Transportation Demand Management: Development of Tdm Programs in Florida

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Center for Urban Transportation Research

TRANSPORTATION DEMAND MANAGEMENT

Development of TDM Programs in Florida

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TRANSPORTATION DEMAND MANAGEMENT

Development of TDM Programs in Florida

FINAL REPORT

Prepared for
The Governor's Task Force on
Urban Growth Patterns

by the

Center for Urban Transportation Research
University of South Florida

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# Contents

**Introduction** 1

**TDM techniques** 2

- Park-and-ride service 3
- Shuttle systems 3
- Pedestrian systems 3
- Employer transit subsidies 3
- Bicycling 3
- HOV lanes 3
- Ridesharing 4
- Alternative work hours 4
- Truck traffic restrictions 4
- Parking management 5
- Automobile restrictions 6

**TDM activities in the U.S.** 6

- Hartford, Connecticut 7
- Pleasanton, California 8

**TDM activities in Florida** 10

- Transportation management associations 10
- Park-and-ride service 10
- Shuttle systems 11
- Pedestrian systems 11
- Employer transit subsidies 11
- Bicycling 12
- HOV lanes 12
- Ridesharing 13
- Alternative work hours 14
- Truck traffic restrictions 14
- Parking management 14
- Automobile restrictions 16

**Recommendations** 16
TRANSPORTATION DEMAND MANAGEMENT
Development of TDM Programs in Florida

INTRODUCTION

If urban sprawl is stopped, what happens to growth? In Florida, the only acceptable answer is that some or all of the urban growth that would occur in the absence of controls on urban sprawl must be accommodated in the state’s existing or emerging urban areas, many of which already are feeling the strains of growth. This raises the question of how to accommodate the additional growth in these urban areas. This report provides a relatively small but important part of the answer as it relates to transportation.

Possible approaches to meeting our future transportation needs include: (1) lowering our expectations about service levels, (2) increasing our supply of transportation facilities, and (3) making better use of what we have, which includes decreasing our demand for transportation infrastructure. The acceptance of lower levels of service may be an unattractive but obvious, perhaps even necessary, part of the answer to accommodating growth. Increasing the supply of transportation by widening roads and building new roads is clearly a necessary part of the answer, but equally clearly not the whole answer. The supply side of transportation is becoming more and more constrained by economic, social, and environmental barriers. It therefore becomes increasingly important that we look at the demand side of the equation, which is the focus of this report.

Transportation demand management (TDM) focuses on ways of influencing the amount and the time of day of the demand for transportation. It encourages alternatives to the single-occupant automobile and more efficient use of the transportation system by altering the demand characteristics. Properly applied, TDM actions can promote the use of public transportation, increase the people-moving capacity of the transportation system, and allow the transportation system to support a higher development density.

TDM is a subset of a larger class of activities, called TSM, or transportation systems management. In addition to the types of actions included in TDM, TSM includes traffic signal timing, the addition of turn lanes, better transit scheduling, and other improvements that relate to increased operating efficiency of the existing system. Although they are not addressed in this report, these operations improvements are important and cost-effective elements of mobility initiatives.

The private sector often is involved in TDM through transportation management associations (TMAs). TMAs are private nonprofit organizations that cover a well-defined geographical area, such as a central business district (CBD), a suburban office park, or some other activity center. They usually are funded by
member dues but also can be funded from a variety of other sources, such as impact fees if local ordinances permit.

The Center for Urban Transportation Research (CUTR) believes that coping with the mobility needs of our rapidly growing urban areas will require a comprehensive approach that includes major investment in new infrastructure, attaining maximum efficiency in the operations of our transportation systems, and effectively managing transportation demand. Experiences around the country suggest that the aggressive application of TDM techniques can result in five to fifteen percent reductions in peak-hour trips (or five to fifteen percent increases in system capacity) on an area-wide basis and in greater reductions at specific activity centers. With the high marginal cost of additions to the highway system, efforts to reduce marginal demand can be extremely cost-effective.

The remainder of this report presents descriptions of TDM techniques, a discussion of the TDM techniques being implemented around the U.S. and in Florida, and suggestions of how to promote TDM in Florida.

TDM TECHNIQUES

Transportation demand management (TDM) techniques can be grouped into three different but not mutually exclusive carrot and stick approaches. One approach is to promote alternatives to the automobile, encouraging persons to switch voluntarily to other modes of travel, such as transit and bicycles. Another approach is to encourage more efficient use of automobiles and roads through ridesharing and alternative work hours. A third approach is to discourage the use of automobiles by making their use more costly or more difficult.

The first two approaches encourage voluntary actions by automobile drivers to reduce or spread out traffic. In growth areas, the usual result of these two approaches is not to reduce traffic or congestion but to increase the people-moving capacity of transportation systems, which promotes more compact growth and higher density CBDs. The third, and nonvoluntary, approach is perhaps the most powerful and most effective. However, if used incorrectly, TDM techniques that increase the cost or difficulty of using automobiles may slow down economic development or redirect growth away from areas where it is desired. If used together and aggressively promoted, the three different approaches can reduce peak-hour traffic by five to fifteen percent--or, in a growth area, can add five to fifteen percent to the people-moving capacity of transportation systems.

Brief descriptions of the different TDM techniques that can be used with each approach are provided below.
Encourage Alternatives to Automobiles

Park-and-ride service

Parking lots are built at transit stops to encourage persons who do not live within walking distance to use transit. These lots also can be used as a central gathering point for carpooling or vanpooling. The convenience of using park-and-ride lots is increased if the lots are located next to such services as day care, grocery stores, and dry cleaners. Lockers for bicycles also can increase the use of park-and-ride service.

Shuttle systems

Vans or small buses are used to provide a variety of shuttle services. A common TDM application is internal circulation in large suburban office centers. The availability of noon-time shuttles, for example, from places of employment to restaurants and shops lessens the need to bring an automobile to work. It also reduces mid-day congestion.

Pedestrian systems

The need for an automobile at work also is lessened if workers can walk from their offices to restaurants and shops. Sidewalks, pedestrian street crossings, parking lots behind rather than in front of businesses, and other urban design amenities make both walking and the use of transit more attractive.

Employer transit subsidies

Employers subsidize their employees' use of transit in a variety of ways. Some employers give cash subsidies that can be used only for the purchase of transit passes, while others provide travel allowances that can be used for transit or parking or other purposes. Employers also subsidize subscription bus services, vanpools, and, in some cases, regular route service by the local transit agency.

Bicycling

For bicycling to a transit stop—or all the way to work—to be a reasonably attractive alternative to the automobile, safe bicycle routes must be provided and shower facilities and bicycle lockers must be available at the destination. Bicycling also can be encouraged, as can transit, if space for bicycles is provided on transit vehicles.

Encourage More Efficient Use of Automobiles and Roads

HOV lanes

High-occupancy vehicle (HOV) lanes are lanes on major roads, usually limited-access roads, that are restricted at peak travel hours to buses and other
vehicles containing a minimum number of persons, usually two or three. These lanes provide a strong incentive for riding transit and for carpooling because they are less congested than the other lanes, and they have proved to be a cost-effective means of increasing the capacity of road systems.

Ridesharing

Ridesharing includes both carpooling and vanpooling. A carpool is a more informal arrangement than a vanpool and generally is organized by the ridesharers themselves, often after being matched by a local ridesharing program. The passengers either pay the driver or take their turn driving on a regular basis. Vanpooling, on the other hand, is more formally organized. Often, the employer leases or buys the van(s), and one particular employee is the designated driver. Generally, the driver receives no direct pay, but rides for free and is allowed use of the van on nights and weekends. The passengers pay a set amount each week.

Becoming more common is third-party vanpooling in which a private company provides the service and charges the rider a fee—much the same as transit agencies charge bus riders a fee. In some cases, the employer subsidizes vanpools by paying part or all of the expense of operating the program. Preferential or free parking also is used to encourage ridesharing.

Alternative work hours

The TDM promotion of changes in work hours is aimed at reducing the amount of traffic on the road at peak hours, and it is one of the more effective TDM measures for areas that do not already have extended peak periods. Alternative work hours can be based on flextime, staggered hours, or a compressed work week. Flextime permits the single-occupant automobile commuter to commute at off-peak times and, since flextime allows workers to adjust their work schedules to fit transit and ridesharing schedules, it encourages the use of alternative modes of travel. Flextime also has been found to increase employee productivity. Staggered work hours means that different divisions or different individual employees of a company report to work at set, but slightly different times (e.g., at fifteen-minute or half-hour intervals). The same effect of spreading out traffic is accomplished if each company within an activity center sets different work hours. A compressed work week involves working fewer than the usual five days per week (e.g., four ten-hour days), which means that total trips are reduced, as well as shifted away from the peak hours. A slightly different, and increasingly important concept is telecommuting (working at home) one or more days a week, which also reduces the number of trips but does not necessarily shift the remaining trips away from peak hours.

Truck traffic restrictions

Truck traffic, which can be a major contributor to congestion, can be banned from certain areas (such as central business districts and major arterials) during peak hours. Freight deliveries can be restricted during peak hours or even limited to night-time hours, and loading zones can be relocated so that trucks do not block
a lane of traffic or tie up parking while unloading. However, time-of-day restrictions on deliveries can create serious problems for many businesses and therefore should be applied carefully and selectively.

**Discourage Automobile Use**

**Parking management**

As noted above, an aggressive policy of parking management can dramatically reduce congestion and increase transit ridership. Parking management can include:

- Limiting on-street parking.
- Limiting off-street public parking.
- Allowing developers to provide fewer than the standard number of parking spaces in exchange for promoting other TDM activities, such as ridesharing and variable work hours.
- Establishing a maximum on the amount of parking builders can provide.
- Requiring parking permits for residential areas adjacent to business districts.
- Converting long-term (commuter) parking to short-term (shopping) parking.
- Increasing long-term parking rates.
- Encouraging employers not to subsidize parking.
- Encouraging employers to provide transportation allowances that can be used to purchase parking space or ride transit or pocketed if, for instance, the employee walks to work.

Limiting downtown parking can be very effective in reducing congestion but it often is difficult to do because lenders usually will not approve a project that does not provide or have available to it a certain amount of parking, and builders may be concerned that they will be placed at a competitive disadvantage unless they are convinced that adequate transit alternatives are available. Although reduced availability and higher costs of parking may make it more difficult to attract employees and, thus, result in higher wages, it should be noted that employers save money by providing less parking and that the higher cost of doing business in downtown—primarily due to land costs—has long been accepted. On the other hand, reduced traffic congestion may make it easier to attract employees. Nevertheless, if land-use plans permit the development of areas that compete with a city's central business district and offer free parking, such as the I-75 area in Tampa, a city must be careful about the extent of parking management it enacts if it wants to encourage growth in the CBD. Some parking management actions also may conflict with other community objectives. The reduction of on-street parking, for example, may reduce congestion but it also reduces pedestrian activity on city streets, which most cities are trying to increase.
Automobile restrictions

Congestion within given areas also can be reduced easily by banning automobiles from, or limiting their use within, those areas. Automobile-restricted zones, such as pedestrian malls, historic districts, or entire city centers, make the affected area much more "pedestrian friendly" and encourage the use of transit. However, this type of restriction on automobiles usually is accompanied by the provision of peripheral parking lots and shuttles or some other form of people-mover service to the restricted area. In Florida, where congestion tends to be most severe not in the CBDs but on the roads leading to the periphery of the CBDs, this TDM technique may have little impact on the more significant areas of congestion.

TDM ACTIVITIES IN THE U.S.

Transportation demand management is not a new concept. A major and comprehensive TDM initiative was undertaken in the early and mid-1970s based on the requirements of the Clean Air Act. Recognizing the pervasive air-quality problem in numerous major cities, the Environmental Protection Agency required many areas that did not meet air-quality standards to prepare transportation control plans. These plans examined the range of actions that would be required to bring an area into compliance with the National Ambient Air Quality Standards. The plans typically included vehicular emission control programs, transportation operations improvements, and transportation demand management actions.

Another major TDM initiative occurred as a result of the energy shortages of the seventies. While the principal objective of these programs was energy savings, the specific actions that were promoted were the same TDM actions identified for air-quality planning purposes. These included a strong orientation toward carpooling and vanpooling. Many of the current ridesharing programs continue to be funded largely through sources related to energy conservation.

In 1975, the U.S. Department of Transportation formalized and codified much of the planning effort for these types of programs. Specifically, the transportation systems management element was identified as a requirement of regional transportation plans under the continuing, comprehensive, and cooperative (3-C) planning process. The federal planning requirements specified many TSM actions to be considered in the development of this element of the regional plan. These included: preferential treatment for transit and other high-occupancy vehicles, provision for pedestrians and bicycles, management and control of parking, changes in work schedules, encouragement of carpooling and other forms of ridesharing, and many others. Based largely on the TSM element requirements of the 3-C planning process, TDM actions have received some consideration at the local level, although their use is still somewhat uncommon.

In recent years, widespread traffic congestion has provided a new impetus to initiate TDM actions. In the high-growth states particularly, the investment in new transportation infrastructure has failed to keep up with the demands of rapidly growing populations. This has generated a renewed interest in obtaining maximum
efficiency from the existing investment, and there are new institutional mechanisms emerging to promote TDM actions. Regional commuter assistance programs promoting ridesharing, variable work hours, and parking management have become much more visible and have demonstrated measurable results. Across the nation, dozens of grassroots transportation management associations (TMAs) have been formed to unite the resources of the private and public sectors to address mobility needs in local areas. California has led the way in these new initiatives, with other notable successes in New Jersey, Hartford, and the suburbs of Washington, D.C.

An important recent development has been the advent of traffic reduction ordinances, particularly in California. Ordinances also have been adopted or are under development in Kansas City, Missouri; Bethesda, Maryland; and Stamford, Connecticut. These local ordinances typically require employers to prepare plans to reduce the number of vehicles arriving at their facilities during the peak period. As a result of these ordinances, many local TMAs have been organized in California, where there is widespread employer participation in providing incentives for carpooling and vanpooling and for using public transportation.

The development of TDM and the variety of TDM activities occurring around the country is perhaps best illustrated by two examples of aggressive management of transportation demand: Hartford, Connecticut, where a downtown TMA was formed to address congestion problems affecting CBD development, and Pleasanton, California, where the city adopted a traffic reduction ordinance that requires employers to reduce peak-hour, single-occupant automobile trips. The efforts of these two communities are described below.

Hartford, Connecticut

Hartford's population in 1986 was 138,000. The population of the region (three contiguous counties) was over one million. The employment in Hartford's core CBD is 90,000; when the periphery CBD is included this increases to 100,000.

In 1981, a partnership of business interests and the public sector began looking at the transportation consequences of the interstate highway reconstruction beginning to occur in the city and of the quickening downtown development. In 1982, at the conclusion of a study financed by the business community, the city council and the chamber of commerce jointly approved 33 transportation measures recommended by the study to reduce congestion, manage parking, and improve the street environment. The overall goal was to accommodate downtown growth without an increase in the number of single-occupant automobiles entering the CBD during the peak period.

In 1983, the city placed a six-month moratorium on commercial building in the CBD and the private sector organized a TMA covering the CBD. The TMA staff (one-half of a professional position plus clerical support) is provided by Hartford's private non-profit Rideshare Company. Policy guidelines are established by the executive committee of the Hartford Downtown Council, an affiliate of the chamber of commerce. Original funding for the TMA was in the form of "seed
money" from the Urban Mass Transportation Administration. In January of 1986, the business community assumed full responsibility for funding the TMA ($65,000 per year).

The TMA has promoted a variety of TDM activities since its inception. It has had good success with ridesharing, alternative work hours, and several other TDM techniques, but only moderate success with parking management, the most difficult of TDM techniques to implement. Ridesharing has increased by fifteen percent among employees of the area's largest companies. Smaller employers have been much harder to involve in the program, and the success rate with them has been much lower. Over the past five years, mass transit ridership has declined by seven or eight percent while ridesharing, overall, is up slightly. Twelve of the major employers have instituted variable work hours programs, which has succeeded in spreading out the peak traffic period, and downtown zoning regulations have been revised to require transportation management plans for all new developments in certain parts of downtown. The TMA also has been successful in designating specific locations for carpool and vanpool pickups, developing off-street and side-street courier delivery areas, prohibiting peak-hour deliveries, designing and funding pedestrian-related transit improvements, and reducing short-term parking rates at city lots.

Efforts to discourage employee parking subsidies have been less successful; of the estimated 70 percent of area employers who offer such subsidies, none has yet done away with them. The delay in reducing parking subsidies and replacing them with general travel allowances (2 of the original 33 proposed measures) has contributed to a seven or eight percent increase over the past five years in drive-alone commuting. However, most major employers have agreed to implement these measures when planned transit service improvements are in place.

Another aspect of the TMA's plan is known as "parking disarmament". Currently, city policy allows a reduction in the minimum parking requirements (one space per 1,000 square feet) if an employer offers rideshare promotion, transit subsidies, or shuttle service from peripheral parking lots. The lack of utilization of this option apparently is due to the belief that parking already is in short supply in the CBD. This belief has led developers and businesses to provide more, rather than less, than the minimum amount of parking. Hartford now plans to restrict parking by allowing a maximum of one parking space per 2,000 square feet of office and commercial development, and the TMA has a verbal commitment by two major developers to limit parking voluntarily.

Pleasanton, California

Pleasanton is a community of 40,000 residents, 20 miles east of San Francisco Bay. Pleasanton's partially constructed Hacienda Business Park, planned eventually to total 7.3 million square feet of commercial development, includes transportation management as an integral part of the development plan. The city council adopted a transportation management ordinance to ensure that the Hacienda plan, as well as the transportation management plans of future developments, is implemented.
The ordinance places much of the responsibility for reducing traffic impacts on the private sector.

The ordinance was adopted in October of 1984. Planning began early in that year, when a citizen's General Plan Review Committee studied the concept of developing a transportation management ordinance. City employees and private-sector representatives then prepared a draft ordinance. The draft ordinance was supported by developers, but employers objected to the severity of the fines for non-compliance. Two revisions reduced employer's fears. One required that the city appoint a transportation coordinator to assist firms in meeting the requirements of the ordinance. The other left enforcement largely up to a task force consisting predominately of employer representatives.

The Hacienda Business Park owner's association organized a TMA to assist employers in the planning and implementation of their transportation management programs and to ensure that employer's programs have a degree of uniformity. The association also has adopted design guidelines that require bicycle racks and preferential carpool parking, and it operates shuttle buses connecting with the regional transit service.

The city's ordinance contains a number of specific requirements for employers. Employers of ten or more, not in complexes, must distribute ridesharing and transit information. A trip reduction goal--45 percent fewer peak-hour trips at the end of four years than would result if all employees drove to work alone--is set for all employers of more than 50 people, for all employers located in complexes, and for all complexes. (Shopping centers are excluded from the definition of a complex.) This goal is to be met through development and implementation of transportation management programs. Employers of 50 or more must appoint a "workplace coordinator" for their program, and complexes must appoint a "complex coordinator". Employers of 100 or more, and all complexes, must appoint a representative to the enforcement task force. All employers must annually report results of employee travel surveys, and employers required to have transportation management programs must annually report on the programs. References to these requirements must be included in the conditions and covenants governing each complex and in every business lease.

Those required to implement transportation management programs may choose measures from a broad list of possible actions. These measures include promotion of ridesharing and bicycling, transit fare subsidies, alternative work hours, and information services. The ordinance prohibits the city from specifying which of these measures are to be used in a specific case, unless non-compliance leads to mandatory enforcement procedures. Mandatory enforcement can be recommended if, after two years, "substantial" traffic reductions have not occurred. The task force may then require the offender to implement specific measures. Finally, non-compliance can lead to fines.

The ordinance has helped mitigate traffic impacts as employment has increased in Pleasanton, and compliance has been nearly universal. Although employment growth meant that the amount of traffic during the morning peak hour
increased between 1985 and 1988, the percentage of commuters driving during the peak hour actually decreased from 70 percent to 50 percent, due primarily to variable work hours adopted by employers.

**TDM ACTIVITIES IN FLORIDA**

The rapidly increasing population in Florida and a lack of new infrastructure construction have combined to create an ever-growing need for the use of TDM techniques. In the past, when TDM has been used in Florida it has generally meant only one or a few measures applied as an attempt to solve a very localized problem. The recent and ongoing development of TMAs in various Florida cities, and the congestion reduction plans these TMAs will develop, present a means to plan and implement coordinated TDM programs.

Transportation management associations (TMAs)

The Urban Mass Transportation Administration (UMTA) and the Florida Department of Transportation encourage TMAs as a means to involve the private sector in transportation planning and in the funding of such plans. There is no precise blueprint for a TMA; each TMA is unique. The funding mechanisms, purpose, membership, and size of each TMA must be tailored to local conditions.

Tampa, Tallahassee, and Key West are leading the way in TMA development in Florida. CUTR currently is developing plans for two TMAs in Tampa, one in the Westshore office and retail area of Tampa and the other in the Tampa Palms development north of the University of South Florida.

Peak-period and lunch-time congestion in the Westshore area led the Westshore Alliance, a development association, to request a plan for implementation of a TMA. While the Westshore TMA will address congestion problems that already exist, the Tampa Palms TMA will attempt to prevent such problems from developing. Tampa Palms is planned as a residential, business, and light-industrial community, and is currently in the early stages of development. The development consists of approximately 750 dwellings and one office building at the present time; plans call for it eventually to be as large as downtown Tampa.

FDOT and the Tallahassee MPO are considering forming a TMA for downtown Tallahassee. Key West, as part of a transportation demonstration project, also is considering development of a TMA, but there has been some resistance from the private sector to providing the necessary funding.

Park-and-ride service

The first park-and-ride lot in Florida was built in Miami in 1974. Since then about 60 lots have been constructed, mostly in urban areas and mainly in Tampa and Miami. These lots--about 50 of which are currently in operation--have been funded primarily by grants from FDOT. Park-and-ride services also utilize parking lots at churches and other facilities when possible.
Shuttle systems

Shuttles are not common in Florida, but are in use in a few areas of the state. In Lee County, stop-and-go traffic at Fort Myers Beach led planners to implement a shuttle from a mainland shopping center to the beach. Using FDOT funds, Lee County Transit is running five shuttles with fifteen-minute headways during the winter tourist season with shuttles leased from a company in Maine, where they are used during the summer. The shuttles run at capacity, and planners believe they could fill five more shuttles.

A shuttle service in the City of Orlando transports commuters from a fringe area parking lot to downtown. The service is operating at capacity, and there already is a waiting list for shuttle service at a new 1,000-space fringe area parking lot being built with a day care center. This project will cost $8.3 million, of which the city will provide $2.1 million.

A $500,000, two-year UMTA demonstration grant to Key West will allow the construction of two parking lots served by shuttles to the Old Town area on fifteen-minute schedules, and another shuttle that will operate internally in the Old Town. These shuttles will be free.

Pedestrian systems

Florida has the highest number of pedestrian accidents per capita in the country. Pedestrian access to mass transit is poor in much of the state. Many locations lack sidewalks and pedestrian signals. Much of this is due to the lack of improvement to narrow, shoulderless rural roads as rapid development occurred. Florida’s "State Pedestrian Transportation Plan", currently in development, calls for the full consideration of pedestrians in the planning and building of transportation facilities. The state also is providing funding for pedestrian coordinators at MPOs to monitor compliance.

Employer transit subsidies

It appears that private-sector subsidization of employee transit costs is not yet a significant factor in Florida. In Tampa, the transit system gives riders a ten percent discount on monthly transit passes if their employer contributes at least five percent ($1.15) of the cost of the pass, and several major employers participate in the program. A major hospital provides employees with a monthly transit subsidy of $1.30, and a large bank provides a subsidy of $6.00 per month. In Jacksonville, a major insurance company provides a $7.00 per month subsidy. Broward County offers its employees 50 percent of the value of a monthly transit pass, which amounts to $15 per month. Approximately 60 employees are taking advantage of the plan. Broward, Dade, and Palm Beach counties currently are preparing an UMTA grant request to aid a marketing effort to inform employers and employees of the availability of "transit checks", which can be provided to employees to be used toward the purchase of transit passes.
Bicycling

FDOT now requires that all future construction, reconstruction, and resurfacing of state roads provide room for bicyclists if the cost is not prohibitive.

A Hillsborough County ordinance requires that outside lanes on urban collectors and arterials be widened for bicycles during roadwork projects unless the cost is greater than six percent of the total cost of the project. The I-75 corridor in the county has been designated a "bicycle friendly corridor", requiring bicycle parking and shower facilities at all new high-density development. A 1987 county zoning ordinance allows up to a five percent reduction in vehicle parking space in exchange for providing bicycle spaces.

In Dade County, bicycle lockers have been placed at Metrorail stations and passengers are allowed to take bicycles on the trains.

HOV lanes

HOV lanes are a tremendous incentive for using a bus, carpool, or vanpool. They are used now in Miami and Orlando and are under consideration in Tampa. The first one was developed for South Dixie Highway (U.S. 1), which links southern Dade County with the Miami CBD. In 1974, one existing southbound lane was taken for an HOV lane, running 5.5 miles beginning one mile south of Miami's CBD. The HOV lane is in effect from 7:00 a.m. to 9:00 a.m. (serving northbound traffic) and from 4:00 p.m. to 6:00 p.m. (serving southbound traffic). Any vehicle with two or more occupants is considered an HOV. In 1984, the lane carried over 50 percent of the people in less than 30 percent of the vehicles during those hours. If there were no HOV lane, an additional lane would be required to move the estimated 1,650 additional vehicles resulting from increased single-occupancy commuting. Estimated travel time savings for HOVs is approximately six minutes per trip. Travel time for non-HOVs increased by approximately fifteen minutes since this was a "lane-taken" project, which reduced the number of lanes available for non-HOVs.

In 1976, additional lanes were constructed on I-95 in Miami for HOVs as part of a multi-phase project that included a park-and-ride lot and expanded bus service in the Miami area. The HOV lanes (one in each direction) run 7.5 miles from the Golden Glades Park and Ride to the Miami CBD. The lanes are limited to HOVs with two or more occupants during morning and afternoon peak periods. In 1984, the HOV lanes carried 31 percent of the people in 22 percent of the vehicles. Although effective, this is relatively poor performance for HOV lanes and it is attributed to lax enforcement on I-95. If there were no HOV lanes, the additional 1,110 vehicles would require 0.5 new lanes. This was a "lanes-added" project, and travel speed increased for all travelers. HOV speeds are approximately 53 m.p.h., and non-HOV speeds have increased from 32 to 38 m.p.h.

City of Orlando officials believe that lack of enforcement has rendered Florida's other HOV project ineffective. The 31-mile long HOV lanes (one in each direction) have operated outbound on I-4 from the Orlando CBD to Disney World
in the morning and inbound in the afternoon since 1980. As is the case with Florida's other two HOV projects, two or more occupants qualifies a vehicle as an HOV.

It appears that the only new HOV project currently under consideration by the state is the addition of HOV lanes to I-275 and I-4 in Tampa when they are reconstructed several years from now.

Ridesharing

FDOT's ridesharing program was originally funded in 1982 by the national ridesharing demonstration program. In 1983, the governor created the Florida Ridesharing Council to establish guidelines for rideshare programs. The council disbanded in 1986, having achieved its goals. That same year, ridesharing was recognized as a full partner in FDOT's transportation development activities through inclusion in the Florida Statutes Public Transit Act.

FDOT's "Statewide Ridesharing Program Assessment", released in February 1988, is a study of the first six and one-half years of the program in eight urban areas. At that time there was a total of eleven urban area rideshare programs in the state, but three were new and therefore not included in the assessment. The programs led to the formation of 4,900 carpools and 270 vanpools at an expense of $2.6 million in federal, state, and local funds during the six and one-half years. These carpools and vanpools resulted in a reduction of 38,585,000 vehicle miles traveled. (The cost of reducing the number of vehicles on the road through the state's ridesharing program works out to seven cents per vehicle mile). These programs have been primarily a public-sector undertaking, and in many cases have not received high priority. Under its new commuter assistance program, FDOT is encouraging the private sector to operate rideshare programs and hopes that TMAs will actively promote such programs.

Gold Coast Commuter Services, operating in Broward, Dade, and Palm Beach counties, is one of the more active rideshare programs in Florida. The list of commuters on the computerized match list numbers approximately 650.

Brevard County has 15 commuter vanpools and 42 social-service and school vans, all of which are operated by Van Pool Services Incorporated (VPSI), a private corporation. The commuter vanpools all serve NASA employees. The low density of population in the county means that most persons must travel great distances to reach the space center. Many employees have an 80-100 mile daily round-trip commute. VPSI leases the vans from the Space Coast Transit Authority and, in turn, charges a flat rate of $360 per month for each van. VPSI also operates a carpool program that currently has a data base of 700 names.

The Tampa Bay commuter assistance demonstration project, a regional ridesharing project for Hillsborough, Pinellas, Pasco, and Hernando counties, currently is being set up by CUTR with funding from FDOT. This project is intended to consolidate and increase the effectiveness of local ridesharing programs in Hillsborough and Pinellas counties and to expand the service to the rest of
FDOT District VII.

Prudential Insurance Company, known nationally for its encouragement of ridesharing, has a rideshare program at its Jacksonville office. At one time, the program operated 45 vans, but as gas prices have fallen the number of vans has declined to 13, according to company officials. The company provides insurance and maintenance on the vans, and leases them to the employees who drive and buy the fuel. This program allowed Prudential to take advantage of a 30-percent reduction in minimum parking requirements.

There are additional public-sector ridesharing programs in Orlando, Fort Myers, Jacksonville, Tallahassee, the Florida panhandle, the Suwannee Valley area, and Volusia County.

Alternative work hours

Although not common, many employers in the state have alternative work hour programs. In some cases, however, it appears that management has decided that the benefits—-at least those accruing to the organization—were less than the costs. FDOT recently cut back its flextime program due to difficulties in managing the program and the Hillsborough Planning Commission and MPO recently dropped its flextime program. The Hillsborough County Board of Education terminated its compressed work week program a couple of years ago. These may be exceptions though. Many employers are satisfied with the results of their programs and new programs continue to be developed. The West Palm Beach MPO has sent letters to local public agencies and to private businesses asking them to consider alternative work hour programs and the City of Lake Worth has indicated that it would implement a program. In Jacksonville, a large insurance company has a flextime program that allows an employee to start work any time between 7:00 a.m. and 9:00 a.m. Another one has staggered work hours, with some divisions starting at 8:00 a.m. and some at 8:15 a.m. The potential benefits of alternative work hours are so great that significant efforts should be made to overcome the difficulty of implementing such programs.

Truck traffic restrictions

The City of Gainesville restricts through truck traffic to a system of highways forming a triangle around the city. However, there is no monitoring program to see if the prohibition is obeyed. Many other areas have restrictions in place, and are also unsure how well such restrictions are obeyed. These areas include the City of Jacksonville, and Broward, Pinellas, Manatee, and Sarasota counties. Key West restricts truck deliveries during morning peak hours.

Parking management

Orlando has enacted a "parking alternative and bonuses" ordinance to encourage increased transit ridership and to improve traffic circulation in the downtown. Developers who pay into a TSM trust fund can reduce the number of parking spaces by up to 20 percent, if approved by the city council.
contribution to the trust fund must be approximately 80 percent of what it would have cost to provide the parking. The trust fund is earmarked for mass transit improvements or TDM projects in the downtown area. Alternatively, developers can contribute to the off-street parking trust fund. These funds are intended to be used for construction of a parking garage over the public library. The reluctance of financial institutions to approve construction with reduced parking has hindered the success of this initiative.

A 1987 parking price study conducted for the City of Miami Department of Off-Street Parking (DOSP) recommended several actions. These included increased off-street parking prices and decreased parking subsidies (implemented incrementally in order to gauge the economic impact on the downtown). Currently, approximately 50 percent of employees receive subsidized parking. Therefore, increased parking rates, if implemented without a concurrent decrease in parking subsidies, would affect primarily the other 50 percent of employees. The study estimates that a 50 percent increase in off-street parking rates would shift approximately 1,350 persons to mass transit. According to study estimates, if the parking subsidies also were eliminated 7,000 persons may shift to mass transit. No action has been taken yet on these recommendations. According to DOSP staff, a fear that developers would relocate outside of the CBD and a fear within DOSP itself of losing some of its reason for existence have prevented implementation.

According to Tampa's parking authority director, the core CBD parking rate increase of four years ago (from 50 cents per hour to $1.00 per hour) was aimed at encouraging transit ridership. Periphery CBD parking remains 50 cents per hour. Although no formal study has been conducted, the parking authority perceives a decrease in core CBD parking as a result of the increase in rates.

Key West is considering issuing parking permits to residents allowing them to park in areas off-limits to others and reducing the time available on Old Town parking meters from eight hours to four or even two hours.

Gainesville's "Regional Transit System Long Term Policies and Strategies Study", concluded in 1986, outlined five parking policy strategies to encourage mass transit ridership. These measures include: regulation of the number and location of spaces, increased parking rates, stricter enforcement of parking regulations, the conversion of long-term to short-term parking, and restriction of parking privileges at the University of Florida. For the most part, these measures have not been implemented. Near the university, however, residential on-street parking permits are required and parking is very limited.

A mayor's advisory group in Jacksonville currently is conducting a parking pricing study to determine how to encourage the use of transit and ridesharing. Also under consideration is an effort to discourage long-term CBD parking by building parking lots on the east and west sides of downtown and running shuttles to the CBD. As mentioned previously, Prudential Insurance Company was allowed a 30-percent reduction in the amount of parking space normally required by the city because of its promotion of ridesharing.
Automobile restrictions

There has been little use made of automobile restrictions in Florida. Very localized areas, such as Tampa’s Franklin Street Mall and Miami’s Brickell Avenue, are the exception. In Key West, consideration is being given to a plan to make the Old Town area into an automobile-free zone served by a shuttle.

RECOMMENDATIONS

The Center for Urban Transportation Research (CUTR) believes that the efficient utilization of the state’s transportation resources should be a major focus of state transportation policy. One important technique that can be used to increase the efficiency of transportation systems is transportation demand management (TDM). As noted earlier, the aggressive application of TDM techniques can result in reductions of five to fifteen percent in the number of peak-hour vehicle trips or, in growth areas, five to fifteen percent increases in the people-moving capacity of transportation systems. CUTR recommends that TDM activities be encouraged and, in certain circumstances, mandated by the state. Since the need for and appropriateness of particular TDM measures will vary among communities and will depend to some extent on local objectives, the state should not mandate specific TDM actions except in very special circumstances. The state’s role should be one of encouraging and supporting TDM in general, leaving the development of specific TDM programs to local areas. This can be accomplished through the comprehensive planning process and other state policies.

The most effective way in which the state can promote and encourage TDM is to institutionalize it. That is, steps should be taken to include TDM in the transportation planning process, to increase its visibility, and to give it greater official standing. Specifically, CUTR recommends that the state require that:

1. Each MPO designate a TDM coordinator.
2. A TDM plan be included in DRI applications.
3. A TDM sub-element be included in the TSM element of MPO transportation plans.
4. A TDM sub-element be included in the transportation element of local comprehensive plans.

Although the state should not require that the TDM sub-elements call for any particular TDM activities, it should require that, at a minimum, the sub-elements address all of the techniques discussed in this paper. A TDM sub-element should indicate what is and is not being done and should show how TDM policies, such as parking policies, are coordinated and consistent with other transportation policies.
CUTR also recommends that the state support TDM activities by:

1. Designating a clearinghouse for information and technical support on TDM activities and TMAs.

2. Providing seed money for transportation management associations (TMAs).

3. Giving TMAs statutory authority to operate shuttle systems within TMA areas.

4. Permitting local areas to use impact fees to fund TMAs.

5. Giving increased consideration to HOV lanes on limited-access highways.

6. Setting an example for public- and private-sector employers by instituting alternative work hours, providing general transportation allowances in place of parking subsidies, promoting ridesharing for employees, and providing shower facilities and bicycle lockers for bicyclists.

In addition, the state should continue to fund ridesharing and park-and-ride services and continue to include bicycle and pedestrian facilities in the design of state roads.