Master Transportation Plan
Demand and System Management Element

Transportation Demand Management (TDM)
Transportation System Management (TSM)

Adopted December 13, 2008

ARLINGTON
VIRGINIA

Table of Contents

I. Introduction

The Master Transportation Plan Goals and Policies document specifies three general policies that form the foundation of the Master Transportation Plan (MTP) and, therefore, transportation in Arlington in the years ahead:

- integrating transportation with land use,
- supporting the design and operation of complete streets, and
- managing travel demand and transportation systems.

Integrating land use and transportation is the cornerstone of managing travel demand because focusing mixed-use development on major transportation corridors results in shorter trips, and shorter trips are more conducive to walking, biking and transit than are longer trips. This element of the MTP reinforces the first general policy of integrating transportation and land use, and focuses on the third general policy of managing travel demand and transportation systems.

Often, in growing regions such as this one, transportation plans and programs focus on improving the quality and, to a large extent, expanding the transportation system: new streets and bike trails, wider sidewalks, more frequent and direct transit service. Five of the six modal elements of the MTP focus on improving the **supply** side of transportation, in terms of quantity and quality. Unlike those five elements, this element focuses on transportation **demand** and system improvements to increase effectiveness, without increasing the supply. Supply and demand measures need to complement each other so that, for example, transportation demand management measures that encourage greater transit patronage are accompanied by the transit capacity to serve that higher ridership level. Measures to influence travel demand on a mode-specific basis are specified in other elements of the MTP including transit services in the Transit element, some intersection modifications (i.e., queue jumpers for buses) in the Streets element, bike and sidewalk improvements in the Bicycle and Pedestrian elements, and parking regulation and pricing in the Parking and Curb Space Management element.

Transportation Demand Management (TDM) is a set of specific strategies that influence travel behavior by mode, frequency, time, route, or trip length to maximize the efficiency and sustainable use of transportation facilities. TDM also includes other community goals, such as promoting access for all transportation system users, improving mobility, and minimizing the negative impacts of vehicular travel such as traffic congestion, air pollution, and an auto-dominated physical environment. TDM strategies typically include managing parking and pricing; marketing transit and providing commuter subsidies; promoting walking, bicycling, and ride-sharing; and encouraging telework and flexible work strategies. A successful strategy, pioneered decades ago with the Shirley Highway here in Arlington, has been the designation of high-occupancy-vehicle (HOV) lanes along congested major roadways.

Arlington County has been a leader in implementing TDM principles, facilities, and services, as integral parts of its community development policies and daily County operations. The Arlington County Commuter Services program (ACCS) provides a comprehensive set of programs and services to proactively achieve the goals of TDM enumerated in this section. This is done primarily through the provision of information services and assistance to businesses and individuals. This is complemented by the County's adopted TDM development policy that directs developers and property managers to work with ACCS to provide TDM services that further the goals of the County's transit-oriented community developed policies. The breadth and depth of ACCS are described briefly in the last section of this element, and more information is available at its primary website: www.commuterpage.com. The TDM implementation actions in this MTP element build on the success of ACCS.

Transportation System Management (TSM) is a set of relatively low-cost strategies to make better use of the existing transportation system, focused on having the supply better tailored to existing demand, rather than influencing demand as TDM measures are intended to do. Examples include better signalization (timing, phasing and coordination), freeway-ramp metering, incident detection and management, restriping such as to create left-turn lanes, and real-time traveler information. TSM strategies focus on increasing the efficiency, safety, and capacity of existing transportation systems through such techniques as facility-design treatments, access-management programs, incident-response plans, targeted traffic enforcement, and intelligent transportation systems (ITS).[1] Often, TSM measures involve greater use of technology, and are part of the ITS universe, but some of the most effective measures may simply require changing the pavement marking or adding or removing a single sign.

This Transportation Demand and System Management element specifies objectives, strategies and programs for proactively managing the transportation system and travel demand generated by residents, employees, and visitors to maximize the efficiency and effectiveness of Arlington's multimodal transportation system.

II. Arlington's TDM and TSM Policies, Implementation Actions and Performance Measures

Between 2005 and 2030, about a one-third increase over current travel demands is forecasted for Arlington due to expected population and job growth. Additional travel demand will also occur due to travelers who pass through Arlington on the way to other destinations. Arlington does not now, nor would it likely ever, have sufficient roadway capacity to accommodate these additional travelers should they use single-occupant-vehicle (SOV) travel in the proportion they do today. Therefore, it is imperative that the County continue to work to achieve a better-balanced transportation system that includes greater use of transit, walking, carpooling, and bicycle travel as well as telecommuting and other measures that diminish travel demands. Managing travel demand and the operation of our transportation system is also essential to achieving the community goals of achieving greater environmental sustainability through lessened fuel consumption and reduced greenhouse gas production.

Arlington must act with the cooperation of its regional partners to minimize the effects of the projected growth in travel on our transportation system through both reductions of motor-vehicle traffic and system improvements that achieve greater efficiency and effective capacity. Management and facility improvements to the Arlington street system over the next 25 years could be sufficient to achieve an effective expansion of peak-period capacity of the system by up to 10 percent over current levels. Travel growth greater than that amount will necessitate some shifting of demand from SOVs to public transit, carpools and non-motorized options, or will result in increased traffic volumes and peak-period congestion.

[1] When the concept of TSM was developed in the 1970s, it included almost any method to improve transportation other than a new road or roadway widening. Any measures to manage demand and even fairly expensive measures such as implementing substantial new bus service were considered to be TSM measures. Since then, TDM has evolved on its own as a way to improve transportation, and measures such as wider sidewalks and more bus service are seen as expanding the transportation system, rather than TSM measures to make better use of the existing system.

TDM has been applied for almost two decades in Arlington and has been effective in increasing the percentage of Arlingtonians that commute to work other than by SOVs. In 2007 about 55% of Arlingtonians used transit, carpool, bicycle, telecommute, walk or use other non-SOV modes to get to work. Thanks to the County's progressive transportation policies and services, the trend is in a positive direction, as the percentage of SOVs is down from 58% in 2004 and 65% in 2001 according to the Washington, DC regional State of the Commute Survey. Achieving the first of the Performance Measures for Policies 1 through 6 specified on page 8 —keeping vehicle-miles traveled to within 5% of the year 2005 levels—will necessitate that this trend be continued, and many Arlingtonians and others that travel into and through the County must significantly change the way they travel. By the year 2030, the percentage of Arlingtonian commuters who do not drive alone will need to increase to almost 60% of all commuter trips. In addition, there will need to be similar shifts away from driving by visitors who travel in Arlington for commuting, shopping, or other purposes.

Arlington's TDM initiatives have evolved and expanded since HOV lanes and rideshare matching began in the 1970s and 1980s, and the original TDM policy in 1990. Continued evaluation and expansion necessary to meet the challenges of Arlington's and the region's growth will depend upon (1) funding; (2) incorporation of TDM measures in the site-plan-development option; and (3) extension of TDM measures beyond the voluntary site-plan-review and special-exception, use-permit process. Some of the actions may require legislative authorization from the Virginia General Assembly.

TDM Policies

Because TDM is both a fundamental element of the MTP and a set of services aimed at encouraging the balanced use of many modes of travel, TDM policies can be applied at two different levels. Some policies are applied Countywide and are coordinated with the County's other transportation policies and services. However some TDM policies are intended to be applied to individual site or service areas where specific individualized TDM plans may be developed.

Policy 1. **Incorporate comprehensive TDM plans for all site plans and use-permit developments to minimize vehicular trips and maximize the use of other travel options.**

Implementation Actions:

a. Update the County's 1993 TDM policy for site plans.

b. Encourage employers to provide employees SmartTrip cards or a monthly transportation stipend for use in offsetting the cost of commuter travel, including bus and rail services, vanpool, bicycling, walking and for parking in lots that serve users of commuter rail, bus and vanpools and charge those employees who park on-site the full cost of a parking space.

c. Seek authority to levy fines on building owners that fail to comply with their approved Transportation Demand Management plans.

Policy 2. **Incorporate TDM measures with respect to all existing public buildings and facilities, irrespective of redevelopment status. Explore strategies and incentives to achieve TDM measures in existing private buildings.**

Implementation Actions

a. Ensure that all County facilities and Arlington Schools include TDM plans and measures.

b. Offer to provide transportation information in every commercial, retail, and multifamily residential building**.** Seek funding for the existing information-display program to expand enough to offer to provide transportation-information displays (kiosks) in every large commercial, retail, and multifamily residential building.

c. Encourage employers to implement comprehensive telecommuting programs and flexible work schedules for employees. Increase opportunities for citizens and businesses to conduct online transactions with the Arlington County government.

d. Expand incentives to support TDM practices such as rewards in the form of discount transit passes for individuals who participate in commuter programs.

e. Designate areas around Metro stations or commercial centers as Transportation Management Districts (TMDs) and develop information on traffic volumes and the level of service at key intersections and the reasons why some intersections are performing unsatisfactorily. Use TDM measures as tools to reduce local congestion problems.

Policy 3. **Require regular travel surveys of new development with TDM plans and link to performance measures to enable follow-up actions. Undertake biennial evaluations of the effectiveness of the County's TDM policies and private-sector compliance with TDM commitments, and implement revisions as warranted.**

Implementation Actions

a. Expand efforts to evaluate the effectiveness of the TDM program. Conduct regular data-collection and analysis efforts including a biennial survey to identify changes in the travel habits of Arlington residents, workers and visitors.
b. Seek a new site plan condition requiring that a transportation monitoring study be provided at two years, five years and each subsequent five-year period after issuance of first Certificate of Occupancy for the building(s) and provide a report summarizing findings to the County. The study should identify such information as TDM participation rates, daily parking utilization and travel mode choices of the building occupants.

Policy 4. **Conduct biennial County-wide resident and worker transportation surveys to monitor travel behavior and system performance, and guide future efforts.**

Implementation Actions

a. Document transportation conditions in a periodic State of the Commute Report. Establish baseline data and a plan for periodic surveys to measure change, such as every two to three years. Include travel data pertaining to both residents and employees and detail the survey approaches, sample sizes, and geographic and demographic segmentation. The data should include both work and non-work trips, take into account the reasons for individual travel choices, and measure other reasons for changes in travel behavior over time, such as new development or changes in development patterns, and external factors such as economic conditions or gas prices. They should measure not only "what" is occurring but also "why" and "where."

Use the periodic report, other available data and the following performance measures to conduct a periodic community analysis and review the County's TDM policies and make updates and revisions as appropriate.

b. Use the periodic report as a basis for a proactive program to communicate the value of TDM to citizens, the business community, the County government, and the region, including promoting the culture of a non-auto-dependent community.

***Policy 5*. Apply TDM programs to non-work travel, as well as commuting, for resident, visitor and employee trips through informational displays, website, promotional campaigns and mailings of materials.**

Implementation Actions

a. Expand Arlington's TDM Program to serve more of the traveling population including the entire population of residents, visitors, and employees, trips made for any purpose, and trips made throughout the day and week.
   i. Strengthen and expand outreach capabilities through improved coordination of functions for greater effectiveness.
   ii. Build Arlington Transportation Partners (ATP) program's Relocation Services in conjunction with Arlington Economic Development Department (AED) to respond to economic development conditions and opportunities.
   iii. Enhance ATP's Personalized Transportation Options Portfolio service to include more of the population for all trip purposes, including individualized transportation marketing, goals setting, and performance monitoring.
   iv. Work with ATP, the Commuter Stores, and CommuterPage/CommuterDirect to develop targeted tourism services.
   v. Improve and expand transportation information dissemination capability (see Policy 2a on page 4), including common-area displays in buildings; newcomer/visitor kits; bus-stop information; expansion, further automation, and improved facilities for Arlington County Commuter Services (ACCS) Logistics and Distribution services.
   vi. Work with, ATP, the Commuter Stores and CommuterPage/CommuterDirect to develop targeted retail services.
   vii. Build an expanded events capability to enable more effective and coordinated events in support of specific program objectives and promoting alternatives to automobile use.
   viii. Expand the Commuter Stores and explore ways to take the Commuter Store services to the streets and to more dispersed locations via special kiosks, branding in-building transportation displays as Commuter Store Information Centers, and coordinate efforts with retail or service companies. Develop a CIP program for the Mobile Commuter Store.
   ix. Expand the BikeArlington program through closer integration within the County's TDM outreach, marketing, and events program including bike-sharing and Bike Stations at selected Metro stations.
   x. Build and expand the WALKArlington program integrated with the County's TDM outreach, marketing and events programs.
   xi. Continue to expand the car-sharing program as needed to encourage and serve reduced private-car ownership.
   xii. Undertake policy and facility improvements that encourage travel shifts from private automobiles to existing alternatives such as bicycles, electrically-assisted bicycles and scooters, as well as encourage the use of newer technologies such as plug-in electric vehicles.

xiii. Develop TDM University as a multi-level training resource for ATP clients, and TDM practitioners in the region and as a center for advancing the concepts and practices of TDM.

xiv. Broaden ACCS marketing through creation of a special support team of marketing, public relations and web designers and integrate and unify all of ACCS through coordinated marketing. Upgrade all web sites and technology to match marketing changes.

b. Focus new initiatives on the most cost-effective opportunities to reduce vehicle travel, such as targeting students, seniors or other demographic groups identified to be receptive to TDM services and messages.

c. Implement a system such as TravelSmart to provide individualized marketing to target transportation demand. (TravelSmart, used in more than 300 projects around the world, identifies individuals who want to change the way they travel and uses personal, individualized contact to motivate them to reconsider their travel options. TravelSmart gives participants the customized information they ask for to help them get started, or to continue walking, bicycling, riding transit, or carpooling.)

d. Work together with the Arlington Schools administration, parent-teacher associations (PTAs) and the WALKArlington program to expand Walk to School Day to Walk to School Every Day. Each year, for Walk to School Day, students in all elementary and middle schools receive encouragement and opportunities to try walking or bicycling to school and to walk more during the school day.

***Policy 6*. Coordinate TDM efforts with other jurisdictions and agencies across the region, and actively promote the expansion of the TDM program.**

Implementation Actions

a. Coordinate with regional stakeholders including the Washington Metropolitan Area Transit Authority (WMATA), Metropolitan Washington Council of Governments (COG), and Northern Virginia Transportation Commission (NVTC) to establish a greater regional effort to implement adopted TDM policies, ensure regional coordination and consistency, and increase public awareness of transportation issues and options. Model the implementing body after the Arlington County TDM program which includes the Arlington County Commuter Services (ACCS) structure for outreach to area residents, businesses, workers and visitors, or expand ACCS to become a regional provider, accepting responsibility to implement different levels of programs as municipalities implement individual programs, and receive funding from all.

b. Enhance the SmarTrip card (WMATA's electronic-fare-media card) or create an EcoPass to include options that would allow employers, neighborhood associations, and even certain age groups to buy discounted bus passes. Arlington should work with WMATA to create a variety of SmartTrip or EcoPass options for Arlington employers and residents, such as an ART/Metrobus-only option, as well as considering an unlimited-use fare card for various portions of the Metrorail system.

c. Continue and expand efforts to encourage and facilitate carpooling and instant carpooling formation ("slugging") through a website, street-levels signs, designated congregation locations and other measures.

d. Continue working with regional partners to examine opportunities for congestion-pricing strategies on regional roadways.

Performance Measures for Policies 1 through 6

Measurement of progress toward the vision of the County represented in the Master Transportation Plan is necessary to review whether the policies and implementation actions in place are adequate to achieve the vision, or whether mid-course corrections are needed. Multi-modal transportation options and services are essential, integral components of the County's overall Urban Villages development policies.

The following performance measures are general indicators of how the combined transportation system and services are working over time to achieve the desired results. More specific performance measures may be developed in future revisions of the plan to more accurately gauge the impact of different elements of the plan. The following measures also address four overarching goals of the TDM program, which include maximizing efficient transportation options, minimizing SOV travel, reduction of vehicle congestion, and reduction of vehicle generated air pollution.

1. Maintain peak-period vehicle-miles traveled across Arlington's street network within five percent of 2005 levels.
2. Maintain peak-period vehicle trips traveled across Arlington's street network within five percent of 2005 levels.
3. Shift 10 percent of peak-period trips to nonpeak hours by the Year 2020.
4. Increase daily peak-period non-SOV mode share (transit, carpooling, walking, bicycling) by one-half percentage point annually throughout the County for all types of trips for the next 20 years.

TSM Policies

***Policy 7*. Implement TSM strategies, including coordination and retiming of traffic signals, left-turn lanes, signal-preemption for emergency and transit vehicles, cameras at intersections and transit stations, and real-time traffic information available to the public.**

Implementation Actions

a. Use traffic management and operational interventions to address congestion and better manage conflicts in the demand for street space among passenger, freight, transit, bicycle, and vehicles. Enhance communication between traffic engineers and traffic law enforcement officers to identify congestion causes and implementation measures to address those problems.

b. Manage street maintenance and construction-related lane closures, especially during peak travel periods, to reduce congestion and minimize rerouting of traffic.

c. Evaluate transportation performance at key locations, particularly on north-south arterials including, for example, Glebe Road and George Mason Drive, and seek to enhance performance as specified in the MTP Streets element.

d. Use photo red-light enforcement and other available tools to enforce traffic laws to reduce pedestrian and vehicular crashes attributable to those violations.

e. Seek legislative authority for the future use of photo speed-limit enforcement methods.

f. Install emergency signal-preemption equipment on traffic signals along key corridors within Arlington.

g. Expand signal prioritization for buses to additional corridors as specified in the MTP Transit element.

h. Continue to review and optimize the performance of all traffic signals on a three-year cycle.

i. Develop a parking-management system, as specified in the MTP Parking and Curbspace Management Element, to direct motorists to available facilities.

j. Install closed-circuit-television cameras at additional intersections and transit facilities. Complete the fiber-optic cable network, and upgrade to Ethernet communications.

k. Work with VDOT to deploy dynamic-message signs, along state and County roads to alert drivers of traffic delays and direct them back to alternative routes.

l. Deploy a public web site to display live camera views and provide other traffic condition information.

m. Deploy overhead system detection on primary arterial roads to monitor traffic conditions in real-time and take appropriate corrective actions to help reduce congestion.

n. Ensure that personnel receive appropriate training on emergency preparedness and document best practices applicable to Arlington.

o. Prepare written contingency plans and procedures to optimize traffic-signal timing on arterial streets for use during emergencies to execute emergency-response procedures, including evacuation when necessary.

p. Continue to work with regional partners to prepare emergency travel-contingency plans and to improve coordination and cooperation among federal, state, and local jurisdictions and agencies.

q. Utilize the telecommunications systems to provide voice-directed, route-specific access to update traffic conditions via cell phone, smart phone, or personal digital assistant. Provide incident and routing information on a traveler-information web site, where camera images at intersections can be viewed as well. In addition provide recommended alternate routes under different scenarios via print and broadcast media.

r. Publish information, disseminate it widely, and educate the public about Arlington's emergency-preparedness plans. Consider conducting periodic public demonstrations, with extensive media coverage, showing how Arlington wants the public to respond in specific situations.

s. Form multidisciplinary safety-and-response teams to plan emergency-response scenarios, conduct outreach, and demonstrate Arlington's approach, not only for emergency preparedness, but also for routine public safety.

Performance Measures for Policy 7:

1. Conduct periodic public demonstrations of Arlington's emergency-preparedness plans and track systems performance, public response and media coverage.

2. Monitor actual emergency- response times and evaluate against acceptability thresholds.

3. Decrease localized congestion, where peak-period level of service is currently worse than Level D. (Refer to the MTP Streets Element for more information about the meaning of this and other levels of service.)

4. Achieve greater on-time performance on major bus routes through the installation of traffic signal preemption for transit vehicles, construction of bus nubs and utilization of other TSM measures on primary transit routes.

III. Context

Background

Arlington's planning for transit-oriented development (TOD) has resulted in its recognition as a smart-growth community. Arlington's TOD site-plan development has enabled Arlington to have a robust, urban environment with relatively little traffic congestion. Building walkable, mixed-use neighborhoods, well served by public transportation in the middle of a vehicle-dependent region, does not ensure success in and of itself. Similarly, supplying a variety of travel choices does not always guarantee their utilization. TDM services can provide the information and incentives necessary to encourage greater non-SOV travel.

Arlington's history includes many examples of separate rights-of-way and incentives for alternatives to SOV travel, and of operational measures to increase system effectiveness. In addition to freight and passenger rail service along the CSX Railroad tracks that has been in place for more than a century, and now carries the Virginia Railway Express service with a stop at Crystal City. In the early 1900s Alexandria County was laced with electric railways serving areas such as Rosslyn, Cherrydale, Bluemont, Clarendon and Barcroft. Soon after Alexandria County became Arlington in 1920, railway ridership withered and this network of transit lines dwindled, replaced with buses that operated in mixed traffic.

The 1970s brought bus priority to Arlington with the nationally-acclaimed Shirley Highway (formerly I-95 and now I-395) Bus-on-Freeway demonstration, followed by bus-priority lanes on Wilson Boulevard (Courthouse Road to Lexington Street) and Arlington Boulevard. Later, these bus lanes became high-occupancy-vehicle (HOV) lanes when carpools and vanpools were permitted. As of 2008, motorcycles and vehicles with clean-fuel plates are also permitted to use HOV lanes. Bus "queue jumpers" were established for the 10th Street North access to Arlington Boulevard, and North Lynn Street at Wilson Boulevard during the brief period between the public takeover of private bus companies in 1972, and the beginning of Metrorail service in Virginia in 1977.

Between 1977 and 1986, the Blue, Orange and Yellow Metrorail lines were opened in Arlington. When the Orange Line opened to Ballston in 1979 and buses were rerouted, the bus lanes along Wilson and Arlington Boulevards were discontinued. In 1982, the Custis Memorial Parkway (I-66) opened and, much like I-395 provided a group-riding incentive. In the peak period in the peak direction, only HOVs are permitted unless the travel is to or from Dulles Airport. Almost immediately after I-66 opened,

predictably, congestion was experienced, but not in the peak direction when the HOV incentives manage the demand. Instead, congestion is experienced routinely in the contraflow direction (i.e., outbound in the morning and inbound in the evening) and during the time periods immediately before and after the HOV period.

In addition to the separate transit/HOV rights-of-way and incentives, Arlington has implemented system efficiencies, particularly for traffic signals. By the 1960s, traffic signals were interconnected in certain areas and corridors such as in Rosslyn and along Washington Boulevard between Stafford Street and Pershing Drive, through Clarendon. Then, in the 1970s, Arlington took on responsibility for signals along state roads such as Lee Highway, Columbia Pike, Glebe Road and Arlington Boulevard, tying them all into a computerized system. More recently, Arlington implemented a signal-priority signal system for buses and emergency vehicles along Columbia Pike. Allocation and management of curb space (i.e., for parking and loading activities for buses, taxis and commercial vehicles) affect system efficiency and are outlined in the MTP Parking and Curb Space Management Element.

Demand Management

Arlington's initial demand-management efforts began in the 1960s when site-plan development was initiated, and primarily focused on parking. The parking requirements for by-right office development were (and still are) geared toward virtually one parking space for each employee. The minimum parking requirement for office site plans in Rosslyn in the 1960s was set at a level to reflect the desired long-range share of HOV use, at a higher level than was typical at that time. Similarly, in the 1970s, the minimum parking requirement for a newly-established residential zoning category was set at a level lower than what was the rate of auto ownership at the time. Another demand-management measure that began in the 1970s is the discounting of off-peak transit fares. This discounting not only reflects the lower marginal cost of providing off-peak service, but also encourages people to shift their times of travel. In the late 1980s, Arlington began a ridesharing program, to facilitate the match-up of people desiring to carpool and vanpool, and that small beginning has led to the Arlington County Commuter Services program. In 1993, Arlington adopted its Transportation Demand Management policy, as a corollary to its Traffic Impact Analysis policy. That marked the beginning of consistent efforts to tailor TDM measures and commitments to each new development.

Arlington County's Existing Commuter Services: The Delivery Mechanism for TDM Services

The promotion of transit, walking, bicycling, carpooling, vanpooling, telecommuting, and other options to reduce the demand for vehicular travel, lessen congestion and air pollution, and improve accessibility in Arlington is accomplished by providing a variety of direct services to individuals and assistance to employers, residential-property managers, developers, hoteliers, and others who, in turn, offer TDM services and incentives to their employees, residents, and guests. These services are known as Arlington County Commuter Services (ACCS). While the services offered are primarily voluntary and available to anyone, some of the services are connected with site-plan conditions agreed upon when new development has been approved.

ACCS provides information and services to educate transportation system users on everything from the basics of what services and facilities the system offers, to how to use them, and to individual and customized support for planning trip solutions to get from point A to point Z. ACCS also facilitates

delivery of transit fare media and travel incentives, such as transit-fare discounts, that are available to residents and employees from employers and other organizations.

ACCS, through a program known as Arlington Transportation Partners (ATP), works with Arlington businesses, property managers, and hotel managers who, in turn, work with their respective employees, tenants, and guests to advance travel options. In 2006, ATP's 625 client companies and agencies employed approximately two-thirds of the work force in Arlington. On a "retail" level, ACCS provides public information and education via countywide information initiatives, commuter Web sites, and direct mail, and at bus stops and commuter retail stores. In 2006, the Commuter Stores and Commuter Direct sold more than $12.6 million of fare media to more than 226,000 customers.

While users are most likely familiar with ACCS services for particular modes, such as transit, walking, bicycling, carpooling, telecommuting, and so on, ACCS organizes its services and activities by operational function.

Site-Plan Requirements Based on the TDM Policy

Arlington's existing TDM policy seeks a commitment from developers seeking site-plan approval for their projects to offer building occupants specified TDM services and incentives. The policy outlines a matrix of potential strategies based on the site's land-use and transportation categories. Each TDM strategy is selected to mitigate the transportation impacts of the planned development based upon a traffic impact assessment (TIA), parking ratios, and other site characteristics. The policy also includes a description of TDM employer services and provides the foundation for many of the TDM services now available to all employers in Arlington on a voluntary basis.

The final approval of the site plan typically includes a series of detailed conditions that a developer must follow to receive a building permit. TDM conditions run for the life of the building, regardless of owner, and guide all decisions about development of the property. Like many other site-plan conditions agreed to between the County and the developer, the approved TDM conditions must be complied with before a final permit for occupancy is issued.

Sales – Arlington Transportation Partners (ATP):

Business-to-business outreach sales and services provide "wholesale" information assistance to businesses, employees, residents, and visitors.

- Employer Services – Typically referred to as Commuter Benefits, these services help employees access the worksite more efficiently and less expensively, with resultant benefits to both employees and employers.
- Residential Services – information for multifamily complex residents.
- Visitor Services – information services for hotel guests and employees.
- Site-Plan Assistance/Development Services – assistance for developers and managers in fulfilling TDM site-plan requirements.

Retail Commuter Information and Support:

- Direct information, assistance, and pass sales for commuters, residents, and visitors.

- Commuter Stores – four stationary (Ballston, Rosslyn, Crystal City, Shirlington) stores and one mobile store for fare sales and personal assistance.
- CommuterPage.com – family of Internet sites with interactive information and services (including BikeArlington.com, WALKArlington.com, and Arlingtontransit.com).
- CommuterDirect.com – online transit fare sales to individuals and companies.
- Commuter Information Center – 703-228-RIDE information.
- Information Kiosks – kiosk displays placed in building lobbies and other high-traffic locations that provide transit schedules, maps, and other information for self-service.

Marketing:

- Umbrella transportation marketing – comprehensive information and marketing of non-SOV modes and services as the core of the car-free, urban-villages lifestyle; public branding and awareness of Arlington's transportation advantages.
- Transit marketing – comprehensive marketing and promotions for Arlington Transit (ART), Arlington Metrobus, and Metrorail.
- Bus Stop Information Program – outfitting all stops with maps, schedules, and information.

Operations and Logistics:

- CommuterDirect.com Support Center – fulfills and mails online fare sales orders.
- Distribution and Logistics Program – distributes brochures to all outlets, individual customers, and wholesale clients, and supports the Bus Stop Information Program.

Special Initiatives:

- BikeArlington program – promotions and information to encourage bicycling.
- WALKArlington program – promotions and information to encourage walking.
- Arlington car-sharing program – support and marketing partnership with private provider Zipcar.
- Arlington retail marketing program – retail partnerships, sponsorships, and point-of-purchase transportation information.

While these functions are presented as separate initiatives, they work together to facilitate travelers' awareness, appreciation, and selection of non-SOV modes of travel to, from, and within the County. Programs to encourage bicycling, walking, and car-sharing complement each other and larger programs such as transit, by improving peoples' abilities to access other modes and by providing additional mobility options that do not involve owning or using a private vehicle.

ACCS has started several new services in recent years. The "Way To Go" campaign promotes the urban lifestyle of living, working, and playing in Arlington with less reliance on the automobile as a way of life. Various services seek to implement this theme. ACCS began a progam in 2004 to offer TDM services, similar to those being offered to employers, to multifamily residential complexes, aimed not only at commuting trips. BikeArlington and WALKArlington have services to promote biking and walking for all purposes. In 2006, Arlington initiated a program dubbed "I Ride" aimed at assisting and encouraging transit riding by Arlington's teenagers. As of 2008, a similar program is being planned to improve the mobility of Arlington's seniors, by encouraging them to use transit.

Car-sharing has become an important component of TDM. Zipcar offers car rentals on an hourly basis to its more than 3,300 Arlington members as of 2008. Car-sharing provides an opportunity for local residents or employees to have occasional access to private vehicles without auto ownership. Surveys have found that access to car-sharing allows members to sell, or not purchase personal vehicles, and to more frequently travel instead by transit, carpool, walking, or bicycle. A similar program is currently being planned for short-term use of bicycles.

Traffic Signals and Intelligent Transportation Systems

The application of intelligent transportation technologies has greatly improved the operation and performance of traffic signals. Arlington has an advanced transportation-management system with a central-command center and communications to all signalized intersections. Signal- timing plans can be adjusted, and the status of signal operations can be observed in real time. In 2005, the County installed 19 closed-circuit-television (CCTV) cameras to view traffic conditions at major intersections and transit stations in real time on workstation monitors and on wall-mounted monitors. Arlington uses these cameras to respond to incidents that block traffic. With additional resources, the program could cover more of the County.

The most extensive communications network for transportation purposes in Arlington is a computerized traffic-signal system. Arlington uses the ACTRA signal software to manage the timing plans of about 240 traffic signals. The ACTRA system monitors each traffic signal and issues timing commands as directed by the system operators. As of 2008, the County continues to use an adaptive traffic-control system called SCOOT operating in several corridors, including at 21 traffic signals on Columbia Pike. This system uses a central-computer server to continuously re-optimize signal timings by adjusting green time, signal-cycle times, splits, and offsets (the difference in the start of main-street green between adjacent signals). SCOOT uses observed traffic counts at locations in the corridor. This adaptive system also incorporates bus priority, by having a beacon receive a signal from an approaching bus so as to extend the green time, so buses wait at fewer red lights. The use of SCOOT is still experimental; its benefits are continually evaluated, and its use is being focused on areas where it delivers the most benefit. In some locations it has been replaced by conventional timing plans to accommodate pedestrians better and reduce operations efforts.

Emergency-vehicle preemption is a technology similar to bus priority except that it can provide an immediate green light to an approaching police cruiser, fire truck, or ambulance. Arlington operates emergency-vehicle preemption on Glebe Road near I-66, on Columbia Pike and at other signals near fire stations. However, signal preemption can have a negative impact on traffic flow after the emergency has passed, and can put pedestrians at risk if the pedestrian-signal phase is aborted.

The deployment of technology throughout Arlington's transportation system is being supported by an investment in infrastructure. This investment includes replacement of the County-owned 52-mile network of copper wire with a fiber-optic network that will have a much higher bandwidth and support nearly an unlimited number of traffic cameras, changeable (electronic) roadside signs, and other technologies.

Emergency Preparedness

Safety and security during special events, incidents, and evacuations involve deployment of emergency-management personnel from around the region. When an incident or evacuation occurs, as it did at the Pentagon on September 11, 2001, a logical emergency-response scenario is to route traffic from affected interstates and regional freeways onto arterial streets in Arlington. To avoid gridlock on arterial streets when this occurs, special traffic-signal-timing plans, variable-message signs, emergency-personnel involvement, and public-information programs are needed.

Arlington works cooperatively with various federal, state, regional, and local agencies to develop and implement emergency-preparation and evacuation plans and procedures. Response plans for certain likely high-impact emergency situations have been developed based on regional coordination. Moreover, Arlington is working to enhance its capability to respond to unplanned emergency events. Certain measures - including emergency traffic-signal preemption, CCTV monitoring of intersections, variable-message signs and high-output communication systems (including Arlington Alert e-mails and radio)— are important components of an emergency-response infrastructure that is being put into place.

High-Occupancy-Incentive Corridors

The MTP focuses on arterial and local streets; however, Arlington also has a strong interest in the parkways and major state and interstate highways that traverse it. While these facilities are managed by state and federal agencies with regional, state, and national perspectives, it is the County's responsibility to represent the interest of its residents in the ongoing planning and management of these facilities. In so doing, the MTP includes policy guidelines to advance the interests of the County, its residents, and its businesses. For example, recommended express bus services along major corridors are specified in the MTP Transit element.

Northern Virginia's regional high-occupancy-vehicle (HOV) system, including HOV lanes on I-395 and I-66 provides drivers commuting to and from Arlington with a strong incentive to use transit and carpool. The system even spawns the occurrences of informal carpool meeting areas (known as slug lines) around the region to facilitate SOVs picking up passengers at the entrance to HOV facilities. While a high level of ride-sharing would be expected given the extent of interconnected HOV lanes the number of employed Arlington residents commuting to jobs in two- and three-occupant vehicles has decreased nearly 19 percent since 1990. This is consistent with trends elsewhere in the region.

In an area as fully developed as Arlington, the primary overall solution to the problem of traffic congestion is to implement Transportation Demand Management (TDM) to encourage transit, walking, carpooling, teleworking, and bicycling. Superior facilities and services need to be combined with TDM. Land-use decisions affect travel choices and can make TDM strategies more effective. Street design also influences travel decisions, as the availability of facilities is especially important to non-motorized travel.

Interstate 66 was constructed in Arlington during the late 1970s and early 1980s against the wishes of the Arlington County Government and many residents. Since its opening, I-66 has been a multimodal corridor that incorporates the Metro Orange Line, bus routes, and a shared-use trail. Trucks are prohibited from using I-66 inside the Beltway, and the four travel lanes for general traffic have the peak-period incentive of limiting travel to high-occupancy vehicles in the peak direction (eastbound in the morning and westbound in the afternoon) plus traffic to and from Dulles Airport and, recently, hybrid vehicles. In the 1980's VDOT reduced the occupancy threshold from HOV-4 to HOV-3, and then to HOV-2 with the promise of reverting to HOV-3 should travel speeds drop below set minimum standards. Traffic on I-66 has grown considerably since its opening, and traffic congestion routinely occurs in both directions in peak and non-peak hours. The adjacent Orange Line and Custis Trail are also extremely well utilized, with those facilities together carrying more people in the peak hours than the interstate highway.

As of 2008, VDOT was moving forward with plans to add segments of a third westbound lane between Spout Run and the Dulles Connector. Arlington County opposes this widening because it would adversely affect neighboring residential and park properties, diminish the possibilities for expansion of transit in the I-66 corridor, and not produce enough long-term improvement in travel to justify the hundreds of millions of dollars of expense. Arlington County would like to instead see the highway upgraded by improvements to ramps and merge lanes at interchanges such as Washington Boulevard and by TDM and TSM measures to provide more-timely traveler information and quicker incident response. Greater capacity on the roadway could be achieved through a reversion to HOV-3 for the peak-period, peak-direction vehicles and application of HOV-2 at certain other high-demand periods. Arlington also supports provision of more-frequent bus service in the I-66 corridor and the reservation of right-of-way for addition of rail lines. Arlington also believes that, should the highway be modified, it should not come at the expense of the existing Custis Trail. Bicycle and pedestrian travel through the corridor must be maintained or enhanced. The County intends to remain actively involved in VDOT's planning for any changes to the roadway.

Interstate 395 (Shirley Highway) along with I-95 south of the Beltway is the most heavily used radial transportation corridor in the Washington region. In addition to the six to eight general travel lanes, the road includes two express lanes south of the Pentagon that operate as HOV-3 northbound on weekday mornings and southbound in the evenings. Those HOV lanes are used extensively by vanpools and transit buses traveling to Arlington locations such as the Pentagon and Crystal City from as far south as Spotsylvania and Stafford counties. While a number of significant projects have been undertaken to improve travel on the roadway, including an extensive rebuilding of the I-395/Beltway "mixing bowl" interchanges, the regular and express lanes sometimes experience periods of considerable congestion, particularly due to accidents, severe weather, or other major incidents.

As of 2008, VDOT has contracted with private firms to implement high-occupancy-toll (HOT) lanes. The two existing HOV lanes would be converted to HOT travel at all times of the day, and a third HOT lane

would be constructed. Vehicles with three or more occupants would continue to use the HOT lanes free of charge at all times. Additional improvements, such as new ramp access in the Shirlington and Pentagon/Crystal City areas and in several locations outside Arlington, are under consideration as part of the project. Arlington is also working with VDOT, the National Park Service, and the District of Columbia on potential improvements in the 14th Street Bridge corridor that would improve multimodal travel.

Further information on plans for these and other Northern Virginia regional highways can be found in the Northern Virginia 2030 Plan, (see www.transaction2030.com for the Northern Virginia Transportation Authority's regional TransAction 2030 plan) indicate that was developed and adopted through the Northern Virginia Transportation Authority in 2006.

The Impetus for TDM and TSM

Arlington is in the midst of one of the nation's most congested metropolitan areas. Forecasts of transportation conditions in 2030 in Northern Virginia (see the Northern Virginia Transportation Authority's regional TransAction 2030 plan) indicate that several major roads in Arlington will experience recurring congestion over several hours each weekday. With local travel demands expected to grow by about 25 percent over the next 25 years as Arlington adds new residents and jobs, there is a critical need for TDM and TSM in ensuring that Arlington's transportation system continues to operate effectively. Relying exclusively on expanding capacity, especially for roadways, is neither realistic nor desirable.

Environmental concerns

The long-term implications of national clean air, energy, carbon emissions and climate change policies are difficult to predict. If significant shifts away from driving private motor vehicles to transit and non-motorized travel are required, Arlington will be well served by its proximity to the region's central core, and its relatively high-density mix of employment and housing. Research has found that burning a gallon of gasoline produces approximately 25 pounds of CO_2 emission. Therefore, measures such as TDM and TSM that improve travel efficiency and enhance non-driving alternatives including transit service, carpools, bicycles, and walking will be essential in achieving the carbon-emission reductions essential to ensuring our community's and planet's long-term viability. TDM and TSM are among Arlington's most effective tools in facilitating long-term change toward a healthier environment.

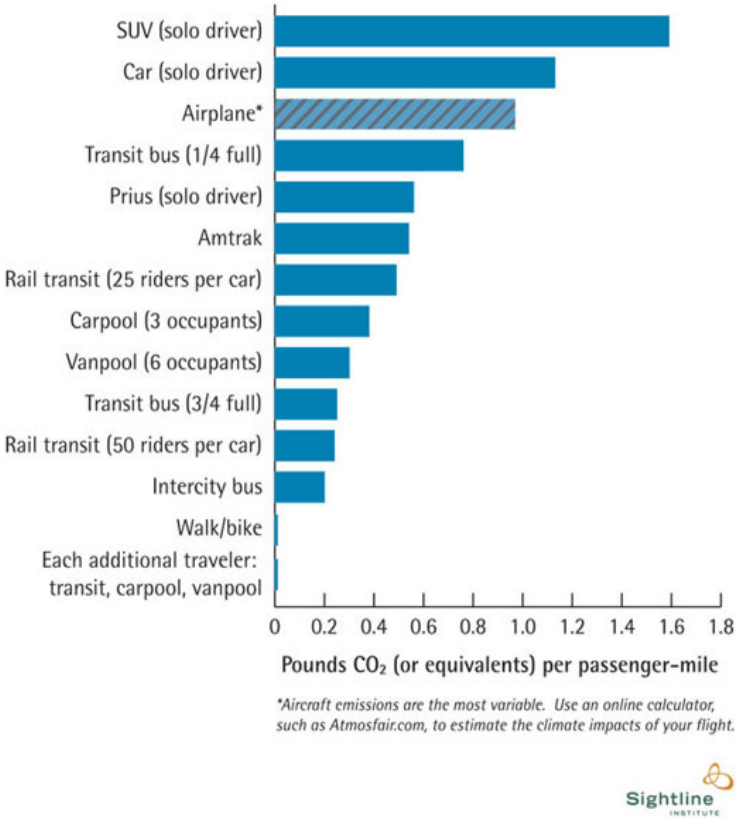

Table 1. TDM and TSM Benefits

Benefits for Individuals:

- *Knowledge* - make better-informed travel choices.
- *Mobility* - travel options for those that cannot or prefer not to drive. Provides access to jobs, shopping, medical care, etc. and other aspects of fulfilling lives.
- *Options* – choices can provide less stress, shorter commute times, reduced cost, and the opportunity to make more productive use of time.
- *Health* - public transit is safer than private automobile. Walking and bicycling reduce obesity, the risk of heart disease, and a variety of other illnesses.
- *Financial* – eliminates or reduces the costs of owning, operating, and maintaining a vehicle - can amount to thousands of dollars a year.
- *Personal Quality of Life* – A 2006 survey of Arlington residents showed that 88% of residents are satisfied with their quality of life, and statistically the transportation system and services in Arlington are clearly a major determinant of their overall quality of life.

Benefits for Businesses:

- *Financial* - saves companies thousands, even millions of dollars in parking costs. Adds options to a company's benefits plan at a relatively small cost.[2]
- *Personnel* **-** easier recruitment, an expanded labor pool, extended service hours and better employee retention.
- *Wellness* - less stressed, more satisfied, and productive workers; improved morale.
- *Efficiency* - less tardiness and absenteeism due to traffic, stress, or health issues. Easier delivery and better customer access.
- *Business Location* – A 2007 Survey of Arlington Business leaders verified the above benefits of TDM services to their companies and cited the County's transportation system and services as the number one reason to locate a business in Arlington.

Benefits for the Community:

- *Quality of Life* - Less traffic, improved access, greater mobility, and expanded travel choice create an enhanced quality of life for Arlington's residents, workers, and visitors.
- *Financial* - enhances Arlington's desirability as a good place to live, work, and play as reflected in the County's high property values, low tax rate, and excellent business climate.
- *Environment* - less air pollution and less contribution to water pollution through urban storm water runoff. Reduced fossil fuel use and carbon emissions.

TDM Is Effective and Cost-Effective

Surveys in 2007 (in the D.C. region) and 2006 (in Arlington) have documented some of the benefits of Arlington's multimodal transportation services, its mixed-use TOD characteristics, and its TDM services.

[2]*Quantifying the Business Benefits of TDM,* U.S. Department of Transportation, Center for Urban Transportation Research for the Office of Research and Special Programs, Winters and Hendricks, 2001.

Arlingtonians take the train and ride the bus at twice the rate of commuters regionwide, and they walk to work at approximately six times the regional rate[3].

The lower rates of reliance on automobiles for commuting result from a combination of the effects of the presence of convenient transportation services, their physical integration with the development pattern, and their promotion through Arlington County Commuter Services. The impact of offering TDM services and incentives to employees through their employers is illustrated below. At worksites where TDM services are offered the drive-alone rate is nearly 30% lower, transit use is double, and carpooling and carpooling/vanpooling is three times the rate, relative to worksites where no TDM services are offered.

Table 2. Mode Use at Arlington Worksites Offering TDM Services**

Commute Mode	TDM Services Offered	TDM Services Not Offered
Drive Alone	57%	79%
Train (Subway or Commuter Train)	22%	11%
Bus	6%	3%
Carpool/vanpool	12%	4%
Walk/Bicycle	3%	3%

***2007 State of the Commute Survey for Washington Council of Governments Commuter Connections by LDA Consulting et al. It is important to note that it's not possible to say that the availability of commuter services and/or availability of parking were the only reasons for the differences in mode use. Many factors influence commuters' choice of transportation, including personal needs and specific travel and site characteristics.

Also, the Victoria, Australia, Department of Infrastructure investigated the cost-effectiveness of community-based programs that promote travel-behavior change, and found that such programs can be highly effective in increasing the use of public transit, as well as use of other alternatives to the private car.[4] The Victoria study concluded that marketing-based TDM programs (similar to those operated by Arlington) have resulted in financial benefits of $3.09 to $4.70 for every dollar invested in the program.

[3] 2006 Survey of Arlington Residents by LDA Consulting and Southeastern Institute of Research.
[4] *Travel Demand Management: Public Transport Business Case*, Ker for Department of Infrastructure, Victoria, Australia, June 2003.

IV. TDM Strategies

Following are brief descriptions of applicable strategies for transportation demand management that are frequently employed in Transportation Demand Management Plans adopted through Arlington's site plan and use permit approval processes.

Program Structure, Participation, and Funding

- Basic to the success of any TDM program is employee education and information dissemination concerning all the transportation alternatives to driving alone. Developments work with the Arlington County Commuter Services (ACCS) and its business-service agency, Arlington Transportation Partners (ATP), in promoting transportation options to persons employed within the development. ATP is prepared to provide assistance to commercial and residential properties to help their management in complying with the requirements of this TDM policy. Typical transportation-marketing strategies include transportation fairs, distribution of ridesharing marketing material to tenants and employees, displaying information material, such as posters, and brochures in common areas, including hallways elevators, restrooms, water fountains, and building-management offices.

- The success of an employer TDM program is enhanced greatly if implemented through an Employee Transportation Coordinator (ETC) or a Property Transportation Coordinator (PTC). A PTC is an employee of the building-management team and is responsible for implementing the developer's TDM program. The PTC tailors the TDM program in response to employee-transportation-survey results. The PTC can be either a part-time or full-time employee, depending upon the number of employees on-site and the complexity of the TDM program (which may be a function of the degree of impact associated with the development). PTC duties include: implementing the TDM program; conducting transportation surveys; managing a preferential parking and transit subsidy programs; and promoting group-riding to development tenant employees. ETCs function in much the same way except that they work for an individual company, which may be a tenant in a building, and coordinate transportation options for their co-workers within that company.

- Site plan contributions often include a contribution to Arlington County Commuter Services, or a TMA based on a rate per square foot GFA of a given use, The terms of participation may range from 30 years to as long as the operation exists and include provisions for adjusting the contributions annually by the Consumer Price Index (CPI) to account for inflation. Recognizing that residential development generates fewer trips than commercial development, rates of contribution are somewhat less for residential development.

  The contribution is based on a formula, escalated by a factor for CPI, and applied by the square foot, as the most fair and equitable way to insure funding for the program.

Facilities and Improvements

On-Site Construction

- Developments may be requested to dedicate on-site easements to the County and to construct associated roadway improvements adjacent to the site, such as additional travel and turn lanes.

- All site-plan development is expected to provide transportation kiosks or information centers to provide information about transportation options.

- All developments may be requested to provide space for transportation information stores (referred to as "Commuter stores"). Commuter stores are proposed to be located throughout the Metrorail development corridors. The Commuter stores, operated by Arlington County Commuter Services, provide in one convenient location a resource for commuter information. Transportation information, such as Metrorail and Metrobus route, schedule and fare information, commuter-bus operations, rideshare-matching applications, vanpool-subsidy programs, is provided to the public on a walk-in basis. Transportation Management Agencies (TMAs) are private associations of companies which provide additional transportation information and assistance in some areas. In Metrorail Station areas where a Commuter store has yet to open or in areas not conveniently served by an existing Commuter store, proposed developments may dedicate commercial area to a new transit-store operation. The Commuter store may be dedicated for as long as the development exists on the site or until a nearby convenient location is established. Arlington County Commuter Services contributions are applied towards operation of the Commuter store on a collective basis to cover lease costs, staffing and program development.

- Depending upon the category of development, a business center may be required to prevent incidental trips and to encourage telecommuting.

- All site-plan development is expected to provide secure bicycle-storage facilities in a location convenient to office, commercial or residential development areas. Use Permit development may be required to provide secure bicycle-storage facilities as well. The facilities shall be highly visible to the intended users and protected from precipitation. Additional standards cover the minimum number to be provided by type (Class) and location. A written plan is required for the operation of the bicycle facilities.

- Depending upon the category of development, shower facilities may be provided within the development as an amenity promoting bicycle or walking commuting by employees to the site.

- Developments shall provide parking facilities designed in such a way as to ensure access by vanpools. At a minimum, 10 percent of the parking capacity shall be accessible to vans by providing a minimum vertical clearance of 86 inches from the street to the parking areas and to the garage exit onto the street. The grade of ramps, beams, pipes or other obstructions must be taken into account to allow the specified effective height.

- Developments should incorporate into the design adequate short-term off-street parking space for delivery vehicles.

Off-Site Construction:

- Whereas the previously discussed strategies may be associated with typical development plan review approval and would be included in part in virtually all site-plan reviews, strategies which deal with off-site construction must be viewed as unique and must be addressed on a case-by-case basis. There will be instances where it will be mutually beneficial for the community and the developer to pursue off-site construction. However, off-site improvements such as provision of

traffic signals and turn lanes or enhancements to public transit facilities that are contributed by the project are generally negotiated through the site plan approval process rather than as part of the TDM program.

Coordinated Parking Management

- Building owners of property subject to approved site plans generally are typically requested to provide parking spaces for vanpool vehicles. Preferential parking programs involve reserving conveniently located parking spaces for carpools and vanpools. Within multi-story parking garages convenient location is defined as near the elevators and close to the entry/exit points to reduce travel time and distance in the parking garage. The spaces are to be clearly marked "Reserved for carpools and vanpools." A minimum of one carpool/vanpool space must be designated at Certificate of Occupancy. An area of carpool and vanpool spaces must be designated on the Parking Management Plan to be set-aside as they are requested. The number of spaces set aside shall be unlimited. At a minimum, 10 percent of the parking supply should be accessible to vans by providing a vertical clearance of 86 inches. Vanpools generally need to operate at or near full occupancy to cover their operating expenses Developer assistance can include additional loan programs, outright purchase, matching or doubling passenger subsidy programs and backup vehicles. The programs include interest-free loans for a specified period of time and start-up passenger subsidies for unfilled seats.

- To encourage group-riding, the preferential-parking program should include a parking-rate agreement charging market rates for single-occupant vehicles. Annual parking surveys shall be conducted to determine local-area price structures for determining "market rates" to be charged.

- To ensure that parking rates will reflect true market conditions in a competitive environment, management agreements with parking-garage operators are encouraged. Although a set number of spaces may be reserved for a tenant, the cost of an individual parking space is not controlled by the tenant subsidies so as to prevent being provided to specific persons.

- Unbundle parking so those who rent or purchase building space can choose how much parking is included.

- Parallel to charging full-market parking rates, subsidies are encouraged to promote group-riding in both carpools and vanpools. Depending upon the category of development and the need to reduce single-occupant-vehicle trips to the site, parking rates for carpools and vanpools may range from market rate to no cost (full subsidy).

- Car-sharing vehicles have proven to reduce the number of vehicles owned and the vehicle-miles traveled (VMT) by the members of car-sharing organizations. This reduces congestion, air pollution, greenhouse-gas emissions, and the need for parking of seldom-used vehicles.

Transit Program

- To improve access between Metrorail Stations, office and residential developments, and commercial businesses, developers have proposed to operate local-area shuttle buses. As a larger number of developments in the Metrorail Station areas are constructed and occupied, the density

required to sustain such transportation operations increases, improving the likelihood of the service being successful. Depending upon the category of development, contributions to support the operation of public buses may be sought as an alternative to establishing private shuttles. Contributions to provide free fares on the local bus system may also be appropriate. The Transportation Management Plan (TMP) should also include provisions for adjusting the contributions annually by the Consumer Price Index (CPI) to account for inflation. The uniqueness of the program is commensurate with the need to reduce vehicle trips to the site.

- Depending upon the category of development, a development may operate an employee shuttle bus-service. The shuttle-bus system would provide improved pedestrian connections between a Metrorail Station and the site. The route and fare structure may be modified over time to include other development sites that have made a financial participation commitment under III a. above.

- As a complement to charging market-based parking rates, subsidizing a resident's or employee's transit costs can often provide a sufficient financial incentive to cause a mode shift in commuting habits. Transit-subsidy programs may apply to the regional Metrorail/Metrobus system, state commuter-rail and commuter-bus systems. Depending upon the category of development various transit-program subsidies may be sought. Three levels of subsidy are provided in the matrix - 25-50 percent, 50-75 percent, and 75+ percent of the maximum-allowed, federal, tax-free-commuter benefit, which also includes bicycle and walking subsidies ($110/mo. in 2008, periodically adjusted for inflation). The federal tax-free benefit applies to employer-based commuting programs. For residential developments an equivalent incentive can be offered to residents by developers/management without the tax-free provision.

Progressive Employee Policies

- Alternative work schedules, such as flex time, variable work-hours and the compressed work week have been successful in spreading peak-hour traffic volumes over, or out of, the peak period and in reducing traffic volumes two days of the week. Flex time includes staggered and flexible work hours which allows employees to arrive or leave before or after the normal congested commuting period. Flexible working arrangements increase the likelihood that prospective rideshare employees can match working hours. Compressed-work-week options include working four 10-hour days (4/10), or nine days over the two-week period (5/4/9). Depending upon the category of development, developers might require tenants to support innovative work scheduling which limits peak period vehicle travel.

- Telecommuting by working remotely from home, is a viable means to reduce the number of employees who commute to a work site on a daily basis. One day of telecommuting per week translates into a 20 percent reduction of travel for an individual who works a five-day week, and may provide business continuity in case of a disaster.

- Depending upon the category of development, trip-generation restrictions may be incorporated into the development's approval as site-plan conditions. Trip-generation restrictions limit the number of vehicle trips allowed to enter or exit the development during a specified period of time, such as during the morning and evening peak hour of the adjacent street. Vehicle trips are monitored on an as-needed basis to monitor conformance, and a set of fines or new TDM measures may be imposed for repeated violations.

- A reason often cited for not participating in ridesharing arrangements is the need to have a personal vehicle at hand for emergency situations. A number of innovative programs, such as Commuter Connections' Guaranteed Ride Home program, have been developed which provide emergency transportation to one's home or child's school, daycare, etc. Programs include a limited taxi/bus fare subsidy, and relaxed company-vehicle policies.

- Arlington Transportation Partners (ATP) is the business-services branch of Arlington County Commuter Services (ACCS). ATP is set up to work closely with developers, property managers, and tenant employers of commercial or residential properties to help make it easy for them to fulfill the requirements of this TDM policy and their particular approved site-plan transportation conditions and TDM plan. Transportation management associations (TMAs) are groups of companies or employers in a particular area that might, in rare circumstances, choose or be required to form to help deal with especially complex or large-scale transportation issues in that area, in cooperation with Arlington County and ATP. A TMA can allow businesses to pool resources to address common issues, but only in close cooperation with ATP.

Performance and Monitoring

- Staff needs to monitor the annual transportation-performance reports to insure compliance with the approved transportation-management plans. Without staff capability, the County will be unable to determine compliance with its requirements for transportation actions. The amounts listed represent private-sector contributions to supervising the implementation and operation of the plans.

- In order to set objectives and monitor performance, employee transportation surveys should be conducted on an annual basis. Surveys are useful in determining commuting patterns, mode split, average commute distance and travel times, and employee attitudes, needs, and willingness to switch modes. The data are useful in developing successful transportation programs, such as transit subsidies, and carpool and vanpool programs.

- Compliance will also be enforced through the Zoning Ordinance.

- Contingent phasing ties compliance to building permit approvals relating to the phasing of construction for the entire project. Subsequent phases of the project will not be approved unless compliance with the traffic mitigation program is demonstrated.