies which result in the greatest reductions in SOV driving (Comsis, 1993) These findings are reported back to TDM program participants so they can adjust and improve the effectiveness of their programs.

3. Expanded Promotional Activities

The *Traffic Solutions* TDM program should continue to be aggressively marketed as an effective and community-friendly solution to solving traffic problems. Expanded marketing efforts could include special promotional days such as drive-free or rideshare days. Coordination with MTD will be a critical element of this action. In Los Angeles County, "Rideshare Thursday" has been a regular promotion of a consortium of transportation agencies including Caltrans, Commuter Transportation Services, Commuter Computer and others, however, vehicle trip reductions as a result of this promotion have yet to be verified. Greater Cleveland's Regional Transit Authority promotes a "Try-Transit" week each May with focused promotional activities and free bus and rail coupons. MTD and *Traffic Solutions* could develop a prototype program which could be targeted at commuters as well as visitors. Visitor transit ridership promotions could coincide with special events in the Santa Barbara area or as part of peak tourist season promotion. Several seasonal events which could maximize transit connections include the County Vintner's Festival in April, Santa Barbara Summer Solstice Day in June, The Fiesta in August, and Memorial Day, Independence Day and Labor Day celebrations during the summer.

4. Financial Incentives

This could be in the form of "transitchecks" whereby employers can buy discounted bus passes from MTD, passing the savings along to their employees. Financial incentives could also be applied to carpooling, which would serve as an additional inducement to preferential parking already provided by many employers. Examples of financial incentives are based on evaluations of public and private sector employers including County of Ventura, Allergan in Orange County, Union Bank in Los Angeles, and Varian in Palo Alto. Evidence suggests that financial incentives for the use of commute alternatives are effective in reducing trips by 8 to 18 percent in an evaluation of over twenty employer based TDM programs, (Comsis, 1993).

5. Parking Pricing Demonstration Program

Establishing a pricing demonstration study in the Corridor area will not only provide a realistic basis to assess the effects on local businesses as well as the traffic impacts, but could also serve as the source of a reasonably available funding match with which to leverage federal and state revenues for needed capital improvements. Pricing incentives or disincentives include: establishment of a parking fee, transit fare reductions or employer subsidized transit passes, employer parking fees or "cashout" programs, parking discounts for carpools and vanpools, discount fuel purchase programs, or congestion pricing programs. The demonstration project could be limited to downtown parking lots or to several volunteer employers.

In a study entitled *An Opportunity to Reduce Minimum Parking Requirements* (Shoup, 1995), providing free parking was estimated to induce more auto travel than providing free gasoline. When an employer at the Warner Center in the San Fernando Valley increased employee parking fees from zero to \$30 per month, the share of solo drivers dropped from 90 percent to 46 percent and average vehicle occupancy rates increased from 1.08 to 1.55 persons per vehicle. One method of instituting employee parking pricing is to require employers who currently provide free parking to their employees to instead offer their employees the option of receiving the cash equivalent of the parking space and making their own arrangements for parking (parking "cashout" policy). In a recent study by Seattle Metro *Cash In Your Car: Cashing Out Employer Subsidized Parking*, (Seattle Metro, June 1994) cash out programs were evaluated at three employers (Digital Equipment Corporation in Bellevue, Ernst Corporation in downtown Seattle, and Minor & James Medical on First Hill in Seattle. Between two and fifteen percent of eligible employees chose to cash out parking. By implication all who cashed out switched from SOV to an HOV mode. The majority switched to transit due to the presence of extensive transit service to employer locations. All employers in the study have good transit access and are located in areas which are urban in character (Seattle Metro, June 1994).

The County and cities have the enabling authority to mandate

these types of programs, but it will be very controversial. The usefulness of a demonstration program is that it can provide a quantified basis which all affected segments of the community can discuss regarding the trip reduction effectiveness of the strategy.. The participation of a wide range of special interest groups in the demonstration program development would be important to the overall credibility of the results. Furthermore, local business interests can recommend the inclusion of specific measurements of program impacts, such as changes in retail sales, volume or value, to insure that any economic effects of the demonstration program are quantified.

6. TDM Ordinance Review and Revision

At the time of TDM ordinance review in 1997, *Traffic Solutions* should establish a carefully chosen ordinance review committee which reflects the broad range of business and citizen transportation interests in the county. In order to achieve a realistic alternative to widening Highway 101, revisions to the ordinance should be structured to result in maximum ridesharing results. The success of a multimodal alternative to the widening will occur through the achievement of performance targets and resulting monitoring programs of the area's rideshare ordinance and based on the review described earlier.

Based on the enhanced data and performance records collected in the first two actions, *Traffic Solutions*, The City and County of Santa Barbara should consider revising the employer participation rate target (higher than current levels) and the employer performance target to a level determined by current needs as measured by the Congestion Management Plan (CMP) and associated deficiency plans. The ordinance should also establish a two year performance threshold for the increased targets. If employers fail to achieve the regional AVR target, specific incentive measures would be prescribed by *Traffic Solutions*.

The Pricing/Enhanced TDM "analysis alternative" included participation rates for modified work schedules and telecommuting based on a national average in order to estimate the effect on trip-making and resultant traffic congestion in the Study Area. The evaluated rates reflect the national average participation rates if employees were offered modified work schedules and telecommuting. The establishment of specific employer participation rates for modified work schedules and telecommuting should be developed in a collaborative arena with the active participation of the local business organizations and transportation advocacy groups. Specific participation rates could and should vary based on the type of business, and the availability of transit services to the employer's site. The linkage between participation rates for various modified work schedules and employer performance in achieving an average regional AVR, however, is an important step towards implementing an alternative to the highway widening. Individual employers

could set variable thresholds for modified work schedules and telecommuting to meet an increased AVR target.

Recent evaluations of the South Coast Air Quality Management District's Rule 1501 by local employers, (Los Angeles Times, March 28, 1995) noted that

". . . some employers have found it necessary to simply change their work hours to achieve the goals. In Riverside, recreational vehicle maker Fleetwood Enterprises had met ridership targets at all but one facility: the corporate headquarters. The large number of workers with often long and unpredictable hours were resistant to giving up solo commutes. So Fleetwood put the headquarters on a nine-hour workday and closes it every other Friday to reduce vehicle trips."

The modified work schedules can have the effect of focusing trip reductions on Fridays, when tourist trips arriving in the Santa Barbara area are higher than other weekdays.

TDM ordinance revisions should consider the expansion of the ordinance to address home to school trips, particularly at UCSB and Santa Barbara Community College (SBCC). This can build on the high bike mode share at the UCSB campus. As transit services to the campuses are expanded, ordinance revisions which identify incentive strategies to students to carpool or take transit can be targeted. MTD discontinued Route 18 service to the UCSB campus due to declining ridership according to the 1992 *S RTP Update* (MTD, 1992). Reintroduction of service in consort with inclusion of UCSB and SBCC commuters under the ridesharing ordinance should occur in a coordinated fashion. MTD's and *Traffic Solution's* promotional activities in these areas could help with this effort. The University of California at Los Angeles has been successful in coordination of transit service with the Southern California Rapid Transit District to provide greater access by alternative modes. The City of Los Angeles provided "DASH" shuttle bus service in the Westwood area of Los Angeles has also proven successful in supporting the ridesharing efforts of employers and students. However, California State University at Fullerton had unsuccessful results when they established a shuttle bus service in 1989. Three years later the shuttle was shut down (Sanchez, 1995). Efforts to expand into the campus travel market with ridesharing programs have been shown to have both successes and failures. Efforts made in Santa Barbara should build on the identified successes and avoid the problems experienced elsewhere.

An additional area to consider in the expansion of the local TDM ordinance is to include provisions for special event AVR targets. In general, AVR to special events is higher than that found in home based work trips. The South Coast Air Quality

Management District has had an ongoing advisory committee with "special trip generators" including such facilities as Disneyland, sporting venues, and concert facilities, to develop specific AVR targets for special activity centers. Expansion of the ordinance into these areas should be considered although the opportunities may be limited to large events at the college campuses.

7. Revised TDM Ordinance Performance Monitoring

Once TDM ordinance revisions have been enacted by local jurisdictions, efforts to monitor ordinance effectiveness should be established. Effects of individual strategies should be monitored through employer reporting to *Traffic Solutions* and serve to provide further refinements to the ordinance. In general, a revised ordinance performance monitoring effort should result in greater integration between the existing monitoring efforts of SBCAG and local jurisdictions for CMP purposes, *Traffic Solutions* for TDM performance, and MTD's existing route and system performance monitoring. Evaluation criteria for TDM strategies include the need to consistently and vigorously measure: the use of alternatives, calculation of trip reduction and vehicle miles traveled (VMT), contribution of specific strategies, and program cost effectiveness. Annual surveys and data processing techniques can be developed to support the evaluation process. In addition to overall performance of the ordinance, efforts should be made to look at individual plan performance in comparison with local roadway traffic and transit ridership in the vicinity of the reporting businesses. Cost effectiveness and individual measures within each employer's program are two performance criteria critical to this enhanced ordinance monitoring.

The results of congestion monitoring on the county's designated CMP system of roads and intersections should also be compared with performance reporting at adjacent and nearby employers. These comparisons can provide *Traffic Solutions* with guidance in developing specific ridesharing strategies with employers located along or on the way through particularly congested portions of the road system. These comparisons support the strategic selection of TDM strategies for specific areas within the county.

Concerns were expressed by the business community at public meetings that job loss in local businesses has not been considered in the TDM ordinance performance evaluations, and that these changes should be compared with recent traffic growth in the Corridor as a means to assess whether there is reason to modify performance targets. The effects of employment changes and housing growth in the entire county could be compared with the changes in AVR and AVO over time, however, the more specific travel characteristics of an individual employer would also need to be considered. Comparisons of the actual versus projected rates of employment and housing growth with actual versus

forecast traffic growth and AVO rates are important comparisons to be looked at when evaluating performance thresholds as well as specific strategies to be applied in subareas of the county.

Further comparisons of AVR performance for employers along selected roadway corridors or areas of high employment concentrations could be made with MTD's regularly gathered information regarding farebox return and ridership rates for individual bus routes serving these areas. Subareas of the county could be considered for employer provided TDM strategies which create incentives for transit use. The CMP program could consider incorporating specific TDM performance thresholds as part of CMP "deficiency plans" on selected roadways with high employment concentrations. If thresholds are not met, more prescriptive measures should be considered for adjacent employer programs which could then be incorporated into deficiency share analysis of intersection traffic flow (*Olen Pointe Finance and Engineering Study*) which can quantify contributions to the traffic flow by different developments or sites. Linking intersection performance to the employer incentive program could be considered.

8. Expansion of the *Traffic Solutions* Public Education Program

Much research has been conducted recently regarding the hidden costs or subsidies of automobile use in America (see discussion in section 4.2.3 of Chapter 4). Much of this analysis, while not directly measuring costs or subsidies in Santa Barbara, is directly applicable to Santa Barbara. Litman (1995), Cameron, (1994), Shoup, (1995) and Handy and Mohktarian, (1995) all conclude that the elimination of these subsidies through policies or actions which result in the "hidden auto costs" being charged to automobile users will result in the greatest reduction in single occupant vehicle use. *Traffic Solutions'* recent promotional materials includes information regarding the true cost of driving. These approaches should be continued and expanded. Brochures with this information include: *Introducing 7 Great Ways to Get There in Santa Barbara County*, *Let's Work Together Let's Clean the Air* (Busing and Vanpooling slip sheets include specific cost savings) and *Share a Van Save a Bundle*. A second area of education could include the definition and benefits of "transit oriented" design (see the more detailed description of land use redesignations into transit oriented design in Section 5.1.5). The third area of public education is to inform the community of the purpose, extent, duration, methods, and results of a pricing demonstration program.

The greatest impact of an expanded education campaign is its anticipated benefit to establishing business and community awareness and acceptance for the recommended pricing demonstration project(s). Secondary results will include some minor shifts in mode choice or reductions in single occupant vehicle travel. Shoup (1995) indicates that it is the application of the direct cost to the driver which results in the change. Knowledge of hidden costs of auto operation will have a limited effect on mode choice. Although the secondary benefits of this education program are expected to be negligible, the education effort is a strategic element in the development of community consensus to cause changes in land use policy, parking policies and the development of financial strategies to fund implementation of these alternatives to the widening of Highway 101. The education effort can be particularly beneficial in the development of a parking pricing demonstration project.

Recent activities by the Sustainability Project in Santa Barbara County have focused on two areas, transportation's relationship to overall community character and the land use/transportation linkage. The Sustainability Project has conducted forums on the first subject and is developing additional activities around both subjects. The Sustainability Project can provide an additional approach to community education regarding the hidden subsidies to the automobile and the concept of "transit oriented design" as described in section 4.2.4, Measures of Community and Environmental Impact, of this report. The Sustainability Project, the Conference and Visitors Bureau, business

associations, and other grass root organizations could be encouraged to participate in this effort to ensure that factors tailored to Santa Barbara are included.

9. Development of a Funding Strategy

The recommended actions call for expanded TDM services to be provided by *Traffic Solutions*. Funding sources for these activities should be identified in conjunction with overall funding needs for the Multimodal Transportation Strategy. Cost estimates for individual activities for *Traffic Solutions* as well as the costs to local employers for expanded implementation and reporting requirements should be developed at the time of ordinance review and revision. The Measure D Strategic Plan of expenditures supports *Traffic Solutions*. Other possible sources include developer impact fees, student fees for transit and Caltrans' TDM funding. However, availability of these funds, particularly Caltrans' programs, is increasingly uncertain.

To the greatest extent possible, ISTEA's flexible funding sources should be used for the expanded program. However, there will be stiff competition for these funds with other capital improvement elements of this program such as the transit, bicycle and highway operational improvements. One of the benefits of establishing a parking pricing demonstration program is that the study should provide a realistic measure of both the revenues and costs which could be expected from the full application of such a demonstration. Revenues from parking fee program alternatives should be estimated to quantify potentially available monies to fund non TDM elements of the recommended strategies (i.e. enhanced transit services, enhanced bicycle services, and unfunded highway operational improvements.) This evaluation should estimate near term (5-10 year) cash flow availability as a result of bonding future revenues. Cost estimates can build from information provided in this study but should also incorporate specific information from individual elements. The funding strategy should be combined with others identified in this report into a single, phased revenue and cost projection which can be incorporated into regional funding programming documents.

5.1.2 Expand Transit Services *Implement additional express bus services and/ or vanpool programs from Ventura County and Carpinteria to downtown Santa Barbara, Goleta, and UCSB. Market and promote them and monitor ridership trends.*

Five action elements are recommended to provide expanded transit services in the South Coast Area.

SCAT and MTD should introduce peak period express bus service between Oxnard and Ventura and Carpinteria, Montecito/Summerland, downtown Santa Barbara, Goleta as well as UCSB.

MTD should prepare an operations study which identifies costs of:

additional express bus services, additional local shuttle service to serve express bus stops, freeway flyer transit station locations, and additional maintenance facilities needed to support the expanded service.

MTD and SBCAG should prepare and implement a funding strategy to implement the recommended service improvements based on the costs identified in the operations study.

MTD, Carpinteria, the City and County of Santa Barbara, SBCAG, and Caltrans should prepare a detailed freeway flyer transit station development program which refines and designs transit stations as located in the Highway 101 right of way and construct the stations.

Caltrans, MTD, Carpinteria, the City and County of Santa Barbara, and SBCAG should develop park and ride lots at selected locations along the Corridor.

Each of these transit recommendations is described in more detail below.

1. Expanded Express Bus Service

Through the coordinated efforts of SBCAG, MTD and South Coast Area Transit (SCAT) in Ventura, peak hour express bus services should be implemented between Ventura County, Carpinteria, downtown Santa Barbara, the Hollister Avenue employment corridor in Goleta and at UCSB. The implementation of express bus service is part of an incremental program to develop an integrated transportation system in the Highway 101 Corridor and in the South Coast. The provision of express bus service, in combination with incentive programs provided by employers in compliance with the *Traffic Solutions* TDM program, will continue the development of awareness of work commute alternatives to the automobile. Feeder service connections, similar to those described in the Enhanced Bus "analysis alternative" will require adjustments to existing MTD service as well as selected new service to create an effective, commute alternative to driving alone.

The objective of this action is to use significantly less capital-intensive express bus service to build the commuter awareness and community culture which might ultimately lead to ridership levels which might justify and support future rail transit in the Highway 101 Corridor. The express bus service is recommended over the rail options due to the lower cost, the probability of transit use for commuters during morning and evening peak period (Seskin, 1995) based on existing densities in the Study Area, and the flexibility of bus service for routing and service level adjustments. Feeder service route, schedule and frequency adjustments should be coordinated with the express services. MTD and *Traffic Solutions* together could market the new and revised service. Recommended express bus service will require additional operating subsidies (in the range of \$5-\$10 million/year) for the foreseeable future. Funding options are described in Section 5.3.

2. Transit Operations Planning Study

In a cooperative effort, SBCAG, MTD and SCAT will need to perform a detailed operations planning study to prioritize the routes to be improved, the level of service improvement, service schedules, and funding for the improvements. This study should identify MTD's needs for additional vehicles, maintenance facilities and labor needs to expand service levels. The costs and benefits of alternative service provision methods (e.g. contracted service with private providers) should be evaluated as part of this study.

The operations study should expand this Highway 101 analysis to include vehicle and maintenance facilities needs in light of current bus replacement schedules and MTD's facility consolidation goals (SRTP, 1992). Recommendations should be included with the next update of the SRTP. In response to later cycles of monitoring and adjustments (in periods between 2000 and 2015), subsequent changes to transit service operations should be incorporated in to later updates of the SRTP.

The City of Los Angeles contracts for peak period express bus service on Highway 101 from the San Fernando Valley into downtown Los Angeles in lieu of MTA providing the service. This service operates at capacity in congested traffic on that stretch of Highway 101. The high price of parking in downtown Los Angeles, easy freeway access to bus stops with available parking and a favorable fare structure all contribute to this line's success. Fare structures should be evaluated with a goal of obtaining a thirty percent farebox recovery. The timing of service implementation could coincide with revisions to the TDM ordinance.

Transit check programs identified in section 5.1.1 above could enhance ridership on the new express bus service.

3. Funding Strategy - Expanded Transit Services

Results of the Operations Planning Study should be detailed enough to assess capital and operations costs of additional services. Funding choices for the expanded transit services may include establishing benefit assessment districts or charging for parking in the other areas of downtown. Capital cost estimates should be refined and availability of STP funds for these purchases will need to be balanced with other eligible funding needs of the key shortfall in the entire multimodal transportation strategy is for transit operating funds. Section 5.3 details revenue raising approaches which could be considered. These are areawide in nature and would require SBCAG, local jurisdictions and MTD to work cooperatively to develop and implement a funding strategy. The development of funding sources for transit operations should not be delayed until a parking pricing demonstration is completed.

The need to establish this funding source early during the first implementation period.

4. Transit Station Development

Development of the intermediate bus transit stops along Highway 101, similar to those described in the Enhanced Bus Alternative (see Section 3.3.1 in Chapter 3), will make the express bus travel times more competitive with the automobile than if the buses would have to exit the freeway and re-enter at each stop. However, even with the intermediate transit station development, the addition of a single express bus route between Ventura and downtown Santa Barbara or Goleta, which makes intermediate stops, will not provide as rapid a trip as multiple express routes starting at various locations along the Corridor, and providing more direct, "point-to-point" service. The development of these transit "stations" is compatible with this express service concept as well. The layouts and designs for these "stations" should be developed and shared with the community. To the extent that construction of the stations must occur in stages, SBCAG, MTD and the cities of Carpinteria and Santa Barbara should act cooperatively to prioritize station construction, based on the locations which would likely attract the greatest ridership and provide the greatest level of convenience to potential users. Ideally, initial station construction would distribute intermediate stops at regular intervals along the entire length of the recommended express bus service area (initially implementing only three or four of the seven stations that were proposed in the enhanced bus transit package). Express bus stop designs should be coordinated with Caltrans operational improvement design and construction as close to interchanges as possible. Interchanges at the following locations should consider direct bus connectors or bypass ramps:

Carpinteria at the Linden Avenue/Highway 101 interchange,
Summerland at the Via Real/Evans Avenue/Hollister Street/Highway 101 interchange,
•.Montecito at the San Ysidro Road/Highway 101 interchange,
•.Downtown Santa Barbara at the Castillo Street/Highway 101 interchange,
Five Points at the La Cumbre Road/Las Palmas Drive/Highway 101 interchange, (Measure D project), and
Goleta at the Hollister Avenue/Route 217 interchange.

5. Park and Ride Facility Expansion

Park and ride facility expansion is recommended to include both express transit related locations as well as other remote locations from local downtowns. Early implementation of transit stations/stops proposed to include park-and-ride lots (Carpinteria, La Cumbre, Goleta and Isla Vista) should be made a priority. Under the Enhanced Bus alternative, only the freeway express bus stops in Carpinteria, La Cumbre, Goleta and Isla Vista were estimated to have sufficient undeveloped land for the provision of park-and-ride lots. Parking lot size was estimated at 25-50 cars due to the limited availability of land. The remainder of the transit stops would be accessible only by walking, transit or via shuttle from remote parking facilities. In addition, efforts should be made to coordinate connections in

Ventura County at locations which could support park-and-ride facilities. Cost estimates for right-of-way, construction and maintenance should be developed and incorporated into the recommended funding strategy for expanded transit services. Coordination with Caltrans' freeway operations plans and with the Measure D strategic plan would facilitate integrated design between interchange reconstruction, transit station location and access between the two. The location of additional park-and-ride lots at Montecito, Carpinteria, La Cumbre, Goleta and Isla Vista with direct transit service connections could support both existing MTD service as well as expanded transit service within the Highway 101 Corridor. City, County, MTD and Caltrans participation in the site selection, development and maintenance is essential if these lots are to be developed. Subsequent recommendations for expanded express bus service would benefit from additional remote parking locations, providing greater access to transit.

5.1.3 Implement Bicycle Systems Improvements *Implement the regional bikeway facility plans and work with bicycle groups, local employers and MTD to promote use of facilities and coordinate bike ancillary facilities (e.g. lockers, showers, racks on buses, etc.)*

Climate and terrain combine in Santa Barbara to provide an hospitable environment for bicycling as an alternative to single occupant vehicle use for both work trip and recreational trips in the Highway 101 Corridor. SBCAG's *Regional Bikeway Study* (SBCAG, 1994) identifies a broad based action program for bicycles for the entire county. Those elements particularly relevant to the Highway 101 Corridor are reiterated here. These actions have been grouped into five recommendations to be accelerated in this Corridor:

- Complete the missing segments and install identified new facilities - Phase I.
- Complete the *Regional Bikeway Program's* (SBCAG, 1994) intermodal connection action program.
- Complete the *Regional Bikeway Program's* (SBCAG, 1994) funding action program.
- Complete the *Regional Bikeway Program's* (SBCAG, 1994) inter-jurisdictional action program.
- Complete the missing segments and install identified new facilities - Phase II.

Each of the specific actions is described in more detail below.

1. Phase I Bicycle Facilities

In order to effectively promote bicycling as an alternative to the automobile for travel along the Highway 101 Corridor, safe and convenient bikeway facilities need to be available. All of the bikeway facilities identified for implementation in Chapter 3 are included in the *Regional Bikeway Study* (SBCAG, 1994). Design and implementation of these facilities, referred to here as Phase I,

should begin as soon as funding can be made available. (Note: this list assumes the construction of the Class II bikelane on Mission Street from San Pasqual to Castillo has been funded and will be constructed in 1995.) Priority should be given to facilities which improve system safety and connectivity including:

Installation of a Class II bikeway on Linden Avenue from Beach to El Carro (to be coordinated with interchange improvements).

Installation of a Class II bikeway along Via Real between Padaro Lane and Santa Ynez Avenue.

Construction of Class I Pacific Coast Bikeway. It would provide a continuous bike path, separated from roadway facilities, for the entire length of the Corridor. The design of such a facility would need to be coordinated with other transportation planning activities concerning the Southern Pacific right-of-way including the potential extension of Metrolink commuter rail into Santa Barbara or the development of urban rail transit within the right-of-way.

Completion of the missing segment of the Cabrillo Boulevard Bikeway (Cliff Drive segment).

Installation of a Class II bikeway on Canon Perdido Street from Bath Street to Alisos Street, and on Alisos Street from Canon Perdido to Highway 101.

2. Intermodal Connection Action Program

SBCAG and *Traffic Solutions* should coordinate with bicycle groups such as the Santa Barbara Bicycle Coalition to identify measures which could be incorporated into the TDM program, such as the mandatory requirements for employers to provide bike lockers, changing rooms and showers to promote bicycle commuting. These recommendations could be brought to the table as part of the TDM ordinance revision (see Section 5.1.1 above). The degree to which these elements are incorporated into revisions to the TDM ordinance, as part of more prescriptive measures to be undertaken, should be based on the strategy evaluation task described in Section 5.1.1 above. Intermodal facilities described in the *Regional Bikeway Study* (SBCAG, 1994) include MTD's downtown transit center, parking lots # 2 and #3 in downtown Santa Barbara, the parking lot near MTD's bus stop in downtown Goleta, and at the Santa Barbara Train Station.

SBCAG should actively promote and support MTD in the next step of the bicycle rack evaluation program. The first step in the program was to confirm the operational practicality of installing bicycle racks on the fronts of buses. Bike racks were installed on the fronts of two buses on the State Street route. The next step involves the identification of passenger user requirements, and establishing potential use levels. Cost and scheduling of an expanded program, based on the next phase of evaluation, should be included in future SRTP and the RTIP. Bike rack capital and

installation costs are estimated at \$800 per rack in the *Regional Bikeway Study*. The study identifies the following routes as "good choices" within the MTD's South Coast services: routes between Goleta and Santa Barbara or Carpinteria, Clean Air Express commuter service between North and South Coast areas, and service between Ventura County and the South Coast. Successful examples of bike and ride service include San Luis Obispo Regional Transit Agency (SLORTA) service between San Luis Obispo and Santa Maria with usage of four commuting cyclists per day and Monterey Salinas Transit (MST) with usage of approximately 1.5 cyclists per day. The distance, terrain and, at times the wind, between Santa Barbara and Carpinteria make these services a good choice for bike and ride.

3. Funding Strategy

The *Regional Bikeway Study* includes a description of available funding sources for bikeway improvements. Identified funding sources include gas tax, Local Transportation Fund, bikeway allocations, developer fees and State Transportation Fund Bicycle Lane Account grants, and federal Transportation Enhancement Activities. The priority for recommended bicycle improvements in the *Regional Bikeway Study* does not appear to be related to mode shift efforts in the South Coast area or elsewhere in the county.

Actions in the study's funding improvement section should be expanded to include a consistent costing basis. Funding options should consider the recommended funding approaches in Section 5.3 of this chapter. This funding strategy should not be delayed for the results of the pricing demonstration program.

4. Inter-jurisdictional Action Program

The goal identified in the *Regional Bikeway Study* for inter-jurisdictional issues is to complete a regional bikeway system which is consistent with local jurisdiction's bikeway planning efforts and emphasizes the facilitation of inter-jurisdictional connections. Action items are identified for both SBCAG and local jurisdictions. Coordination in the development of facilities across jurisdictional boundaries, establishment of joint user agreements to allow for bicycle use in utility easements, drainage facilities and along railroad Corridors are some of the actions identified in this area. Maintenance is a third area which is identified in inter-jurisdictional programs. The use of the Congestion Management Program (CMP) is identified as one of several places to ensure that bicycle improvements are identified for installation to help ensure their completion.

It is further recommended that the local input to developing ISTEAM Management Systems, particularly those which address facilities management (bridges, pavements and transit facilities), include categories which track intermodal bicycle facilities. Pavement management systems for example, can include bicycle lane information regarding both location, type, size, and maintenance needs. Maintenance of bicycle lanes could be incorporated into

ongoing pavement maintenance efforts in local jurisdictions. Striping efforts on existing roadways could be programmed to occur when pavement sealing or surfacing is scheduled. Transit management systems could include bicycle rack and locker locations and their extent as part of transit stops inventory information, while transit vehicle information can include bike rack information. Bridge inventories could be expanded to include overcrossing and undercrossing information on structures already included in bridge inventories. Local Geographic Information Systems (GIS) capabilities could be expanded to incorporate bicycle lane location, type, annual maintenance status, and needed safety improvements. This would provide a coordinated and readily updateable data base which local bicycle groups could help to maintain.

5. Phase II Bicycle Facilities

Additional facilities identified in Appendix D of *The Regional Bikeway Study* include the bicycle improvements to be installed at the time of interchange improvements. Some of the improvements are planned and integrated with the Measure D Strategic Plan schedule. Others are not included in the Measure D program and project definition is still at the alternative stage. These include:

Route 154 and Highway 101 Interchange (south) years 1995 - 2000

●. Route 154 and Highway 101 Interchange (north) years 2001 - 2005

Within the Study Area portion of the South Coast, an additional bicycle improvement has been identified for improvement:
(*Regional Bikeway Study*, SBCAG, 1994)

The construction of the Class I bikeway (Ortega Hill Bikeway) from Sheffield Drive to Evans Avenue, in Summerland years 2001 - 2005

Development of precise improvements and the associated cost estimates will be important prior to the funding and construction of those improvements not included in the Measure D program.

Figure 5-1 reflects typical probabilities for bicycling or walking based on land use densities and distance to work. The highest rates of bicycle or walking use are predicted when trips are less than a quarter of a mile in length and taper off dramatically at 1.5 miles. The average length of a work trip within the Study Area is about seven miles, however, *the 1990 Census Analysis of Journey to Work Information* (SBCAG, 1993) shows the percentage of bicycle use for home to work trips within Santa Barbara county in the Isla Vista Census Designated Place(CDP) at 49.5 percent, within the City of Carpinteria at 5.0 percent, in the City of Santa Barbara at 4.3 percent, and in the Santa Ynez CDP at 4.1 percent. Trip lengths within each of these areas are shorter in length than the seven mile average. Analysis methods used to predict bicycle mode shift were applied to trips of between one

and six miles in length. Trip lengths of less than 1.5 miles within these areas will be the greatest source of forecast increases in bicycle trips.

5.1.4 Define, Fund and Construct Operational Improvements to Highway 101 *Work with Caltrans to further define and implement operational improvements to Highway 101 including interchange improvements.*

Roadway operational improvements are measures, actions and strategies which can be implemented, typically within the configuration of an existing roadway, to improve the efficiency of traffic control, management and flow along the roadway. As a result of these improvements, the roadway's traffic carrying capability is increased.

Within the existing configuration of Highway 101 through the Corridor area, operational improvements can be implemented which would increase the efficiency of traffic flow and optimize existing traffic capacity along Highway 101. The following are the specific operational improvements recommended for the Highway 101 Corridor. Recognizing that limited resources are available to meet traffic demand, responsible agencies will need to provide the most efficient street and highway system possible,

Caltrans, in association with the City and County of Santa Barbara, should test and establish a ramp metering system on selected interchange on-ramps in the Highway 101 Corridor in the South Coast.

1. Design, fund, and construct programmed interchange improvements on Highway 101 at Milpas Street, La Cumbre Road, Route 154 north and south, and at Storke Road as programmed in the Measure D Strategic Plan.
2. Define and establish an electronic detection system and monitoring systems within the South Coast Highway 101 Corridor.
3. Define and establish an incident response program within the Highway 101 Corridor.
4. Define locations for and establish a changeable message sign program to alert motorists to delays, accidents, and alternative routes.
5. Define locations for and establish a Highway Advisory Radio (HAR) program within the South Coast Highway 101 Corridor.

Elements of detailed system operations plan for the South Coast area have been developed. Caltrans Districts 5 and 7, working closely with SBCAG and local jurisdictions, have programmed interchange projects on Highway 101 at Milpas Street, La Cumbre Road, Route 154, and at Storke Road in the *1994-1995 Federal Transportation Improvement Program for Santa Barbara County* (SBCAG, 1995) and scheduled milestones to design and construct these improvements are found in the *Measure D Highway Program Strategic Plan* (SBCAG, 1995)

1. Ramp Metering

Caltrans identified ramp metering in the Santa Barbara area from Goleta to the Ventura County line as an element of their *Traffic Operation Systems Plan*. The purpose of ramp metering is to control the flow of vehicles entering the freeway to a degree that minimizes the disruption to traffic flow along the freeway. At the same time, Caltrans notes that for ramp metering to work successfully a system of parallel arterials with reserve capacity is required. Ramp meters should be installed at many of the on-ramps in the Highway 101 Corridor, with highest priority given to those ramps located at the western end of the Corridor. At two lane ramps, or where adequate right-of-way exists to improve a ramp with two lanes, ramp meter by-pass lanes should be provided for high occupancy vehicles, including buses.

Implementation of ramp metering will require close coordination between Caltrans and the local jurisdictions. If the metering constricts the flow of vehicles onto the freeway too severely, back-ups will occur along the ramps and, in the worst cases, onto the arterial system causing arterial traffic delays. An "equilibrium" will need to be established permitting the meters to provide a rate of flow of vehicles onto the freeway which minimizes disruption to freeway traffic flow, while at the same time accommodating a sufficient number of vehicles such that those vehicles waiting to enter the freeway do not queue onto arterial streets. Current and forecast intersection deficiencies (see Table 4-3 in Chapter 4 Section 4.2.1) underscore the absence of available storage space for vehicles on local roads at Highway 101 interchange ramps. Any ramp metering program must consider the availability of storage space for cars waiting to get on the freeway during peak periods. The ability for local jurisdictions to work with Caltrans to create the needed storage capacity will be critical to the success of any ramp metering efforts. The problem is exacerbated during peak periods when congested flow on Highway 101 itself results in congestion at the on-ramps.

Segments of the South Coast Community have voiced considerable concern regarding the installation of ramp metering on Highway 101. The use of demonstration programs during interchange reconstruction (e.g. Patterson Road) would help to maintain traffic flow during construction and would provide the community with first hand experience with ramp metering in the Highway 101 Corridor. Queing problems can be monitored and design considerations at all ramps could be evaluated prior to the full implementation.

2. Interchange Improvements

Several additional interchanges within the Corridor should be considered for improvements to bring them more in line with current Caltrans design standards and to improve safety and efficiency. Interchanges and auxiliary lanes which should also be considered for improvements include:

Route 225 (Cabrillo Boulevard) at U.S. 101 - This interchange should be reconstructed so that the southbound on and off ramps would be relocated to enter and exit to the right of freeway traffic. The Draft EIR for the Highway 101 widening project provided several alternatives for realigning the arterials surrounding the interchange to improve traffic flow and operations at the arterial intersections. These alternatives would need to be reconsidered within the context of a four-lane freeway configuration.

Linden Avenue - Due to the short distance between the southbound on-ramp from Reynolds Avenue to Linden Avenue, consideration should be given to building an auxiliary lane between the two ramps. Bicycle improvements are also planned for this interchange.

Linden Avenue/Casitas Pass area - The Draft EIR for the Highway 101 widening included several "design variations" for the redesign of the interchanges at Casitas Pass Road and at Linden Avenue to eliminate isolated ramps and provide better freeway access. All of these design variations assumed a six-lane freeway cross section and would, therefore, need to be reconsidered in the context of a four-lane freeway cross-section. Improvements to these interchanges should focus on eliminating the isolated ramps at Casitas Pass Road and North Via Real, and reconfiguring the eastbound off-ramp and westbound hook on-ramp at Linden Avenue to provide more efficient access.

Sheffield Drive - The left side ramp at Sheffield Drive is also significantly substandard by current Caltrans standards, not only because of its left side configuration but also because of the grade required on the on-ramp acceleration lane in order to bring traffic from the arterial below the freeway up to the level of the freeway in a fairly short distance. The Sheffield Drive ramp is a very low volume ramp. Due to the topography of this section of Highway 101, relocation of the ramp to the right side of the highway would require considerable engineering. While ultimately it would be desirable to eliminate this ramp or relocate it to the right side of the freeway, it should be a lower priority than other more heavily used ramps in the Corridor.

3. Electronic Detection Systems and System Monitoring Stations

Electronic detection systems and system monitoring stations provide real-time data on freeway conditions. In conjunction with ramp metering, electronic detection systems and system monitoring stations can automatically track the flow of vehicles along the freeway and manage the flow of vehicles entering the freeway traffic stream. The detection and monitoring systems also collect and store data which is useful for monitoring and evaluating conditions over time. (See Section 5.1.7.)

The Caltrans' *Traffic Operation System Plan* identifies electronic

detection systems and system monitoring stations for installation along Highway 101 at one-half mile intervals from Goleta to the Ventura County line. In conjunction with the installation of ramp meters, surveillance stations and surveillance loops could be installed at each of the interchanges. In addition, to meet the Caltrans goal of detectors at one-half mile intervals, intermediate surveillance stations would need to be installed between interchanges which were located more than one-half mile apart (approximately seven freeway segments within the Corridor).

4. Incident Response Strategy

In its four-lane configuration, Highway 101 traffic flow can be easily disrupted by "incidents" on the roadway. Incidents include accidents, debris in the roadway, trucks and/or trailers overturned, and stalled and broken-down vehicles. In order to maintain the highest possible levels of traffic flow along Highway 101, speedy and efficient incident detection and response is critical. Such rapid response is needed given the relatively few parallel routes available along the Corridor and their limited traffic capacity (e.g. SR 192). SBCAG should identify as a high priority the institution of traffic monitoring along Highway 101 in the South Coast. Recent plans to locate a Traffic Management Center (TMC) in San Luis Obispo have been canceled by Caltrans. Current plans call for the TMC to be located in Fresno County. Incident management is imperative along Highway 101 through the Corridor, particularly during peak weekday hours and Sunday afternoons and evenings. The objective of incident management is to ensure that incidents such as accidents or debris in the roadway, which could significantly disrupt traffic flow, are recognized, identified and corrected as quickly as possible. SBCAG should work closely with Caltrans Districts 5 and 7, to develop traffic operations monitoring along Highway 101, including the Sunday afternoon/evening periods, in the near term. In addition, arrangements should be made between SBCAG, CHP and Caltrans to fund and implement incident management response teams with practical proximity to the Highway 101 Corridor. The incident management response teams would respond to incidents along Highway 101 identified through traffic operations monitoring, coordinating the resources necessary to resolve the incident, provide interim traffic management and ultimately restore traffic flow along Highway 101 as quickly as possible. Incident management strategies should include freeway service patrols as dictated by traffic volumes and conditions.

5. Changeable Message Signs

Changeable message signs should be located to provide travelers current information on traffic conditions through the Highway 101 Corridor area in sufficient time to affect travel decisions. The Caltrans District 5 *Traffic Operations System Plan* includes provisions for changeable message signs along Highway 101 north and south of its junction with Highway 154 in Santa Barbara and north of Buellton, at the junction of Highway 101 and Route 246 in Buellton, south of the junction of Highway 101 and Highway 1 near Gaviota and at the junction of Highway 101 and Route 150 in Carpinteria. Due to the lack of equivalent parallel highway facilities to Highway 101 through the Corridor on which to detour traffic if incidents occur, the primary function of changeable message signs within the Corridor will be to keep motorists informed of conditions and the status of corrective actions. This may serve to reduce driver frustration and the likelihood of unsafe activities. However, opportunities for traffic diversion are very limited in the study Corridor.

6. Highway Advisory Radio (HAR)

Used in conjunction with changeable message signs, HAR can provide travelers more detailed current information on incidents and general traffic conditions. Motorists are informed of the highway advisory radio station by signs posted along the highway. Information such as estimated delay times and alternate travel options can be broadcast to travelers. HAR can be provided via 10 watt transmitters licensed by the Federal Communications Commission (FCC) for broadcast on AM radio, or via low power milliwatt unlicensed transmitters. Typically, the broadcasts would be managed by a local responsible agency. Broadcasts would be managed by Caltrans and the California Highway Patrol. District 5 operated an HAR system in Monterey, however the HAR locations list included in *Highway Advisory Radio, Design and Operations Guide* (Caltrans, July 1994) lists no HAR operations in the District.

5.1.5 Initiate a Transit Oriented Land Use Transition Program *Educate the community regarding the relationship between transit oriented development and intermodal transportation systems. Adopt the policy basis for transit oriented design in local plans and regional growth documents. Revise zoning and redevelopment designations to reflect transit oriented development densities and allowable uses.*

Transit-Oriented Design (TOD) is defined in *Access: Communities and Transit-Oriented Design* (L. Olsen, *What is Transit-Oriented Design?*, 1995) as including "higher density land uses and activities ... designed and located to encourage ridership on public transit." Regions that are well planned can support transit services through in-fill development by integrating the community around transit facilities to maximize the benefits of transit investment and maximize ridership. TOD can eliminate automobile trips and provide

access to the circulation system to all members of the community.

Research has been conducted throughout the country to identify land use density thresholds that encourage TOD. In Portland, the *Land Use, Transportation, Air Quality (LUTRAQ)* study is considering land use alternatives to a suburban freeway. Population densities were studied to identify their impact on travel behavior. Table 5-2 summarizes the results of the analysis. To provide transit service during the peak periods, a minimum population density of 8,000 people per square mile is suggested.

The *Public Transportation and Land Use Policy* (B. Pushkarev and J. Zupan, 1977) study of the 1970s identified that population "densities of 7 to 30 dwelling units per acre were necessary to sustain significant transit use - in the range of 5 to 40% of all trips." Those recommendations were extrapolated to 1993, using average household size data. The *Transportation, Congestion, and Density: New Insights* study (R.T. Dunphy and K. Fisher, 1993) found that the recommendations "would be roughly gross densities of 11,000 to 50,000 persons per square mile. Most of the US population, even in the major urban areas, lives at densities below the lowest values in this range." The authors further suggest that "travel would decrease in an area with households that tend toward small size, low auto ownership, and good transit service regardless of the area's population density" (sic).

**Table 5-2
Residential Density and Travel Behavior**

Units/Acre		Lot Size (ft.)	People/ sq. mi	Transportation Characteristics
Gross	Net			
3	4.4	10,000	4,000	Auto dependent; no transit support
6	8.7	5,000	8,000	AM/PM work-oriented transit service; local transit service
12	17.4	2,500	16,000	High level of transit service to employment centers, less for local trips
24	34.9	1,250	32,000	Walking and transit trips may exceed automobile trips daily
48	69.7	625	64,000	High level of transit service; extensive pedestrian activity

Source: Seskin, 1994.

The LUTRAQ study also identified the travel behavior associated with the size of employment centers. Table 5-3 summarizes the results. For efficient light-rail operation, twenty million square feet of development is suggested in employment centers.

Table 5-3

Employment Center Size and Travel Behavior

Millions of Sq. Ft.	Acres needed @ F.A.R.				Transportation Characteristics for higher F.A.R.s
	.25	1	5	10	
2	240	60	12	6	Bus service at half-hour intervals
5-8	800	200	40	20	Comfortably supports half-hourly bus service
7-15	1,600	400	80	40	Intermediate level of bus service
20	2,400	600	120	60	Frequent level of bus service/min. threshold for efficient light-rail service

Source: Seskin, 1995

The *Transit Cooperative Research Project: Transit and Urban Form* study (S. Seskin, 1995) looked at the relationship between transit ridership and several demographic factors in Toronto, Washington, DC, San Francisco, and Portland. Figure 5-2 illustrates the relationship between transit mode share for work trips and the distance to the nearest rail transit station. The relationship differs for each city reflecting the range of land uses near stations. Residences located one-half mile from a transit station were observed to make between three and 40 percent of work trips by transit. Figure 5-3 shows the probability of a work trip occurring on transit, depending upon the number of automobiles in the household. A range of land uses and densities were analyzed; the highest probability of transit work trips would occur in a household with one automobile located in a dense area.

It is generally acknowledged that public transportation will, of necessity, play a far greater role in accommodating travel demand in the future, as the available capacity of highway infrastructure becomes increasingly limited. However, in Traffic Congestion: Federal Efforts to Improve Mobility (1989) the U.S. General Accounting Office concluded that the development of ample and well-managed transit by itself will not induce appreciable numbers of people to leave their cars at home. Experience shows that successful transit systems (bus or rail) exist in settings where land use patterns and population density can be well served, and where the cost of operating an automobile (as measured by money spent on tolls, parking or other direct charges, or by travel time delays) make transit very competitive with the automobile in terms of cost and convenience. The success of transit in the South Coast will depend on the degree to which the current setting can be altered, over time, to provide an environment in which transit can compete with the automobile.

The population density in the City of Santa Barbara, between 10 - 20 people per acre in the residential areas. Assuming the density of 8,000 people per square mile recommended in the LUTRAQ study, the

land use densities in Santa Barbara in the vicinity of each freeway flyer transit station would have to significantly increase to sustain peak period transit service. The other estimates of population densities suggested above to sustain transit service are even higher and more unlikely of achieving in the South Coast.

The successful transition from an auto-dependent community to a community which supports a balanced transportation system offering a variety of modal alternatives will require, among other things, a reshaping of policies governing development and land use patterns. The commitment to modal alternatives to the automobile should be comprehensively integrated into the land development process. In *Designing for Transit: A Manual for Integrating Public Transportation and Land Development in the San Diego Metropolitan Area*, (San Diego County) it is recommended that "from the general plan to the final development permit, land use decisions and the expenditure of public funds should be predicated on the realization that the sustained economic development of our cities requires a new development pattern that can be supported by a balanced transportation system." The following five objectives are recommended as a basis for local and regional land use policy formulation:

Transit Preference: Transit should be the preferred mode of transportation to meet urban mobility demands. Increased street capacity for general traffic should be limited to specific circumstances.

Land Use Determinant: Activity Corridors, which could be efficiently served by transit should be defined through general plans. Growth should be directed to these Corridors. Access can be conveniently provided by public transit if sufficient density thresholds are achieved. Directing growth to transit Corridors will ensure the most cost-effective use of transit and the most direct form of access for nearby uses. Such focused growth will also promote efficient use of other urban facilities and services.

Automobile Disincentives: Employer-provided long-term parking is a direct subsidy for automobile use (Shoup, 1995). Parking management has been shown to be an effective way to reduce the incentive for people to drive alone to work. Parking costs should be borne as part of the cost of driving, included with gasoline, insurance, and car repairs. Monies spent on providing parking spaces should be redirected to providing transit passes or other incentives for non-SOV travel. Local parking requirements would need to be amended to reflect this preference. The parking pricing demonstration described in Section 1.5.1 could serve as a local testing ground to assess the effects of eliminating free parking.

Designing for Pedestrians: Walking is a critical part of a transit trip. Improving the pedestrian environment

will make people feel comfortable walking from place to place. Pedestrian access should be a first consideration in building and infrastructure design. Streets should provide amenities that reinforce pedestrian activities. Examples include areas for resting, drinking fountains, protection from weather, and ground floor business that serve pedestrians.

Providing for Public/Private Partnerships in Transit: The private sector should be included in helping to finance transit directly. Through the project review process, and based on the general and community plans, transit dedications or facilities should be included as normal infrastructure improvements.

Many of the objectives outlined above represent a significant departure from traditional planning priorities and objectives and, in many cases, represent a significant increase in density. The City of Santa Barbara is in the process of updating the Circulation Element of its General Plan. Many of the concepts contained in these objectives have been at the center of spirited community discussions regarding the direction of future land use and transportation policy making in the City. The process that has been occurring in Santa Barbara over the past months serves to illustrate that it will not be easy to redirect public commitment from an automobile-dictated infrastructure to one that fosters a diversity of modal alternatives.

Also, because Santa Barbara is a significantly built-out, mature community, changes in land uses will occur very slowly as infill development continues and reuse begins to occur.

It would be several decades before changes in land use policy could sufficiently affect significant changes in land use patterns to produce changes in travel behavior. However, it is correct to assume that the process must begin with changes in the policies which direct land use and transportation infrastructure development, including general plans, land use and circulation elements, specific plans, master plans and Corridor plans, and associated implementing ordinances.

Improvement in Analytic Planning Methods: The SBCAG travel forecasting model is the primary countywide tool for evaluating the impacts of changes in land use or in transportation infrastructure on travel characteristics. Several enhancements to the SBCAG travel forecasting model are recommended in order to be able to support a future multimodal orientation to land use and transportation planning in the Corridor and in Santa Barbara County as a whole.

First, with the significant existing and forecast commute patterns between Santa Barbara and Ventura County, the geographic area covered by the SBCAG model should be expanded to include Ventura County on the south. With an expanded model area, it will be possible to model the potential impacts of significant growth in both population and employment in Ventura County on Santa Barbara. It would also make it possible to forecast with far greater reliability the likely effects

of enhanced transit services on travel demand between Ventura and Santa Barbara.

This leads to the second recommended enhancement. If the development of transit alternatives to the automobile is a priority in future transportation planning and implementation, the mode choice modeling capability of the SBCAG travel forecast model should be enhanced. The incorporation of a mode choice model which could reflect the relative attractiveness of a variety of mode choices (bus transit, rail transit, carpool and drive alone) given a range of time and cost variables, would provide a far better indication of the likely usage of future transportation projects of all modes.

Finally, the SBCAG model should be re-calibrated to produce peak period forecasts. Average daily forecasts are adequate tools for Corridor level planning. But in order to refine alternatives and develop detailed programs for implementation, it will be necessary to assess the potential peak period impacts of alternatives.

5.1.6 Visitor/Tourist Auto Trip Reduction Program *SBCAG, Traffic Solutions and MTD should work with local Chambers of Commerce, and the Convention and Visitors Bureau should enhance multimodal information in promotional and special event materials.*

Visitor and tourist trips have a substantial impact on traffic conditions along Highway 101, particularly on weekends (Friday and Sunday evening peak periods) and during peak summer months. The vast majority of visitors and tourists in Santa Barbara are visiting from locations outside of Santa Barbara. The 1990 survey by the Conference and Visitors Bureau found that only 14 percent of the visitors were traveling alone, with the remaining 86 percent accompanied by one or more people (50 percent traveled in groups of two). This limits the degree to which local policies (such as the TDM program for employers) can be applied as most tourists are already "carpooling". Also, tourism provides a significant source of revenue to the Santa Barbara economy and tax base. It would, therefore, not be desirable to discourage visitors from traveling to Santa Barbara. However, innovative promotions and incentive programs can be implemented to induce visitors to use alternative forms of transportation to the automobile for travel to and from Santa Barbara, and for local travel once in Santa Barbara. SBCAG, *Traffic Solutions*, and MTD should work cooperatively with the tourist supported businesses and groups to develop greater awareness among visitors of alternative modes. These programs and strategies could include:

Applying the cost of the visitor's AMTRAK fare to hotel charges or coupons for meals or merchandise.

- Transit or shuttle passes included with a visitor's hotel registration.
- Bicycles provided free or at a reduced charge to hotel guests, particularly in the downtown and waterfront areas. Work with waterfront hotels to make Chamber of Commerce maps to local

attractions available at bike rental outlets.

- Financial incentives (discounts) for off-season travel.
- Develop or enhance existing tours (walking, bicycling, bus or shuttle) to local activities and tourist attractions.
- Enhance *This Week in Santa Barbara* to include more information on transit and bicycle opportunities to get to tourism sites. Include the transit routes on the publication's centerfold map of the area. Add MTD bus route numbers which run by each of the locations and activities write-ups in "This Week's Calendar", Incorporate transit connections from the major hotel areas to the week's special event (e.g. Santa Barbara Harbor Festival, the Goleta Food and Wine Festival, or the Santa Barbara Wine Auction Weekend). Add a new section which emphasizes how to get around Santa Barbara without an auto. Include a specific mention of the Waterfront Shuttle and the State Street Shuttle to provide access around downtown.
- Enhance the Santa Barbara Chamber of Commerce brochure *A Walk Through Old California, Santa Barbara's "Red Tile Tour"* to include more information on transit and shuttle service connections from various parts of the City to this area. Include text which suggests using the MTD services and the shuttles after the "look for this symbol for your free downtown shuttle" text. Enhance the Santa Barbara Area Map (reverse side) descriptions of the *Scenic Drive Points of Interest* to include transit routes which can be used to take the scenic drive. These sites are the places where reduced entrance fees for transit access should be considered.
- Use special event brochures (e.g. special supplements to *Santa Barbara Magazine* for the Santa Barbara Wine Auction Weekend) to incorporate transit, bicycle and pedestrian approaches to the activities and locations. Special shuttles for events could be considered from participating hotels to the key activities. The Chamber of Commerce could take the initiative with event sponsors to coordinate with MTD to provide information for the brochures and for special shuttles.

5.1.7 Monitor and Report on Performance of Highway 101 and the Multimodal Transportation Strategy *Monitor performance of U.S. 101 and traffic trends and share information with public and elected officials regularly and periodically. Use the performance results to prepare a review of and recommend adjustments to the Multimodal Transportation Strategy*

Monitoring based on enhanced data collection becomes the corner stone of a strategic implementation program by providing the basis for regular reassessment and adjustment of multimodal strategies, schedules and actions. Effectiveness of the many action elements of this alternative to the widening of Highway 101 can be assessed against the changes in travel in the Highway 101 Corridor. Monitoring also provides information which will help to optimize the available capacity within the Corridor. The following are the four

components of the monitoring and reporting program:

1. Expand existing Caltrans and local agency traffic and travel monitoring efforts.

Traffic volumes

- . Average vehicle occupancy
- . Travel speeds and levels of congestion
- . Accidents
- . Trip purpose and components of travel
- . Origins and destinations
- . Effects of Tourist Promotional Efforts

TDM Monitoring

2. SBCAG, with input and financial support from Caltrans and local agencies should create a "State of the Corridor" newsletter.

3. Develop a Funding Strategy for the enhanced monitoring and reporting efforts.

4. Prepare three to five year evaluation reports which compare the implementation status and effectiveness of individual action elements with the Highway 101 monitoring reports. Develop adjustments and revisions to the action items list in response to the results.

Descriptions of each of the four components of the enhanced monitoring action are discussed in more detail below.

1. Expand the Monitoring Effort

The conditions which should be monitored periodically, on a regular schedule, within the Corridor include:

Traffic volumes: Caltrans publishes Traffic Volumes of California State Highways annually. The report provides annual average daily traffic for each count location along all state routes in California. For the Highway 101 Corridor, counts are provided for the segments of highway between every interchange in the Study Area. In addition, peak month ADT, or the average daily traffic for the month of heaviest traffic flow is also provided. This data is provided because Caltrans recognizes that on many routes, Highway 101 among them, variation in traffic volumes occurs during certain seasons of the year. Estimates are provided of peak hour traffic at all count points. Beginning in 1991, peak hour volume data by direction are provided for selected locations. However, this information is not provided for any segments along Highway 101 within the Corridor.

Efforts should be coordinated with Caltrans District 5 to collect peak hour traffic volume data, by direction, at several, if not all, segments of Highway 101 through the Corridor on a bi-annual cycle. Directional peak hour traffic counts will require additional effort by and funding for Caltrans to perform this work.

Average vehicle occupancy: Average vehicle occupancy within the Corridor should be evaluated every five years. AVO can be determined using video sampling to videotape a time sample of traffic flow to record the occupancy of each vehicle in the traffic stream. These studies would most likely be conducted by SBCAG in coordination with Caltrans.

Travel speeds: Speed studies should be conducted to monitor average (weekday and weekend) daily and peak hour travel speeds along Highway 101 in the Corridor. These studies should be conducted every two years during both peak and off-peak travel months. At the present time, Caltrans has discontinued speed studies due to lack of funding.

Accidents: Accident data is currently maintained by the California Highway Patrol and Caltrans for all California state highways. This information should be obtained quarterly for the Highway 101 Corridor in order to track accident trends and identify high accident locations.

Trip purpose/components of travel: The intercept license plate travel survey should be repeated on five year cycles (along with the AVO survey), to update information on trip purpose and the components of travel (internal, internal-external or external) within the Highway 101 Corridor. These studies should be coordinated with Caltrans and the California Department of Motor Vehicles. Intercept surveys will follow the same process used in this study, with video taping of license plates, address matching through the Department of Motor Vehicles, and the mailing of surveys to vehicle owners whose vehicle has been recorded driving through the Study Area.

Origins and destinations: The intercept travel survey updates will also provide the opportunity to monitor geographic distribution of travel in the Highway 101 Corridor. This will be particularly critical as the RGF '94 population and employment forecasts play out. One of the key trends to monitor will be the commute pattern between Ventura Counties Santa Barbara and as both Ventura County and the northern portion of Santa Barbara County continue to develop.

Effects of Tourist Promotional Efforts: A monitoring program should be developed as part of the tourism and travel consortium's incentive programs. Use of incentives could be monitored by those who provide the incentive and those attractions which benefit from the incentive. Costs of the program (e.g. transit subsidies) should be tracked to develop an overall cost effectiveness. The Conference and Visitors Bureau should consider expanding their periodic surveys to include measures of promotional activities.

- TDM monitoring as described in Section 5.1.1

2. Create a "State of the Corridor" Newsletter

The results of the periodic monitoring should be made available to policy makers and the public on a regular basis. The Highway 101 Corridor is clearly valued as a unique feature and visual resource of the community by the residents of South Coast, as well as those traveling through the area. Providing regular information on the status of the Corridor to as broad a segment of the population as possible will educate more people on the issues and concerns related to the Highway 101 Corridor, and the state of transportation and circulation in Santa Barbara in general. This study has served to raise the issue of the most appropriate approach to accommodating future travel demand in the Highway 101 Corridor and has resulted in a variety of opinions. The next step is to involve as much of the population as possible, and particularly the users of the Highway 101 Corridor, in refining and implementing the multimodal transportation strategy. This could be accomplished by providing widespread distribution, at least annually, of a "State of the Corridor" newsletter. The newsletter can serve as a report card to the community on the implementation progress of the multimodal transportation strategy.

In addition to supplying the most current monitoring results, the newsletter should restate the problem, summarize the actions being taken, and identify ultimate objectives and progress towards those objectives. Editions could also highlight the parking pricing demonstration program, the TDM ordinance revision, education efforts regarding transit oriented development and the hidden cost of auto ownership, the activities and promotions of the tourist and travel consortium and adjustments and revisions to the multimodal transportation strategy. Space for community debate about individual actions or program effectiveness could also be considered.

Distribution should extend to:

local elected and appointed officials

- those who participate in the TDM ordinance review and revision process,
- employers and employees who are subject to the TDM ordinance,
- the tourism and travel consortium participants,
- those who participate in the pricing demonstration project development,
- business and community groups and associations which participated in this study,
- local print and broadcast media, and
- others by request or by recommendations of participants.

3. Funding Strategy - Enhanced Monitoring

To the extent possible, existing monitoring programs are expected to provide data regularly. Caltrans and local agencies currently collect many of the data items, however, as noted above, funding limits at the state level have reduced data collection for speed studies and directional counts. Intercept surveys are not regularly conducted. Several of the recommended monitoring

activities, the "State of the Corridor" newsletter, and the periodic Multimodal Transportation Plan strategic review and revision will require funding. A strategy to identify and program funding for these components should develop up-to-date cost information, and be incorporated into the SBCAG overall work program. Participation in this funding should come from the County and local cities within the Corridor. Caltrans participation is extensive due to its mandate to maintain and operate the state highway system.

4. Multimodal Transportation Plan Strategic Review and Revision

SBCAG's Regional Transportation Plan (RTP) updates provide a logical and readily available place to present a Highway 101 Corridor multimodal transportation plan strategic review and provide recommendations for adjustments. The RTP's needs assessment section can incorporate the results of the regular monitoring program. The status of the individual elements of the Multimodal Transportation Plan should be included in the action element of the RTP. Funding strategies should be consolidated into the RTP's financial element with revisions reflecting the creation of new funding sources or the reallocation of existing funding sources between elements. As all modes are reflected in the RTP, each of the modal components of the Multimodal Transportation Plan can be evaluated both for funding and a performance. The results of the data collection and monitoring of each of the multimodal strategy components should be assessed to determine which components are working as planned and which are not. For those components which are not performing up to expectation, adjustments should be made or alternative components substituted.

5.2 IMPLEMENTATION, SCHEDULING AND MONITORING

The recommended multimodal transportation strategy will be implemented through regular cycles of monitoring Highway 101 Corridor performance and adjustments to actions by implementing agencies in response to the results. This strategic implementation approach is the essential component of the entire recommendation. The ability to respond promptly to actual performance levels of implementation actions, as measured by Corridor roadway performance characteristics, is unique to this alternative to the highway widening. Such responsiveness is a challenge in the multi-agency arena in which decisions and actions will be made. The ability of SBCAG MTD, *Traffic Solutions*, individual cities, the County, SBCAG and others to act and respond to the monitoring results will directly effect the success of the strategy.

Thresholds of Significance Which Require Adjustments to Implementation Actions. A threshold of significance is essential to determine whether performance monitoring results require adjustments or acceleration of actions. Separate thresholds are recommended for highway, local roadways, express transit service, and TDM

performance. Recommended thresholds are:

Highway 101 Performance. A traffic level of service level (LOS) of E and average operating speeds of 40 miles per hour on Highway 101 for consecutive segments of the highway totaling 3-4 miles in length over two consecutive years.

Local Roadway Performance. Level of Service D for CMP intersections as adopted in Santa Barbara's current *Congestion Management Plan* (SBCAG, 1995).

Express Bus Service Performance. Express bus transit ridership of 35 or more riders per revenue vehicle hour.

TDM Performance. Individual employer attainment of existing TDM ordinance performance standards (average regional average of 6 percent over baseline) through 1997 and to the revised standards after the 1997 ordinance revision cycle. Employer based share of TDM trip reductions will not be expected to exceed the estimated 10 percent reduction in home based work trips.

No individual performance thresholds are recommended for bicycle, highway operational improvements, transit oriented land use, or visitor tourist trip reduction program elements as their impact will be reflected in the four measures above. Performance thresholds are based on existing industry or local standards and generally are reflective of current monitoring programs or can be easily calculated from existing nationwide or recommended data collection efforts. At the time when employer based travel demand management programs achieve the maximum expected performance, an additional performance threshold should be established with the selection and development of a parking pricing or other type of pricing strategy to continue to monitor home to work trip reductions. Monitoring results should take into consideration roadway incidents occurring during traffic counts and speed and delay studies, and highway operational improvement construction or demonstrations.

How to Implement Monitoring and Adjustment Cycles. Implementation of actions in the first period (1995 - 2000) of the program will establish the basis for performance monitoring. Enhanced monitoring efforts should begin after SBCAG board action to select this alternative. The first two to three cycles of monitoring reports should be used to shake out reporting information, formats, timing and the multiple system evaluation methods and discussions. Early years should focus on reporting on and identifying what has been implemented and the status of other items. Comparison with performance thresholds should be made, however the first program adjustment cycle should be initiated in the fifth year, after the revised TDM ordinance has been completed. Express bus service is expected to be phased in incrementally. Failure to implement funding sources for transit operations during this first phase may result in the choice between instituting a pricing program (a funding choice in and of itself) or returning to the highway widening alternative. Funding actions will require actions by individual agencies as well as SBCAG overall. These should coincide with regular TIP, SRTP and capital improvement program cycles.

Periods 2 (2001 - 2005) and 3 (2006 - 2010) adjustment and monitoring cycles are expected to begin to indicate which elements are achieving targets and which are falling short of desired thresholds. Adjustments to the actions may be presented in the form of choices. LOS failures on the Highway 101 may require adjustments to both the TDM elements and the transit services. Additional revisions to the TDM ordinance may be required during this period. Revisions in transit route coverage, adjustments to service frequencies and/or operating periods may need to be made by MTD. During this period monitoring should determine whether the employer component of TDM trip reductions is reaching theoretical thresholds (10 percent of the total trip reductions needed in the corridor to achieve LOS standards on the highway and at the CMP intersections). Recommended actions should be developed cooperatively with the multiple agencies as each will require separate agency actions.

The Period 4 (2011 - 2015) adjustment and monitoring cycle will need to consider actions to address the post 2015 forecast traffic. Review of changes to land use densities in the vicinity of freeway bus stations could begin during this period. Adjustments to TDM strategies may need to consider expansion of or increases in cost to any pricing strategy which has been implemented to date in the Highway 101 Corridor. Ongoing regional planning may serve to set a direction for the future in the corridor which could include a continuation of these actions, a construction alternative or new technology activities. It is impossible to speculate what this future may be within this study.

More detailed schedules for individual action item implementation follows. The recommended schedules are only suggestions, as overall travel performance in the corridor, as measured by the recommended thresholds, will determine the need to accelerate implementation. Actual timing for individual actions beyond the initial 3 to 5 year start-up period must be accelerated if congestion levels increase at a faster pace than actual traffic reductions occur as a result of mode shifts. Adjustments will require, at some time in the second or third period, a choice of implementing a pricing strategy or returning to the highway widening alternative. This will be a difficult choice for the South Coast whenever it occurs.

5.2.1 Schedule and Monitoring Approach for the Enhanced TDM Actions

Schedule. The first five year time frame, between 1995 and 2000, is when most activities for enhanced TDM actions are scheduled. The longer lead time for results in these areas underscores the need to begin the transition to a multimodal transportation strategy immediately. Timing of enhanced data collection, revised ordinance performance monitoring, the expanded promotional activities, and the expanded education program is expected to be ongoing throughout this study's 20 year time horizon.

Annual work programs for *Traffic Solutions* would reflect increased time for implementation of data compilation both due to the increased numbers of employers reporting and the effort to identify successful

strategies to subareas of the county. The expanded public education program focus on hidden costs of auto subsidies may require some initial research by *Traffic Solutions* staff early in the first five year period to develop education materials and to expand their existing information programs. The TDM ordinance review and revision effort is one which has been planned for by *Traffic Solutions* and therefore is not expected to result in a change to scheduled work.

The controversy surrounding the discussion of any pricing approach to achieve significant automobile trip reduction necessitates an early start to the design of a demonstration program. Demonstration program design and scope should be initiated upon the decision of SBCAG to proceed with this multimodal transportation strategy alternative to the Highway 101 widening. Development of consensus between business community and participants on the study design, duration, and methods for evaluation optimistically will take a year to complete. Completion of the study design prior to 1996 will provide local congressional representatives with the ability to pursue demonstration program funding during ISTEA (or its successor) re-authorization expected in 1997. The demonstration program itself is recommended to occur during the later part of the five year period, in order to have program results and recommendations regarding a long term program completed by the start of the second five year period. Implementation of a more permanent, more wide-spread program will need to be based on the demonstration program results and will certainly generate significant community discussion.

Development of a funding strategy for this Enhanced TDM Action program should be initiated upon the decision of the SBCAG board to proceed with a multimodal transportation strategy. Elements of this strategy will be completed after recommended special reports and studies are completed. The funding strategy should be completed prior to the re-authorization of the federal ISTEA, and should serve as input to the upcoming RTIP cycle in 1997.

Monitoring. Existing annual reporting systems of employers to *Traffic Solutions* and by *Traffic Solutions* to the SBCAG board should be used as the primary reporting and monitoring approach for the recommended, enhanced TDM actions. Data collection and ordinance effectiveness will primarily be based on employer reports to *Traffic Solutions*. Special reports will be needed for three of the actions:

The pricing demonstration program. A series of special reports will be necessary to establish a pricing demonstration project in the Highway 101 Corridor. SBCAG could use the existing TAC and CAC from this Highway 101 Alternatives study as an advisory group to develop recommended demonstration program goals, approach, duration, implementation procedures, and evaluation measures. SBCAG should serve as the lead agency for this program and either prepare technical development materials in-house or use outside consultants to prepare them. Evaluation measures should include ways to quantify:

- changes in mode shift and in AVR,
- changes in retail sales volume which could be attributable to a change in parking costs,
- changes in employer costs if free parking is still provided to employees,
- social equity of the parking pricing strategy and other items the community feels are important.

The enhanced TDM action funding strategy. *Traffic Solutions* and SBCAG should develop a special report to the SBCAG board, individual Corridor city councils, and community associates which sets forth a funding strategy to identify overall development and implementation costs, as well as sources of revenues for each of the items in the Enhanced TDM Action element. Annual reports on funding obtained, revenue generated, and cost updates should be included in *Traffic Solutions* ongoing budget requests and reporting efforts, and in SBCAG's overall work program.

5.2.2 Schedule and Monitoring Approach for the Expanded Transit Services

Schedule. The first steps necessary to provide expanded express bus transit service in the Highway 101 Corridor include the recommended operations planning study, and the funding strategy. MTD should initiate the recommended operations planning study upon the decision of the SBCAG board to pursue a multimodal transportation alternative to widening Highway 101. The funding strategy should be initiated within six months to a year of the initiation of the operations planning study or could be merged with it. Recommendations from both studies should be included in the next SRTP update and in the next RTIP.

Express bus service should be initiated towards the end of the five year period to allow time for the operations and funding strategies to be implemented and for needed buses to be purchased. Both the express bus and the feeder service adjustments should be scheduled to come on line simultaneously. These services should not be delayed until completion of freeway flyer station construction or remote park and ride lot development. The express bus service should locate stops in the immediate vicinity of the planned freeway flyer station locations.

Capital improvements (freeway flyer stops and park and ride facility development) are expected to be completed at the end of the second five year period (2001 -2005) allowing time for financial strategies to be implemented and site selection and development to be completed. Schedules may need to be accelerated if congestion levels increase at a greater rate than recent trends in the growth in traffic.

Monitoring. Monitoring should be accomplished through existing

reporting required of MTD by the State and the Federal Transit Administration (FTA) and through the SRTP. The recommended transit service should be incorporated into CMP intersection deficiency plans when the enhanced transit service coincides with identified problem intersections. Special reports for the operations planning study and the funding strategy would be required.

Park and ride lots and "freeway flyer" stops implementation could be monitored through local capital improvement programs and included in the next Regional Transportation Plan (post 1995) update. To the extent that Caltran's participates in the freeway flyer stop design and construction process, Caltran's reports (Project Study Report (PSR), Project Report (PR), Environmental Document, Project Approval Report (PAR), and Plans Specifications and Estimate (PS&E)) could be used to track the development of these bus "stations".

5.2.3 Schedule and Monitoring Approach for the Bicycle System Improvements

Schedule. Development of a funding strategy for currently unfunded bicycle facilities included in Phase I and Phase II should be completed in the first five year period. During this same period, local jurisdictions should update their bicycle plans (as required by State laws) and complete the recommended inter-jurisdictional actions. MTD should work with SBCAG and the local jurisdictions during the first five year period to develop intermodal connection implementation actions and to incorporate costs into the SRTP and RTIP during the next update cycles.

Whenever possible, bicycle improvements should be constructed at the time road or interchange improvements are made. Class I facilities should be incorporated into the local jurisdictions' pavement maintenance program resurfacing schedules. Construction of unfunded projects in Phase I should occur between 2001 and 2005, the second five year period. This is ultimately dependent on funding availability. These bicycle improvements will have less direct impact on reducing vehicle trips on Highway 101 due to the relatively short trip lengths of bicycle commutes and the locations of high bicycle usage in Isla Vista, Carpinteria and within Santa Barbara. Construction of unfunded projects in Phase II should occur between 2006 and 2015. This will allow additional funding sources to be identified and obtained. The *Regional Bikeway Study* would recommend that facilities in the Highway 101 Corridor be given priority over those located elsewhere in the county. Opportunities for construction should be taken advantage of when ever they present themselves. Identified bicycle facilities in Santa Barbara or Carpinteria may be improved as development occurs along these roads with bicycle facilities designated, either conditioned as part of local development approval processes (Santa Barbara) or through developer fees, dedications or construction (Carpinteria). Measure D projects have the opportunity to construct recommended bicycle facilities during a roadway capital project. Road improvements included in CMP deficiency plans on roadway with planned bicycle facilities should include the bicycle facility as part of the

deficiency plan.

Monitoring. Monitoring of bicycle improvements could be tracked in the RTIP, the CMP updates and deficiency plans, in SRTP updates and the capital improvement programs of individual jurisdictions. Within local jurisdictions, pavement maintenance schedules for those streets which include Class I facilities should be coordinated between departments with road maintenance and bicycle facility development. These various monitoring efforts do not provide a single location to assess the overall status of the recommended improvements. Local GIS systems are limited in their extent of coverage at this time, but their use could be expanded to provide mapped status reports of completed or pending bicycle facility improvements. Federally mandated transportation management systems (Pavement, Congestion, and Bridge management systems) could serve as another source of data regarding bicycle improvements. SBCAG's most reliable method of monitoring the status of bicycle facilities would be to include a monitoring requirement in updates of the Regional Bikeway Study. SBCAG could serve as the clearinghouse for plan implementation, not just in the Highway 101 Corridor but in the entire South Coast.

5.2.4 Schedule and Monitoring Approach for the Highway Operational Improvements

Schedule. Interchange improvements included in the Measure D Strategic Plan (SBCAG, 1995) are scheduled for environmental clearance, design and construction as indicated in Section 5.1.4. Unfunded interchange improvements, if funded with reallocated Highway 101 widening funds, could be scheduled for environmental clearance and design within the first five year period (1995 - 2000) with construction occurring in the second five year period (2001-2005). Federal, State and local funding limitations will, in all likelihood, delay implementation of unfunded interchanges into the 2006-2010 time period.

SBCAG and local agencies are currently working with Caltrans in the preparation of the *Traffic Operations System (TOS) Plan for District 5* in the Highway 101 Corridor. The TOS plan identifies improvements to be implemented within a twenty-year time frame. Ramp metering, incident response, changeable message signs and highway advisory radio elements should be scheduled within the TOS plan. The Caltrans plan should reflect detailed implementation of recommendations in the multimodal transportation strategy.

Monitoring. The bi-annual STIP updates and annual CMP updates should be the primary tools used to monitor the completion of highway operational improvements. The first of these documents will reflect the timing of improvements while the second of the two documents will reflect the performance effects before, during and after the installation of recommended actions. Annual reporting on Measure D expenditures can also reflect the completion of those operational improvements funded all or in part by the local sales tax. There is no single reporting mechanism which will present both the installation and the performance results of these improvements.

SBCAG should consider creating an annual Highway 101 Corridor Performance Report which summarizes these improvements along with the other recommended actions.

5.2.5 Schedule and Monitoring Approach for Transit Oriented Land Use Program

Schedule. Adoption by local jurisdictions of the policy based commitments to more "transit friendly" land uses will need to follow the identification of new transit routes and freeway flyer "stations". The shift in policy will be reflected in local general plans which may be amended in California no more than three times per year. The first five year time horizon (1995-2000) is proposed for the completion of these actions. The actions themselves could be scheduled within the first year, however, the need to establish community support from the diverse interests in the Corridor will likely require a longer lead time. Local elected officials could champion this effort, however a "grass roots" approach should build from the enhanced public and business information programs described in Section 5.1.1. Establishing a set of urban design guidelines for transit supportive land uses could require several years to develop community consensus regarding the ultimate development densities and a transition from current land uses to more intense land uses. The second five year period (2001-2005) is suggested for this action to allow the recommended education program to build awareness and community support for these ideas.

Implementation of the adopted urban design guidelines will take many years. The degree and the speed with which redevelopment and other fiscal incentives can spur land uses to recast themselves into the desired densities and uses will affect the rate of implementation. Outside economic factors in the South Coast area, in California, and the United States will also effect the implementation schedules for these items. New freeway flyer bus station locations may actually develop to the densities established in the urban design guidelines sooner than locations in the older, more developed part of the City. Development of transit oriented land uses over a ten year period, from 2005 to 2015, is an optimistic schedule for Santa Barbara. Carpinteria and Goleta, with more developable land, could occur in this time frame.

Monitoring. Monitoring of policy based actions towards the establishment of a transit oriented land use program does not fit easily into any existing monitoring programs of either SBCAG or local governments. Regional Growth Forecast monitoring and updates are one existing program which can serve as the basis for monitoring and tracking these actions and the resulting shifts in densities. The Technical Advisory Committee could track actions by cities or the county to revise general plans or zoning ordinances. SBCAG could participate as a facilitator and coordinator in the policy development and therefore would be aware of local agency actions. The Coachella Valley Association of Governments (CVAG), the local council of governments in the Palm Springs area, has had for many years planning and technical advisory committees which provide

coordinated land use and transportation planning efforts among nine cities and Riverside County. CVAG has successfully developed an American Planning Association award winning Transportation Uniform Mitigation Fee (TUMF) Program, regional arterial prioritization and cost programs as well as a regionwide GIS system among its member jurisdictions.

5.2.6 Schedule and Monitoring Approach for the Visitor / Tourist Trip Reduction Program

Schedule. The tourism consortium should be established during the first five year implementation period. The objectives of this group should include test marketing of selected incentives on a seasonal basis which can be evaluated periodically during the first five years. Two or three incentive strategies could be designed, tested and evaluated during the first five year period, with results evaluated individually and at the end of the first five years. The period from 1995 through 2000 should be used to identify successful marketing strategies which are then continued into the next five year period. Marketing strategies in general have a brief shelf life, and there is a need to constantly refresh the incentives and approaches used. The activities of this group should continue throughout the 2015 time horizon.

Monitoring. No currently available document or activity lends itself to the monitoring of these activities. The committee could report bi-annually to SBCAG on progress and results of incentives tests conducted. The Conference and Visitors Bureau 1990 survey should be updated every two years to ascertain the effects of incentive strategy tests. Market research reporting could be another means of monitoring results. MTD and AMTRAK could both provide ridership data on selected routes and service and perform limited on-based surveys to determine the effectiveness of any strategies coordinated with each operator.

5.2.7 Schedule and Monitoring Approach for Highway 101 Monitoring

Schedule. Traffic monitoring on Highway 101 is an ongoing effort which for all five year periods of the multimodal transportation program. Monitoring results are critical to the responsive nature of a strategic implementation program. Annual and seasonally based records will be important input to the scheduling of improvements, decisions to move from demonstration programs to ongoing programs, and to trigger further updates of TDM ordinance provisions. Reporting should coincide with current Caltrans and SBCAG CMP reporting schedules. Local jurisdiction contributions to traffic monitoring should continue to be timed to provide input to the CMP update cycles.

Monitoring. The obvious implementation question to any intermodal strategy is when should adjustments and corrections to the program be made? What performance thresholds should be used to determine when a small adjustment in the a particular element should be made or when a shift in the entire emphasis of the program should be made? The

expanded monitoring program is the essential activity which provides the measures of roadway performance to signal needed changes in the program.

5.3 FUNDING STRATEGIES

The programs described above are recommended for implementation over the next 15 years. The implementation of these programs will require both capital expenditure (one time) as well as additional annual operations and maintenance costs support (including significant additional annual bus operations and maintenance (O&M) costs support). Table 5-4 identifies capital, O&M, and program costs implementing the multimodal transportation strategy. The initial capital intensive programs include implementing express bus service and its needed support improvements (approximately 60 percent of the Enhanced Bus Analysis "Alternative"), the bicycle system improvements, and the operational improvements to Highway 101. The capital cost for this initial program of physical improvements is estimated to be between \$50 and \$62.5 million. Additional, annual O&M bus costs are initially estimated at approximately \$6 million a year, exclusive of offsetting transit farebox revenues. It is assumed that 25 to 30 percent of the bus O&M costs could be recovered through the farebox for the recommended new services as with current MTD services and other express services operated in Southern California. This would require a net annual subsidy of \$4.5 to \$5.0 million. The expanded TDM program cost is estimated at between \$1 to \$1.5 million per year to support the additional programs and transit and ridesharing financial incentives. Total bus operating costs, TDM program costs, monitoring and annual evaluation costs are estimated at \$5.7 to \$6.9 million annual exclusive of the bicycle route maintenance costs.

At the present time, the first two segments of the Highway 101 widening project (from Milpas Street to Padaro Lane) are included in the State Transportation Improvement Program and funding for the project has been allocated (approximately \$63 million) by the California Transportation Commission. In addition, SBCAG has allocated approximately \$19 million from Measure D sales tax monies to incorporate locally desired enhancements and amenities. Due to the current budget shortfalls at the state level, and Caltrans redirection of available state highway capital funds to complete the seismic retrofitting of existing highway infrastructure, the availability of this funding for the Highway 101 widening project in the 1997-1999 time period seems uncertain. To the extent that one of the objectives of this study is to explore the degree to which the funds earmarked for the widening could be applied to alternative solutions in the Corridor, funding of the alternatives in this same time frame would therefore also be uncertain. However, the alternatives also offer opportunities for phased implementation, which could allow the draw down of funds to be spread over more fiscal years, potentially improving the availability of the funding stream.

Generally, sources of funds for highway and transit system capital improvements are more readily available than O&M or program operations funds, although there is a considerable competition for these capital funds. A number of local, state, and federal programs provide sources of funding for highway and transit system capital

improvements.

Table 5-4
Estimated Capital and O&M Costs for Multimodal Strategy

	Total Capital Costs (millions 1994 \$)	Annual Program and O&M Costs (1,000 1994 \$)
Enhanced TDM Actions	--	\$1,000 - \$1,500 (1)
Expanded Transit Services	\$29.0 - \$35.0	\$4,500 - \$5,000 (2)
Bicycle System Improvements	\$2.0 - \$2.5 (3)	TBD
Highway Operational Improvements	\$19.0 - \$25.0	--
Transit Oriented Land Use Programs	--	\$50-\$100
Strategies to Reduce Visitor/Tourist Auto Trips	--	\$100-\$300
Performance Monitoring of Highway 101	--	\$20-\$30
Totals	\$50.6 - \$62.5	\$5,670 - \$6,840

(1) Includes both public and private sector costs, in excess of current program costs.

(2) Additional transit O&M costs net of transit fare revenues.

(3) Source: A. Lawler, SBCAG Staff, November, 1994.

With the approval of both SBCAG and the California Transportation Commission (CTC), the federal and state funds currently allocated in the State Transportation Improvements Program (STIP) for Highway 101 improvements could be used to fund most of the capital costs of the program components identified above. This is based on the assumption that the federal portion of the funds allocated (approximately \$60 million) are Surface Transportation Program (STP) funds as defined by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

Eighty (80) percent of the capital improvements identified above could be funded by these federal funds (approximately \$40 million). The state matching funds (20 percent) are restricted by state law. While these funds may be applied to some of the capital improvements identified above, they could not be used to provide the 20 percent match for the bus fleet expansion. This match (approximately \$2.7 million) could be provided through Measure D or Transportation Development Act (TDA) funds.

A number of alternative federal funding sources for the bus related capital improvements should also be explored, in order to retain as much of the STIP allocations for other Highway 101 improvements. One

source is the Federal Transit Administration (FTA) Section 3 (now called 5309) Bus Capital program which provides funds for the purchase of buses, bus-related equipment and paratransit vehicles, and for the construction of bus related facilities. This is a competitive program with funds being allocated based on the worthiness of the proposed projects, rather than the funds being allocated based on formulas. Santa Barbara has been successful in obtaining funding through Section 3 in the past. Section 3 funding also contains requirements as to how other FTA funding is to be applied. Specifically, it is normally required that FTA Section 9 formula funds (operation cost assistance or capital cost assistance) be fully programmed in the urban area. In addition, the FTA grants require a 20 percent local match. For the proposed multimodal transit component of the program, approximately \$16.4 million of the total could be eligible. This would reduce the need to consider using the STIP funds but would increase the local share participation by \$0.5 million.

The real challenge to successfully implement and receive the maximum benefits of the proposed program is to identify an agreed upon stable and reliable source of funds to cover transit system operating and maintenance costs. The identified program requires resources above those already committed to the current MTD transit system and expansion program. The only stable and reliable sources currently available for operating assistance include TDA, Federal Section 9 and Measure D (although recent congressional budget actions cast serious doubt on the continuance of federal transit operating assistance). It is important to recognize, in the case of Measure D funds, that a major trade-off decision exists. If additional funds are allocated to transit, the amount of Measure D funding currently dedicated to local street and bikeway construction and maintenance by the county and the cities would have to be reduced. There is also a federal program called CMAQ (Congestion Mitigation and Air Quality Funds) that is allocated by formula to SBCAG and could be used for O&M costs of new transit service, but for only a maximum period of two years. It is estimated that the initial bus service expansion program for the Highway 101 Corridor would require an additional \$4.5-\$5.0 million in annual public subsidy. This is equivalent to approximately a 1/7 percent sales and use tax applied countywide. In addition, there will be an estimated \$1.1 to \$1.8 million per year in public and private sector program costs to provide the other elements of the multimodal strategy.

New sources for funding the multimodal improvement strategy that the county and local jurisdictions will need to consider would include:

- A countywide increase in the local sales and use tax for transit operations which would require a two thirds voter approval and approval by the cities and county.
- Property tax increases by local jurisdictions, requiring a two thirds voter approval.
- Assessment Districts covering the area receiving the benefits of the transportation improvements, which would have to be approved

by the cities and the county.

- . Transportation Uniform Mitigation Fees - a cooperative interjurisdictional funding program structured to meet California nexus requirements and to provide revenues for specific Corridor improvements.

Parking pricing approaches such as parking discounts for carpools, vanpools, parking fees or employer parking cash-outs, which would have to be approved by local cities.

These are likely to be politically difficult to enact, and an extensive voter education campaign would need to be undertaken to convince residents of the South Coast that additional taxes and/or fees are ultimately worthwhile to their overall quality of life.

5.4 POLICY ISSUES RAISED BY CHOOSING A MULTIMODAL ALTERNATIVE TO THE HIGHWAY 101 WIDENING

The choice to reduce congestion on Highway 101 through a multimodal transportation strategy in lieu of widening the highway is a fundamental policy decision of the SBCAG board. Either choice results in impacts to Santa Barbara and its residents. Neither alternative results in a post 2015 solution to forecast growth in traffic. Each choice has opportunities and risks. Policy issues cannot be resolved in an alternatives analysis. Rather, an alternative analysis presents a technical basis from which policy makers may weigh predicted results against issues, risk and community concerns. Three general policy areas suggest themselves in the Highway 101 alternatives analysis; fiscal, implementation and regional. Issues within each policy area are listed and then described in the following paragraphs. In the end, decisions, issues and policy choices are left to the elected decision makers.

1. Fiscal issues in selecting an multimodal strategy.

The risk of reprogramming of available funds from the widening to elsewhere in the state.

- .The ability of currently programmed funds to be used for other improvements (e.g. transit capital, bicycle facilities, highway operations).
- .The ability to obtain new revenue sources for transit operational d improvements.
- .The difficulties in establishing funding priorities between recommended elements.
- .The potential for public acceptance of any approach to instituting pricing elements.

2. Implementation issues of the multimodal strategy.

The ability to achieve predicted results with the multimodal strategy is less known that results achieved by widening the highway.

- .The effects of not implementing selected elements.
- .The community's tolerance of increased congestion during phases of implementation.

- .The difficulties in an annual review of, and adjustment to, actions and elements of the strategy. (How to make it work)
3. Regional issues regarding the relationship of the multimodal strategy to other programs and planned projects.
- The risk to air quality conformity determinations of changing the Highway 101 project definition.
- .Plans to widen Highway 101 between Castillo and Route 217 to eight lanes.
 - .Intercounty Coordination.
 - .Rail recommendations from the *Comprehensive Rail Plan*. (Korve, 1995).

5.4.1 Fiscal Issues

It has been frequently observed in a variety of situations, that "it all boils down to money". Money issues include the potential to lose currently programmed money if the project is changed, project eligibility for funding, establishing funding priorities between elements of the multimodal strategy, and community acceptance of pricing approaches in the future. Each is discussed briefly below.

What is the risk of losing existing funding if the multimodal transportation strategy replaces the highway widening project? Currently available funding (\$63 million) identified in the STIP is presently designated for the Highway 101 widening project. Un-programmed segments of the widening are estimated to cost an additional \$45 to \$50 million. As noted in Section 5.3, the timing of the availability of currently programmed state funds may be delayed due to state budget shortfalls and earthquake retrofit priorities. The \$50.6 to \$62.5 million dollar capital cost of the multimodal strategy appears to be close to the levels in the funding programmed in the STIP. An alternative program, fully supported by SBCAG, the County and the cities, should be able to receive favorable consideration by the California Transportation Commission. The phased implementation of the multimodal strategy should also be easier to fund in smaller annual amounts. The potential does exist for the \$63 million to be reprogrammed to other transportation needs elsewhere in the state. Lack of local consensus regarding an alternative to the widening could increase the risk of the CTC reprogramming these funds. With no implementation action on the currently funded project currently underway, other projects from around the state which are already designed, cleared environmentally, and awaiting funding provide readily constructed alternatives to the Highway 101 widening. Project delivery is still an important consideration. Prompt selection of a preferred alternative by SBCAG with support from member agencies and the community should reduce this risk.

Can money programmed in the STIP be used for non-highway improvements? Section 1007 (b) (2) identifies capital costs for transit projects eligible for assistance under the Federal Transit Act and publicly owned intracity or intercity bus terminals or facilities as an eligible use of STP funds. The eligibility list

also includes carpool projects, fringe and corridor parking facilities and programs, and bicycle transportation and pedestrian walkways (b) (3); and capital and operating costs for traffic monitoring, management and control facilities and programs (b) (6).

In short, the answer appears to be yes.

Can money be raised to fund transit operations and maintenance for the recommended expansions in express service? Although currently programmed STP funds can be reprogrammed to fund many of the elements of the multimodal strategy, operations and maintenance funds (\$4.5-\$5.0 million less fare box return annually) must be obtained or raised if the express bus elements are to be implemented. Potential sources of transit O&M revenues which could be tapped are currently programmed for other improvements. Measure D revenues are extremely flexible however the reprogramming of these funds for transit O&M would reduce revenues for other projects or programs. Each of the revenue generating methods itemized in Section 5.3 above, must either meet voter approval or elected officials must approve the actions. Voter reactions to recent revenue generating proposals in California have generally been negative. Parking pricing programs can be structured so that revenues can be designated for transit operations. Such programs would then have the dual benefit of reducing single occupant vehicle (SOV) trips and providing for increased transit service to further reduce trips. Voter antipathy to actions which "expose" the hidden subsidies provided by the public and private sector's of the automobile can be both positive - mode shifts occur - or negative - elections are lost. The policy choices are finite and still difficult for decision makers.

Which elements of the multimodal actions should be funded first? The first five year period of the implementation strategy emphasizes the TDM elements, some of the highway operational improvements, park and ride lot development, Phase I bicycle improvements, the majority of the enhanced TDM actions and the development of funding strategies which identify more detailed costs for the remaining elements. Reprogramming of funds will focus the potential for competing for funds demands among the elements. The "lumpiness" of funding needs and funding availability could be reduced if SBCAG establishes priorities when adopting the multimodal transportation strategy which balances community preferences for individual elements with predicted trip reductions over the life of the program. For example, the comparison of the overall contribution of bicycles to the trip reduction of these elements in the Highway 101 Corridor with the overall reductions forecast for enhanced transit or TDM actions. The longer distance commute which typically use the 101 corridor are less likely to be diverted to bicycle trips than to other modes.

In a "no taxes" environment, can a publicly acceptable parking pricing strategy be approved? Recent efforts by the City of Santa Barbara to add additional parking structures in the downtown area which were to be funded from fees based on a business' proximity to the parking structure were not successful. Establishing any parking pricing program will be a difficult element to implement should the enhanced TDM actions fail to produce the necessary trip reductions

needed to offset growth in trips in the Corridor. The usefulness of a pricing demonstration program during the first five year implementation period should provide an opportunity to test one or more pricing approaches and to provide the local test case to allay business concerns regarding lost sales revenues.

5.4.2 Implementation Issues

People are generally more content going with what they know. Selecting the multimodal transportation strategy can be innovative but implementation issues may be compounded. Five policy issues suggest themselves as both the risks and the challenge of implementing a nontraditional approach to alleviating increased traffic congestion. Each is discussed in the following paragraphs.

What are the risks of success in implementing the multimodal transportation strategy in lieu of the highway widening? An integrated multimodal transportation strategy such as recommended in this study has not yet been used in the United States to meet the long term transportation needs in a highway corridor. The effectiveness of individual elements can be forecast, however the long range outcome of congestion relief is less known than results achieved by widening the highway. The effect of highway widening on traffic congestion is well documented and readily quantified. The risk of implementing this strategy is the possibility of its failure to result in reduced traffic congestion. SBCAG's ability to redirect its program, should implementation of the multimodal strategy fail to maintain pace with actual growth in traffic, will be difficult. Funding strategies may not be fully realized and other revenues may be committed to elements which are already under construction, reducing monies available for reprogramming. Decision points identified in Section 5.2, Implementation Scheduling and Monitoring are based on recommended roadway performance thresholds. Implementation of a strategic approach is designed to allow for continual program adjustments to respond to change in roadway performance. The risk increases if the political climate changes during the fifteen to twenty year implementation phase and needed multimodal program adjustments are not agreed to. To change directions at any of monitoring and revision cycles is predicted to result in increased congestion in the Highway 101 Corridor and delays in then implementing a highway widening alternative.

What if community opposition to individual elements results in the failure to implement one or more of these actions? Success of the recommended multimodal strategy relies on widespread community acceptance of all of the multiple actions identified in Section 5.1. All actions, implemented together, are designed to achieve results similar to those predicted under the Pricing/Enhanced TDM analysis alternative. The beauty of any strategic implementation approach is the ability to make adjustments and revisions to the program to respond to community reactions, failure to secure funding at a particular point in time, differences in growth rates in traffic or population from those assumed in the basic analysis, or differences between predicted and actual trip reduction outcomes of any

particular element. The ability to respond to changing traffic performance in the Highway 101 Corridor is the fundamental bottom line of the multimodal transportation strategy. The challenge is put to the elected to either implement the recommended multimodal program elements or define and implement equally effective alternatives.

Will the community tolerate increases in congestion while strategy effectiveness builds? The annual monitoring programs described in Section 5.2 above result in documentation of congestion levels and strategy effectiveness as measured in traffic volumes, speeds or auto occupancy rates. Public reactions to increasing congestion on the Highway 101 corridor are more immediate and can create an instant "issue" for elected officials and supporters of the multimodal transportation strategy. The emphasis on public information and education campaigns as well as the highway operational improvements will help reduce public frustration. The public reactions to increased traffic congestion can also serve as important support to move into the next steps of the strategy.

What are the difficulties in implementing the multimodal transportation strategy in lieu of the highway widening? Implementation of the multimodal transportation strategy will require the participation, coordination and cooperation of all of the transportation and local government entities in the South Coast area. The numbers of actions and the inter-related nature of both funding and implementation actions is likely to cause friction between individual agencies. The annual reviews and resulting adjustments to the multimodal transportation strategy will add additional work effort and coordination efforts to already extensive agency and staff work loads. Although every attempt has been made to use existing monitoring documents to report on the annual progress and needed recommended changes, individual priorities may take precedence over the Highway 101 Corridor program. The absence of a clear lead agency through which all actions must pass is an additional challenge to implementation. Interagency coordination and cooperation is expected to raise issues throughout the fifteen to twenty year implementation program. Changing membership on governing boards will also result in the potential to redirect priorities. Promotional and educational efforts will only go so far to reduce the potential for complications in the course of implementation.

5.4.3 Regional Issues

The final policy area discussed here are regional issues which may arise as a result of other planned improvements in the Highway 101 corridor. Several other improvement programs are planned and or programmed on either side of the South Coast's Highway 101 Corridor.

The following paragraphs describe issues surrounding the relationship of the multimodal transportation strategy to the area's clean air plans, other Highway 101 improvements, and the joint SBCAG and VCTC rail study.

What are the risks of changing project descriptions to SBCAG's Clean Air Act conformity findings for plans and programs? Relationship to

clean air attainment plans in the South Coast area is a critical element of any transportation strategy. The multimodal transportation strategy would be subject to conformity determinations under the 1990 Federal Clean Air Act Amendments as a new element to the conforming RTP and the RTIP. A decision to follow the multimodal transportation strategy is expected to result in a need for reprogramming of state and federal funds. When the RTIP is revised, a new conformity determination may need to be made. Conformity determinations in non-attainment areas, such as the Central Coast Air Basin, currently raise concerns about the potential to not be able to make the determination and thereby lose federal funding. Many elements of the multimodal transportation strategy are predicted to reduce mobile source emissions. Individual elements included in the strategy implement required Transportation Control Measures listed in section 108(f)(1)(a) of the 1990 Federal Clean Air Act Amendments. The expanded bus transit service is, if operations and maintenance funding is available, expected to potentially be operated with all alternatively fueled buses (as opposed to diesel buses), thereby resulting in reduced emissions of NO_x and Reactive Organic Gases (ROG). Proposed highway operational improvements, particularly ramp metering however, could result in increased queuing on local arterials near ramps with associated emissions increases. Interchange reconfigurations and TOS system elements are generally forecast to improve traffic flow, thereby reducing idling emissions from mobile sources.

What are the issues raised by other planned widening projects on Highway 101 if the multimodal transportation strategy is implemented? Plans to widen Highway 101 between Castillo and Route 217 to eight lanes would result in a transition on the Highway from 4 lanes in each direction to 2 lanes in each direction. Issues associated with this relate to policy, operational design and driver awareness methods to create a smooth and safe transition between the 4-lane and 2-lane sections eastbound at Milpas Street. Policy issues include a choice for the South Coast communities to expand a variation of the multimodal transportation strategy to include a broader geographic area in lieu of the Castillo Street to Route 217 widening of Highway 101, and or the extent of the widening project could be revised.

Design issues may include the operational aspects of how to accommodate a transition between the two segments where the capacity differs by a factor of two. Based on 2015 traffic forecasts, the level of service is estimated to drop D to F for eastbound traffic at this transition. Design changes could result in funding issues regarding changes in cost assumptions used in current programming documents. Driver awareness issues include decisions on methods and means to alert drivers to the change in the character of the highway along a well traveled stretch of the highway. The planned TOS changeable message sign element could help with this awareness although it is not proposed to address this concern.

What are the issues in intercounty coordination and implementation of the multimodal transportation strategy? The enhanced bus service included in the intermodal transportation strategy requires intercounty coordination between SCAT and MTD for intercounty transit

services. Recommendations described in the previous paragraphs require continuing VCTC and SBCAG coordination as well as a recommendation for Santa Barbara County to join the Southern California Regional Rail Authority, the multi-county commuter rail operator in the Southern California Association of Governments (SCAG) region. Priorities for local based service on either side of the county line may cause conflicts or impact service delivery schedules for transit or rail services to Santa Barbara County. In addition, equitable cost sharing formulas will need to be worked out between agencies in both counties.

What are the issues to the recommended multimodal transportation strategy from the recent rail recommendations in the Comprehensive Rail Plan for VCTC and SBCAG? The Comprehensive Rail Plan (Korve, 1995) describes three future rail services and significant facility improvements for Santa Barbara County:

A six month demonstration weekend service between Los Angeles and Santa Barbara consisting of 4 one-way weekend trips. Operating cost estimates from Metrolink are approximately \$1 million with an estimated cost to the Santa Barbara region of between \$743,000 and \$881,000.

1. The expansion of existing San Diegan Intercity Services to add 4 daily round trips between Los Angeles and Santa Barbara as state financed service at no additional cost to the Santa Barbara region.

2. Capital improvements already programmed to upgrade Coast Line signaling between Goleta and Moorpark which includes track improvements, upgrading and re-establishing sidings and new station facilities at Goleta, Guadalupe and Surf, and a major rehabilitation and upgrade to the Santa Barbara station. These facilities are financed by Caltrans as part of intercity service between Santa Barbara and Los Angeles.

3. The provision of 2 daily round trip commuter trains between Simi Valley and Goleta with cost shares to SBCAG estimated at \$10.93 million in capital costs and annual operating subsidy of \$1.02 million and no identified funding sources. Long term daily ridership is projected at 750 which is below normal thresholds for viable commuter service.

Recommendations 2 and 3 are programmed and financed at no cost to Santa Barbara and will provide an additional alternative to SOV trips on the Highway 101 Corridor. The new station at Goleta could serve as a multimodal transit facility with bicycle and transit connections. The weekend demonstration service proposed in recommendation number 1 could support the Visitor and Tourist Trip Reduction actions however at a cost of just less than \$1 million. Continued operation of the service would pose additional unfunded operating costs. The rail plan does not include this in either its Tier I or Tier II recommendations. The rail plan also does not recommend the pursuit of recommendation number 4 in either the Tier I or II recommendations. Implementing either of both actions would result in competition for any future operating funds which have

already been identified as an funding issue for the multimodal transportation strategy's enhanced transit recommendations.

This list of issues associated with implementation of an multimodal alternative to widening Highway 101 could easily be expanded. The recommended multimodal transportation strategy brings the challenges of a fresh and new approach as well as the risks associated with innovation. Breaking the mold is never an easy choice. It is important for the South Coast communities to consider at least several of these issues in the course of selecting an approach to responding to the Highway 101 Corridor traffic problems.

5.5 CONCLUSION

The Highway 101 Widening Alternatives Analysis developed and analyzed three "analysis alternatives" to the proposed widening of Highway 101 between Milpas St. and the Ventura County line. These alternatives, based upon community and agency staff input, were specifically constructed to test a wide range of investment options and transportation policies to meet the study objective: find alternatives to avoid the need to widen Highway 101 from the current four lane cross-section to a six lane cross-section until the year 2015 or later. They include:

- an enhanced bus transit package which is comprised of significantly expanded local and express bus services in the Corridor,
- a rail transit package which is comprised of extensive, local rail transit service using the Southern Pacific right-of-way between Carpinteria and Isla Vista, along with expanded local and express bus services,
- a parking Pricing/Enhanced Travel Demand Management package which includes a significant parking pricing component of \$3.00 per day for all public and private parking spaces in Santa Barbara, as well as an enhanced version of the current *Traffic Solutions* employer-based TDM program and additional programs to reduce automobile usage by visitor and tourists.

Based upon the preliminary level of travel demand forecasting done in this study, it was determined that only the Pricing/Enhanced TDM package, particularly due to the significant parking pricing component, sufficiently reduced forecast traffic demand on Highway 101 in the year 2015 to allow the unwidened Highway 101 to operate at acceptable traffic levels of service without significant daily traffic congestion. Significant community concern is anticipated with the recommendation of any pricing strategy.

The study found that significant transit improvements (bus or rail) do not reduce forecast traffic volumes sufficiently in 2015 to allow the unwidened, four lane Highway 101 to operate at acceptable traffic levels of service. These recommendations are consistent with the findings of the recent *Comprehensive Rail Plan for VCTC and SBCAG*

(Korve, 1995). However, these alternative packages were forecast to significantly increase transit ridership in the Corridor.

The proposed highway widening was forecast to serve projected traffic demand on Highway 101 in the year 2015 at acceptable levels of service but, as was previously presented in Caltrans *The Draft Environmental Impact Report*, has significant negative community and environmental impacts. And, based upon historical traffic volume growth trends in the Corridor, even accounting for lower growth rates in the 1990's traffic volumes on Highway 101 could be expected to exceed the capacity of a six lane facility shortly after the year 2015. In addition, week end peak period traffic congestion would still occur before the Year 2015.

Based upon the above findings, this study recommends a multimodal transportation strategy which blends elements of the Pricing/Enhanced TDM and the Enhanced Bus "analysis alternatives" into an incremental, phased approach to implementing an alternative to widening Highway 101. Seven elements make up the strategy:

Enhance the City/County TDM Ordinance and *Traffic Solutions* programs

1. Expanded transit services
2. Bicycle system improvements
3. Highway 101 operational improvements
4. Land use planning considerations to facilitate use of alternative modes
5. Strategies to reduce visitor/tourist auto trips
6. Performance monitoring of Highway 101

Each of these elements contains multiple implementation actions. An implementation schedule proposes five year increments for actions. Many of the implementing actions work together to build an integrated and intermodal transportation system for the South Coast. Actions are mostly directed to the home to work trip and provide only limited relief for the weekend tourist and visitor trip making. The entire program of actions is designed to result in a shift in travel mode choice away from single occupant vehicle travel and into carpools, vanpools, transit or bicycles, as well as telecommuting.

The program proposes a strategic implementation method of multiple actions, regular monitoring and review and adjustment of actions, previously untried in the United States, as an alternative to widening. The program builds in the stringency of each action in response to the operational performance of the highway. Enhanced employer transportation demand management programs are coupled with expanded bus transit services and traffic operations system (TOS) elements until such time as traffic growth in the Highway 101 Corridor outstrips these programs' abilities to mitigate congestion levels. Each time traffic congestion levels outstrip the performance of the recommended actions, the community is faced with strategic choices to increase educational efforts, to adjust the performance levels of ridesharing actions, to proscribe TDM strategies for employers whose employee travel characteristics in congested subareas impact CMP intersections, to implement one or more pricing strategies, with quantifiable effectiveness in producing reduced SOV travel (Shoup 1995, Schreffler et al, 1991, Comsis, 1993) or ultimately returning to a traditional widening approach.

Recommendations include a proposed Corridor monitoring program that provides the local transportation agencies, Caltrans, and the public with the essential information with which to annually assess the travel impacts of the recommended program's implementation. The predicted success of the implementation program is based on regular review of these monitoring results to adjust the timing and intensity of implementation actions to respond to changes in traffic conditions. The use of existing monitoring programs serves as the backbone of a strategic feedback process which is expected to recommend acceleration of individual actions to respond to level of service deficiencies as they arise in the Highway 101 Corridor. The study proposes Level of Service (LOS) E and average travel speeds of 40 miles per hour on Highway 101 as the threshold at which actions must either be stepped up to continue to meet local and regional mobility needs.

Recommended implementation schedules emphasize enhanced TDM and TOS actions between the years 1995 and 2000. Identification of, funding sources for shortfalls in transit operating costs and annual program operations costs are an essential action needed to move into the recommendations for the Year 2001 to 2005 period. Further detailed design and operations planning studies, demonstration projects, and funding strategy development needs are identified as actions in this implementation strategy. Their timing is set to provide necessary information prior to the actual need for services or facilities to continue to stay even with the pace of congestion.

This phased and strategic set of multimodal Corridor improvements and monitoring provide the South Coast communities with the opportunity to modify travel behavior in the South Coast to reduce the current dependence upon the single occupant vehicle (SOV) for many trips in the Highway 101 Corridor. Given the lead time required to design and construct the widening project (up to 10 years), and the potential need for the two additional lanes by the year 2015, there is a window of opportunity over the next 7 to 10 years to try these other multimodal improvement strategies and see if the forecast traffic growth can be significantly reduced to the point where the widening can be forestalled beyond the year 2015. Land use based approaches to supporting transit, pedestrian and bicycle travel (Seskin, 1995) are recommended as long lead time elements - ones which are not expected to result in measurable shifts in mode choice prior to 2015.

While there are many site specific success stories to date from around the country where individual programs and policies have measurably reduced single occupant vehicle (SOV) use, they have been, to date, much less successful on a Corridor or an area wide basis in urban settings of similar size and character to the South Coast. The change in ingrained travel habits will be a challenge for the residents and public officials of the South Coast.

Implementation of the recommended multimodal transportation strategy would create an innovative and alternative to traditional transportation service provision. The potential for success, is given to the community and the responsible agencies. The ability to adjust and respond to both market forces and community preferences is highest with this type of solution to rising congestion. The range of issues to be faced by elected officials in the doing of this strategy are many. Public policy arenas will be the testing ground for the multimodal strategy. There is choice for the South Coast, the incentive to compel the use of alternative modes is fostered by the regular monitoring and adjusting of the program. There is an alternative to widening Highway 101.