

Incorporation of Transportation Demand Management (TDM) into the Development Review Process

Final Report and Recommendations



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Department of Transportation**

**Incorporation of Transportation Demand
Management (TDM) into the Development Review
Process**

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Table of Contents

1.0 Executive Summary	1
2.0 Existing Conditions	5
2.1 Introduction to Transportation Demand Management.....	5
2.2 The Benefits of TDM	5
2.3 Washington, D.C.’s TDM Policy.....	6
2.4 District Development Application Process.....	7
2.5 Federal Government and Military	8
3.0 Lessons Learned and Input.....	9
3.1 Best Practices	9
3.2 Focus Group Input.....	11
4.0 Recommendations	12
4.1 Maximizing TDM with the Current Process (Near Term: Implementation within six months)	12
4.2 Long Term Changes to Better Maximize TDM Benefits (Implementation within three years)	18
5.0 Other Planning Issues that Indirectly Impact TDM	23
Appendix A: TDM Programs and Ordinances: Literature Review	
Appendix B: Focus Group Summaries	
Appendix C: Draft TDM Plan Requirements	

List of Tables

Table 1: Summary of Recommendations.....	3
Table 1 Continued: Summary of Recommendations	3
Table 2: TDM Recommendations Matrix.....	22

1.0 Executive Summary

The District of Columbia is attracting new residential, commercial, and retail development and redevelopment at an unprecedented pace. This activity, while highly beneficial in many respects, generates significant additional vehicular traffic to, from, and within the District. The current redevelopment permit process lacks a systematic approach and process within DDOT and among all District agencies for integrating Transportation Demand Management (TDM) policies as a way of meeting the District's goals of reducing auto trips and accommodating travel through the complete transportation network.

TDM is now handled on a project-by-project basis, with limited opportunities for coordination among agencies or implementation of sub-area TDM goals. Current practice applies a one-size-fits-all framework to development, with limited differentiation across diverse geographic areas, development types, development sizes, or other aspects. This approach does not allow maximization of TDM opportunities or provide a process for consistently applying TDM analyses, nor does it apply TDM expectations specific to the anticipated traffic impacts of various types and scales of proposed development.

To address these issues, DDOT initiated this analysis of TDM in the development review process. The project included three primary tasks:

Review of Best Practices and Standards:

National best practices were researched to identify examples of effective systematic approaches to TDM. Through the research it became evident that TDM in the development process tended to be addressed in two general ways:

- Addressing TDM directly through the development approval process and in particular through parking ordinances. By limiting parking or encouraging denser development, developers need to consider TDM early on and must participate in ongoing programs to provide alternative access options to ensure the viability of their projects.
- Developing TDM participation ordinances that require ongoing financial contributions (proffers) from the developer, include enforceable penalties, and generally entail submission of a TDM plan prior to the occupancy of the development.

Evaluate the Potential for TDM under the Existing District of Columbia Development Review Process:

District stakeholders (including the development community, advocacy groups, District agencies, and agencies from other local municipalities) were interviewed to analyze the existing development review process and inconsistencies in how the development review process is perceived by different user groups. Stakeholders were also asked about potential strategies for amending the existing process based on the needs of their constituents. Staff members from peer municipalities throughout the region were interviewed for informational purposes, to further assist in identifying successful practices and highlighting potential pitfalls.

Recommend Improvements and Changes to the Development Review Process:

Based on the national best practices and input received from stakeholders, the Project Team developed recommendations to more fully integrate TDM into the District's development review process. The recommendations represent both near-term priorities (implementation within six months) and long-term direction for DDOT's consideration (implementation within three years). These recommendations are summarized in Table 1 and are fully described in this report.

To assist DDOT and developers in the formulation of TDM plans, a comprehensive listing of TDM measures for consideration is provided as an attachment to this document. This table separates developments into different categories based on the amount of peak hour traffic generated by the site and whether the application is by-right, a Planned Unit Development (PUD), or one that requires a variance.

Any final TDM planning and guidance documentation will require close coordination between DDOT and the DC Office of Planning (DCOP), the DC Office of Zoning (DCOZ), other departments within the District and, possibly, developers themselves to produce a workable procedure that will be acceptable to the Planning Board and can lead to development of reasonable ordinances in the future. It was evident in the review of best practices that a legislated solution, unique to the region involved, was necessary for a TDM program to be fully successful. As such it is recommended that a workgroup of district stakeholders, possibly by DDOT, be formed to investigate the best way to require that TDM considerations be included in the development process. Political realities and legal considerations will figure predominately in this discussion and more parties will need to be involved than were interviewed for this study. However, to assist DDOT staff in envisioning what a TDM plan might consist of, a draft plan has been provided as an appendix to this document. This generic plan is based on the project team's experience in developing similar plans for other locations in the country and has been modified to better reflect the District's needs. The intent of this document is to spearhead the use and application of TDM strategies into the District's planning process, noting that the final document may be modified by input from all of the interested parties and stakeholders.

Ultimately if TDM impacts are to be quantified it will need to be within a broader context. Currently DDOT does not have a preferred quantitative methodology for assessing the impacts of various planning issues such as project level trip generation, parking policy, land use/development patterns and TDM. Attempting to quantify any single one of these elements in isolation, either for a particular site or district-wide, is not advisable as the interaction between them is a fundamental consideration. The transportation impacts of a development can only be quantified if synergetic relations are implicitly considered care is taken not to double count any benefits. Failure to do so will likely result in underestimation the impact of any one of these element, as is often the case with TDM measures. An understanding of all these factors is vital since ultimately all of them are necessary if the district is to meet its quality of life, economic and environmental goals. Further investigation and development of a cohesive analytic framework that is inclusive of all these elements is warranted.

Table 1: Summary of Recommendations

Near-Term (Implementation within six months)
<ul style="list-style-type: none"> • DDOT should make it standard practice that all development plans, regardless of size, address all applicable DDOT land use, bicycle, pedestrian, transit, and corridor plans as well as make reasonable allowances for future TDM requirements, particularly sidewalk and bicycle accommodation and transit right of way. Small-scale developments/redevelopments should support all District and neighborhood plans, but should be exempt from the requirement for a formal TDM package.
<ul style="list-style-type: none"> • DDOT should expand its current outreach and advocacy efforts to encourage voluntary adoption of TDM measures by developers and building management companies in the District.
<ul style="list-style-type: none"> • DDOT should develop written guidance explaining the agency’s interpretation of the Comprehensive Plan. DDOT may choose to include TDM goals or targets as part of this effort.
<ul style="list-style-type: none"> • Create a directory of DDOT recognized TDM planners. Require development applications to include a TDM Plan, preferably drafted by a DDOT recognized planner or one with demonstrated credentials. Track TDM plan submissions and base ongoing consultant recognition on submitted TDM plans.
<ul style="list-style-type: none"> • As the District’s requirements for TDM measures increase, additional resources within DDOT will need to be allocated to implement and administer the program.
<ul style="list-style-type: none"> • All new developments should support the District’s TDM policies as per the District’s Comprehensive Plan. The elements do not need to be onerous, particularly for smaller developments; however, all developments have a role to play in reinforcing the District’s commitment to transit, alternative transportation programs and services, and vehicle trip reduction.
<ul style="list-style-type: none"> • The formation of Transportation Management Associations (TMAs) within the District is a goal of the Comprehensive Plan. DDOT will need address this recommendation and/or develop a functional equivalent to administer and monitor any TDM requirements implemented in the District. (Near-Term (Process), Long-Term (Operational))
<ul style="list-style-type: none"> • DDOT should judiciously enforce existing Zoning Regulations to demonstrate the agency’s commitment to furthering TDM measures in the District.
<ul style="list-style-type: none"> • DDOT should encourage developers seeking LEED certification to adopt as many of the Alternative Transportation related credits as possible.

Table 1 Continued: Summary of Recommendations

Long-Term (Implementation within three years)
<ul style="list-style-type: none"> • Until there is an established process for ongoing surveying to demonstrate success, quantification of site-level TDM impacts for the purposes of mitigation is not appropriate.
<ul style="list-style-type: none"> • DDOT, DC Office of Planning (DCOP), other relevant district agencies and officials should formalize TDM considerations into the current DDOT/OP development review process.
<ul style="list-style-type: none"> • DDOT will need to spearhead an effort to formalize TDM as a regulatory requirement for new developments and as an ordinance in the Zoning Regulations for the District. This ordinance will need to address not only physical elements at the time of design and construction, but also ongoing survey requirements and the ability to assess fines when violations are identified or program goals are consistently not met. Funding of specific TDM programs will also need to be addressed.
<ul style="list-style-type: none"> • Measures of Effectiveness for TDM programs should be two-fold: a reduction in peak period vehicle trips and a reduction in overall weekly vehicle trips.
<ul style="list-style-type: none"> • Rather than calculating the potential impact of any specific elements of a TDM plan, DDOT should set overall vehicle trip goals and allow the developer to address the specific goals accordingly, with success determined via ongoing surveys and reporting back to DDOT.

2.0 Existing Conditions

2.1 Introduction to Transportation Demand Management

Transportation Demand Management (TDM) is a set of strategies, programs, services, and physical elements that influence travel behavior by mode, frequency, time, route, or trip length in order to help achieve highly efficient and sustainable use of transportation facilities. To effect meaningful travel behavior change and encourage the widespread utilization of alternatives to Single Occupant Vehicles (SOV), residents and other travelers must first understand the options available in the multimodal transportation system – how they work, how to use them, and the benefits they offer. This requires a level of information and support that demystifies travel options and makes them rational and desirable alternatives to the car.

TDM policies are the mechanisms for reducing SOV trips by focusing the demand for transportation services on alternative modes and providing the public with the incentives as well as information to use these alternatives. This is TDM in the active sense of services and programs. At the same time, to maintain high-quality transportation services, programs must cater to the needs of all residents, regardless of age, income, or physical ability. Without these characteristics, travel demand will not be fully addressed and travelers will be encouraged to use SOV's or not travel at all. The goal of TDM is essentially to nurture a sustainable community that embraces alternatives to the car while enhancing mobility.

2.2 The Benefits of TDM¹

TDM Benefits for Individuals

TDM services help residents and workers make better use of the many available transportation options. Assistance in finding and using these can be a very valuable lifestyle and economic benefit. For those who do not or cannot drive, non-SOV travel options provide the mobility needed to hold employment, go to the doctor, shop, and otherwise lead a fulfilling lifestyle. For others, travel options can relieve the stress, time, or cost of a commute, or allow for more productive use of the time they travel. The monetary savings in fuel, vehicle wear and tear, or owning fewer vehicles in the household can be substantial.

Moreover, the ancillary health benefits can be extensive; public transportation is many times safer than the private automobile and the simple exercises of walking or bicycling, whether to one's destination or to access public transit, can reduce obesity, lower the risk of heart disease and reduce myriad of other illnesses. In sum, TDM can be support an improved quality of life on many levels.

¹ A synopsis of select studies substantiating the observed benefits of TDM can be found on the Victoria Transportation Policy Institute website: <http://www.vtpi.org/tdm/tdm58.htm>

TDM Benefits for Businesses

By managing or lessening the number of vehicles accessing and parking at the worksite, TDM can save companies substantial capital associated both directly and indirectly with parking costs. They can also provide even more important, though less visible, business advantages by virtue of the benefits to employees. The benefits to individual employees can also accrue to the company in the form of less stressed, more satisfied, and productive workers, easier recruitment, an expanded labor pool, expanded service hours, improved morale, better retention of employees, and less tardiness and absenteeism due to traffic, stress, or health issues.

TDM Benefits for the Community

The combined benefits of TDM to individuals and to companies also aggregate to benefit the community as a whole. Less traffic, improved access, greater mobility, and many choices in travel modes will add up to an enhanced quality of life for District citizens, workers, and visitors. Less vehicular traffic also means less air pollution, and less contribution to water pollution from urban storm water runoff.

TDM Can Be Cost Effective

One of TDM's advantages is that it is more cost-effective and more environmentally sustainable than providing additional transportation infrastructure. In one investigation of community-based programs that promote travel behavior change, the Victoria, Australia Department of Infrastructure found that such programs can be highly-effective in both increasing use of public transit as well as use of other alternatives to the private car.² The Victoria study concluded that marketing-based TDM programs have resulted in financial benefits of \$3.09 to \$4.70 for every dollar invested in the program. Additionally, businesses may form partnerships with other businesses to share costs for implementing TDM programs and services, such as shuttle services to and from transit stations and shared ride programs, such as vanpooling and fleet management for carpools increasing the return on investment even further.

2.3 Washington, D.C.'s TDM Policy

Washington, D.C.'s municipal government provides TDM measures by balancing the transportation supply with pedestrian, bicycle, and transit facilities in roadway rights-of-way, reducing the cost to ride transit (Metrochek), and sponsoring alternative modal options (including the DC Circulator and SmartBike DC). The District has also affirmed the prioritization of TDM with specific policies and actions in its Comprehensive Plan:³

- **Policy T-3.1.1:** Transportation Demand Management (TDM) Programs: Provide, support, and promote programs and strategies aimed at reducing the number of car trips and miles driven (for work and non-work purposes) to increase the efficiency of the transportation system.

² *Travel Demand Management: Public Transport Business Case*, Ker for Department of Infrastructure, Victoria, June 2003.

³ *Growing an Inclusive City: From Vision to Reality. The Comprehensive Plan for the National Capital: District Elements*, Adopted December 2006.

- **Policy T-3.1.2:** Regional TDM Efforts: Continue to pursue TDM strategies at the regional level and work with regional and federal partners to promote a coordinated, integrated transportation system.
- **Action T-3.1.A:** TDM Strategies: Develop strategies and requirements that reduce rush hour traffic by promoting flextime, carpooling, transit use; encouraging the formation of Transportation Management Associations; and undertaking other measures that reduce vehicular trips, particularly during peak travel periods. Identify TDM measures and plans as appropriate conditions for large development approval. Transportation Management Plans should identify quantifiable reductions in vehicle trips and commit to measures to achieve those reductions. Encourage the federal and District governments to explore the creation of a staggered workday for particular departments and agencies in an effort to reduce congestion.

2.4 District Development Application Process

Beyond sponsoring and funding public TDM initiatives, many municipalities have established TDM programs as the responsibility of developers, since private developments generate many of the person trips that the transportation system must accommodate. Private TDM requirements are often incorporated into the development application review process, as there is a rational nexus between potential transportation impact and providing TDM measures that mitigate those impacts.

The Development Review Division of the Office of Planning (OP) assesses plans that are generally large, complex, and precedent-setting in their potential to change the character of an area. While development is viewed as the economic engine of the District, protecting the integrity of neighborhoods is equally important. The Development Review Division encourages growth in a way that is sensitive to the needs and values of neighborhoods. In Washington DC, there are three types of development applications: Matter of Right, Planned Unit Development (PUD), and Special/Variance.

Matter of Right applications meet the use and form requirements within the Zoning Regulations, and are not anticipated to significantly affect the District’s transportation system. Therefore, the District does not usually request TDM measures from Matter of Right applications. The exception to this is the Zoning Regulations’ requirements to provide bicycle parking, though this is considered a parking requirement, not a TDM measure.

A PUD is a planning tool which allows a developer greater flexibility in site planning and building design. This flexibility permits the developer to incorporate amenities in the project that exceed those that could have been achieved under the general provisions of the Zoning Regulations. When a project is designated as a PUD, standards are specifically tailored to the project, including TDM measures. Similarly, when a development application includes a request for a variance, TDM measures are frequently attached to balance the value of the project and mitigate potential impacts.

While the District has not codified TDM requirements as part of the development review process for any development application category, the policy statements in the Comprehensive Plan have served as the impetus for creation of a list of voluntary strategies that are recommended in the review process. The “Transportation Demand Management Strategies for Site Plan Review” (Department of Transportation, September 2008), offer 11 TDM elements including bicycle parking and changing facilities, preferential

parking for car/vanpools and carsharing vehicles, complimentary transit fare media for new tenants, and provision of information to simplify trip planning by alternative modes. These TDM strategies are recommended to applicants seeking approval of PUDs or variances, though the District cannot require these elements. While many developers have agreed to provide combinations of these strategies, there is currently no process for long-term monitoring or enforcement; and as such the implementation and going maintenance of these strategies in the District is unclear.

2.5 Federal Government and Military Facilities

One of the challenges facing District planners is that federal facilities and military installations are not necessarily bound by decisions of the planning council or DDOT. Traditionally both of these stakeholders have worked closely with DDOT and others to help advance the goals of the local agencies. In terms of TDM, The Federal Government has an aggressive program based on the Federal Executive Order for Ridesharing, authored by President Jimmy Carter, February 1, 1980. The language in the order was based on a program he created for the state of Georgia to address the challenges of the oil embargo in 1979. The order was written into law to increase ridesharing as a means to conserve petroleum, reduce congestion, improve air quality, and provide an economical way for Federal employees to commute to work. Each Federal agency is responsible for promoting and providing oversight for their individual programs with reporting requirements submitted to the Office of Management and Budget (OMB). The following text from the Executive Order lists some of the requirements:

Executive Order 12191--Federal Facility Ridesharing Program

Agencies shall establish an annual ridesharing goal tailored to each facility, and expressed as a percentage of fulltime personnel working at that facility who use ridesharing in the commute between home and work. Agencies that share facilities or that are within easy walking distance of one another should coordinate their efforts to develop and implement ridesharing opportunities.

Agencies shall designate, in accordance with OMB, an employee transportation coordinator. Agencies that share facilities may designate a single transportation coordinator. The coordinator shall assist employees in forming carpools or vanpools (employee-owned or leased) and facilitate employee participation in ridesharing matching programs. The coordinator shall publicize within the facility the availability of public transportation. The coordinator shall also communicate employee needs for new or improved transportation service to the appropriate local public transit authorities or other organizations furnishing multi-passenger modes of travel.

Agencies shall report to the Administrator of General Services, hereinafter referred to as the Administrator, the goals established, the means developed to achieve those goals, and the progress achieved. These reports shall be in such form and frequency as the Administrator may require.

Like other federal facilities, military installations are largely not legally bound incorporate DDOT recommendations into site plans. However the military does have a history of working closely with the local communities to minimize impacts of their facilities. TDM has taken on renewed importance with

the military (including the NSA) as a result of the 2005 Base Relocation And Closure (BRAC) study and resulting in a migration of employees underway across the greater DC region. TDM has figured prominently in the plans for growing bases in Virginia and Maryland, and as the military embraces TDM, opportunities will exist for DDOT to endorse and possibly participate in these activities.

3.0 Lessons Learned and Input

3.1 Best Practices

As part of the ongoing effort to identify ways of better integrating TDM into the District's overall development process, a research effort was undertaken to locate TDM programs across the country and summarize some of the best practices and approaches. Candidate programs were identified by online sources, suggestions by DDOT staff, and practitioners in the field (see Appendix A for the complete summary of best practices). From the initial review, six locations were chosen for more in-depth study:

- Cambridge, MA
- Montgomery County, MD
- Arlington, VA
- Alexandria, VA
- Contra Costa (Bay Area), CA
- Seattle, WA Metropolitan Region

The research into these programs revealed that including TDM in the development process tends to be addressed by one of the following three generalized approaches:

- By directly specifying TDM requirements in the development approval process.
- Through the use of TDM ordinances that require long-term commitment by developers, property managers, and owners, which influences the development process early on and throughout the planning stages.
- A combination of the two options above.

Review of the various ordinances, regulations, and planning policies identified during the research effort revealed a vast array of specific approaches to implementation. Goals varied widely, with some agencies looking at TDM as a traffic mitigation tool, others setting goals for alternative modes of transportation, and still others using TDM to complement and reinforce their urban planning vision. However, a number of general themes were identified that are relevant to the District's initiative to incorporate TDM in the development review process:

- The more successful TDM programs rely on continuing, enforceable ordinances. Stand alone programs relying on voluntary measures, while somewhat successful in reducing auto trips, tended to have less influence on the nature or type of the development in a region. This is specifically applicable to Washington, D.C.'s existing voluntary TDM strategies, which are inconsistently incorporated into development applications and are not verified to ensure they were implemented as proposed.

- While regulation and requirements are included in the most successful TDM programs, education about the benefits of TDM is an integral component to maximizing TDM’s success. Providing developers with research into the value of TDM (as described in Chapter 2), as well as assisting in the marketing of these programs to prospective tenants and owners helps convert the interest in quality of life improvements into an economic incentive for developers to provide TDM programs.
- Approaches to “elevate TDM” in the development process are unique to how each particular region operates from a political perspective. As such, few “one size fits all” practices are recommended for wholesale application elsewhere.
- TDM Ordinances take on many forms and may tie into zoning, the building/site approval process, or specific parking requirements.
- The existence of an agency with enforcement authority appeared to be a necessary element for TDM to have a significant impact.
- Monitoring is a major requirement for TDM programs to be successful, with the vast majority of programs requiring annual reporting. The most effective survey programs are those tied to other survey requirements in the region in order to limit the time commitment required of property managers and/or employers/residents.
- In order to have TDM considered early in the development process, most locations make the submission of a TDM plan a requirement for the certificate of occupancy. The degree to which these plans are scrutinized varied widely, with many plans only making up a small section of the overall traffic impact study.
- The metric by which the success of a program will be evaluated has a direct impact on how TDM is approached. Metrics are generally a reflection of the underlying policy goals of the TDM program. For example, a metric based on transit use might be part of a broader goal to focus development at major transit stations, while a parking-oriented TDM ordinance might attempt to focus development along corridors.
- The most successful TDM programs generally set low thresholds (size of development, number of employees, number of parking spaces, etc.) when TDM requirements become mandatory. However, these choices were made based on a broad range of thresholds, and in some cases programs focused solely on larger employers and/or developments. Successful integration across all sizes and types of development generally entailed a graduated introduction of TDM requirements.
- Significant TDM program support funded at least in part by the city/regional agency was a common theme in the more successful examples. This generally took the form of a significant staff commitment at the regional government office to TDM efforts (including an area-wide coordinator with either extensive staff managing support internally or through consultant agreements) or an active Transportation Management Association (TMA).
- While difficult to measure, TDM efforts appear to be greatly affected by the local culture or mindset. San Francisco, Seattle and Cambridge are all examples of areas that have aggressive trip reduction goals, thus developers in these areas tend to address TDM early on as a selling feature. Anecdotally, businesses attracted to these locations also appear to place a high value on quality of life issues addressed by TDM either in response to customers or as a benefit to staff.

- Locations with limitations on parking and roadway capacity (physically, as in San Francisco, or self-imposed, as in Arlington) also tended to have the strongest programs. In these locations TDM directly influences accessibility and the ultimate viability of projects, resulting in a development process where TDM is a fundamental consideration.
- The difficulty of implementing TDM in a residential setting was noted in a number of locations, with only the most active programs addressing this type of development in a significant way.

3.2 Focus Group Input

Representatives from District organizations (including the development community, advocacy groups, District agencies, and agencies from other local municipalities) were interviewed to analyze the existing development review process and inconsistencies in how the development review process is perceived by different groups. Stakeholders were also asked about potential strategies for amending the existing process based on the needs of their constituents. Staff members from peer municipalities throughout the region were interviewed for informational purposes, to further assist in identifying successful practices and highlight potential pitfalls. The following summarizes the key inputs provided by stakeholders at the focus group meetings (see Appendix B for complete documentation of focus group meetings):

- There is support from Washington, D.C.'s Zoning Commission to require TDM elements as part of development applications.
- The level of frustration with the current, overall District development process was palpable. Most of the groups, both public and private, talked of systemic problems in the system to the point where it was labeled nonexistent by some. It cannot be stressed strongly enough that this is fundamental issue.
- Legal requirements for TDM elements should be formalized to ensure maximum effectiveness. Requirements should include elements to be provided in the development application, as well as mechanisms for ongoing funding, monitoring, and enforcement of TDM requirements.
- Currently there is no enforcement process or mechanism to impose fines. Even if fines were collected there is no way to direct funds to TDM projects.
- TDM requirements should be predictable and based on an easily replicated format. This will provide TDM benefits, by encouraging developers to include TDM in applications while minimizing the additional workload on District staff.
- Different processes may be required to ensure TDM is included in the process for Matter of Right, PUD, and Variance developments.
- TDM elements should be considered equivalent to other transportation mitigations (roadways, intersections, signals) and not as amenities.
- Education on the value of TDM should be provided to developers, Advisory Neighborhood Commissions (ANCs), community members, and the Zoning Commission.

4.0 Recommendations

The District's Comprehensive Plan established a specific policy objective of reducing the number of car trips and miles driven (for work and non-work purposes) as a way to increase the efficiency of the transportation system. Incorporating TDM strategies into the development review process is a direct mechanism for supporting this goal.

Based on the national best practices and input received from stakeholders, a list of actions were developed to more fully integrate TDM into the District's development review process. The recommendations represent both near-term priorities (implementation within six months) and long-term direction for DDOT's consideration (implementation within three years).

A comprehensive listing of TDM measures for implementation is provided in Table 2. This table details a menu of TDM measures that can be applied in different combinations, allowing applicants to formulate a TDM program that best addresses their project's specific characteristics. The table separates developments into different categories based on the amount of peak hour traffic generated by the site and whether the application is Matter of Right, a Planned Unit Development (PUD), or one that requires a variance. While all PUD and Variance applications would require a TDM program developed from the elements described in Table 2, Matter of Right applications (which are considered "Consistent with the Zoning Regulations") would only require a TDM program if it is projected to generate at least 25 person trips in the peak hour or entails renovation of more than 25 percent of the total property value.

4.1 Maximizing TDM with the Current Process (Near Term: Implementation within 6 months)

A) DDOT should expand its current outreach and advocacy efforts to encourage voluntary adoption of TDM measures by developers and building management companies in the District.

Until such time that TDM plans and programs become officially mandated in the District, DDOT should expand its current efforts to promote and help fund voluntary TDM programs. Programs might include conducting TDM workshops with District Council, Zoning Commission, ANCs, and the public to educate them about opportunities and develop a District-wide TDM vision. This represents a sizable increase over DDOT's current TDM efforts and as such additional staffing, funding and/or consultant resources would be required. It is anticipated that this effort would target substantive developments; expansion of the current outreach effort to the general public is also recommended.

Once TDM programs are officially mandated in the District, DDOT should maintain an education campaign that emphasizes how TDM supports the community's quality of life and how District agencies can assist developers and neighborhoods in designing TDM programs appropriate to each site's context. Also this will allow developers to become more accustomed to incorporating TDM considerations into their site plans, laying the groundwork for mandatory requirements should the district move in that direction.

B) DDOT should develop written guidance explaining the agency's interpretation of the Comprehensive Plan. DDOT may choose to include TDM goals or targets as part of this effort.

The District's Comprehensive Plan is a legal document with both federal and District elements. As such, it is appropriate that DDOT provide official written documentation summarizing the agency's interpretation of the plan as it applies to those elements under DDOT's purview.

By setting out exactly what DDOT expects of developers that are seeking project approval, DDOT can help steer design in a direction that speaks to the agency's goals. This document should not be limited to TDM, but encompass DDOT's entire development process. This document should:

- Reiterate the scope and general tone of the Comprehensive Plan;
- State the specific impact the plan has on transportation planning policy;
- List agency-specific goals (in a broad sense);
- State the future direction of DDOT, specifically addressing the anticipated rules and regulations that the department will be advocating for TDM; and
- Specify the extent that TDM will play a role in the granting of project approval requests in the development evaluation process.
- While it is beyond the scope of this project, other transportation elements of the plan under the purview of DDOT should also be addressed more fully than is provided in the Plan itself.

The intent of this recommendation is to address the sentiment that DDOT has been inconsistent in its approach and to build credibility regarding the agency's commitment to TDM. DDOT may also choose to establish goals for the TDM program in the district as part of this effort. In the near term goals may simply serve as notice to the development community that consideration of TDM in transportation plans is important to DDOT as an agency. In the longer term reporting and monitoring of TDM effectiveness at the project level could become standard practice in the district (see recommendation L below.) Formalization of the above elements may be appropriate for incorporation into future updates of the Comprehensive Plan or provided as a complementary document.

C) DDOT should encourage developers seeking LEED certification to adopt as many of the Alternative Transportation related credits as possible.

The Leadership in Energy and Environmental Design (LEED) represents an opportunity for DDOT in regards to TDM. Fourteen points currently fall under the category of Sustainable Sites, four of which are assigned to Alternative Transportation: Public Transportation Access, Bicycle Storage & Changing Rooms, Alternative Fuel Vehicles, Parking Capacity and Carpooling. DCOP regularly presses for high levels of LEED accomplishment in PUD applications, and many District buildings are required to meet LEED standards under the Green Building Act. DDOT and DCOP should encourage developers to seek the full alternative transportation credit for developments in suitable locations. LEED certification includes inspection after one year of occupancy to verify that programs are adopted, which offers at

least some follow-up that DDOT/DCOZ currently cannot provide. While this may have a limited overall impact in regards to TDM and would only apply to developments seeking LEED certification, it again sends a message to developers regarding the District's commitment towards advancing TDM.

D) DDOT should judiciously enforce existing Zoning Regulations to demonstrate the agency's commitment to furthering TDM measures in the District.

Currently, bicycle parking and signage are the only TDM elements enforceable under the Zoning Regulations. Anecdotally, these requirements appear to be often ignored. As a show of intent, DDOT through the Department of Consumer & Regulatory Affairs (DCRA) should coordinate an ongoing effort to identify and address TDM commitments that have not been fulfilled. In the very near term, a compliance review could be undertaken to identify deficiencies in any current bicycle parking and signage requirements, as well as any TDM commitments included in PUD, variance, campus plan, and special exception approval orders. Responsible parties would be alerted as to any issues noted and follow-up action taken as is possible under current regulatory authority. In the longer-term, any enforceable TDM requirement could be pursued. In both the short and the long term a two-phase approach is recommended. In the first phase a wide area review will be staged. Building operators will be informed of what is being done and if any shortcomings that were noted. Deficiencies should be used as an opportunity for education on the value of TDM, as well as a reminder of applicants' commitments. Follow-ups can then be completed three months later, and at that point corrective action can be taken as deemed appropriate. It is anticipated that actively working with the responsible parties to address problem areas will be sufficient. At some time in the future when TDM requirements become more entrenched, more aggressive actions could potentially be taken including fines, press announcements, and theoretically nullifying Certificates of Occupancy (rescinding of approvals is not a recommended course of action). None of these stronger actions is considered preferable and given the potential ramifications should only be pursued where inaction is blatant and negative impacts are both evident and indisputable.

E) DDOT should make it standard practice that all development plans, regardless of size, address all applicable DDOT land use, bicycle, pedestrian, transit, and corridor plans as well as make reasonable allowances for future TDM requirements, particularly sidewalk and bicycle accommodation and transit right of way. Small-scale developments/redevelopments should support all District and neighborhood plans, but should be exempt from the requirement for a formal TDM package.

Through the building code and the project approval process, DDOT has the ability to request, and in some cases require, that infrastructure for TDM, be incorporated into current and future project designs. Sidewalks, bicycle accommodations (lanes, trails, parking, shower facilities), and right-of-way set-asides for transit improvements (bus lanes, room for shelters) are all examples of design considerations that would be difficult, if not impossible, to implement after a project is built. It is also appropriate for DDOT to request certain infrastructure improvements as part of a new development that go above and beyond the needs of the development itself.

To ensure that TDM programs are supportive and not onerous, smaller scale developments should be exempt from TDM requirements. These projects should still be consistent with other Zoning Regulations and District-and neighborhood plans.

The intent of this recommendation is to make TDM a matter-of-fact in the district. It is recognized that small reconstruction and redevelopment projects, particularly residential developments, should not be disproportionately impacted by new regulatory requirements. In these cases wider efforts to inform and educate developers, business owners and residents of the larger TDM goals for the district may be sufficient.

F) All new developments should support the District's TDM policies as per the District's Comprehensive Plan. The elements do not need to be onerous, particularly for smaller developments; however, all developments have a role to play in reinforcing the District's commitment to transit, alternative transportation programs and services, and vehicle trip reduction. (Near- Term (Voluntary), Long-Term (Required))

TDM considerations are often limited to larger developments. In the long term, this will result in a patchwork approach and may give developers a valid complaint regarding inconsistent treatment. There are design-based TDM measures that all developments can integrate as a matter of fact without requiring ongoing investment or operation. These include:

- Leaving space in lobbies for information and telephones to taxi/transit/ridesharing services;
- Ensuring that designs reflect the Bicycle and Pedestrian Master Plans;
- Ensuring adequate pedestrian and bicycle facilities under current codes as well as any anticipated requirements above and beyond the master plan;
- Orienting development to the street and allowing for a clear path from the front door to transit facilities;
- Managing parking in a way that reflects the urban nature of the District; and
- Participation in neighborhood programs/promotions.

Efforts could be as simple as acknowledging receipt of an information packet describing the District's alternative transportation programs when a building permit is approved (the person obtaining the permit would be responsible for supplying the materials to the building occupants.) These and other low or no-cost options are items that all developments, regardless of size, could incorporate. Having near-term voluntary goals will help the development community adjust and adapt prior to the requirements becoming mandatory.

G) Create a directory of DDOT recognized TDM planners. Require development applications to include a TDM Plan, preferably drafted by a DDOT recognized planner or one with demonstrated credentials. Track TDM plan submissions and base ongoing consultant recognition on these submitted TDM plans.

DDOT should begin to review TDM plans submitted by consultants and identify samples it considers to be adequate for developments of a given size and scope. DDOT can then provide these examples to developers, applicants, and consultants as needed. Once a consultant has provided two or more

documents found to be sufficient, that organization or individual can ask to be placed on a list of recognized TDM planners maintained by DDOT. Individuals may also be allowed to submit two or more TDM plans from other areas or otherwise demonstrate their credentials for review. DDOT would maintain a list that can be supplied to interested parties as needed, preferably on the DDOT website. DDOT should review the TDM plans submitted by recognized consultants or other individuals to ensure that they continue to provide sufficiently detailed analysis. The purpose of this list would not be to exclude practitioners; qualified individuals could continue to submit plans for other parties as appropriate. Successful implementation of this element however would reduce DDOT staff time spent reviewing and commenting on plans submitted by recognized consultants. DDOT's legal counsel should investigate District-wide certification processes, as well as liability and fairness issues.

H) As the District's requirements for TDM measures increase, additional resources within DDOT will need to be allocated to implement and administer the program.

Based on the input received during the stakeholder interview process, the project team agrees that DDOT's current staffing levels would be unable to fully accommodate all of the department's desired TDM efforts, the additional administration associated with the proposed program, and coordinating efforts with OP and other district agencies. The capacity of current staff would need to be reviewed and additional resources considered (increased staffing, consultant assistance, outsourcing to other agencies, etc.) if the review and implementation of TDM is to be implemented as envisioned. TDM requirements should only be increased in conjunction with DDOT's staffing being comparably expanded. Additional TDM requirements for developers without follow-up by DDOT will only result in unmet commitments and disenfranchisement of the public and development communities.

I) The formation of Transportation Management Associations (TMAs) within the District is a goal of the Comprehensive Plan. DDOT will need address this recommendation and/or develop a functional equivalent to administer and monitor any TDM requirements implemented in the District. (Near-Term Process), Long-Term (Operational))

Both the current version and proposed update to the Comprehensive Plan envision the formation of TMAs or functionally equivalent organizations as a way to administer, oversee, support and enforce TDM requirements. TMAs would not represent a separate "level of government," but instead would be an extension of DDOT's ongoing efforts to reduce the impact of vehicular transportation. If TMAs are not feasible, DDOT should propose a different approach for inclusion of TDM oversight in future comprehensive plan updates. TMA's, as a semi or fully independent entity, may also be able to act as a conduit for funding from outside sources, addressing some of the constraints DDOT has regarding dedicated funding.

Regardless of the eventual organizational title or structure, a body responsible for planning, supporting, following through, and enforcing TDM requirements will need to be developed. A funding commitment would be required by the District as part of this effort, since these types of organizations are typically not self-sustaining. A portion of the funding could come from members (funding formulas vary); however DDOT would need to address the issue of how outside funding could remain targeted to TDM projects and not end up in the general fund. Having TDM programs administered by a separate entity

may address this issue. A three-year timeframe for developing an approach is reasonable and should be defined prior to the next update to the District's Comprehensive Plan.

The primary role of the agency/organization will be to coordinate and promote TDM and alternative transportation as well as to review and assist larger developments with their independent programs. This organization might also assist DDOT by review the annual TDM reports submitted by larger developments. Depending on funding mechanism, this group might also be responsible for producing an annual report summarizing the effectiveness of its efforts. Some of the roles the organization would fill include:

- Hiring a coordinator and support staff who will attend, and become part of, DDOT's broader TMA network;
- Be the neighborhood champion of TDM and alternative transportation. Be a clearinghouse for local and regional TDM programs and opportunities;
- Develop a strategic marketing plan, with detailed schedules and budget, based on the outcome of meetings with the ANC/local community;
- Coordinate efforts with local ANC groups assigning transportation representatives or coordinators for each organization/association;
- Provide oversight of TDM programs of individual developers within the region;
- Possibly manage and host a local TDM Web site;
- Review the TDM annual reports from larger developments;
- Create (and potentially oversee) a monitoring and evaluation plan;
- Represent the TDM concerns of residents, employers and employees;
- Schedule transportation events;
- Open a Commuter Store in the neighborhood;
- Coordinate with leasing agents and building management companies to promote TDM and help them meet TDM commitments/requirements;
- Provide personalized transportation assistance to local residents and employees; and
- Distribute fare media and other transportation incentives.

An operational role may also be involved, such as working with several developments to pool resources and implement more extensive measures. As an example, individual developments might not be able to facilitate the creation of a shuttle service, but a larger agency might be able to coordinate such a service. Such an expanded role for the organization would be at the discretion of DDOT. TMAs, however, are not typically invested with authority over physical infrastructure (responsibility of which remains with either DDOT or the property owner).

4.2 Long Term Changes to Maximize TDM Benefits (Implementation within three years)

J) Until there is an established process for ongoing surveying to demonstrating success, quantification of site-level TDM impacts for the purposes of mitigation is not appropriate.

There is a general desire in the district to quantify reductions in traffic and travel demand which can be attributed directly to project or development level TDM measures. However, credit for TDM benefits should only be taken if the program is reliably implemented, monitored (i.e. surveys taken regularly), and enforced (through fines or other actions that require an ongoing commitment). Unfortunately, the District is unable to accommodate or require any of these prerequisites at this time. Without such a process and the means to follow up on TDM commitments, one could potentially take advantage of the situation by promising to implement certain programs, taking credit for them in the planning approval process, and then ultimately failing to provide the promised items. Conversely, may developers need TDM to implement specific projects if their developments are to be successful. Failure on the part of DDOT or other agencies to fulfill their role in the TDM process might also be identified in the survey effort. It is premature at this time to formally and quantitatively consider the impacts of any program that is not enforceable or sustainable. As a result, in the near-term the District will need to encourage voluntary actions, formalize policy and begin the process of creating a regulatory framework to incorporate TDM in the District. Until the regulatory framework is established, DDOT should establish a pilot self-monitoring program for property owners who voluntarily agree to participate. Volunteers who submit evidence of TDM program implementation should be rewarded with ongoing agency support and positive press announcements.

K) DDOT, DC Office of Planning (DCOP), other relevant district agencies, officials and stakeholders should formalize TDM considerations into the current DDOT/OP development review process.

There is no formal or consistent process followed by both DDOT and OP when considering TDM in the current development review process. An official process should be formalized between the agencies (to transcend beyond current staff tenure) and include coordination with the Zoning Administrator (and DCRA for Matter of Right applications). The following steps are suggested as possible inclusions:

- At the pre-application preparation meeting, should it occur, DDOT would present the TDM table. (Input from stakeholders indicated that these meetings are offered to all applicants to facilitate the application preparation and review process. This meeting is not mandatory, but when it occurs, the TDM Table should be included as an agenda item.)
- When the applicant files a pre-hearing statement, DDOT would review the provided TDM program. OP and DDOT would send joint recommendations on the application. When applicable, this could be incorporated into the review of zoning relief requests.
- DDOT only has direct oversight on a limited number of transit services in the District; however, transit is an alternative mode that is key to the success of any TDM program. As such it is recommended that WMATA be included as an advisor into the development review process, primarily to provide comment on larger scale developments and Transit Oriented Development (TOD) projects.

Adopting these recommended steps would require addressing current shortcomings in the overall development approval process, including more regular engagement by DDOT. Additional staffing resources would need to be made available to implement these measures.

Workshops should also be offered to the BZA and ZC members, as well as ANCs, to educate relevant stakeholders in TDM as a policy priority and effective means of implementation (workshops on special exemptions, campus plans, PUDs, and variances can be held when relevant). Separate workshops for the DCOZ are recommended on the importance of follow-up on TDM agreements in the post-approval period for PUDs.

L) DDOT will need to spearhead an effort to formalize TDM as a regulatory requirement for new developments and as an ordinance in the Zoning Regulations for the District. This ordinance will need to address not only physical elements at the time of design and construction, but also ongoing survey requirements and the ability to assess fines when violations are identified or program goals are consistently not met. Funding of specific TDM programs will also need to be addressed.

For TDM to be effective in the District it will need to become a formalized and mandated planning element, fully outlined in new zoning ordinances. Some of the long-term elements that DDOT should consider for inclusion in the plan include:

- Adopt the TDM Expectations Table (see Table 2) as part of Zoning Regulations (or equivalent) and authorize DDOT to serve as the administrative agency.
- Establish a requirement that a TDM plan be included with the development application. The size of the actual document would be in line with the size of the development. Smaller developments might just provide a listing of the programs, a contact person, a funding commitment and a brief description of program. Larger developments would require extensive reports that would include goals and reporting commitments and may include elements such as:
 1. Providing contact information for the individual overseeing the TDM aspects of the project with a commitment for regular (annual) updates;
 2. A commitment to develop an operations manual delineating day-to-day tasks undertaken to successfully implement program;
 3. Branding the TDM program based on input from focus group studies;
 4. Developing a strategic marketing plan based on the outcome of the focus group studies;
 5. Developing programs specific to each TDM strategy;
 6. Conducting annual transportation trip generation and mode split surveys, including a baseline survey;
 7. Track the progress and success of each TDM program;
 8. Creating a monitoring and evaluation plan;
 9. Commitment to submit annual TDM report based on requirements;
 10. Hosting a development-specific TDM Web site;
 11. Addressing the TDM concerns of the residents, employers and employees of the specific developments;
 12. Scheduling alternative transportation promotional events at the applicant site;
 13. Locating a TDM office within the applicant site;
 14. Developing a targeted marketing program for residential sales/leases;

15. Developing a targeted marketing program for commercial programs for office tenants;
16. Establish a dedicated transportation fund, likely managed by DDOT, to fund TDM programs (that cannot be shifted to the General Fund). While this fund will include developer contributions, it should not be expected that the TDM program will be self-sustaining.⁴ Alternately, funding may flow through a TMA or similar independent body;
17. Offer an in lieu payment option where developer includes no TDM elements but pays a lump sum into District's Transportation Fund (equivalent to TDM requirements for 30 years) and permit DDOT/TMAs to implement a TDM program on-site or to fund an implementing agency such as a TMA that has taken on this role.⁵ In this case DDOT would need to work closely with the developer to ensure developer and operators have the support (programs, policies and in some cases infrastructure) to ensure that TDM targets are met;
18. Establish modal split goals for all new developments. Require the developer/successors to conduct an annual survey of residents/tenants/employees. Allow the public to notify DDOT or Zoning Enforcement if commitments are not provided; and
19. Authorize DDOT or Zoning Enforcement to monitor all developments for TDM commitments at least once per year or based on public notifications. Establish a fine system based on number of days commitments are not provided.

A sample TDM plan is provided in Appendix C for illustrative purposes and a possible starting point for the DDOT in beginning to develop a plan for use in the district.

M) Measures of Effectiveness for TDM programs should be two-fold: a reduction in peak period vehicle trips and a reduction in overall weekly vehicle trips.

TDM and auto trip reduction in general is not just a tool for addressing peak period traffic, it is also a way to increase mobility for all residents, employees, and travelers in the District all the time. Also, parking is the primary consideration for residents and is not limited to peak travel periods. Any performance measures or monitoring should therefore include both peak period and weekly travel (all-day and weekend.) How these measures are estimated will require further investigation.

N) Rather than calculating the potential impact of any specific elements of a TDM plan, DDOT should set overall vehicle trip goals and allow the developer to address the specific goals accordingly, with success determined via ongoing surveys and reporting back to DDOT.

Quantification of TDM measures is challenging. The state of the practice is generally sketch level techniques intended to give a general idea of TDM impacts. The EPA COMMUTER model is generally accepted as the preferred estimation technique; however, it was intended for gross estimates of emissions reductions associated with TDM programs, not as a traffic analysis tool. Several locations,

⁴ This recommendation may require Council legislation, as establishing fees is outside of the purview of the Zoning Commission.

⁵ Ibid.

including cities and counties near the District, have turned to performance-based programs instead of program quantification. This allows the developer and/or the building operator to select measures best suited to their projects. The District will need to establish a reasonable set of goals that developers and building operators are expected to achieve. These goals should be sensitive to the location of the development relative to transit services as well as the mode shares achieved by similar developments in the District. A study will need to be undertaken to identify how DDOT will set these goals. Initially DDOT may choose to turn to the MWCOG model mode share component and the Census Transportation Planning Package (CTPP) as possible sources for baseline and achievable mode shares goals. In the future, DDOT should require annual surveys from developments with TDM plans and from the TMAs in the region, which would provide a robust source of information to draw from.

Table 2: TDM Recommendations Matrix

DDOT TDM Expectations For All District Development Proposals

Guide: **E** Expected TDM Measure
e Expected TDM Measure (Option to Substitute)
S Potential Substitute/Optional Measure

Type of Development	Proposal consistent with the Zoning Code and project generates less than 50 peak hour auto trips.	Proposal requires a variance (or is a PUD) and project generates less than 100 peak hour auto trips.	Proposal consistent with the Zoning Code and project generates Between 50 and 200 peak hour auto trips.	Proposal consistent with the Zoning Code and project generates over 200 peak hour auto trips.	Proposed requires a variance (or is a PUD) and project generates Between 100 and 400 peak hour auto trips.	Proposed requires a variance (or is a PUD or Campus Plan) and project generates more than 400 peak hour auto trips.
TDM Measures						
During construction, maintain or coordinate relocation of any existing bus stops at the developer's expense.	E	E	E	E	E	E
Comply with Zoning requirements to provide bicycle parking/storage facilities.	E	E	E	E	E	E
Require all parking costs be unbundled from the cost of lease or purchase. Parking costs must be set at no less than the charges of the lowest fee garage, located within ¼ mile.	E	E	E	E	E	E
Post all TDM commitments on-line, publicize availability, and allow the public to see what commitments have been promised.	E	E	E	E	E	E
Identify a project's TDM Leader (for planning, construction, and operations). Provide DDOT/Zoning Enforcement with annual TDM Leader contact updates.	e	E	E	E	E	E
Install a Transportation Information Center Display (kiosk) containing printed materials related to local transportation alternatives and maintain a stock of materials at all times.	S	S	e	e	e	e
Provide website links to CommuterConnections.com and goDCgo.com on developer and property management websites.	e	e	e	e	e	e
At no cost, dedicate spaces in the garage for car sharing services to use with right of first refusal. Locate spaces that are convenient to the garage entrance, available to the members of the car sharing service, twenty-four hours a day, seven days a week, without restrictions (the garage may be gated—members of the service would have access to the spaces via a key pad combination to a pass code system, or other similar device). Count the car sharing spaces towards the project's parking requirements.	S 1 space required	S 1 space required	S 2 spaces required	e 2 spaces required	e 2 spaces required	e 2 spaces required
Provide reserved spaces for carpools and vanpools that are conveniently located with respect to the elevators serving the buildings. Oversee a program to provide carpools and vanpools with a parking subsidy.	S	S	S	e	e	e
Provide secured bicycle parking/storage facilities (lockers, bicycle valet parking, etc.)	S	S	S	e	e	e
Contribute funding to available, non-exclusive Shuttle Service to Metro or DC Circulator (based on total number of trips generated). Only applies to developments not considered Transit Oriented Developments by DDOT	S*	S*	S*	e*	e*	e*
Provide an on-site business center to residents with access to copier, fax, and internet services.	S	e	e	e	e	e
Provide location for Bikeshare Program Station/Kiosk	Not Applicable	S	S	e	e	e
Provide Ongoing Funding for on-site Bikeshare Program	S	S	S	e	e	e
Provide each new resident with 1-year subscription to DC Bikesharing program	S	S	S	e	e	e
Provide residents with \$75 mail-in refund on bicycle purchases	S	S	S	e	e	e
Provide SmarTrip cards plus \$100.00 Metro fare media per person, for free, one time, per employee, to each of the tenants' employees and each on-site employee of the property management company and/or building operator.	S 5 year commitment required	S 5 year commitment required	S 15 year commitment required	S 30 year commitment required	S 15 year commitment required	e 30 year commitment required
Provide SmarTrip cards plus \$100.00 Metro fare media per person, for free, one time, per resident	S 5 year commitment required	S 5 year commitment required	S 15 year commitment required	S 30 year commitment required	S 15 year commitment required	e 30 year commitment required
Provide a one-time membership fee subsidy in a car sharing program for each residential unit.	S	e	S	e	e	e
Locate and furnish an on-site Transit Store free of charge.	Not Applicable	S	S	e	e	e
30 year commitment to operate an on-site Transit Store.	Not Applicable	S	S	operation of the store will be provided by an outside agency	e	e
Operate a Shuttle service to metro (or other appropriate destinations) specific to the site/development	Not Applicable	S*	S*	S*	e*	e*
Install and maintain new bus stop infrastructure.	S	S	S	e	S	e
Construct new Metro Rail stations connection (entrance, escalator, fare array).	S*	S*	S*	S*	S*	e*

* Shuttles and Direct Access to Metro are site specific. DDOT expectations for these measures will be dependant on the practicality of adopting them at a specific location

Guide to Users: Use the top row of this table to identify the category which best describes the development proposal, the minimal TDM measures expect are indicated in column below along with others that may be used as substitutes and/or above and beyond the minimum requirements. These expected measures were developed by reviewing TDM programs in other locations both in the greater DC region and nationally. DDOT encourages the adoption of measures above the minimum expected, reserves the right to require additional measures beyond these minimal expectations as warranted.

5.0 Other Planning Issues that Indirectly Impact TDM

In undertaking this study, a number of general planning concepts and goals were proposed that, while supportive of TDM, are beyond the scope of this work. These are provided to DDOT as suggestions for the agency as it continues to refine its approach to TDM and the planning process in general.

- Establishing parking maximums by neighborhood or district would have a profound impact on transportation and development. In this scenario, if a developer wanted to provide more spaces than allowed in an area, a per-space fee could be levied and funds deposited into the District's non-auto transportation fund. In this case, shift the standard traffic impact from "10 additional trips generated" to "any increase in the amount of off-street parking they maintain for non-residential uses." This is an initiative that should be jointly investigated between DDOT and OP.
- Require the "unbundling" of parking costs from real estate purchases and leases so that parking costs can be better understood by occupants and DDOT. (One peer model is San Francisco's unbundling requirement in its Zoning Code for downtown.)
- Establish multimodal standards that specify the number of trips that can be generated by and accommodated in any zone.
 - Include trip supply for all modes (roadway capacity, transit capacity, and sidewalk and bike network completeness).
 - Assign weights for each mode and assign to districts based on the Comprehensive Plan.
 - If a proposed development will generate more trips than the supply will accommodate, require the development to expand the transportation network based on the modal weights and balance mode use with TDM measures.
- Establish, as policy, that the District will not widen any roadways for additional auto capacity. This concept, often referred to as "complete streets," is based upon the belief that the current transportation network accommodates all the peak hour trips it can and will not be significantly expanded (widening to accommodate additional capacity for alternative modes or to address substandard safety conditions would be exempt from this requirement). Therefore, since all new developments will create additional trips, all new developments will result in impacts.
 - Calculate how many new trips could be accommodated by all of the non-auto transportation projects in the District's Transportation Improvement Program (TIP).
 - Determine the price of all of the non-auto transportation projects in the District's TIP.
 - Calculate the average price per additional trip accommodated by the transportation network by dividing the total cost by the total number of trips.
 - When a development is proposed, determine how many trips it will generate. Require the developer to pay the District an impact fee based on the number of trips generated multiplied by the average price per trip accommodated.
 - Dedicate the impacts fees paid to the implementation of the non-auto transportation improvements.

Appendix A: TDM Programs and Ordinances: Literature Review

DDOT Incorporation of TDM in the Development Process

TDM Programs and Ordinances: Literature Review



November 18, 2009

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Submitted to:
**District Department of Transportation
Transportation Policy and Planning Administration**

Baker

Submitted by:
Michael Baker Jr., Inc.

Table of Contents

1.0 Introduction	1
2.1 Detailed TDM Program Review:CAMBRIDGE,MASSACHUSETTS	3
2.2 Detailed TDM Program Review: ARLINGTON COUNTY’S TDM PROGRAM FOR SITE PLAN DEVELOPMENT	11
2.3 Detailed TDM Program Review: MONTGOMERY COUNTY’S TRANSPORTATION MANAGEMENT DISTRICTS AND TRAFFIC MITIGATION PLANS	19
2.4 Detailed TDM Program Review: CITY OF ALEXANDRIA, VIRGINIA	25
2.5 Detailed TDM Program Review: CONTRA COSTA COUNTY DEPARTMENT OF CONSERVATION AND DEVELOPMENT- TRANSPORTATION DEMAND MANAGEMENT PLAN	30
2.6 Detailed TDM Program Review:TRIP REDUCTION IN THE SEATTLE, WASHINGTON METROPOLITAN AREA	37
3.0 Other Travel Demand Management Programs and Initiatives	39
3.1 Gainesville, Florida	39
3.2 Alachua County, Florida	40
3.3 Boca Raton, Florida	40
3.4 Hillsborough County, Florida	40
3.5 Prince George’s County, Maryland	41
3.6 San Diego, California	41
3.7 Dallas-Fort Worth, Texas	42
4.0 Summaries of Additional Regional TDM Initiatives	42
4.1 City of Aspen, CO	42
4.2 Lake Tahoe Basin, CA	42
4.3 Hennepin County, MN	43
4.4 Commonwealth Atlantic Properties, Arlington County, Virginia	43
4.5 The Florida Hospital System, Orlando, Florida	43
4.6 Transportation Expansion Project (T-REX) – Denver, CO	44
4.7 Port of Long Beach - Long Beach, CA	44
4.8 University of Washington – Seattle, WA	44

4.9 Zion National Park, UT	44
4.10 Calibre – Alexandria, VA	44
4.11 CH2M Hill – Denver, CO	45
4.12 Georgia Power Company – Atlanta, GA	45
4.13 Johns Manville – Denver, CO	45
4.14 Nike – Beaverton, OR	46
4.15 Overlake Christian Church – Redmond, WA.....	46
4.16 Simmons College - Boston, MA.....	46
4.17 Swedish Medical Center – Seattle, WA	46
4.18 Texas Children’s Hospital - Houston, TX.....	47
4.19 Metropolitan Seattle Transit-Oriented Development and Flexcar – Seattle, WA.....	47
4.20 Orenco Station Mixed-Use Development – Hillsboro, OR.....	48
5.0 Summary.....	48
6.0 References	49

Table of Figures

Figure 1: Arlington's TDM Program Matrix.....	14
Figure 2: Arlington’s TDM Program Matrix (continued)	15
Figure 3: Employer TMP’s	23
Figure 4: Thresholds for Special Use Permits.....	27
Figure 5: Contra Costa Transportation Strategy Options.....	36

1.0 Introduction

As part of the ongoing effort to identify ways of better integrating Travel Demand Management (TDM) into the District's overall development process, a research effort was undertaken to identify TDM programs from across the country and to summarize some of the best practices and approaches. Candidate studies were identified by online sources, suggestions by DDOT staff and through practitioners in the field. From the initial review, six locations were chosen for more in depth study:

- Cambridge, MA
- Montgomery County, MD
- Arlington, VA
- Alexandria, VA
- Contra Costa (Bay Area), CA
- Seattle, WA Metropolitan Region

These more detailed reviews drew upon the experience of the project team and additional research into the specific programs. For the other TDM programs identified, shorter descriptions are provided. Additional point-form summaries are provided for regional programs where only limited information could be found as well as a selection of site specific programs.

1.1 General Observations

Review of the various ordinances, regulations and planning policies identified during the research effort revealed a vast array of approaches. Goals varied widely, with some agencies looking at TDM as a traffic mitigation tool, others setting goals for alternative modes of transport, still others using TDM to complement and re-enforce their urban planning vision. However a number of general themes were identified that may assist the District in formulating an approach for the region:

- Approaches to “elevate TDM” in the development process are very unique and a reflection of how a particular region operates from a political perspective. As such, few “tried and true” methods exist.
- The metric by which the success of a program will be evaluated has a direct impact on how TDM is approached. Metrics are generally a reflection of the underlying policy goals of the TDM program. For example, a metric based on transit use might focus development at major transit station, a parking ordinance might focus development along corridors.
- The more successful TDM programs rely on continuing, enforceable ordinances. Stand alone programs relying on voluntary measures, while often somewhat successful in reducing auto trips, tended to have less influence on the nature or type of the development in a region.
- Ordinances take on many forms and may tie into zoning, the building/site approval process or specific parking requirements.
- The most successful TDM programs generally set low thresholds (size of development, number of employees, number of parking spaces, etc.) where TDM requirements become mandatory. However a broad range of thresholds exist and in some cases programs focus solely on larger employers and/or developments.
- In order to have TDM considered earlier in the development process, most locations make the submission of a TDM plan a requirement of the certificate of occupancy. The degree to which

these plans are scrutinized varied widely, with many plans only being a small sub-section within a project's traffic impact study.

- Significant TDM program support funded at least in part by the city/regional agency was a common theme in the more successful examples. This took the form of a significant staff commitment at the regional government office to TDM efforts (including an area-wide coordinator) or an active Transportation Management Association (TMA).
- The existence of an agency with enforcement authority appeared to be a necessary element for TDM to have a significant impact.
- While difficult to measure, TDM efforts appear to be greatly impacted by the local culture or mindset. San Francisco, Seattle and Cambridge, MA are all examples of areas that have aggressive trip reduction goals and anecdotally developers in these areas tend to address TDM early on as a selling feature. Businesses attracted to these locations also appear to place a high value on quality of life issues addressed by TDM either in response to customers or as a benefit to staff.
- Locations with limitations on roadway capacity (physically as in San Francisco or self-imposed as in Arlington) and parking also tended to have the strongest programs. In these locations TDM directly influences accessibility and ultimately the viability of projects. The results tended to be a development process where TDM is a fundamental consideration.
- The difficulty of implementing TDM in a residential setting was noted in a number of locations, with only the most active programs addressing this type of development in a significant way.
- Monitoring is a major requirement if TDM programs are to have an influence, with the vast majority of programs requiring annual reporting. The most successful survey programs are those tied to other survey requirements in the region.

The diversity of approaches suggests that a “one-size-fits-all” program may not be as successful in a setting as large as the District. Developing programs tailored to specific communities and neighborhoods is an option that may warrant further consideration.

2.1 Detailed TDM Program Review: Cambridge, Massachusetts



A. Background

The City of Cambridge established a Vehicle Trip Reduction Ordinance (VTRO) in 1992 to reduce overall auto trip impacts in the city. Out of this ordinance, the City has developed two new programs, one to mandate TDM participation at existing developments and one to cover new development projects — the City's Parking and Transportation Demand Management (PTDM) ordinance and its Article 19 process (A19), respectively.

The PTDM enjoys widespread support among the city council, city planners, the business community, and the public. This is most clearly evident by the Cambridge City Council's September 11, 2006 vote to eliminate the program's sunset clause in order to expand the positive impact of the program. The A19 program is newer and has recently begun to affect residential developments.

B. Vehicle Trip Reduction Ordinance

In 1992, the Cambridge City Council passed the Vehicle Trip Reduction Ordinance as part of an effort to address community concerns about increasing traffic congestion and environmental pollution. The ordinance required the City government to begin implementing Transportation Demand Management strategies such as transit subsidies and bicycle parking that would reduce vehicle trips by City staff. The most significant effort was led by the Environmental and Transportation Planning Division of the City's Community Development Department, which also began working cooperatively with citizens, businesses, and institutions in Cambridge and the Boston area to implement similar TDM benefits for their employees.

C. Parking & Transportation Demand Management (PTDM) Ordinance

In 1998, a formalized, mandated TDM program for businesses in Cambridge was approved by the City Council with the passage of the PTDM Ordinance (Section 10.18 of the Cambridge Municipal Code).

1. Participation Trigger

The PTDM Ordinance is triggered when any landowner in the City of Cambridge seeks any increase in the amount of off-street parking they maintain for non-residential uses. All landowners are required to register their parking with the City's Traffic, Parking & Transportation Department (TPTD) which has maintained a comprehensive inventory of all off-street parking facilities in Cambridge since 1971. The Director of TPTD determines if a building permit or parking license to increase registered parking has triggered the PTDM Ordinance and if so, sends notification to the landowner.

2. Compliance

Compliance with PTDM requires approval of a PTDM plan by a PTDM Planning Officer. Parking facilities with a total of 5 to 19 spaces are considered "small projects" and must implement three unique TDM measures from a toolbox of suggested TDM measures – as a one-time implementation with no required monitoring or performance targets.

The list of specific measures is not documented in the ordinance, but is rather maintained and updated by the Planning Officer. Commonly implemented measures include:

- subsidized transit passes;
- information kiosks;
- bike racks;
- bike showers;
- car-sharing spaces;
- carpool spaces; and
- a guaranteed ride home program.

Projects that create facilities of 20 or more parking spaces are considered "large projects" and are subject to greater implementation and reporting requirements. Most significantly, most projects must commit to reducing their percentage of drive-alone trips by 10% from 1990 levels for the census tract in

which the site is located. To achieve this goal, landowners must prepare an aggressive package of TDM measures under the guidance of the Planning Officer.

Typical plans include many of the small project measures listed above as well as:

- Membership in a Transportation Management Association (TMA);
- Market-rate parking fees;
- Employee transportation accounts;
- On-site transportation coordinators;
- Commuter awareness events;
- Shuttles to transit;
- Transit shelters;
- Bike stations; and
- Tele-commute programs.

Each plan must also include a detailed monitoring program to determine the mode shares of all persons who may use the subject parking facility. Programs typically include annual or biennial employee surveys, parking utilization counts, and driveway counts — each of which are compared to a base-year set of observations.

All small or large project plans must be approved or rejected by the PTDM Planning Officer within 90 days of their submittal. If a plan is rejected, the landowner cannot receive a permit to expand their parking facility.

Large projects that are subject to monitoring must implement additional, more aggressive TDM measures if they fail to meet the mode split goal of a 10% drive-alone-rate reduction from 1990 levels for the census tract in which the site is located.

3. Administration and Enforcement

If a landowner fails to comply with the PTDM, the TPTD Director may take enforcement action until the landowner complies. Enforcement can consist of a fine of \$10 per day for every parking space in the facility or even physical closure of the subject facility. Landowners are directed to work with the City's PTDM Planning Officer who is appointed by the City Manager and works in the Community Development Department. The Planning Officer provides guidance to landowners, approves final PTDM plans, and reviews and approves any required monitoring reports.

Compliance has been very high and consistent. To date, non-compliance penalties have not been used. Survey return success has been aided by the fact that the State requires a number of annual surveys from employers. As a result, employers tend to have already implemented effective strategies for surveying, including contracting out for the services.

4. Performance Measures

The fixed 10% target reduction in drive-alone commute rates is the primary performance measure for the program. A secondary measure of the program's impact is its own growth in terms of how many developments enter into PTDM agreements.

5. Performance to Date

The PTDM Ordinance has been very successful for Cambridge. Nearly 100 large projects have resulted in detailed monitoring plans — and dozens of small project landowners have implemented one-time TDM measures. The regular monitoring requirement for large projects has demonstrated much success. Over 85-percent of the monitored businesses have met or exceeded their mode split goal. The average drive-alone mode split for monitored businesses by 2004 had dropped from 68% to 55%, removing an estimated 7,000 vehicle trips from Cambridge roads each day.

The ordinance is notable for both its impact on new developments and popularity. It enjoys widespread support among the city council, city planners, the business community, and the public. The original ordinance contained a sunset clause for the ordinance, which was lobbied for by the business community which feared the implications of TDM on the cost of business. After two renewals, the sunset clause has been eliminated in the latest version of the ordinance, so PTDM is now a permanent program.¹

Developers who originally received the ordinance with skepticism found that employees support the transit benefits program and it has become an effective marketing tool to attract prospective employees.

Success stories include the Technology Square development which sought to double its office and research campus from 1M square feet to 2.6M square feet and add over 600 new parking spaces. During preparation of its PTDM plan, the developer cut back the parking expansion by over 200 spaces and was able to commit to a drive-alone rate of 50 percent. Within one-year, the project exceeded this goal, and was operating at only 40 percent drive-alone by year two. A smaller development with 220,000 square feet of office space and 220 parking spaces committed to a 56 percent drive-alone mode split in 2002, and has been performing at less than 48 percent since.

6. Funding

Program participants fund their own mitigation activities, and are not required to contribute to the overall cost of program administration.

D. A19 and the Project Special Review Permit

The success of the PTDM program, though significant, was limited in its impact on overall traffic generation by the program's narrow focus — existing land uses for which parking expansions were sought. Throughout the 1990's, Cambridge residents continued to oppose the overall level of local traffic growth due to rapid development within the city, especially in East Cambridge. Eventually,

¹ Section 10.18.090

citizens demanded a halt on development, eventually settling for the Interim Planning Overlay Petition (IPOP) that sought detailed traffic review of new developments along with impact thresholds and mitigation requirements.

The IPOP became formalized as Article 19 of the City's zoning ordinance. While the City's PTDM did not require participation from residential developments, the only exclusion in A19 was for university housing.

1. Intent of A19

The intent of A19 is to establish traffic and urban design standards for development projects likely to have significant impact on abutting properties and the surrounding urban environment.

To realize this intent, A19 codifies the city's urban design objectives and establishes detailed building and site development standards to (1) regulate new building construction in the city's commercial and high density residential areas; (2) establish standards by which significant adverse traffic impacts can be measured; and (3) establish procedures by which individual proposals can be reviewed by the Planning Board, city staff and the general public before a building permit is issued.

2. Traffic Impact Review

The Planning Board assesses the impact of the vehicular traffic, and pedestrian and bicycle circulation expected to be generated by a proposed development project. The procedures and requirements are intended to encourage applicants to adopt a development program that reduces the number of single occupancy vehicles coming to the site.

Such a program is also expected to encourage pedestrian and bicycle access to the site and throughout the neighboring district, while reducing potential negative impacts of the vehicles coming to the site on abutting properties. While the review focuses especially on the impacts affecting abutting properties and the immediate environment, the impacts on streets and locations more distant from the site, and on transit and bus facilities serving the site, are also assessed.

3. Project Special Review Permit

To ensure that new construction or changes of use in existing buildings do not impose substantial adverse impacts on city traffic, a special permit process was established as part of A19.

a. Participation Threshold

A Project Special Review Permit (PSRP) is required for new building construction based on the gross floor area (GFA) and nature of the proposed project, as stipulated within the ordinance. In an existing building, the PRSP shall be required where the total GFA of a new use or uses on a lot exceeds the threshold limits set forth for new developments.

b. Application

An application for the PSRP is made to the City Planning Board. The application must consist of the following materials:

- Planning Board Special Permit Application Form. The application shall include all required plans and narrative statements. The site plan and other plans, elevations, and drawings shall clearly show:
 - The access and egress points for all forms of travel to the site;
 - The location of adjacent bus and transit stops;
 - The schematic design of proposed mechanical equipment; and
 - The architectural screening treatment proposed for that mechanical equipment.
- Traffic Study. This must include a geographic and functional scope determined by the Traffic, Parking and Transportation Department (TPTD) to be appropriate to the location of the project. In general, the study must review intersections where the project will have significant and measurable impact.

The TPTD must issue a certification to the applicant within twenty-one (21) days of its submission that the traffic study has been done in a complete and reliable manner. Where that certification is denied, the applicant may revise the information in the traffic study and resubmit it; a certification of the revised study must be issued or denied by the TPTD within fourteen (14) days of the resubmission of material.

Based on guidelines established by TPTD, the traffic study must include a narrative discussion of:

- The nature and quantity of vehicles traveling to the site including, in addition to passenger cars, service, delivery and other commercial vehicles;
- The likely impact of such vehicular traffic on abutters, abutting streets, and nearby residential streets, including on-street parking behavior;
- The physical nature of pedestrian and bicycle access to the site and the quantity of movements anticipated for each;
- An analysis of the crash history at intersections within the study area; and
- Parking and transportation demand management measures proposed to ameliorate any adverse traffic impacts identified in the study.

Additional elements of the Application (not related to traffic) include:

- A Tree Study;
- An Urban Design Objectives Narrative;
- A Sewer Service Infrastructure Narrative;
- A Water Service Infrastructure Narrative; and
- A Noise Mitigation Narrative.

c. Approvals Evaluation

The Planning Board only grants the special permit if it finds that the project will have no substantial adverse impact on city traffic within the study area as analyzed in the Traffic Impact Review. In determining whether a proposal has substantial adverse impacts on city traffic the Planning Board assesses the following indicators:

- Project vehicle trip generation: weekdays and weekends for a twenty-four hour period, and A.M. and P.M. peak vehicle trips generated;
- Change in level of service at identified signalized intersections;
- Increased trip volume on residential streets;
- Increase of length of vehicle queues at identified signalized intersections; and
- Lack of sufficient pedestrian and bicycle facilities.

When one or more of the indicators is exceeded, it is indicative of potentially substantial adverse impact on city traffic. In making its findings, however, the Planning Board considers the mitigation efforts proposed, their anticipated effectiveness, and other supplemental information that identifies circumstances or actions that will result in a reduction in adverse traffic impacts.

Such mitigation efforts and actions can include, but are not limited to:

- Transportation Demand Management plans;
- Roadway, bicycle, and pedestrian facilities improvements;
- Measures to reduce traffic on residential streets; and
- Measures undertaken to improve safety for pedestrians and vehicles, particularly at intersections identified in the Traffic Study as having a history of high crash rates.

The precise numerical values that indicate potentially substantial adverse impacts for each of these indicators are revised periodically by the City Planning Board in consultation with the TPTD, and published and made available to all applicants.

4. Results

Around 2002, several large residential developments were proposed. This was the first real test of applying the new program’s requirements to residential development, which was met with much resistance. Residential developers claimed they were fulfilling an official City goal by providing more housing, and so shouldn’t be treated like commercial developers. However, traffic studies of the projected impacts of large residential developments were not easily dismissed — and the new legislation has been upheld.

E. Residential Implementation – A New Challenge

Residential projects tend not to trigger the primary VTRO criteria — peak-hour trip generation — as much as they do secondary criteria such as daily trip rates. Therefore, unlike commercial developments, impacts were not as clear for peak-hour intersections. Impacts on overall daily trip volumes, by contrast, are not as easy to quantify, nor as immediately noticeable. For instance, a large residential development may not significantly impact nearby intersections at any one hour of the day, though it produces a significant amount of trips throughout the day.

TDM Measures for Residential Developments

The most effective measures among commercial developments caused much debate and resistance among residential developers — contributions to the transit shuttles, subsidized transit passes, and

ongoing, annual monitoring. These measures required on-going financial commitments, which were deemed to be unsustainable by some homeowners' associations.

Cambridge's zoning prevents unbundling (assessing a fee for parking distinct from rental fees or home purchases), so pricing parking is not an available tool for residential developments. Bike & pedestrian measures have been frequently implemented — racks, sidewalks, paths, bigger elevators, etc. Other TDM toolbox measures that have been used include car-sharing, electric charging stations, posting transit information in lobbies and on websites, and on-site transportation coordinators (provided by the management office).

2.2 Detailed TDM Program Review: ARLINGTON COUNTY’S TDM PROGRAM FOR SITE PLAN DEVELOPMENT



A. Background

Arlington County’s coordinated policy approach to land use and transportation planning has allowed it to grow rapidly over the last 30 years without major expansions in the highway network and minimal traffic growth. In that time, nearly 18,000 residential units, 14 million square feet of office space, 1.5 million square feet of retail, and 1,218 hotel rooms have been built just in the area served by the county’s Orange-Line Metrorail corridor – Rosslyn, Courthouse, Clarendon, Virginia Square, and Ballston stations. Other major development areas include the Jefferson Davis and Columbia Pike Corridors. Today, the County contains more than 46 million square feet of office and retail space – more than downtown Dallas, Denver, or Seattle².

² Patrick Siegman, “City of Pasadena Traffic Reduction Strategies Study – Appendix A: Case Studies, , 2007

As intense as this development has been, it has generated only modest levels of traffic growth. Year 2000 U.S. Census data show that almost half of Orange-line corridor residents ride transit to work. Traffic counts from 1997 to 2004 show that while office and residential square footage increased by 17.5% and 21.5% respectively, traffic along the Rosslyn-Ballston corridor grew by only 2.3%.³ Surveys at large apartment buildings have shown peak hour auto trip generation rates of one trip per 5.9 units, far below the standard in the Institute of Transportation Engineers' Trip Generation Manual.

The resulting economic prosperity has been remarkable, including the lowest property tax rate among the major cities and towns in northern Virginia and a AAA bond rating. The county's Metrorail corridors provide 50% of the County's tax base — on only 7% of the land. The County also enjoys far lower vacancy rates and higher lease and sale prices, compared to other regional locations.

B. The TDM Program for Site Plan Development

Arlington County's TDM Program for Site Plan Development is an Arlington County Commuter Services (ACCS) program adopted by the County Board in 1990. This program was the product of a joint task force of the Arlington County Planning and Transportation Commissions, and an outgrowth of the comprehensive site-plan review process headed by the Arlington County Department of Community Planning, Housing and Development (DCPHD).

Arlington's TDM policy focuses on workplace commuter travel and looks to reduce peak hour work travel by achieving a reduction of single occupant vehicle trips. Its objectives are consistent with, and help support, those of the County's Master Transportation Plan, including achievement of major street and intersection level of service goals.

The key program requirements include:

- A TDM plan for each development consistent with the TDM Matrix (see Figure 1);
- A standard site plan condition to implement the TDM Matrix;
- In-building parking provisions that extend preference to vanpools, carpools, and bicycles;
- The encouragement of travel to and from the work place by modes other than single occupant automobile through various educational and incentive measures;
- Coordination and cooperation on such measures among employers, building owners, and management companies. The county has one central transportation management agency (TMA), Arlington Transportation Partners, that serves this function for most developments⁴; and
- Arlington County using its roles as developer of public buildings and as employer to encourage TDM practices.

³ Ibid

⁴ The county's second TMA, the recently formed, Potomac Yards TMA, was established exclusively to assist in the implementation, coordination, and monitoring of TDM's generated among developments within a single, large development area in southern Arlington County.

C. The Matrix

Recommended County TDM programs are set forth in the TDM matrix (see Figure 1). However, upon providing clear and convincing evidence that particular elements of the TDM matrix may be inappropriate for a particular project, the developer may propose substitution of other elements which provide equivalent value.

No Site Plan TDM Program is expected to incorporate all the strategies outlined in the matrix. Rather, the matrix provides a framework of options from which the County will help developers identify appropriate actions for their project. In doing so, the County distinguishes the intensity of the strategies, matching them with the assessed impact of different developments on the transportation system. The greater the impact, the more intense the mitigation measures in the approved Site Plan will be. The categories and density thresholds are described in the matrix below and through the following context codes:

Matrix Land Use Category Codes

- A. Development plan is consistent with the General Land Use Plan (GLUP), and no traffic problems are projected related to the development and its surroundings.
- B. Development plan is consistent with the GLUP, however, traffic problems are projected related to the development and its surroundings.
- C. A GLUP amendment is requested for a non-conforming development plan, no traffic problems are projected however.
- D. A GLUP amendment is requested, and traffic problems are projected.

The DCPHD reviews submitted site plan proposals to assess transportation impacts and opportunities. Reviews incorporate an assessment of site characteristics, proposed land-uses, a traffic impact analysis (TIA) report, and a proposed parking plan. The ACCS then helps the developer identify site-specific strategies and prepare a TDM plan. Each TDM strategy is selected to mitigate the transportation impacts of the site on a case-by-case basis.

Developers can obtain further assistance in implementing their TDM plan requirements by contacting the County's primary TMA – Arlington Transportation Partners (ATP), a division of ACCS – or the County's TDM planner.

Figure 1: Arlington's TDM Program Matrix

Strategies		Land Use Category			
		A	B	C	D
Rideshare Marketing	Information dissemination				
	Distribute/ Display	X	X	X	X
	Employee Surveys	X	X	X	X
	Operate Vanpools		X		X
	Subsidize Vanpools				
	Match State Subsidies			X	X
	Double Match State Subsidies				X
	Backup, Reserve Maintenance Vehicle				X
	Employee Transportation Coordinator				
	Part-Time	**	X	X	
	Full-Time				X
	On-Site Ride Matching				X
	Transit Store or TMA Contribution				
	\$7,970/ Year	**	X		
	\$15,947/ Year			X	
	\$23,911/ Year				X
	Locate/ Operate Transit Store				X
	Emergency Ride Home		***	***	X
Parking Management	Unlimited Reserved Rideshare Parking	X	X	X	X
	Market Rates for SOV Parking	X	X	X	X
	Outsource Parking Management ⁵		X	X	X
	Reserved Vanpool Parking Space	X	X	X	X
	One-Half Market Rate	X		X	
	Free		X		X
	Variable Rate for Carpools (2+ Employees)				
	Market Rate	X			
	One-Half Market Rate		X	X	
Free				X	

⁵ To ensure that parking rates will reflect true market conditions in a competitive environment, lease 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 and subsidies are prevented from being passed along to specific persons.

Figure 2: Arlington’s TDM Program Matrix

Strategies		Land Use Category			
		A	B	C	D
Transit Programs	Contribute to Employer Bus Shuttle				
	\$7,970/ Year	**	*	*	*
	\$15,947/ Year	***	**	**	**
	\$23,911/ Year		***	***	***
	Operate Employer Bus Shuttle				X
	Fare Media Subsidy				
	25-50 Percent		X		
	50-75 Percent			X	
75+ Percent				X	
On-Site Construction	Bike Lockers, Racks	X	X	X	X
	Shower Facilities	X	X	X	X
	Van Accessible Garage	X	X	X	X
	Off-Street Delivery/ Loading	X	X	X	X
	Roadway Improvements	X	X	X	X
Off-Site Construction	Pedestrian Systems	X	X	X	X
	Direct Metro Connections				
	Existing Knockout Panels	X	X	X	X
	New Connections			X	X
	Intersection Improvements			X	X
	New Facility Construction				X
	New Metrorail Station				X
Employee Policies	Flex Time	X	X	X	X
	Telecommuting	X	X	X	X
	Trip Generation Restrictions		X		X
	Transportation Management Organization	X	X	X	X
Monitoring & Compliance ⁶	Contribution				
	\$1,000/ Year	**	*	*	*
	\$5,000/ Year	***	**	**	**
	\$10,000/ Year		***	***	***
	Performance Guarantees				X
	Zoning Compliance Fines	X	X	X	X
	Contingent Phasing			X	X

- * If GFA is less than 100,000 SF
- ** If GFA is 100,000 - 200,000 SF
- *** If GFA is more than 200,000 SF

⁶ To date, approved Site Plans have not required either Contribution - to offset monitoring and compliance costs - or Performance Guarantees.

D. Participation

Participation in the Site Plan Review process is voluntary, but incentivized through density bonuses. Each zoning district permits a certain type and level of development "by-right." Beyond this, certain districts provide public review processes for a special exception by "site plan" that allows for greater flexibility in use, density, and form of development. The key to the success of the Site Plan Review Process is that additional development potential serves as an incentive to developers to seek a special exception by site plan and participate in the process.

To date, the density bonuses have been significant enough to attract the majority of new development projects into the process. By framing incentives in terms of added project density, the Site Plan Review Process supports the County's objective of concentrating development around transit stations.

E. Implementation

The developer must follow conditions outlined in the final approved site plan in order to receive a building permit and to continue to be in compliance with the property's existing zoning. While entering the site plan approval process is voluntary, once approvals are received, TDM conditions run for the life of the building, regardless of ownership, and guide all future decisions regarding development on the property.

The developer of an approved site plan property must implement the TDM program and obtain approval from the County before gaining the first Certificate of Occupancy. At this time the developer will prepare a property TDM Report. Subsequent to the first approval, the property owner will re-submit the property's TDM Report on the anniversary of the approval of the first Certificate of Occupancy.

Common components of site plan implementation include:

- Ridesharing promotion;
- Parking management;
- Transit promotion;
- On-site construction measures;
- Mutually agreed off-site provisions or contributions;
- Lease agreements ; and
- Monitoring and compliance

F. Common Strategies

Some of the most common strategies used today include:

- Conducting an employee transportation survey, provided free by ATP;
- Attending a free, ATP-sponsored employer workshop or seminar;
- Posting commuter information in a company newsletter, on a central bulletin board, internal e-mail system, or website;

- Installing a permanent display case, stocked with commuter information tailored to the specific worksite, in a central area;
- Hosting an on-site transportation event for employees;
- Providing preferred parking spaces for carpools and vanpools;
- Implementing an informal teleworking program;
- Installing bicycle and/or shower facilities to encourage bicycle and pedestrian commuting; and
- Offering employees flextime, compressed work week, or job sharing options.

More intensive TDM strategies include:

- Starting a formal telework program;
- Instituting a tax-free transit benefits program, either employer-sponsored or through pre-tax payroll deduction;
- Developing a commuting incentive program for those who carpool, bicycle or walk to work;
- Providing an employee/customer shuttle to local transit stations or other service areas;
- Supplementing the regional Guaranteed Ride Home program with an additional employer-sponsored service;
- Implementing a parking fee for solo drivers (for employers who previously offered free parking);
- Offering free or reduced-price parking for carpools and vanpools (where a fee previously existed);
- Starting business-sponsored or subsidized vanpools; and
- Implementing an active Air Quality Action Days program.

G. Monitoring and Compliance

The County's TDM planner is assigned to cover TDM compliance and monitoring. Staff for these tasks has increased along with the number of properties with Site Plan review obligations.

For Category D projects, developers can be required to provide a performance guarantee to assure continuing performance. To date this option has not been used by the County for any project.

H. Performance Measures

The Arlington TDM program seeks to achieve the following results, which may be employed as evaluators of the success of the program:

1. Maintain pre-construction peak hour levels of service at major intersections.
2. Limit single occupancy vehicle trips generated by development.
3. Reduce vehicle-generated air pollution.
4. Maximize transportation alternatives while minimizing single occupancy travel.
5. Utilize transportation facilities efficiently.
6. Encourage efficient, cost effective modes of transportation that focus on moving people, not vehicles.
7. Improve transit information and dissemination so people will be able to make the most efficient and friendly use of the system.
8. Utilize public transportation effectively and efficiently, through improved system information, frequencies, routing, connections, transfers; innovative technologies are encouraged.
9. Configure mass transportation to provide access to, through, and around employment centers.

10. Encourage innovative technologies that move people between home and work the most efficient and effective way.
11. Maximize convenience of inter-modal transfers between the commuter rail system and feeder/distributor systems.
12. Encourage group riding and shared parking arrangements through parking management plans.
13. Minimize or eliminate barriers to group riding.
14. Review transportation management plans during the site development process.

I. Performance

Arlington's TDM initiatives have successfully evolved and expanded since authorization of the original policy in 1990. Today, over 110 site plans have been approved by the County Board with TDM plans and ACCS now includes a ten-person sales team that serves 600 businesses. Ninety percent of all development is now conducted through the Site Plan review program - almost all of the remaining 10% consists of either single-family homes or small, town home developments.

J. Funding

The most fundamental obstacle to long-term operation of the TDM program is a lack of funding. Currently, no dedicated funding is available for ACCS; instead programs rely upon state and federal grants. Unlike most other civic functions performed by Arlington, TDM programs have no financial backing from the County. This leaves this important function in a precarious position, especially in its potential for continued growth. Recent changes that have brought improved financial security for the program include: indexing contribution increases to inflation (as indicated by the Consumer Price Index) and expanding the obligation for Transit Store/TMA contributions from 10 years to 30 years.

The key opportunity for the County continues to be the level of development demand. This has allowed the County to extract substantial civic improvements from private developers without slowing development activity. In fact, over time, the public investments secured by the program increase development demand by contributing to the distinct mobility environment that makes Arlington County a uniquely desirable place to live, work, and visit.

2.3 Detailed TDM Program Review: MONTGOMERY COUNTY’S TRANSPORTATION MANAGEMENT DISTRICTS AND TRAFFIC MITIGATION PLANS



A. Background

Montgomery County Commuter Services (MCCS), a section of the Division of Transit Services in Montgomery County’s Department of Public Works and Transportation (DPWT), provides free commuter assistance to county employers and employees through education and promotional outreach services, as well as incentive programs and a transit store.⁷

Beginning in the late 1980’s, Montgomery County established Transportation Management Districts (TMDs) to provide concentrated services to encourage the use of transit and other commuting options in the County’s major business districts — Downtown Bethesda, North Bethesda, Friendship Heights, and Downtown Silver Spring. A dedicated TMD staff was assigned to each district, to focus efforts in these areas.

⁷ These are physical stores although online fare media sales are also available - http://www.montgomerycountymd.gov/cittmpl.asp?url=/apps/dpwt/fare_media/index.asp.

B. The TMD Program

The County has four broad goals for its TMDs:

- Reduce traffic congestion;
- Increase transportation capacity;
- Reduce air and noise pollution; and
- Promote bicycle and pedestrian access.

On November 26, 2002, the County Council passed legislation mandating that employers with 25 or more full- or part-time employees located within a TMD actively work with their TMD's staff to reduce drive-alone commute trip rates. At a minimum, these employers are required to:

- Designate a Transportation Benefits Coordinator to serve the company's employees;
- Implement a Traffic Mitigation Plan (TMP) – developed in consultation with TMD staff;
- Submit an Annual Report of Activities; and
- Participate in the County's Annual Commuter Survey.

1. The Traffic Mitigation Plan

MCCS and its contractors assist County employers in developing a Traffic Mitigation Plan (TMP) designed to reduce the rates at which their employees drive alone to work. Each TMP is reviewed by the TMD staff and the Advisory Committee for that TMD which recommends approval or changes. The Director of DPWT has final approval authority.

2. Annual Report of Activities

Once a year, employers are asked to summarize the activities they have undertaken to implement their plans. Employers who successfully encourage "Better Ways to Work" (used as the program's tag line) are eligible for local and national recognition and awards.

3. Annual Commuter Survey

Employers receive Annual Commuter Surveys from Commuter Services for distribution to their employees. Employers are required to circulate the Commuter Surveys to their employees within 45 days for their completion. The completed Annual Commuter Surveys are submitted to each Employer's TMD. All surveys are conducted in the spring.

These surveys are used to track employee commuting patterns in the TMD and to monitor progress toward reaching any commuting goals set in the County's Annual Growth Policy. They help DPWT determine what changes to programs and services are necessary. Employers are asked to make a good faith effort to achieve an 80% response rate from their employees.

The County assists employers in reaching the target response rate by supporting the efforts of the company's Transportation Benefits Coordinator (TBC) in getting a survey into every employee's hand. The TBC is the contact person at that employment site with whom MCCS and its contractors work to provide services and the person who is asked to distribute the survey. Surveys are available in hard copy format or online, distributed through the company email system. The County also provides detailed instructions, flyers, and prize drawings for participants who take the survey. If requested, TMD staff will hand out surveys at company-sponsored events and provide refreshments and additional prize drawings for participants.

4. Common TMP Strategies

- Designate contact person for employee transportation information (TBC);
- Distribute information on transit/pooling/other commute alternatives to employees on a regular basis;
- Commute information/alternatives presentations to employees at worksite by TMD staff;
- Information on commuting alternatives provided to new employees (orientation materials and presentations available from TMD staff);
- Attendance at free TMD-sponsored meetings/workshops permitted for TBC to learn about new services;
- Ozone Action Days participation (regional program to alert people to dangerous air quality days);
- Guaranteed Ride Home Promotion (free regional program offering emergency rides);
- Permanent display area for TMD-provided bus schedules and other transportation information;
- Provide ADA transportation options information;
- Tax-free monthly transit subsidies provided to employees (County subsidies and State commuter tax credit may be available);
- Transit passes/tokens offered for purchase at worksite (at full or reduced price);
- Pre-tax payroll deduction for transit costs;
- Transit/pedestrian amenities at worksite, e.g. sidewalks, benches, etc.;
- Bike amenities at worksite - racks, lockers, and/ or showers (TMD may be able to supply);
- Employee carpool matching service;
- Free or reduced rate parking for car/vanpools offered to employees;
- Preferred location and/or reserved parking for car/vanpools offered to employees;
- Alternative work schedules: Flex Time, Compressed Work Week; and
- Telecommute, telework, and job-sharing.

C. Compliance

The basic steps for compliance among qualifying employers include:

1. Contact TMD Staff for assistance in customizing an effective TMP;
2. Submit TMP to DPWT — DPWT reviews submitted TMP. Upon successful review, DPWT issues confirmation of approval;
3. Work with TMD Staff and employees to actively implement and promote the strategies that are included in approved TMP;
4. Participate in the Annual Commuter Survey;
5. Submit an annual “Report of Activities” documenting results of TMP implementation.

To date, compliance rates have been very high – estimated by one TMD administrator to be about 95%.⁸ There are very few non-compliant companies in any of the TMDs. Those few will probably face fines in the near future. Failure to comply is a misdemeanor under County Code.

The County sets an 80% survey-response rate target in order to effectively measure the program’s performance. While this is a goal which many employers do not reach, most produce response rates

⁸ Jim Carlson, Planning Specialist, Montgomery County Commuter Services

significant enough to effectively track program performance. For some agreements, the TMDs conduct their own mode split surveys, usually through driveway counts at the employment site.

D. Enforcement

An employer or owner that does not submit a traffic mitigation plan or provide survey data within 30 days after a second notice has committed a Class C violation. Continued non-compliance can result in fines.

To date, the County has not invoked any non-compliance penalties though enforcement efforts are being undertaken. There are no penalties for failing to achieve established survey-response rate targets.

E. Performance Measures

In addition to the broad goals set out for established TMDs, commuting goals are identified for each district, stated as the percentage of participant-commuters not driving to work during peak times – tracked by the County as “non-auto driver mode share” (NADMS). Current NADMS targets for each TMD are as follows:

- Bethesda: 37%;
- North Bethesda: 39%;
- Friendship Heights: 39%; and
- Silver Spring: 46% (50% for new development⁹).

While there are no individual NADMS targets established for participants, these targets serve as effective performance measures for the overall program.

F. Performance

Each TMD has active TMPs from dozens of area employers – see Figure 3.

⁹ Established developments in Silver Spring are grandfathered at 46% in order to allow the County to maintain and update ambitious NADMS targets for new development in this transit-rich location.

Figure 3: Employer TMP's

TMD	Participants	
	Required	Voluntary
Bethesda	121	10
North Bethesda	141	6
Friendship Heights	26	2
Silver Spring	63	18

All TMDs have achieved or exceeded their NADMS target, according to the latest processed survey data (2006).¹⁰

G. Funding – County

A variety of funding structures have been established to support TMD efforts. The Bethesda and North Bethesda TMDs are primarily funded from parking revenues: parking meter payments, parking violation revenue, monthly permits for public parking lots, and In-Lieu of parking development fees. For the Bethesda TMD, revenues from the Bethesda Parking Lot District facilities (including lots and garages) are used to support TMD expenses as well as other types of transportation costs. In the North Bethesda TMD, the County installed more than 800 parking meters to manage its parking system which also generates revenue for TMD activities.¹¹

Silver Spring TMD is eligible to receive net revenue from the Silver Spring Parking Lot District when available, though net revenue is not always generated there. The TMDs in Silver Spring and Friendship Heights are supported by other sources, including developer fees and funds from the County’s general operating budget. Friendship Heights is the only TMD that does not receive any parking revenue, as there are no County parking facilities in Friendship Heights.

Around 2005, the County began assessing an annual fee for most new projects within TMDs. These revenues are collected by the County and allocated to traffic mitigation actions — identified in coordination with TMD staff and the TMD Advisory Committees. The fee is currently set at \$.10/SF for all commercial uses. There is enabling legislation for applying a fee of up to \$60 per unit for multi-family residential development, but the County has chosen not to implement this strategy. The fee is assessed upon use and occupancy of the development.

¹⁰ Carlson, Montgomery County Commuter Services

¹¹ “Opportunities for Sustainable TMA Funding”, *UrbanTrans Consultants, Inc., December, 2004.*

Developments deemed to produce significant increases in traffic may also be required to produce a Traffic Mitigation Agreement, which outlines measures they will take to mitigate their project's traffic impacts.

This policy may soon be changing significantly with the recent adoption of a new County growth policy. This policy will likely increase the frequency with which Traffic Mitigation Agreements are required. In addition, developers usually are required to pay the cost of driveway counts and similar monitoring required as part of their development approval.

H. Funding – Participants

Participants must bear the cost of the specific strategies they implement as part of their TMP. However, MCCS and its contractors provide assistance to all County employers, including those mandated to participate in the TMD program. Free services provided include:

- Transportation Benefits Plans — How to design a suitable plan, while boosting productivity and morale;
- Transit Subsidies and Tax Credits — How commuter benefits can lower taxes for employers and employees;
- Public Transportation — Information on routes, fares, schedules, and where to buy transit passes, including pre-tax Metrochek and other discounts;
- Carpools/Vanpools — Free assistance in forming or joining a carpool;
- Parking — Information on free/discount parking for carpools/vanpools and park-and-ride lots;
- Biking/Walking — Help with rental lockers, commuting routes, and other amenities;
- Guaranteed Ride Home — Free rides home in cases of emergency or unscheduled overtime;
- Teleworking/Alternative Work Schedules — How to design a program tailored to specific needs;
- Car Sharing — Programs that provide 24/7 access to a vehicle, available at Metro stations;
- Accessible Transportation — Freedom of mobility for those with special needs;
- HOV Lanes Information — Where, when, and how to access them;
- Customized Seminars and Presentations — For setting up a commuting benefits program that works for each business; and
- Commuter Information/ Marketing Materials — Fact sheets, posters, flyers, exhibits fairs.

2.4 Detailed TDM Program Review: CITY OF ALEXANDRIA, VIRGINIA



A. Background

In 1997, as a result of traffic congestion from new development and rapid economic growth, the City of Alexandria's leadership determined that a traffic mitigation plan would need to be created to maintain the attractiveness and viability for Alexandria as a place to live and work. This was especially true in the light of rapid commercial develop adjacent to the King Street, Braddock Road and Eisenhower Metrorail Stations. New development in the area of the rail stations included an 80-acre parcel with 6.5 million square feet of mixed use development adjacent to the King Street and Eisenhower Metrorail Stations, as well as a 1.2 million square foot mixed-use development directly across from the King Street Metrorail Station. Development along the Eisenhower corridor was imminent as local developers began applying for Special Use Permits (SUPs) for creating a commercial business community along the once desolate two-lane highway, parallel to Interstate I-495. Additionally, the King Street Metrorail Station had become a transit center, or hub, for the region-wide Washington Metropolitan Area Transportation Authority's (WMATA) Metrorail system Blue and Yellow lines, as well as Amtrak's Northeast Regional Service (Boston to Richmond) and the newly authorized Virginia Railway Express, commuter rail service

providing service from Fredericksburg/Manassas, through Alexandria, terminating at Washington DC's, Union Station. Utilizing the transit services options by the three providers created a tremendous opportunity to mitigate the impact of future development. The City's Office of Transit Services and Programs (OTS&P) would provide the administrative support to monitor compliance to the proposed traffic mitigation planning ordinance. OTS&P already provided outreach to the business community on transit services and transportation program options.

B. Transportation Management Planning (TMP) Ordinance

On May 16, 1987 the City of Alexandria Council passed the Transportation Management Plan (TMP) Ordinance (No. 3204) which requires developers to reduce Single Occupant Vehicle (SOV) traffic associated with their projects. The TMP Ordinance was the first in the Commonwealth of Virginia and only one of two in the Washington, DC region. The other being the Adequate Public Facilities Ordinance required in Montgomery County, Maryland.

C. Purpose of the Ordinance

The Alexandria City Council created the Ordinance not to limit development but rather to limit the amount of traffic that development would create. This is accomplished by requiring the developer to provide certain incentives and apply selected transportation demand management (TDM) strategies to commuters who choose to use transit services and participate in transportation programs, and provide disincentives to those commuters who choose to drive alone to and from their place of employment in the City of Alexandria, each day. The Plan, that includes the use and implementation of transit services and transportation programs, is known as the TMP, or Transportation Management Plan.

D. Goal of the Transportation Management Planning Ordinance

The goal of the Ordinance is that through the operation, and management of an approved TMP program, peak period trips generated by a development will be reduced by 10% to 30% over the AM peak period trips generated by a development without a TMP program.

Each TMP consists of two parts: the developer's submitted TMP and the supplementary City staff recommendations. These recommendations are printed and become part of the TMP SUP that is officially adopted by the Alexandria City Council. The two documents, together, represent the 'working TMP' and the developer is responsible for complying with the provisions adopted in both of these documents. Where there is conflict between the two documents, the language in the staff recommendations prevails. A standard supplemental staff recommendation would be that each applicant designates a TMP Coordinator upon application for the initial building permit. The Coordinator shall maintain an on-site office and be responsible for establishing and administering the TMP for the project, including all of the approved TMP activities, or strategies.

The City Council will approve an application for a SUP if it determines that:

- The Applicant’s TMP is in accord with the requirements of the TMP, and
- The TMP, together with any amendments deemed appropriate by City Council, demonstrates that reasonable and practicable actions will be taken in conjunction with and over the life of the proposed use which will produce a significant reduction in the traffic and transportation impacts of the use.

In deciding whether such a determination may be made, City Council may consider whether either of the following goals for the proposed use will be achieved by the TMP:

Goal #1:

That 10% to 30% of the total number of projected trips for commercial, industrial, retail or residential uses, during the AM and PM peak periods, utilize a travel mode other than the single occupancy vehicle;


Goal #2:

That no more 40% of the projected SOV trips from commercial, industrial, retail or residential uses, occur between 6 AM and 10 AM, and that no more than 40% of the number of projected SOV trips occur between 3 PM and 7 PM.

E. Development Projects Subject to the TMP Ordinance

All new developments meeting the following size (square footage [SF]) thresholds that are required to receive a SUP before construction can begin.

Figure 4: Thresholds for Special Use Permits

Proposed Use	Minimum SF
Office	50,000 or more SF of usable space
Retail	40,000 or more SF of usable retail sales space
Residential	250 or more dwelling units
Mixed-Use 	If the proposed building includes any of the uses listed above which meet the size threshold, the TMP must be prepared for the entire project.

F. Application and Approval Process

The developer’s application for a SUP must contain a Traffic Impact Study (TIS) to assess the peak period traffic impacts of the proposed project without the TMP in place, and a mitigation plan (TMP) with goals and strategies to reduce SOV traffic, particularly during AM and PM peak hour periods.

The Departments of Planning & Zoning (P&Z) and Transportation and Environmental Services (T&ES) review the SUP application and make joint recommendations to the Alexandria Planning Commission. After the Planning Commission reviews the SUP application along with the recommendations of P&Z and T&ES, the Commission makes their recommendation to City Council which finally either approves or disapproves the application. An SUP application may be amended with conditions that are recommended from Planning, T&ES and the Planning Commission. The developer must comply with the conditions. The SUP and thus, the TMP, run with the land and are mandatory and binding upon the applicant, all owners of the land, and all occupants and upon all of their heirs, successors and assigns.

G. Components of the TMP

The required TIS determines the extent to which traffic mitigation measures are needed, and which traffic mitigation measures and strategies will be the most effective.

An important impact of the TIS is that the minimum amount of parking the developer is allowed to build is adjusted downward to take into account the number of people that will be commuting by Single Occupant Vehicle (SOV) travel. Developers typically take advantage of being allowed to build less parking, therefore at full occupancy there is not enough parking for everyone to drive alone to the project. Consequently, developers are able to charge higher parking rates.

The TMP includes a reasonable and effective combination of some or all of the following elements which shall be appropriate to the size, scale and location of the proposed use and shall demonstrate that reasonable and practicable actions will be taken in conjunction with and over the life of the use which will produce a significant reduction in the traffic and related impact of the use.

- Designate a TMP Coordinator to market and promote SOV alternatives and implement and manage the approved TMP.
- Offer ridesharing incentive programs which may include activities to encourage and assist in the formation of carpools, vanpools and bus pools. This includes cash payments or subsidies; preferential parking spaces and discounted parking charges.
- Offer public transit incentive programs which may include:
 - The provision of Para transit services to/from convenient public transit sites and to accommodate midday and evening excursions;
 - The construction of transit shelters and amenities;
 - The construction of bus/rail transit stations and related facilities;
 - Dedication of land and the provision of other subsidies for the construction and operation of public transit facilities;
 - The provision of transit fare media subsidies and marketing programs; and potentially
 - The provision of other analogous incentive programs.
- Recommended improvements in public transit which services the site of the proposed use, such as changes in service routes, increases in the frequency of service, alterations in the location of facilities, the establishment of fare incentive programs and other measures designed to make the public transit more accessible to occupants of the proposed use.

- Bicycle and pedestrian incentive measures which may include the provision of bicycle parking and storage facilities; the construction and extension of bicycle paths and pedestrian walkways; the provision of shower and locker facilities; and, similar incentive features.
- In the case of office and industrial uses, variable work hour, or flex time, programs under which employees working at the proposed use will stagger their work hours in order to affect a reduction in the amount of peak period traffic to and/or from the use which would otherwise occur.
- Measures to reduce the reliance on SOV by employees and others who will travel to and from the proposed use which may include parking fee structures tailored to discourage SOV vehicles. Proscription of tenant-employer subsidy of parking costs for SOV vehicles. Time and other access restrictions of parking spaces in on-site parking facilities. Programs to support and encourage the utilization of alternative transportation modes.
- Use and accessory use design options which reduce reliance on SOV vehicles by employees and others who will travel to and from the proposed use, such as the provision of less parking area than that required under the provisions of the Ordinance. Shared parking arrangements. The incorporation of residential units (in the case of proposed commercial use).
- Any other techniques, or combination of techniques, capable of reducing the traffic and related impacts of the proposed use, such as the following:
 - Set aside a minimum of 5% of the off-street parking to be reserved for carpool and vanpool vehicles until 10:30 AM on weekdays.
 - Sell transit fare media at a location on the approved TMP development site.
 - Create a TDM program, including all applicable and reasonable program initiatives, i.e. rideshare matching, preferential & discounted parking, teleworking, etc.
 - Provide incentives for commuters who use bicycles and walking as their commute mode, including the installation of bicycle lockers and provision of shower facilities.
 - Implement alternative work hour programs, i.e. staggered work hour, flextime and compressed work weeks.
 - Create a parking management program, whereby parking pricing policy is established that supports HOV travel.
 - Establish a TMP Account to fund TMP program activities. Commercial and retail developments are required to spend, at least, \$0.10 per square foot of occupied floor space annually. Residential projects are required to spend \$60.00 per dwelling unit. These rates typically increase by 4% annually or through the consumer price index. They may also be tied to parking fees, or other appropriate means stated within the specific SUP.
 - Install bus shelters and similar amenities to enhance transit usage.
 - Install transit information display and maintain the same.

H. Legal Requirements

Failure to comply with the conditions of the approved TMP may result in revocation of the SUP.

2.5 Detailed TDM Program Review: Contra Costa County Department of Conservation and Development -Transportation Demand Management Plan



A. Introduction

In 1992 Contra Costa County (CA) passed their first Transportation Demand Management Plan Ordinance and Guidelines with revisions in 1995 and 1997. The focus of the Ordinance is to require developers to use effective ways to reduce traffic trips, and their associated impacts, created by new development projects.

County staff will review development projects with the Applicant (developer/owner) based on these guidelines and determine if a combination of acceptable options/measures will reduce the net number of trips that the project is anticipated to generate. This Ordinance provides recommended TDM measures and guidelines to achieve trip reduction.

The County faces the inevitability of a growing population, in conjunction with an expanding job market. The County's TDM Ordinance Guidelines are committed to reduce traffic congestion through techniques designed to encourage the use of modes of transportation alternative to the single-occupancy vehicle (e.g. carpool, transit, etc.). The following sections paraphrase the ordinance and provide additional insights into the intent of each section.

B. Intent and Purpose of the Ordinance

Under the County's zoning ordinance or possibly under a project's conditions of approval, County staff has the authority to require the submittal and approval of a TDM program prior to the issuance of a

building permit for a project. TDM programs associated with development projects typically aim at achieving the following general outcomes:

- Reduce the frequency and distance of auto trips;
- Spread peak-hour trip making to off-peak time periods;
- Shift trips toward the use of environmentally friendly and non-motorized modes of transportation; and
- Provide technological solutions to reduce the environmental impacts of vehicular traffic, such as provision of charging stations to encourage the use of electric/hybrid vehicles, and provision of real-time or interactive information on bus services.

It should be noted that development projects are also subject to the potential requirement of Traffic Impact Analysis (TIA), which may include mitigations to individual and cumulative project impacts at study intersections, roadway segments, and/or freeways as well as on-site and site access improvements.

The TDM Ordinance defines important terms to clarify the type of projects subject to its requirements:

(a) "Residential Project" means any residential development application containing thirteen or more dwelling units that must be approved through a public hearing process and has not received final approval.

(b) "Non-Residential Project" means any non-residential or mixed-use development application that must be approved through a public hearing process and has not received final approval. Non-residential projects also include an application to expand an existing office or industrial structure that has at least five thousand square feet of gross floor area, by twenty-five percent or more of the structure's gross floor area.

C. Application for Off-Street Parking Reductions

A project may qualify for reductions in off-street parking requirements. An Applicant requesting parking reductions must submit a conceptual TDM program to the community development department concurrently with the application for the project. If the tenant is known, the project Applicant and tenant must jointly submit the conceptual TDM program.

The two main benefits to project Applicants associated with a reduced off-street parking requirement are: (1) Significant savings in construction and maintenance costs for off-street parking; and, (2) The availability of space/land that otherwise would be used for parking. Such space could be utilized to provide on-site amenities, landscaping, or increased project density subject to County approval.

A mixed-use development application can have characteristics that could qualify for a reduction in off-street parking required by the zoning code. Different uses can vary in their peak parking demands in a

day, week and/or season which could support the concept of shared parking. An example would be opening up office parking to an entertainment complex in the evening to more fully utilize the facility.

D. Required Information for Development Permit Application

1. Conceptual TDM Program

The conceptual TDM program must identify TDM measures that can be demonstrated to attain the trip reduction necessary to qualify for the requested parking reductions. The department must review the project's conceptual TDM program and make a recommendation to the division of the planning agency hearing the project application.

All Conceptual TDM Programs must contain a monitoring, evaluation and enforcement component.

To ensure the success of the TDM program, it is important that the project Applicant establish mechanisms that guarantee the perpetuity of the program. Examples of such mechanisms are described below:

- Incorporate the TDM program requirements into the Covenants, Conditions & Restrictions (CC&Rs) of the property to ensure that the TDM program runs with the land.
- Incorporate the TDM program requirements into the tenant lease agreement to ensure that occupants of the project site cooperate with the property owner/Applicant, property manager and/or the County in meeting all requirements.

2. Proposed Improvements

The Applicant must include in the tentative map, land use permit, or development plan application, any improvements that will provide access to public transit, ridesharing opportunities and non-motorized forms of travel.

If the project lies within a transit service area identified in the circulation element of the General Plan, the Applicant must consult with the transit service provider on the need to provide infrastructure to connect the project with the transit services. Evidence of compliance with this requirement may include correspondence from the local transit provider(s) regarding the potential need for installing bus turnouts, shelters or bus stops at the site.

3. Final TDM Program

The design and implementation of the final TDM program must be a condition of a project's approval. The Applicant and all subsequent owners of the project must provide deed notification of mandatory participation in the final TDM program to all subsequent purchasers and owners of the project.

The County's approval of a TDM program for a reduction in off-street parking is discretionary. County staff will review the Conceptual TDM Program, in consultation with the Applicant, and determine its potential to achieve the off-street parking reduction requested in the development application. A recommendation for a Final TDM Program will be made to the approving body. Approval may be conditional and include performance standards which, if not met, would require reconsideration of the Final TDM Program. If the TDM Program is not approved, there will be no reduction in off-street parking requirements.

Following the County's review and approval process, the Final TDM program will be set as a condition of approval on the project. The project Applicant and all subsequent owners of the project must provide deed notification of mandatory participation in the Final TDM program to all subsequent purchasers, owners and tenants of the project.

E. TDM Requirement for Residential Projects

1. Residential TDM Program Content

The Applicant of a residential project containing thirteen or more dwelling units must prepare and implement a TDM program that includes at least the following:

(1) Owner-Occupied Units. Upon a residential dwelling being sold or offered for sale, the Applicant must notify and offer to the buyer or prospective buyer, as soon as it may be done, materials describing public transit, ridesharing, and non-motorized commuting opportunities available in the vicinity of the project. Such information must be transmitted no later than the close of escrow;

(2) Rental Units. Upon a residential dwelling being rented or offered for rent, the Applicant must notify and offer to the tenant or prospective tenant, materials describing public transit, ridesharing, and non-motorized commuting opportunities in the vicinity of the development. The materials must be approved by the Department of Conservation and Development. The materials must be provided no later than the time the rental agreement is executed.

The Applicant and all subsequent owners of the project must provide deed notification of mandatory participation in the TDM program to all subsequent purchasers and owners of the project.

The TDM Program for a residential project should be understood as a disclosure document to the occupants of the residential project. It discloses the transportation facilities and services located on-site and off-site that are available to the occupants.

The TDM Program must be approved prior to issuance of the first building permit for the project, unless the conditions of approval indicate otherwise. The Applicant must submit an initial submittal to County staff for review. County staff will review this submittal and identify any revisions needed, in consultation with the application, to receive approval. County staff's primary concern is that the TDM program be accurate regarding the on-site and off-site transportation services available for project residents and that it be easily understood by residents.

2. Proposed Improvements

The Applicant must include in the tentative map or development plan application, all improvements that will provide access to public transit, ridesharing opportunities and non-motorized forms of travel.

The Applicant whose project lies within a local transit service area identified in the circulation element of the general plan must consult with the local transit service provider on the need to provide infrastructure to connect the project with transit services. Evidence of compliance with this requirement may include correspondence from the local transit provider(s) regarding the potential need for installing bus turnouts, shelters or bus stops at the site.

Proposed improvements are a primary feature of a TDM Program for residential projects. The Program will incorporate a copy of the project's site plan showing the internal paths, bicycle parking, pedestrian/cyclist connections to off-site facilities pedestrian signage and lighting, etc. It will also require a plan/map showing bicycle lanes/routes, sidewalks/paths in the area around the project site. If the project lies within a transit service area identified in the Circulation Element of the General Plan, a map showing the transit services and the stops closest to the project site is also required.

E. TDM Requirement for Non-Residential Projects

The Applicant must include in the tentative map or development plan application, all improvements that will provide access to public transit, ridesharing opportunities and non-motorized forms of travel.

The Applicant whose project lies within a local transit service area identified in the circulation element of the general plan must consult with the local transit service provider on the need to provide infrastructure to connect the project with transit services. Evidence of compliance with this requirement may include correspondence from the local transit provider(s) regarding the potential need for installing bus turnouts, shelters or bus stops at the site.

F. Transportation Strategies Options

The four general categories of strategies recognized by Contra Costa are outlined in Figure 5. For each initiative, the Effectiveness, Cost and Implementor are defined as follows:

Effectiveness – is a measurement tool to determine the value of the effort in reducing single occupant vehicle trips at the site. Effectiveness is on a scale of 1-10, with 10 being the most effective and 1 being the least effective.

Cost – indicates the cost relative to the other options listed.

X = no cost

\$ = low cost (less than \$10/year per employee, or offered by 511 Contra Costa)

\$\$ = medium cost (\$10-\$30/year per employee)

\$\$\$ = high cost (more than \$30/year per employee, or higher infrastructure cost)

Implementor – identifies who will likely implement this strategy. This may be the developer, (property owner) or employer; however in some cases, the rideshare agency called 511 Contra Costa (511 CC) provides these services free of charge, or for a nominal charge.

Figure 5: Contra Costa Transportation Strategy Options

Initiative	Effectiveness	Cost	Implementor
Facilities and Design			
Bicycle Racks/Lockers	3	\$	D/E/511CC
Bicycle Station	6	\$\$	D
Showers and Clothes Lockers	3	\$\$\$	D/E
Walk/Bicycle Corridors	4	\$\$	D
Onsite Amenities	5	\$\$	D/E
Site Design	5	\$\$	D
Alternative Work Schedule			
Compressed Work Week	4	X	E
Flexible Work Hours	3	X	E
Telework Policy	5	X/S	E
Carpool Incentives	5	\$\$	D/E/511CC
Vanpool Incentives	5	\$\$	D/E/511CC
Vanpool Empty Seat Subsidy	3	\$\$	E
Guaranteed Ride Home	3	\$	D/E/511CC
Transit Incentive	4	\$\$	D/E/511CC
Commute Alternative Program	4	\$\$	D/E/511CC
Tax Benefit Program	5	X	E/511CC
Car/Bike Sharing	2	\$\$	D/E
Bicycle Loan Program	1	\$	D/E
Free Bicycle Accessories	1	\$	D/E
Marketing Strategies			
Employee Transportation Coordinators	5	\$\$	D/E
Employee Orientation	2	\$	D/E
Transportation Health Fairs	3	\$	D/E/511CC
Commute Options Brochures	1	X	D/E/511CC
Bike to Work Day	1	X	D/E/511CC
Bicycle Riders Guide	1	\$	D/E/511CC
Spare the Air	1	X	D/E/511CC
Parking Management			
Preferential Parking	4	\$	D/E
Parking Management Program	8	\$\$\$	D/E
Parking Cash Out	10	\$\$\$	D/E
Unbundled Parking Leases	8	X	D
Parking Charges	10	\$\$	D/E

2.6 Detailed TDM Program Review: Trip Reduction in the Seattle, Washington Metropolitan Area



A. Introduction and Overview

The trip reduction ordinance in King County, Seattle, Washington, as well the following Washington State jurisdictions, are tied to the Washington State, Commute Reduction (known as CTR) State law 70.94:

- Settle Commute Trip Reduction (Washington)
- Non CBD Transportation Management Ordinance - Bellevue (Washington)
- Commute Trip Reduction Program - Durham County (North Carolina)
- Commute Trip Reduction Plan - Camas (Washington)
- Commute Trip Reduction Plan Ordinance - Thurston County (Washington)
- Commuter Trip Reduction - Gig Harbor (Washington)
- Commute Trip Reduction - Puyallup (Washington)
- Commute Trip Reduction Program - SeaTac (Washington)
- Commute Trip Reduction Parking Program - Spokane County (Washington)
- Commute Trip Reduction Law - Kitsap County (Washington)
- Commute Trip Reduction Plan Ordinance - Tumwater (Washington)
- Commute Partnerships Program - King County (Washington)
- Commute Trip Reduction Program (Municipal Ordinance - Vancouver (Washington)

The King County CTR program began in 1996 and by 1999, 425 King County employers reduced daily SOV travel to work by 40%. The objective of the ordinance, the first established in Bellevue, Washington, is to provide a framework for all state jurisdictions to be consistent state-wide and help to meet air quality standards through the implementation of trip reduction strategies required of employers who have 100 or more employees.

Employers that meet the criteria must identify themselves to the city/county within 180 days of either moving to the area or growing in employment number at a worksite to 100 or more employees. Such employers shall be given 180 days to develop and submit a CTR program. Employers that do not identify themselves within 180 days are in violation of the ordinance. Newly affected employers shall have two years to meet the first CTR goal of a 15 percent reduction in proportion of single occupant vehicle trips or vehicle miles traveled per person; four years to meet the second goal of a 20 percent reduction; six years to meet the third goal of a 25 percent reduction; and twelve years to meet the fourth goal of a 35 percent reduction from the time they begin their program.

Under Washington State law, the Commute Trip Reduction (CTR) approach addresses employers having at least 100 employees who commute to work during peak commute hours of 6 AM -9 AM. CTR-affected employers are required to designate an employee transportation coordinator (ETC), distribute information about alternatives to driving alone, and report on performance goals. Over 6,400 employees (18 percent) of an estimated 35,000 downtown workforce are affected by CTR requirements. The 2006 update to the state CTR Act encouraged municipalities to enhance TDM efforts in areas of concentrated development, and Bellevue has designated downtown as a Growth and Transportation Efficiency Center (GTEC). Under this new state framework, Bellevue's GTEC endeavors to reduce 5,000 daily auto trips by 2011 through multiple voluntary programs for employers, employees, residents, and visitors in downtown Bellevue. Rounding out the TDM repertoire, TMPs address the role of property owners and managers. Generally, TMPs support an efficient transportation network by promoting awareness of and incentivizing alternatives to driving alone, moving more people on existing infrastructure. In regard to the GTEC goal of 5,000 less auto trips, transit capacity is expected to accommodate only half, meaning that carpool and vanpool TMP requirements will be a major element in accommodating the other half.

Bellevue's TMP is a traffic and parking plan agreement between the city and developers intended to mitigate transportation impacts of new development. First under the authority of the Washington State Environmental Policy Act, and now under city code, the City of Bellevue currently requires ongoing Transportation Management Programs for new developments depending on their size and land use. Depending on the development, a TMP may include a number of programmatic and performance requirements to reduce drive-alone commutes, such as:

- Posting transit and rideshare information
- Distributing information
- Designating a Transportation Coordinator
- Providing Preferential Parking for carpools and vanpools
- Providing Financial Incentives for carpool, vanpool, and transit commuters
- Providing a Guaranteed Ride Home program for carpool, vanpool, and transit commuters

In addition to these requirements, large downtown office buildings are required to provide commuter information for tenants having 50 or more employees, institute lease agreements incorporating employee surveys and line item parking costs, provide a ridematching service, and demonstrate a 35 percent reduction in drive-alone commuting over a 10 year period.

B. TMP History

The earliest TMP agreement was established downtown in 1980, and by 1987 there were nine agreements. Early TMP agreements focused on preventing parking spillover of office buildings, and then focus shifted to reducing drive-alone commute trips. In 1987, TMP requirements were codified and included varying requirements for buildings of different land uses and sizes, both within and outside of downtown.

Between 1987 and 1995, fifteen developments were TMP-conditioned both downtown and Citywide, mostly in the Bellevue-Redmond area. In 1995, the TMP code was revised to include: additional downtown specific requirements, particularly for office developments; and, adjusted square footage thresholds at which developers were required to implement a TMP.

C. TMP Implementation and Administration

After a developer submits a design proposal for a specific project in Bellevue, development services staff review the proposal for code compliance. Transportation Development Review staff inform the developer of any transportation-related design modifications or concerns, including a TMP, if required. If a development is determined to require a TMP, the developer must sign and record an agreement with the Bellevue city clerk and King County office of records before a building permit is issued. Recorded agreements do not include specific requirements; they are general agreements stating that the property owner will comply with the TMP city code. Following these two steps, implementation requirements differ between downtown developments and developments outside of downtown.

Developers are to submit an action plan within six months of the temporary certificate of occupancy (TCO). With the help of transportation planning staff, developers confirm this action plan in writing, describing the specific transportation management techniques that the property owner will use to encourage non-drive-alone commuting and reduce peak period vehicle trips. The action plan is not required to be recorded. A survey to determine commute behavior of employees and a report are then due a year after the certificate of occupancy (CO), followed by biennial surveys and reports for the life of the building. A number of downtown properties use the professional services of the Transportation Management Association (TMA) to administer surveys, reports, and programmatic requirements.

3.0 Other Travel Demand Management Programs and Initiatives

In addition to the case studies, a number of additional programs were identified during the literature review. The following are brief summaries of the programs using information readily available.

3.1 Gainesville, Florida

The City provides specific design standards that developers must incorporate according to the size and impact of the project. Depending on the size and impact, developers can choose from a list of transportation improvements to mitigate the conditions. These improvements include traffic signals, dedicated turn lanes, bus pass programs for residents or employees of the development, payments to the regional transit system which will add or increase the frequency of bus service, ride-sharing or van pooling, participation in a TDM program, or provision of shading over sidewalks.

3.2 Alachua County, Florida

The planning approval process in Alachua County requires that each development must document both new and ongoing mass transit modifications, bicycle/pedestrian modifications, and any other TSM/TDM strategies undertaken to date to reduce single occupant vehicle (SOV) trips, and changes in mass transit frequency and level of service as well as bicycle/pedestrian levels of service, when such levels of service are adopted by the Board of County Commissioners. This information is included in the county's annual Monitoring Report which evaluates and recommends mitigative measures involving/including local street networks, transit, bicycle/pedestrian facilities, and service to address any transportation system capacity deficiencies identified in the report for the year being monitored.

3.3 Boca Raton, Florida

To meet the requirements of the Downtown Boca Raton DRI development order, the City of Boca Raton is required to prepare and implement a Transportation Demand Management program before issuing certificates of occupancy for developments of more than 1.5 million square feet of office equivalents. The City elected to prepare a trip reduction ordinance to meet this requirement, officially known as the Transportation Demand Management Plan. The proposed ordinance would require the development of a TDM Plan for any building, structure, or development with a minimum of 50 full time and/or part time employees and has the specified minimum size:

- general retail of 15,000 square feet of gross floor area;
- general office of 50,000 square feet of gross floor area;
- medical office of 30,000 square feet of gross floor area;
- light industrial/warehouse of 100,000 square feet of gross floor area; and
- others including hotel/motels, schools, nursing homes, movie theatres, day care centers, restaurants, recreation facilities, and government or institutional uses.

The requirements of the TDM Plan include provisions for facilities supporting a variety of alternative transportation modes, including transit. The TDM Plan for each development would adopt some combination of at least two elements contained in a list that includes:

- public transit incentive programs, including the construction of transit shelters and amenities and the provision of fare subsidies;
- public transit improvements, such as changes in service routes;
- increases in frequency of service, alteration in the location of facilities;
- the establishment of fare incentive programs and other measures designated to make public transit service more accessible to the occupants of the proposed use; and
- designated spaces provided on site that are restricted to bus pool vehicles, for those who utilize bus subscription service. Bus pool spaces would be provided at a minimum rate of 2 percent of the total parking required by the City Code of Ordinances or the Downtown Development Order. The spaces must be non-handicapped employee parking spaces located closest to the building entrance.

3.4 Hillsborough County, Florida

Hillsborough County has no legal requirements either for employers to reduce trip making by their employees or for their employees to participate. In order to address TDM in the county, the Bay Area Commuter Services, the transportation management organizations and the transportation management

initiatives seek to foster voluntary actions through their employer outreach efforts to increase employer participation in TDM programs. The County's TDM Program Scenario consists of the following strategies:

- Employer outreach to encourage the voluntary adoption and support of TDM programs among large employers or worksites (56% of employees work for employers with more than 100 employees. Only 3% of companies have more than 100 employees.);
- Advocating for new and expanded transit services;
- Compressed work week and telecommuting outreach program;
- Vanpool program management and promotions;
- Matching program for employer-provided discounts for transit, vanpool and other commute benefits;
- Preferential parking for carpools and vanpools.

3.5 Prince George's County, Maryland

The Maryland National Capital Park and Planning Commission (MNCPPC) is currently responding to a request from the Prince George's County Council to create Transit District Development Plans (TDDP) in the College Park, Prince George's Plaza, New Carrollton, and West Hyattsville areas of the County. The goal of the TDDPs is to reduce vehicle trips during specified periods of the day. A transit district is a legally defined geographic area in which vehicle trip reduction procedures, strategies, and programs are required. Developers within transit districts may be asked to provide bus shelter installations, transit use incentives and improved pedestrian facilities.

3.6 San Diego, California

The City has identified several strategies that have potential for implementation at work sites in San Diego. These strategies include: alternative work schedules, telecommuting, alternative modes of travel, on-site amenities that reduce employees' need to have access to a personal vehicle, and parking management. The initial focus of the City's TDM program is to work with large employers to seek their participation in implementing TDM strategies at their work site. Based on research conducted by others, employer-based TDM programs are most effective in reducing trips during peak periods. The City's employer-based TDM program has both voluntary and regulatory components.

Voluntary - Voluntarism requires motivation and commitment, and thus, involves extensive efforts to market TDM benefits to potential participants (employers with 50 or more employees.) These efforts could include, but are not limited to:

- Extensive dialogue and coordination;
- Marketing and advertising, campaigns;
- Public-private partnerships with employers and institutions;
- Incentives; and
- Training.

Regulatory - The City is considering requiring developers applying for discretionary permits or tentative maps for developments or redevelopments of commercial, scientific research, mixed use or industrially zoned projects exceeding 25,000 square feet of gross floor area to file a Developer Transportation Demand Management Plan as a condition of the permit. The plan requirement would be a condition of approval placed upon development during the discretionary permit review process. The purpose of the plan is to promote consideration of Transportation Demand Management objectives early in the

development process. Such consideration could include providing bike lockers, carpool parking, showers and lockers; developing designs that promote biking and walking; and parking management.

3.7 Dallas-Fort Worth, Texas

NCTCOG, the Metropolitan Planning Organization for the Dallas-Fort Worth area, has been instrumental in ensuring the incorporation of TDM and TSM elements in any Major Investment Study or MIS, which in this region is an extension of the NEPA requirements for large scale projects but also includes those without federal funding. TDM aspects include:

- Employer Trip Reduction Programs (ETR);
- Vanpools (and other similar ridesharing modes);
- Park-and-Ride Facilities;
- Transportation Management Associations;
- Bicycle and Pedestrian Transportation Improvements.

4.0 Summaries of Additional Regional TDM Initiatives

In the following section information is provided on TDM programs, both regional and site-specific, that were not fully detailed in the literature reviewed. The information that was available however provides insights that may prove using to the District in the development of its approach.

4.1 City of Aspen, CO

- Types of TDM: Mode Choice
- Keywords: tourism, shuttle service, paid parking, marketing, ridesharing, recreation, HOV
- Area Demographics: Premier winter sports and recreation destination in west-central Colorado. Peak season visitor population nearly matches resident population.
- Program: Various programs including carpool parking incentives, mandatory shuttle service, paid parking programs, and aggressive marketing.
- Results: Money generated from the paid parking program directly benefits demand-side strategies. Traffic volumes have not exceeded 1993 volumes. Parking occupancy reduction of 10%.
- Cost of Program: Unavailable; numerous departments cover resource needs. As an indication, the City's marketing budget (including printing costs) for 2003 was approximately \$50,000.
- Staff: The City of Aspen has one full-time individual dedicated to demand-side strategies.
- Contact: Lynn Bader, City of Aspen, www.aspenpitkin.com

4.2 Lake Tahoe Basin, CA

- Types of TDM: Mode Choice, Route Choice
- Keywords: tourism, trolley service, private shuttle service, gondola, transportation management association, recreation
- Area Demographics: Mountain communities surrounding Lake Tahoe, an attractive year-round recreation and vacation destination. Historically, a peak Friday in August experiences the highest annual daily traffic volumes. About 56,000 live in the Tahoe Basin year-round.
- Program: Various programs including two summer trolley services and private shuttle services catering primarily to Basin visitors. Private investments such as the Heavenly Gondola.

- Results: 20% of Heavenly’s visitors arrive via the gondola. In 2001, the combined trolley service ridership was nearly 90,000 passengers during a limited summer operational season.
- Cost of Programs: Limited information available. In 2001, the Nifty 50 trolley service operated on a budget of \$200,000 which included 5 vehicles. During the same year, the TNT / TMA operated with a budget of about \$160,000.
- Staff: Limited information available. South Shore TMA has one full-time person. TNT / TMA utilizes one full time director and one part-time employee.
- Contact: Dick Powers, South Shore TMA and Jennifer Merchant, TNT / TMA

4.3 Hennepin County, MN

- Types of TDM: Modal Shift, Location Shift
- Keywords: Transit subsidy, Pre-Tax benefits, Legislation
- Employer Demographics: Hennepin County, Minnesota, has 130 offices and facilities dispersed throughout the county with differing levels of transit service at each site. About 10,000 County employees are located in downtown Minneapolis and are well served by transit.
- Results: Estimated 60% drive alone, 15% carpool, 2% vanpool, 15% bus, 3% telework, 5% flextime
- Cost: \$559,000 bus subsidy + \$14,000 vanpool, parking and administration costs = \$573,000 - \$109,000 FICA Savings = Total Cost: \$464,000.
- Staff: Minimal staff time and staff costs once program was set up.
- Contact: Mike Bastyr, Sr. Human Resources Representative, 612-348-4640

4.4 Commonwealth Atlantic Properties, Arlington County, Virginia

- Proposed a redevelopment plan for Potomac Yard in Arlington
- 2.9 million square feet of office and commercial space
- 1.4 million square feet for residential and hotel use.
- Plan also includes new streets, parks, and other amenities
- As a condition of development, the developer agreed to a Transportation Management Plan. The developer is required to achieve a transit/bike/walk mode share of 40 percent through a combination of TDM, Transportation Systems Management (TSM) and other strategies.

4.5 The Florida Hospital System, Orlando, Florida

- As a condition of their Certificate of Occupancy, the Florida Hospital must continue to be an “active and financially supportive” member of the Downtown Orlando Transportation Management Association (DOTMA).
- Either through DOTMA or on their own, the hospital must develop a TDM program.
- The TDM program is to consider “at a minimum the following”
 - Parking management provisions for carpools and vanpools
 - Publicity for transit and ridesharing information
 - Work hour adjustments (compressed week, flextime)
 - Telecommuting (where possible)
 - Showers and bicycle lockers
 - Daycare facilities.

4.6 Transportation Expansion Project (T-REX),– Denver, CO

- As part of the T-REX project, a TDM-based maintenance of traffic/construction mitigation program was required through the existing regional program TransOptions.
- TransOptions seeks specifically to reduce congestion associated with major roadway projects.
- Roadway Project sponsors have dedicated \$3 million to the TransOptions program,

4.7 Port of Long Beach, Long Beach, CA

- The Los Angeles region has 16 million residents, 9 million jobs, and one of the busiest freight ports in the world.
- The Long Beach port moves close to 13,000 20-foot long containers each day.
- To better manage this high level of goods movement, Intelligent Transportation Systems (ITS) were employed as a tool to implement TDM concepts traditionally seen in personal commuting.
- Concepts explored included better scheduling, better routing and reduction of bottlenecks at check points.

4.8 University of Washington – Seattle, WA

- Types of TDM: Mode Choice
- Keywords: U-PASS, university transportation, parking disincentive, flexible parking, transit service
- Area Demographics: UW-Seattle is the City's second largest employment and activity center outside of the central business district. In 2002, enrollment topped 39,000 students.
- Program: One pass, the U-PASS, provides an array of transportation options including transit service, preferential parking, consumer discounts, and rideshare matching.
- Results: Due to its success, other campuses have developed their own programs using U-PASS as an example. U-PASS has saved UW-Seattle capital investment costs associated with traditional parking expansion projects. U-PASS has eliminated 91 million trips since 1991.

4.9 Zion National Park, UT

- Types of TDM: Mode Choice
- Keywords: national park, shuttle system, sustainable practices, parking restriction, road closure, alternative fuel vehicles
- Area Demographics: Utah's first national park, annual visitation of 2.61 million in 2002.
- Program: Mandatory summer shuttle system since 2000 serving Zion Canyon and Springdale. Parking is restricted on Scenic Drive.
- Results: 75% of Zion's annual visitors use the system. In 2000, the shuttle system reportedly reduced nearly 1,200 vehicle trips per day and almost 11,000 vehicle miles traveled per day.
- Cost of Program: \$12 million for the initial capital investment and approximately \$2.5 million in annual operating costs.
- Contact: Ron Terry, Zion National Park

4.10 Calibre – Alexandria, VA

- Types of TDM: Modal Shift, Location Shift
- Keywords: Transit Subsidy, Parking Management, Shuttle, Relocation, Parking Cash Out, Telework, Lease Negotiation

- Employer Demographics: Located in Alexandria, VA near Washington, DC in an area well served by subway, commuter train and bus
- Program: \$65 transit, bike or walk subsidy, \$65 parking cash out, carpool subsidy, telecommute
- Cost of Program: \$99,500 - \$30,000- transit subsidies, \$5,500 Telecommute program administration, \$64,000 TeleworkVA! subsidy
- Staff: 2 (Benefits Coordinator and HR Director)
- Results: 2% carpool, 12% transit, 5% telework
- Contact: Michelle Voisinet Caylor, Benefits Coordinator mcaylor@calibresys.com

4.11 CH2M Hill – Denver, CO

- Types of TDM: Time Shift, Location Shift
- Keywords: Telework, Intranet, Technology, Flextime, Relocation
- Employer Demographics: Located in a suburban business park, little bus service, ample parking, adjacent to a large corridor construction project.
- Program: Corporate Telework and Flextime policies, “Look Before You Leave” Intranet travel site, relocation based on commute time analysis, accessibility to roadways and future alternative mode infrastructure.
- Results: 17% mode shift
- 8% Telework and Flextime, 3% transit, 5% Carpool, .5% bike
- Cost of Program: \$60,000 includes 40 hours a month of staff time, Intranet upkeep and marketing costs.
- Staff: 1 FTE with limited transportation related responsibilities.
- Contact: Michele Wagner, michele.wagner@ch2m.com

4.12 Georgia Power Company – Atlanta, GA

- Types of TDM: Modal shift, Location shift
- Keywords: Company sponsored vanpools, Fleet vehicles, transit subsidy, telework, intranet
- Employer Demographics:
- Program: Smart Ride commuter options program. Offers a variety of commuter options to employees
- Results: 15% Compressed/flex time, 13% Vanpool/Carpool, 5% Telework
- Staff: 3 FTE. 1 Project Coordinator, 2 Corporate Facilities Analysts
- Contact: Jane Franklin, Project Coordinator 404-506-1967

4.13 Johns Manville – Denver, CO

- Types of TDM: Modal Shift
- Keywords: Transit subsidy, parking management, pre-tax benefits
- Employer Demographics: Corporate office located in downtown Denver near ample bus and light rail service, limited parking. Although Johns Manville has multiple offices around the country, the program is offered to Denver employees only
- Program: 100% transit subsidy, GRH, free-parking vouchers and parking subsidy
- Results: 55% drive alone, .5% vanpool, 44% bus/rail, .5% walk, carpool not tracked
- Cost of Program: \$372,129 includes parking charges, EcoPass and parking validation stamps.
- Staff: 1 FTE, Risk Management Coordinator dedicates 20 hours a month to transportation benefits.

- Contact: Pam Linam, LinamP@JM.com

4.14 Nike – Beaverton, OR

- Types of TDM: Time Shift, Modal Shift
- Keywords: Internal Rideshare Technology, Incentives, Flextime, Relocation, Transit Subsidy, Bike Commute
- Employer Demographics: Located in a suburban business park, bus and light rail service, ample parking. 5,000 employees at world headquarters.
- Program: Evolution of incentive based program from Nike Buck giveaway to TRAC program featuring prize incentives, transit and rail subsidy, preferential parking, shuttle, service amenities and flextime.
- Results: 78% SOV, 10% carpool, 5% bus/rail, 5% flextime, 2% bike
- Cost of Program: \$302,000 annually plus staff time. 43% of expenditures go to shuttle operations, 34% to transit subsidies, 6% to incentives, 1% to marketing, remainder to other expenses.
- Staff: 1 FTE, Transportation Specialist dedicates 150 hours a month to the TRAC program.
- Contact: Linda Bainbridge, Linda.Bainbridge@nike.com

4.15 Overlake Christian Church – Redmond, WA

- Types of TDM: Modal Shift
- Keywords: Suburban Location, Carpool, Incentives
- Employer Demographics: Located in the City of Redmond, WA, Overlake Christian Church has ample free parking and receives minimal bus service.
- Program: The transportation benefits program provides up to 16 hours of paid time off per year to employees utilizing other forms of alternative transportation and \$20 a month financial subsidy for public transportation.
- Results: 52% drive alone, 1% bus, 26% carpool, 12% Flextime/compressed work week
- Cost of Program: \$4,000
- Staff: 1 FT with other various responsibilities including transportation program and 1 FT Director with only oversight of program.
- Contacts: Nancy Thorgeson, Director of Human Resources, nancyt@occ.org; Barbara Graef, Human Resources Administrative Assistant, barbg@occ.org

4.16 Simmons College - Boston, MA

- Types of TDM: Modal shift
- Keywords: Transit subsidy, Parking Management, Incentives, Disincentives, Shuttle
- Employer Demographics: Located in a dense, area of Boston, MA that is well served by transit.
- Program: \$65 T-Pass subsidy, increased parking costs
- Staff: 1 (Director of Auxiliary Services), contributes approximately 20 hours a month to transportation program and has assistance from other staff.
- Results: 27% transit usage, 41% SOV, 32% carpool, bike, walk
- Contact: Roy Schifilitti, roy.schifilitti@simmons.edu

4.17 Swedish Medical Center – Seattle, WA

- Types of TDM: Modal Shift

- Keywords: Transit Subsidy, Ferry Subsidy, Parking Management, Preferential Parking, Vanpool and Carpool subsidy, State and Local Mandates
- Employer Demographics: Swedish has three campuses dispersed throughout the greater Seattle area: First Hill in a downtown, dense, area well served by transit and Ballard and Providence, less dense and less transit service.
- Program: Carpool promotion program expanded to include transit, vanpool and parking benefits. Program is flexible given different shifts and campuses.
- Results: Varies with each campus.
- Cost of Program: \$1.6 million for Flexpass, Puget Pass and Washington State Ferry Pass
- Staff: 1 FTE, Parking Manager/Employee Transportation Coordinator dedicates 80 hours a month to transportation benefits program.
- Contact: Karen Lee Kimber, Parking Manager/Employee Transportation Coordinator, Karen.Kimber@swedish.org.

4.18 Texas Children's Hospital - Houston, TX

- Types of TDM: Modal Shift
- Keywords: Transit subsidies, Vanpool Subsidies, Carpool allowances, Recruitment and retention, Home/Life balance
- Employer Demographics: Located within the largest medical center in the world, TCH is the largest pediatric hospital in the United States.
- Results: 20% mode shift, 10% carpool/vanpool, 10% transit
- Staff: 1 FTE for seven sites
- Contact: Patsi Davis, Transportation Specialist, 832-824-2070

4.19 Metropolitan Seattle Transit-Oriented Development and Flexcar – Seattle, WA

- Types of TDM: Mode Shift, Origin/ Destination Location Choice, Trip Substitution Choice
- Keywords: park and ride, transit oriented development, parking variance, car sharing
- Area Demographics: Metropolitan Seattle, project locations are varied
- Program: Transit-oriented development at existing park and ride facilities, car sharing program.
- Results: New multi-family construction parking variance. Flexcar operates over 100 vehicles in more than a dozen Seattle area neighborhoods.
- Cost of Program: \$1 million appropriation for staffing, consulting fees, and project development for TOD Program. Additional private development costs. The County contributes up to \$200,000 per year for member incentives and staff support.
- Staff: Three project managers oversee the TOD Program.
- Contact: Flexcar – Christine Anderson, Flexcar Program Manager, King County Department of Transportation, cristine.anderson@metrokc.gov
- TOD - Ron Posthuma, King County Department of Transportation, TOD Program Manager, ron.posthuma@metokc.gov.

4.20 Orenco Station Mixed-Use Development – Hillsboro, OR

- Types of TDM: Mode Choice, Location Choice
- Keywords: light rail, transit-oriented design, housing, zoning, community design
- Area Demographics: Master-planned community at Orenco Station proximate to Tri-Met Westside MAX light rail within metropolitan Portland, Oregon.
- Program: Transit-oriented development featuring a varied housing selection and pedestrian-friendly amenities. Free transit passes are offered to all new tenants for one year.
- Results: 53% increase in transit usage after Westside light rail opened. Reduced need to travel outside of immediate community for discretionary trips.
- Contact: www.orencostation.com

5.0 Summary

Through the research undertaken to identify best practices in TDM integration it became evident that the process tends to be addressed in three general ways:

- By directly specifying TDM requirements in the development approval process.
- Through the use of TDM ordinances that require long term commitment by developers and owners, knowledge of which, influences the development process early on and throughout the planning stages.
- A combination of the two options above.

A difficulty noted in some locations was a poor record of enforcement and support for TDM programs. In situations where programs tended to wane over time, TDM is not given significant consideration and the result has been developments designed to be viable with or without a robust TDM program in place.

TDM programs and policies are very unique and reflect the political landscapes of the regions concerned. Tying TDM requirements to other elements such as parking and transit ridership simply reflects the difficulties some areas have in promoting TDM as a stand-alone measure. By tying TDM to these other elements, the goals of trip reduction can be achieved within a development process that might not consider it otherwise. However, other regions have successfully promoted TDM independent of other factors. This is all simply a reflection of how TDM is perceived and how the local approval process works. The diversity of approaches is a reflection of regional differences which has resulted in solutions as unique as the regions involved.

6.0 References

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Appendix B: Focus Group Summaries

MEMORANDUM

To: Anna McLaughlin, DDOT

From: David Fields, Nelson\Nygaard
Robert d'Abadie, Baker
Cynthia Fondriest, STI

CC: Thomas Osborne, PHR&A

Date: December 14, 2009

Subject: TDM in the Development Review Process: Interview and Focus Groups
Summary and Key Findings

Introduction

This technical memorandum summarizes the input received during the Focus Group interviews conducted during the week of December 7, 2009. Interviews included representatives from the development community, advocacy groups, District agencies, and agencies from other local municipalities. Interviews included representatives from the following organizations:

- Arlington County Department of Environmental Services
- North Bethesda Transportation Management District
- City of Alexandria Office of Transit Services and Programs
- Coalition for Smarter Growth
- Developers (2) and Land Use Attorney (1)
- Downtown DC Business Improvement District
- District Office of Planning
- District Department of Transportation

Several of the interviews were held in close door sessions at the request of the interviewees and/or to encourage frank and open discussion. Staff interviewed at other local municipalities was done for informational purposes and to further assist the district in identifying successful practices in the region as well as to highlight potential pitfalls.

Arlington County Department of Environmental Services

John Durham, TDM Planner

Arlington County's TDM Program for Site Plan Development was adopted by the County Board in 1990. Arlington's TDM policy focuses on workplace commuter travel and looks to reduce peak hour work travel by achieving a reduction of single occupant vehicle trips. TDM measures are required for use permits if the developer wants an exception to the zoning code such as reduced parking, even if there is no increase in density.

Arlington County's planners have learned many lessons over the program's 20-year lifespan. The following outlines the key lessons learned:

- The most critical elements for a successful TDM program include:
 - Political support: Elected officials and citizen commissions must be willing, and have the vision, to back up TDM planning requests. Educate these key people to the goals of good planning for sustainable development
 - Enforceable language, to understand the information flow of the design process: Develop standards and apply them fairly to all development. Permit language should be precise; never use the word "May" when you mean "Shall or Will". Any weakness will be exploited creating loopholes to weaken the provisions or save money.
 - Understand the process is collaborative and adversarial at the same time. You seek to collaborate to create a more robust business environment, which is good for developers.
 - Maintain control over the provisions (i.e. you make the decisions, not the developer).
 - Enforcement authority and staff: A dedicated staff person is needed to visit and inform on a regular basis to maintain continuity of the programs, as well as to keep property manager contacts up to date and apprised of their responsibilities.
- TDM programs are not intuitive to most project applicants, nor the owners or managers who will be responsible for on-going program operations. Therefore, clearly defined responsibilities and goals must be spelled out in the approvals that are granted with the TDM requirements. These must be monitorable and enforceable over the long-term and should include all requirements inherited by project inheritors and successors, not just original applicants.
- To ensure agreements are fulfilled, significant penalties must be included in the TDM code. The objective is never to have to penalize, but if needed, the penalties must be of the magnitude and schedule to persuade immediate correction of the deficiency.
- Capital requirements should be included in the original building design. It is much harder to redesign or retrofit a structure later and result in the facilities needed for effective use of the program elements. Transit information, bike storage, and pedestrian access are examples.
- Applicants should be required to utilize the skills of design specialists. General designers, engineers, or planners do not have adequate education to design the specialty elements needed to support significant pedestrian and bicycle usage. One option is for the municipality to provide these services as part of design review and charge the applicant for the service.
- Do not require the TDM program to be self-sustaining financially. In Arlington, only 4% of program costs are generated by the program itself. Arlington considers the program's objectives and results are worth the cost of financially supporting the program.
- New TDM elements being considered for the update to the County's TDM Matrix include unbundling parking, carsharing, and providing Smart Trip Cards to every new tenant.
- Arlington encourages cooperation between the County and project applicants. The County provides assistance in developing TDM programs by meeting early and often with applicants, and recommending what should be included in their TDM program. Once projects are open, the County also offers on-site reviews to help building operators implement their programs.

- An important element is to help elected officials understand beyond the value of TDM to the details of specific TDM elements. That way, when Staff recommends TDM programs, they generally have the support of elected officials who will ultimately approve the plan.
- Most developers would prefer a more expensive, predictable process, to a less expensive inconsistent one where results cannot be predicted.
- Make sure any financial commitments are tied to the inflation index, otherwise today's commitments provide little financial results in the future. Also make sure financial commitments are based on square footage, not number of units.
- Incorporate TDM service providers into your TDM program. For example, working with carsharing companies to understand what they need to be successful in developments, will help develop TDM elements that result in successful programs.
- Allow TDM users to help monitor the program. Place TDM commitments on-line where building residents and tenants can see what they're "entitled to", and request them directly from the building before reporting them to the municipality. Complaints that do reach the municipality should be responded to with on-site visits and notification of how the agency and building operator addressed the issue.

North Bethesda Transportation Management District (NBTMD)

Peggy Schwartz, Executive Director

- TDM in Montgomery County is administered under the Adequate Public Facilities Ordinance which originally was adopted in 1978.
- Focus is on growth policy while mitigating traffic.
- TDM Application Process consists of the submittal of a trip reduction plan in the form of a Traffic Mitigation Plan (directed to employers) or a Traffic Mitigation Agreement (directed to residential development).
- The TMP is a requirement for the application process and is included in the mandated Traffic Mitigation Agreement and Traffic Mitigation Plan. This is a single submission, not stand-alone documents.
- Plan is submitted to Montgomery County Park and Planning, with a copy to the Montgomery County Department of Transportation after approval.
- After approval, the Agreement and Plans are shared with Montgomery County DOT for implementation and tracking.
- The role of NBTMD is to assist employers within their policy area in complying with the TMP and TMA and/or assisting them in reporting on implementation of TDM plans and strategies.
- Montgomery County's ordinance has goals based on traffic flow and auto travel times and as such the metrics used are focused on roadway operations, not directly on the success of programmatic strategies (i.e. Roadway and intersection level of service vs. measurement of mode share).
- Trip reduction goals are determined by the planning or policy area where the development is located. Each policy area has its own trip reduction goals.
- Federal agencies are exempt from the ordinance.
- Approved developments must submit annual reports which include how the TMP funds are spent as per their reporting requirements found in the ordinance.
- The Planning Department is the first to find out about applications for new development.

Peggy Schwartz Continued

- Challenges noted:
 - Lack of organization within the jurisdiction;
 - Confusion as to whom to report changes to; and
 - Lack of staff experience with TDM.

City of Alexandria, Office of Transit Services and Programs (OTS&P)

James Maslanka, Division Chief, OTS&P

- The City of Alexandria's TDM ordinance is simply known as the Transportation Management Plan (TMP) and was originally adopted in May, 1988.
- Agencies involved are the Office of Transit Services and Programs and City Planning and Zoning Department.
- For the TDM application process, information on compliance with the City's TDM/TMP is presented to the Applicant when they seek to secure Special Use Permits to develop property (both commercial and residential).
- Federal Agencies are exempt from the ordinance.
- Although Federal Agencies are NOT required to comply to any land use ordinances, the City of Alexandria is pleased with the cooperation and efforts of the Patent and Trade Offices (PTO), located in the Carlyle development adjacent to the Eisenhower and King Street Station Metrorail Stations. In good faith, PTO, with its 6,500 employees, has achieved a 51% trip reduction, above and beyond the required established trip reduction goal for Carlyle which is 49%. The Federal agency, also in good faith, provides the City with on-going reporting on TDM activities.
- Approved developments must submit semi-annual reports which include how the TMP funds are spent as part of the mandatory reporting process.
- The Planning and Zoning Department is the first to find out about applications for new development. The staff reviewing TDM plans attend weekly meetings with Planning and Zoning to find out about new developments.
- The TMP is a requirement for the application process and is included in the mandated Transportation Impact Study/Traffic Impact Analysis usually submitted by traffic engineers on behalf of the applicant. The TMP is NOT a stand-alone document.
- Challenges:
 - Monitoring for non-compliance;
 - Change of ownership of property;
 - Change in property management firm; and
 - Public hearing process.
- OTS&P suggested that residential properties, other than multiple dwelling units such as condos and apartment buildings, should never be required to comply with the TMP.

Coalition for Smarter Growth

Cheryl Cort, Policy Director

- Washington D.C. currently has no policy to require TDM in the development process. A new policy should be developed that encompasses the entire District, but prioritized Downtown. One policy document which should be reviewed to find support for a TDM policy is the Comprehensive Plan.
- Community input on TDM in the development process is limited to BZA hearings and ANC meetings.
- A menu of TDM options would help agencies and the public recommend projects applicable to different neighborhoods and land uses, as well as help create campus specific plans for campuses and PUD's. Factors to consider include intersection density and transit density, which should also help determine applicable parking ratios. TDM should also be considered on an area-wide basis through a Transportation District Management approach.
- Project planning should consider a trade-off between traffic impacts, parking supply and cost, and TDM elements. There may be an opportunity to encourage developer-supported TDM programs, if the District can show why TDM can be less expensive to provide than it costs to build parking. It would also help garner community and representative support, if TDM can be shown to reduce auto trips.
- District-sponsored projects should be the first included in a TDM policy. One example is the DCUSA project (Target at Columbia Heights) which was built with more parking than is used; parking is an expensive project cost that is "bleeding the District money."
- By-right applications are a separate concern, as the District may not be able to require TDM elements for these projects, unless they change the status of TDM to a level equivalent with safety and welfare.
- The following elements should be considered as part of TDM programs:
 - Constraining parking
 - Requiring charging for parking and unbundling those costs from leases/purchases
 - Transit passes
 - Pedestrian and bicycle access
 - Bicycle storage
 - Changing rooms and showers
- An enforcement mechanism is also required as part of the TDM Code, to ensure promised TDM elements are provided.

Developers/Lawyers/Downtown DC Business Improvement District

- The District has no official TDM policy or requirement. In comparison, there is a clearly delineated Streetscape Program which applicants can incorporate into their designs and the public can understand.
- There is also a need for a "different culture" at District agencies, based on transparency and allowing all projects to follow a consistent process.
- TDM Plans should be integrated with the Vehicular and Bicycle Parking Plans required under District zoning.

Developers/Lawyers/Downtown DC Business Improvement District Continued

- Many developers see the value for LEED certification as a project amenity that can be marketed. TDM programs should be marketed the same way. Developers would also support TDM if they understood how they can save money by building fewer parking spaces.
- There is no post-construction follow-up to make sure TDM commitments are provided, or if they are provided on building opening, to make sure they're provided in the long-term.
- The only way to retrofit existing buildings (or provide new operating programs) is to offer a tax credit. Otherwise, there's no incentive to start a new TDM program.
- Proposed Clean Air Incentives Program: The District currently imposes a sales tax on all parking spaces except those bundled in the cost of a lease or purchase. All parking should be unbundled, with the parking taxed at the parking sales tax rate. This tax could be waived with the implementation of TDM programs instead.
- It is critical that any new TDM program be consistent, so Developers understand the cost when initiating projects.
- Developers reported a frustration in the entire development approval process inclusive of the TDM requirements. Developers were unsure what ultimately will be required of them in terms of analysis requirements, acceptable methods, assumptions, etc. as well as final documentation.
- Developer noted a desire for less negotiation and "back and forth" when approving a project.
- Developers and their advocates noted, without exception, that additional upfront costs would be welcomed for a consistent, well defined, transparent and equitable process. As an aside, two parties noted that Montgomery County assesses a one-time fee of \$11,000 per peak hour auto trip reduced if that is accounted for in the traffic impact study, however this has not been tested as no new major development has occurred since this was enacted (effects of the current economic recession). One person providing this information felt the amount was too high.
- Developers feel that TDM requirements should be reflective of the size and location of a particular development. Flexibility in the requirements is also desirable (which elements of TDM to use).
- Developers and their advocates noted that higher up-front costs are preferable to an ongoing commitment. Developers would like to ensure that TDM fees benefit their projects directly.
- It was noted that documentation requirements are unnecessarily onerous and seemingly arbitrary.
- DCOP and DDOT are thought not to speak in one voice.
- There are instances where the first indication of any TDM issues from either DCOP or DDOT were three weeks prior to the planning commission hearing.

Washington DC Office of Planning

Jennifer Steingasser, Deputy Director, Development Review and Historic Preservation

Joel Lawson, Associate Director, Development Review

Colleen Mitchell, Transportation Planner

Karen Thomas Development Review

Dan Emerine, Development Review Specialist

- Zoning Commission is frustrated that a) TDM is not a consistent process; and b) the connection is not clear between recommended TDM elements and development applications.
- Zoning Commission is supportive of TDM Programs and providing less parking as part of development approvals.
- Residents frequently request more on-site parking to reduce the number of drivers looking for free on-street spaces.
- DCOP and DCDOT have re-energized their development review process. Representatives from the agencies are in on-going communication and jointly meet with applicants.
- The only leverage to require TDM programs currently lies with the Zoning Commission.
- Planned Unit Developments are treated differently than traditional zoning applications, because they are supposed to be superior to as-of-right projects. This also provides leverage to request more from the developer to make it a superior project, including TDM programs.
- Context for TDM requirements should be based on land use and distance to MetroRail station, which can be found in the District's Comprehensive Plan.
- WMATA is not currently involved in development of TDM programs, with no mechanism for transferring funds for operating transit services.
- Development applicants are happiest when the application process (including TDM) is clear and predictable.
- TDM Policy is supported by the Comprehensive Plan, but to be effective it needs to be solidified in regulations.
- The Zoning Commission Public Hearing is the only time when DCOP and DDOT have standing to present their technical recommendations. The Applicant can modify their application anytime until the Zoning Commission takes Proposed Action.
- There are three types of development applications: Matter of Right, Planned Unit Development, and Special/Variance.
- The only way TDM requirements can be added to a project are PUD or Variance.
- There is no process for proffers in District applications, aside from within the PUD approval process.
- Zoning Commission is supportive of TDM and expects more detailed TDM plans with each application; however, these plans must make sense individually and in relation to other applications.
- Residents generally don't ask for TDM elements in their comments on development applications.
- Long-term enforcement of TDM requirements is unclear, other than it is led by DCRA. ANC's are a potential watchdog for compliance, as are building tenants or unit owners. In addition to an unclear enforcement process, it is unclear where fines would be deposited.

Washington DC Department of Transportation

Anna McLaughlin, Transportation Demand Management Coordinator

Jamie Hensen, Transportation Planner

Jeffrey Jennings, Ward 3 Transportation Planner

- An airtight system to require TDM in the development application/review process is needed. The District can't be capricious in their requirements, but if the details are not specified, developers will take advantage of any ambiguity.
- DDOT is now included in the application process from early scoping. This allows DDOT to outline for applicants what TDM measures will be required.
- Bicycle requirements are included in the Zoning Code. No other TDM elements are required by zoning. This limits DDOT's leverage to create a reliable process and results.
- Developers currently will agree to low-cost TDM elements including marketing and providing bike racks. They do not want to commit to programs with on-going costs, such as transit passes.
- Zoning Commission would like TDM elements to be defined by the number of Single Occupancy Vehicle trips they would reduce. This would also help developers understand the value of the requested/required TDM programs.
- There is no long-term monitoring or enforcement of current TDM agreements.
- TDM elements should be specified as mitigations, not amenities. Amenities can be eliminated, mitigations cannot.
- TDM elements by mode:
 - Vehicular Parking
 - Zoning Commission and agencies support less parking. Residents request more.
 - Car sharing raises security issues, especially in residential-only buildings.
 - Bicycle
 - Bicycle spaces are required in the Zoning Code and these elements are generally provided.
 - There has been a mixed response to providing space for the District's Bike Sharing Spaces
 - Also a mixed response to requiring showers/changing rooms.
 - Transit
 - TDM Plans can require providing transit passes for new residents/tenants (though it is difficult to ensure they are provided).
 - Bus shelters are provided by an advertising contract, so developers cannot provide them.
 - No way to provide operating funds to WMATA, but funds could potentially be provided to DDOT for streetcar/circulator service. Clarification of how to accept these funds is still needed.
 - Impact Fees
 - No clear process on how to accept these fees currently exists.
 - DDOT staff needs a process to simplify TDM program approval.
- The ANC's were mentioned as a potential avenue for monitoring TDM compliance.

Additional Comments

The follow are some general concepts which came up repeatedly during the interview process. These recommendations from the interviewees are provided to help inform the process as the process as the project moves forward:

1. There is support from Washington DC's Zoning Commission to include TDM elements in development applications.
2. The level of frustration with the current, overall district development process was palpable. Most of the groups, both public and private, talked of systemic problems in the system to the point where it was labeled non-existent by some. It cannot be stressed strong enough that this is a fundamental issue.
3. Legal requirements for TDM elements should be formalized to ensure maximum effectiveness. Requirements should include elements to be provided in the development application, as well as mechanisms for on-going funding, monitoring, and enforcement of TDM requirements.
4. Currently there is no enforcement process, there is no mechanism available to impose fines, and even if fines we collected there is no way to direct funds to TDM projects.
5. TDM requirements should be predictable, based on an easy to replicate format. This will provide TDM benefits, encourage developers to include TDM in applications, and minimize additional workload of District staff.
6. Different processes may be required to ensure TDM is included in the process for By-Right, PUD, and Variance developments.
7. TDM elements should be considered equivalent with other transportation mitigations (roadways, intersections, signals) and not amenities.
8. Education of the value of TDM should be provided to developers, ANC/Community members, and Zoning Commission.

Appendix C: Draft TDM Plan Requirements

District of Columbia
Department of Transportation
Transportation Demand Management Requirements

Proposed Development Review Process

For proposed development the TDM requirement will be submitted in the format of a TDM Strategic Plan (“The TDM Plan”) attached as a Proffer, or an item that serves the same purpose to the proposed Site Plan being submitted for approval by the Applicant developer for residential (all uses with the exception of single family dwellings), commercial, hotel, retail and all other uses.

The Proffer, or item, will set forth the programmatic elements of a transportation demand management plan (the “TDM Plan”) that shall be implemented by the Applicant, and if applicable subsequently the Umbrella Owners Association (“UOA”) to encourage the use of transit (Metrorail, Metrobus, and DC Circulator), other high occupant vehicle commuting modes, walking, biking and teleworking, etc. in order to reduce automobile trips generated by the uses constructed on the Application Property. The TDM Plan shall be provided to complement the numerous physical attributes of the proposed development that provide for transportation systems management and may be referenced elsewhere in proffers required by DDOT. Depending on the timeline for development, “The TDM Plan” may be submitted, as part of the Proffer, in assigned phases relative to development thresholds and construction constraints.

I. The TDM Strategic Plan will address four specific areas:

A. Trip Reduction Objectives.

General. The purpose of the TDM Plan shall be to reduce vehicle trips generated by the uses constructed on the Application Property through the use of mass transit, ride-sharing, and/or other strategies.

Stabilization. Specifically, upon “stabilization” of the Application Property and thereafter, the objective of the TDM Plan shall be to reduce vehicle trips generated by the on-site uses during the weekday peak periods as defined by DDOT by a required percentage as well as an overall reduction in all daily vehicle trips. “Stabilization” of the Application Property shall be deemed to occur on either the one-year anniversary of the issuance of the last initial RUP (residential use permits) for a dwelling unit to be constructed on the Application Property or on the one-year anniversary of issuance of the last initial Non-RUP for floor area representing 80% of full occupancy of the first of the office buildings to be constructed on the Application Property.

During Construction. In addition, during construction of the Application Property the objective of the TDM Plan shall be to reduce trips generated by on-site residential uses and on-site office uses, and construction activities.

Baseline. The baseline number of vehicle trips from which such reductions shall be determined at the time of the trip generation analyses required by DDOT shall be based on the methods adopted by agency at the time of the analysis.

B. TDM Program Plan and Implementation

In order to meet the objectives set forth by DDOT, the Applicant shall implement the TDM Strategic Plan prepared by them, or on their behalf. It is the intent of this proffer that the TDM Strategic Plan adapt over time to respond to the ever-changing transportation related circumstances of the site, the surrounding community and the region, as well as to technological and/or other improvements all with the objective of meeting the required objectives by DDOT. As such, the TDM Strategic Plan may be amended from time to time, subject to approval of DDOT.

Within 90 days of the approval of this Application, the Applicant shall designate a transportation management professional to be the Transportation Coordinator (“TC”) for the building or development, whose duties shall be to further develop, implement and monitor the various components of the TDM Plan. The TC shall oversee all elements of the TDM Plan and act as the liaison between the Applicant and DDOT. The TC may be employed either directly by the Applicant/UOA or through a property management company contracted by the Applicant/UOA. The Applicant shall provide written notice to DDOT of the designated TC, along with a demonstration of his/her qualifications, within 10 days of such designation and, thereafter, within 10 days of any change in such designation, plus an annual written notice to DDOT confirming the person’s name and contact information. Following the initial designation of the TC, the Applicant/UOA shall continuously employ, or cause to be employed, a TC for the Application Property.

Within 180 days of approval of this Application the Applicant, through the TC, shall establish an initial budget sufficient to implement the TDM Strategic Plan for the forthcoming year (the “TDM Budget”). The TDM Budget shall include a contingency (the “TDM Budget Contingency”) equivalent to a minimum of 10% of the amount of the TDM Budget. The Applicant shall provide written documentation demonstrating the establishment of the TDM Budget to DDOT within 10 days of its establishment. In conjunction with annual monitoring of TDM strategies the TC shall re-establish the TDM Budget for the forthcoming year. If acceptable a cost of living component will be including in the budget. As a rule, Federal agencies do not comply to/with local TDM ordinances.

C. TDM Account, Remedy Fund and TDM Penalty Fund

TDM Account: Within 90 days of the approval of the Proffer, and TDM Strategic Plan, the Applicant shall establish and fund a TDM Account in the initial amount established by DDOT. The purpose of the account is to help fund the TDM budget, including a TDM budget contingency. The TDM account shall be established in an interest bearing account with a fully insured and licensed financial institution. The Applicant shall provide written documentation demonstrating the establishment of the TDM account to DDOT within 10 days of its establishment TDM account shall be utilized by the transportation coordinator (TC) each year to implement the approved TDM Strategic Plan in accordance with the TDM Budget. The TC shall provide an annual audit of the TDM Account to DDOT, and such audit shall include demonstration that the applicable strategies of the TDM Strategic Plan were implemented and sufficiently funded that year.

Any funds remaining in the TDM Account at the end of any given year shall be transferred to the TDM Remedy Fund until such time as the TDM Remedy Fund has achieved a balance required by DDOT. Upon such time as the TDM Remedy Fund achieves the balance, any funds remaining in the TDM Account at the end of any given year shall remain in the TDM Account to be utilized for the forthcoming year. In the event that the TDM Remedy Fund is drawn upon then the process for replenishing the TDM Remedy Fund as outlined above shall be repeated until the TDM Remedy Fund again achieves the required balance.

The TDM Account shall be replenished annually following the establishment of each year's TDM Budget reporting expenditures in an annual report to DDOT.

D. Land Use and Trip Generation

Assumption: Required trip reduction goals established by DDOT

Trip Generation: As part of the required monitoring of the TDM programs, the Applicant shall measure actual auto trip generation from the site at select intervals to evaluate the success in meeting the auto trip objectives (maximums) as required by the DDOT. Specifically, the Applicant shall conduct an auto trip generation analysis to monitor peak period auto trips generated by the uses constructed on the Applicant's property using either traffic count or survey based methods as appropriate. Auto trips generated will be determined at the following phases of the construction process:

- Phase I: Following the occupancy of an agreed upon density
- Phase II: Double the amount of occupancy of Phase I
- Phase III: Following stabilization of the Proffer which will occur after one-year following issuance of the last initial RUP for a dwelling unit to be constructed on the Applicant property or one year following the issuance of the last initial Non-

RUP for floor area representing 80% of full occupancy of the first office building constructed by the Applicant.

- Phase IV: One year following stabilization
- Phase V: Two years following stabilization

Following the Phase V, and the fifth auto trip generation analysis, if the auto trip standards are NOT met then the Applicant, or successor developer (but not successor UOA) shall conduct additional auto trip generation analyses as provided until such time as two consecutive post stabilization auto trip generation analyses state that the auto trip requirements are being met. Auto trip generation analyses shall include vehicle counts or survey based analysis as defined by DDOT, however, the consultant may make recommendations as to the definition. Additionally, if the results of the auto trip analyses indicate that the goals have not been met, the Applicant shall meet with DDOT to review the approved TDM Plan and develop modifications to the TDM strategies to ensure that the auto trip goals are met.

II. Existing Conditions

Prior to DDOT establishing an official policy for TDM as part of the planning process it is recommended that Section B, development of a TDM Strategic Plan, be required for all new development separate of the planning and approval process through DDOT zoning/planning.