Implementing a Successful

TMP

Transportation Management Program

May 2008

General Services Administration (GSA) | the Metropolitan Washington Council of Governments (MWCOG) | National Capital Planning Commission (NCPC)

This handbook resulted from recommendations from the Congestion and Mobility Summit for the National Capital Region in 1998, as well as key future emission reduction dates that were set forth under the Clean Air Act Amendments of 1990.

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1.1 Introduction

Purpose

This handbook provides federal agencies within the National Capital Region (NCR)* with procedures and guidelines for preparing a Transportation Management Program (TMP). The purpose of a TMP is to document an employer's active program to foster more efficient employee commuting patterns by minimizing "single occupant vehicle" (SOV) trips related to federal agency worksites. This is mandated by Federal air quality regulations, local trip reduction ordinances, and National Capital Planning Commission planning requirements. While Travel Demand Management addresses overall strategies and policies that influence travel behavior, a TMP documents how these strategies and policies can be applied. Both TMPs and TDM seek to optimize the use of existing and future transportation facilities and preserve our natural environment with the aim of reducing single occupant automobile travel.

The purpose of this handbook is to:

- Define Travel Demand Management in general, why it is important in the National Capital Region, and demonstrate how an aggressive TMP can benefit a federal agency;
- Describe specific TDM strategies and programs available in local jurisdictions;
- Describe specific TDM strategies available to federal agencies;
- Provide a step-by-step process for designing and implementing a TMP;
- Identify resources and contacts available to aid TMP efforts.

The need for a handbook initially evolved from initiatives sponsored by the General Services Administration (GSA), the Metropolitan Washington Council of Governments (MWCOG), and the National Capital Planning Commission (NCPC). This handbook resulted from recommendations from the Congestion and Mobility Summit for the National Capital Region in 1998, as well as key future emission reduction dates that were set forth under the Clean Air Act Amendments of 1990.

* Jurisdictions within the NCR include: Arlington, Loudoun, Prince William and Fairfax Counties, and the cities of Alexandria, Falls Church, Fairfax, and Manassas in Virginia; Prince George's and Montgomery Counties in Maryland; and the District of Columbia.

This Handbook is designed to be used by each of the following types of professionals, who are likely to have TMP planning, administration and/or implementation roles and responsibilities:

- Facility Managers
- Directors of Human Resources
- Employee Transportation Coordinators (ETC)
- Directors of Labor Relations
- Union Representatives
- Transportation Planners

Organization of the Handbook

This handbook is designed to be easy-to-use and readily available. The handbook is published electronically and is available on the Internet, with links provided from the homepages of NCPC and www federaletc.org.

The Appendix lists additional sources of information that are related to specific municipalities, provides sample TMPs, and identifies outside resources that may be used in the preparation and implementation of a TMP.

This handbook is organized into the following five sections:

- **Section 1** provides an introduction to this handbook and serves as an overview of the transportation management planning process for facility managers and Employee Transportation Coordinators (ETCs).
- **Section 2** provides a discussion of the roles and responsibilities of parties involved in the TMP process.
- **Section 3** provides a description of the different strategies and tools available in the development and implementation of a TMP.
- **Section 4** provides step-by-step guidance to the Employee Transportation Coordinator or manager in the preparation of a TMP.
- **Section 5** (Appendix) contains reference material, including local ordinances, sample worksheets, a glossary, a bibliography, and a listing of TMP resources and contacts in the NCR.

Federal agencies are encouraged to supplement this handbook and agency resources by contacting local and regional officials who are responsible for TMP development, implementation, and monitoring. Additionally, there is a wide range of resources available to employers, including federal agencies, within the Washington metropolitan area. These resources along with a genuine desire on the part of local governments to work with the federal government, will help federal agencies meet the requirements of federal transportation management plan (TMP) guidelines.

Background

Congress created NCPC to serve as the central planning agency for federal activities and interests in the National Capital Region. One of NCPC's principal responsibilities is to coordinate federal development activity within the region. In 2004, NCPC adopted the most recent version of its comprehensive plan - the *Comprehensive Plan for the National Capital: Federal Elements*. The plan contains guidelines that require a TMP for all projects that will increase work site employment to 500 or more employees (existing and proposed employees), and encourages a TMP for projects that will increase work site employment to 100 or more employees.

NCPC guidelines suggest that the TMP should incorporate the following information:

- Stated goals for "single occupant vehicle" (SOV) trip reduction, transportation mode split, and vehicle occupancy;
- Strategies to minimize SOV work trips and discourage SOV travel during peak and off-peak hours;
- Measures to monitor achievement of goals and to adjust SOV trip reduction strategies, as needed;
- A description of existing and projected peak hour traffic by mode;

A summary of existing and proposed parking by type of assignment (official cars, vanpools, carpools, single-occupant vehicles, handicapped persons, visitors, etc.);

- An evaluation of projected transportation impacts and description of proposed mitigation measures
- A summary of the relationship of the TMP provisions to transportation management requirements of local, state, and regional agencies, including provisions for working cooperatively with affected agencies to address these requirements.

NCPC's comprehensive plan also offers the following additional TMP-related guidance:

Develop TMPs that explore methods and strategies to meet prescribed parking ratios (contained in the comprehensive plan), and include a thorough rationale and technical analysis in support of all TMP findings;

Analyze scenarios that incorporate data on employee home zip codes, nearby bus routes, Metrorail, MARC, and VRE lines and their schedules, and that identify existing and planned HOV or "High Occupancy Toll" (HOT) lanes;

Include, within TMPs, implementation plans with timetables outlining each agency's commitment to reaching TMP goals;

Reflect, within TMPs, planned regional transportation infrastructure or service improvements within five miles of the federal facilities; and

Update TMPs at least every two years to reflect the most current employee information.

NCPC is not alone in identifying the need for addressing TMP requirements and responsibilities. Executive Order 12191, dated February 1, 1980, delegated the primary responsibility for program development, implementation and administration of the Federal Facility Ridesharing Program to GSA, which includes a nation-wide system of Federal facility Employee Transportation Coordinators (ETCs).

As part of GSA's continuing role in supporting the network of federal agency ETCs, GSA and MWCOG established a Memorandum of Understanding (MOU). The MOU calls for GSA and MWCOG to cooperate in training federal ETCs in the NCR, to provide various marketing materials and assistance to these ETCs, and to link federal ETCs to regional services on an as-needed basis. MWCOG has taken a lead role through the publication, distribution, and coordination of several TDM activities.

The Challenges: Traffic Congestion & Air Pollution

Single occupancy vehicle travel, particularly during the morning and evening rush hour periods, will continue to be discouraged in the future because of its significant contribution to regional and local traffic congestion and poor regional air quality.

The following facts describe the future projected growth of the region and its resulting impacts on vehicle trips, traffic, delays, and air pollution:

By 2030, the region's population is expected to increase by 40% while the workforce is expected to increase by 45%.

The majority of growth will occur outside the Beltway, in areas with limited road capacities and public transportation services. In fact, 92% of population growth is expected to be in suburban areas.

The number of trips made daily by Washington residents is expected to grow by more than 48%, between 2000 and 2030, and the number of miles driven will increase by more than 45%. At the same time, current regional long range transportation plan projects would only nominally increase the region's highway system capacity with very little planned expansion of the transit system during the same period of time.

77.4% of daily trips are expected to be suburb-to-suburb travel in 2030, while future planned highway infrastructure is largely intended to improve mobility between suburban areas and downtown Washington, DC. These trips are more often than not SOV trips, as there are fewer non-personal vehicle travel options available in suburban areas.

The use of "alternative" modes for commute trips, such as transit and ridesharing, has declined as a percentage of travel since 1960.

These trends will only increase SOV trips, thus negatively impacting economic productivity and quality of life for employers and commuters, alike.

According to MWCOG, if existing development trends continue and no highway improvements are made beyond those that are currently under construction or programmed, some likely transportation impacts in the NCR would be:

- Average travel speeds along highways would decline, resulting in significantly increased travel times during peak travel periods. Commuters could spend a significant amount of extra hours per year commuting. The productivity loss of which, is substantial when the "lost" time is multiplied by the number of affected employees;
- Declining rush-hour travel speeds would result in lengthened morning and evening travel periods;
- The significant majority of all peak-period auto travel would occur in stop-and-go traffic, with major delays happening routinely; and
- A substantial percentage of the regional roadway network would operate at an unacceptable level of congestion during morning and evening rush hours.

Increases in traffic volumes, distances, and delays contribute to other problems, including air pollution. This is because ozone, the prime ingredient in smog, is formed when gases in motor vehicle exhaust react with oxygen in the air. As the number of trips increase in quantity and length, higher emission levels result, causing an increase in ozone and, therefore, smog.

Evidence is mounting that young people raised in heavily polluted areas are losing lung capacity faster than young people raised in less polluted areas. The implications of lifetime exposure to polluted air include greater incidence of respiratory infections, such as colds, croup, and asthma attacks.

Traffic congestion and air pollution problems pose continued, significant challenges for the nation and the NCR, in particular. Eliminating the growth in population and workforce is an impossible and possibly undesirable goal. However, the development and implementation of policies and strategies that manage and help reduce traffic congestion by focusing on more efficient movement of people and goods is an achievable goal. One fundamental strategy requires the sharing of responsibilities: employees must work to reduce their SOV trips and employers must work to help make alternative travel modes available and more convenient.

TMP as Part of the Solution

A TMP offers a set of strategies to reduce traffic congestion and air pollution. An evaluation of Travel Demand Management by the Federal Highway Administration (FHWA) points out that:

"The accomplishment of a [transportation management] program depends entirely on the actions that are applied. If travelers are presented with no alternative that realistically competes with the private auto, they will not stop driving. And if driving continues to be subsidized in the form of free (or heavily subsidized) on-site parking, alternative modes will represent bad economic choices for travelers. If these factors are confronted by a [transportation management] program, trip reductions in the range of 20% to 40% can be the norm, rather than the exception."

FHWA concludes that the techniques developed by TDM professionals are valuable tools for alleviating traffic congestion and regional air pollution problems.

1.2 Overview

What is a Transportation Management Program?

A Transportation Management Program (TMP) documents an employer's active program to foster more efficient employee commuting patterns. The plan includes specific strategies to encourage changes in travel modes, trip-timing, frequency and length, and travel routes in an effort to reduce traffic congestion and improve regional air quality.

What Are The Benefits of a Transportation Management Program?

TMPs offer the following potential benefits to a federal agency:

- Reduces tardiness and absenteeism.
- Expands the regional area from which to draw more qualified candidates.
- Meets local government trip reduction ordinances, as required under the Clean Air Act, where such ordinances are in force.
- Low preparation and implementation costs - most of the activities focus on low-cost marketing efforts and training.
- Low-cost method of reducing employee turnover due to relocation from an area with high levels of transit service, to an area with low levels of transit service.
- Reduces traffic congestion in the vicinity of federal facilities.
- Provides alternatives and assists employees who must make longer commutes or switch travel modes, when relocating to a new or existing work site.
- Reduces both on-site and off-site parking demand.
- Demonstrates federal agency concern about reducing traffic and parking impacts to local and adjacent communities.
- Improves local/regional air quality and overall quality of life for the region's workers, residents, and visitors.
- Conserves energy, which contributes to a more sustainable society and reduces national dependence upon foreign energy sources.

What is Included in a TMP?

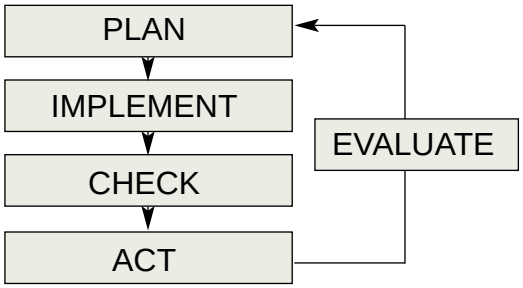
The overall process follows a plan, implement, check, and act cycle. The four steps of the cycle are as follows:

1. The federal agency plans a change to its employee transportation policies and programs, to comply with particular regulations or agency needs.

2. The program is implemented.

3. The federal agency checks the results of the program.

4. Based on the results of the evaluation, the federal agency acts either to adopt changes or to begin the cycle again, based on new information gleaned from the evaluation.



Details of how to accomplish the four steps are provided in Sections 3 & 4. They are summarized here:

Program Initiation

To begin the preparation of a TMP, the federal agency must define the mobility problem. The definition should include a summary of the work location's existing transportation facilities, programs, and resources. The problem definition is necessary in order to develop initial program goals.

As a next step, specific performance objectives, such as increasing the average number of people per vehicle, reducing the agency's contribution to the regional "Vehicle Miles Traveled" (VMT), or reducing the number of trips during rush hour must be established. The objectives may be set by local or regional ordinances. Setting realistic objectives often requires a federal agency to conduct a baseline survey of its employee and/or visitor travel patterns to establish a realistic starting point. This information can then be used to evaluate the effectiveness of various programs.

Selecting TMP Strategies

There are numerous strategies, tactics, and services that a federal agency can utilize in the preparation and implementation of a TMP.

The following list contains the potential components of an agency's TMP, which are described in more detail in Section 3:

- Parking Management
- Carpooling
- Ridematching
- Vanpooling
- Transit Services
- Subsidies
- Travel Allowance
- Guaranteed Ride Home
- Bicycling/Walking
- Telecommuting
- Variable Work Hours
- Commuter Work Centers

Regional and local efforts often augment these employer-initiated strategies. Examples include the provision of ride-matching services and planning/construction of HOV/HOT lanes. Agencies can also make use of MWCOG's Commuter Connections Program, which consists of the Ridematching and the Guaranteed Ride Home programs, among other services.

By providing a menu of TMP options to employers, local governments allow for flexibility and foster creativity in complying with objectives. The reluctance to prescribe specific actions is due to the diverse nature of each worksite's operating environment and business requirements.

Due to its "social-engineering" nature, it is difficult to predict a TMP's outcomes with a high degree of certainty, unless specific market research is conducted for a particular location. Mixes of strategies and pricing levels can have dramatically different results in different combinations and locations, which reinforces the need for an iterative and responsive TMP process.

Implementing a TMP

To facilitate the implementation of selected tasks, a work plan for each service/product should be prepared with the following elements:

- Task Description/Objective
- Identification of transportation mode(s) impacted by task
- Description of current and forecasted levels of participation
- Marketing Plan
- Performance measure and monitoring procedures
- Budget
- Timetable
- Responsibilities and staff time allocations
- Priorities

Monitoring a TMP

Monitoring the progress of a TMP is crucial to improving performance and productivity, and controlling program costs. A successful plan evaluation will use procedures that determine one or more of the following:

- The extent to which the program has achieved its stated goals and objectives (e.g., increases in average number of persons per vehicle).
- The extent to which the accomplishment of the goals and objectives may be attributed to the TMP (direct and indirect effects).
- Degree of consistency in program and plan implementation (relationship of planned activities to actual activities).
- The relative effectiveness of different tasks (which ones worked, which did not, how well).

A TMP assists a federal agency in making more efficient use of the regional transportation system by changing worker and visitor travel behavior at specific worksites. There are numerous entities at each worksite that contribute to the success of a TMP. The federal agency needs two key ingredients to design and implement an effective TMP: strong management support and a motivated, enthusiastic Employee Transportation Coordinator (ETC).

2.1 The Federal Government Role

The Roles and Responsibilities of the Federal Agency

The way that employees and visitors choose to travel is based on agency and worksite policies, as well as other factors, such as out-of-pocket costs, convenience, travel time, reliability and safety. Employers may influence employee and visitor travel behavior with certain policies, which are described in this section of the handbook below. Adjustments to these policies can contribute to minimizing work and visitor-related single-occupant travel during peak hours.

Federal Agency Policies Affecting Mode Choice Decisions

PARKING POLICIES

Federal agency parking policies may either be used as an incentive or disincentive. "Free" or heavily subsidized parking promotes driving alone among employees and visitors. However, market-rate pricing can have a dramatic impact on travel mode choice. Another parking policy example is the assignment of limited parking spaces. Assignment of spaces close to the entrance of a worksite for carpools and vanpools can serve as a low-cost incentive to using these travel modes.

WORK HOURS POLICIES

Another type of policy that could affect employee travel behavior is the agency's work hour policy and practices. Allowing the scheduling of last-minute or late-day meetings, places a burden on employees who must meet a bus or carpool. While a common perception is that ridesharers of all kinds are "clock watchers," employers have found that increased carpool activity helps reduce tardiness and absenteeism.

Alternative work hour programs such as flex-time, staggered work hours, compressed work weeks and telecommuting, all help increase the flexibility of individuals in meeting commuting schedules including transit schedules and carpools.

Unscheduled overtime requirements can also place a burden on ridesharers. However, more TMPs now include Guaranteed Ride Home (GRH) programs as low cost "safety nets" for these situations. GRH programs are described in more detail in Sections 3 and 4.

What is Required of the Federal Agency?

While each federal agency is encouraged to use its existing role and responsibilities to help guide how employees and visitors choose to travel, some agencies are required to submit a TMP. NCPC requires the following process to be followed for federal agencies that are undertaking any project(s) that would increase a work site population to 500 or more employees (including existing and proposed employees):

- Consult at an early date with NCPC staff about applicable NCPC policies and guidelines, and arrange for early consultation with local governments and regional agencies. Many of these policies and guidelines are stated in the transportation chapter of the NCPC *Comprehensive Plan for the National Capital: Federal Elements.*
- Consult with local jurisdiction planning and transportation officials that would be impacted by the development to identify current plans and programs, available congestion mitigation/travel management techniques, and any required TMP-related implementation commitments.
- Each agency should prepare a Transportation Management Program related to its proposed action. (If GSA is undertaking a construction or other applicable program for an agency, GSA can

assist the agency in preparing this program).

- Submit the TMP as part of the agency's planning submission for NCPC review and regional referral to the appropriate local, regional and state agencies.
- Be prepared to make the necessary commitments to implement the TMP, including participation in the funding of construction of off-site improvements.

What are the "Necessary Commitments"?

The federal agencies' "necessary commitments" to TMP implementation (referred to above) may include some or all of the following:

- Develop a written policy statement to show consistency between the TMP and agency mission.
- Provide decision-making authority and agency support to the Employee Transportation Coordinator.
- Allocate funding in the budget to provide the ETC with the means to conduct employee surveys; hold informational meetings/fairs for employees; design and distribute marketing materials; and actively participate in local, regional and national continuing education and training efforts to foster professional development in Travel Demand Management efforts.

Adopt policies that:

- Encourage employees and visitors to use alternatives to driving alone when traveling to the work-site.
- Encourage and participate in joint public-private initiatives for managing traffic concerns, such as transportation management associations (TMAs) and regional or local trip reduction programs.
- Allow greater flexibility in using agency funding to permit investment in facilities and services related to "alternative" modes that offer the most cost-effective solutions. An example of this would be the reinvestment of parking revenues into traffic mitigation projects and programs.
- Explore incentives for cost-effective use of the agency's transportation assets, such as parking pricing differentials for carpools and vanpools.
- Encourage effective management and use of transportation assets by requiring the evaluation of alternative options and management techniques that enhance performance and capacity of parking and impacted roadways.

Taking the First Steps

The common element in all successful TMPs is a motivated, enthusiastic Employee Transportation Coordinator (ETC). The first step in the preparation and implementation of a successful TMP is to designate the best person to carry out the program and to provide them with adequate agency support.

The Roles and Responsibilities of The Employee Transportation Coordinator

The role of an Employee Transportation Coordinator is multi-faceted. An effective ETC must be one part insightful planner, one part effective communicator, one part consummate customer service representative, and one part proficient transportation analyst. The ETC will find that many of these skills will be called upon as the federal agency develops and implements their TMP.

Other highly desirable qualities sought in an effective ETC include the desire for variety in their work, the ability to adapt quickly to change, and an ability to think strategically in order to promote, market, and gain organizational support for a plan. In developing a new TMP or expanding an existing one, the role of an ETC will change with each stage of development. Fortunately, the federal agency and ETC have other sources of outside support that include GSA, NCPC, MWCOG, and local transit and ridesharing agencies. A sample job description for an ETC is included in the Appendix.

The ETC's specific responsibilities are defined by the needs of the community, agency, and employee. The needs of the community and agency require changing worksite-related travel behavior and as such, the ETC must first succeed in satisfying the needs of the individual employee.

Actions of a typical ETC could include:

- Investigate the existing transportation situation, develop a database, and determine the potential for change.
- Select reasonable goals and objectives, plan appropriate strategies and tasks for carrying them out, develop a timetable, and establish a budget.
- Actively solicit support from agency management, other departments, and key individuals within the federal agency.
- Advertise and market the program to employees and visitors in order to create awareness and interest in participating in alternative travel modes.
- Create conditions and incentives that will encourage employees and visitors to change their travel behavior.
- Personally facilitate the formation and utilization of travel options.
- Track and report changes in site-related travel behavior.

The Roles & Responsibilities of GSA, NCPC, & MWCOG

GSA, NCPC, and MWCOG continue to play integral roles in assisting ETCs and their federal agencies with developing and implementing effective Transportation Management Programs.

GSA

The General Service Administration's (GSA's) role in this process is to assist federal agencies in the development, implementation, and administration of TMPs. GSA will directly assist in developing a TMP if an agency's construction project is being managed, designed and/or funded through GSA. In addition to providing TMP support, GSA also performs the following functions:

- Coordinates ridesharing efforts with MWCOG on behalf of federal agencies. The coordination includes publishing a newsletter for federal ETCs; printing ridesharing promotional information for federal employees; providing standing displays for marketing materials; establishing links to MWCOG's Commuter Connections ride-matching system when required; and coordinating transportation fairs with MWCOG and local TMP personnel.
- GSA, in cooperation with MWCOG and NCPC, sponsors training sessions for federal ETCs. In addition to learning new marketing techniques and keeping abreast of changes, the sessions offer the opportunity to meet and exchange ideas with ETCs from other federal agencies.
- GSA has the authority to regulate and police parking facilities or may delegate the authority. GSA's current policy is to delegate the responsibility to the individual agencies.

GSA's parking space assignment policy is provided in the Federal Management Regulation (FMR). Agencies are directed to assign spaces in the following order of priority:

1. Official Needs
2. Handicapped
3. Executive personnel and persons who work unusual hours
4. Vanpools and carpools
5. Persons who use their private vehicle regularly for Government business
6. Other employees

In addition to the assignment of parking spaces, federal regulations address the issue of pricing. Title 40 U.S.C., Section 490(k) requires that parking revenues in excess of the actual operating and maintenance costs be returned to the Treasury as miscellaneous receipts. Unfortunately, this effectively prohibits the use of parking revenues to offset other TMP programs such as transit subsidies.

GSA is also charged with running and maintaining a Telework Center program, providing satellite work centers for federal employees.

National Capital Planning Commission

The responsibilities of the National Capital Planning Commission (NCPC) include:

- Reviewing all federal development in the National Capital Region;
- Reviewing District of Columbia public projects, proposed street and alley closings, and Zoning Commission actions, as well as private development in the Pennsylvania Avenue Historic District;
- Preparing a comprehensive plan for the National Capital and other long-term plans for the capital city and the region; and
- Reviewing and maintaining a six-year capital improvements program for the federal government, which helps set the federal government's development priorities.

For any project in the NCR that would increase the work-site population to 500 or more employees, the NCPC approval process requires the submission of a TMP.

MWCOG

The Metropolitan Washington Council of Governments (MWCOG) is the federally-designated regional metropolitan planning organization responsible for coordinating transportation planning and air quality planning within the NCR. MWCOG accomplishes this by compiling and synthesizing the transportation planning actions of each of the incorporated cities, counties, and states within the NCR into one comprehensive and cohesive regional strategy.

MWCOG operates a commute alternatives program called Commuter Connections. Key components of Commuter Connections are as follows:

Overall administration and employer outreach assistance through the Employer Outreach Program, which includes Employer Outreach for Bicycling.

Providing commuter assistance through the Commuter Operations Center.

Assistance for the establishment and expansion of employer telecommuting programs and Telework centers.

Enhanced transit, telework centers, park-and-ride information, bicycling and full-service travel information through the Commuter Connections state-of-the-art Ridematching software and website.

Overall implementation of the regional Guaranteed Ride Home (GRH) program.

Assistance on voluntary commuting actions that can be taken by employers and the general public to reduce mobile source emissions, particularly on Air Quality Action Days.

NCPC and GSA are committed to working with MWCOG to minimize traffic congestion in the region and to meet all applicable transportation management goals. This handbook was conceived as an initial step in assisting federal agencies in this regard and will serve as a guide in keeping agency transportation managers abreast of new requirements as they are promulgated. MWCOG's resources are significant and extensive. MWCOG should always be the first place an ETC checks in finding information and mining resources for the development and implementation of a TMP. MWCOG currently maintains a clearinghouse website for ETCs.

Federal Requirements & Resources

Clean Air Act Requirements

The Clean Air Act, first enacted in 1970 and amended in 1990, was developed to protect the health and general welfare of the public from air pollution. The Act requires that areas designated in non-attainment of the federal health standards, to attain clean air standards within certain deadlines. The Metropolitan Washington region is currently designated as a non-attainment area for ozone and for fine particle pollution. EPA's 1997 requirements for ozone and fine particles require the Metropolitan Washington region to meet the standards by 2009.

The Washington metropolitan region's most serious summertime air pollution problem is ozone. Ozone exists naturally in the earth's upper atmosphere, the stratosphere, where it shields the earth from the sun's ultraviolet rays. However, ozone found close to the earth's surface, called ground-level ozone, is considered to be an air pollutant. Ozone is a harmful gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx) react with sunlight.

Fine particle pollution is a serious health concern and a year-round problem. Fine particulate matter may penetrate deep into the lungs and even into the bloodstream, causing asthma and other respiratory effects, and potentially serious cardiovascular problems. Sources of fine particle pollution include cars and trucks, industry, and power plant combustion.

In May 2007, The Metropolitan Washington Air Quality Committee (MWAQC) approved a new ozone plan to demonstrate the region's ability to meet the ozone standard by the deadline of 2005. In March 2008, MWAQC approved a plan to reduce fine particles in the region to acceptable levels by 2009.

The US Environmental Protection Agency (USEPA) reviews health standards for air pollutants every five years and as a result, the standards are revised continually. In 2007, the USEPA proposed a new ozone standard and a new fine particle standard. Air Quality plans to meet the new fine particle standards, which are revisions of the 1997 standards, will be due in 2010-2011. The new ozone standard has not yet been finalized.

Transportation Planning & the Clean Air Act

The CAA links transportation planning and clean air planning in several ways. Most critically, federal highway funding aid may be withheld as one of the sanctions imposed for failure to meet CAA requirements. Secondly, the region must show that its transportation plans and programs are in conformity with the region's clean air plans. Finally, the region's clean air plans include transportation emission reduction measures (TERMs), which are intended to reduce emissions from mobile sources and are given a special, priority status for federal-aid funding in the region's annual Transportation Improvement Program (TIP).

The regional air quality plan is the mechanism with which metropolitan areas strive to control their transportation-related emissions. The regional air quality plan establishes maximum emission levels for motor vehicles on a regional basis. As a result, local and regional roadway improvements must not result in projected emission levels that are greater than the regional limit. This limit is established by the Metropolitan Washington Council on Air Quality (MWAQC) for the Washington metropolitan area. All city, county, and state transportation plans (within the region) are reviewed by the National Capital Transportation Planning Board to ensure their conformity with the region's air quality plan.

The existing regional air quality plan recommends the preparation of TMPs and the implementation of TDM measures since motor vehicle use and their resulting emissions are expected to increase significantly in the future. Although vehicle emissions are declining as a result of cleaner cars and cleaner gasoline, emissions are predicted to increase as the number of vehicle miles traveled is projected to increase.

The 1997 Ozone Standard

The USEPA announced a new eight-hour National Ambient Air Quality Standard for ground-level ozone in July, 1997 in replacement of the one-hour standard. The more stringent, eight-hour standard was adopted to better protect the public from exposure to ozone pollutants. The Washington metropolitan region had initially been exempt from the eight-hour standard until the region was able to meet the initial one-hour standard.

Air Quality Action Days

The Air Quality Action Days program is a voluntary initiative that encourages employers and other organizations, including governments, to implement more aggressive travel demand measures on days when unusually high ozone levels are predicted. The purpose of the program is to minimize the anticipated high level of ozone on those days. Meteorologists are able to predict when these ozone "spikes" will likely occur since ground-level ozone forms under certain known weather conditions, which are typically hot sunny days, with little or no wind. On these "Air Quality Action Days", individuals and organizations are encouraged to take additional measures to modify their travel-related activities. The current regional air quality forecast and ozone alerts may be accessed through the Clean Air Partners website.

Commuter Choice Program

"Commuter Choice" is the name given to tax-free benefits that employers are permitted to offer employees to encourage them to commute to work other than by driving alone. Under IRS rules, these benefits are also referred to as "qualified transportation fringes."

The Transportation Equity Act for the 21st Century (TEA-21) amended the Internal Revenue Code to permit employees to receive tax-free, transit or vanpool benefits in lieu of compensation, as was done for parking under the Taxpayer Relief Act of 1997. TEA-21 also raised the monthly tax-free limit from $65.00 to $100.00 for transit and vanpool benefits in CY 2002. This amount was most recently increased to $115.00 in CY 2008.

Federal agencies may provide these benefits in any of three ways:

Agencies are permitted to give their employees up to $115.00 per month in benefits to commute to work by transit or eligible vanpools. The benefit may be paid by using existing appropriated funds, usually taken from administrative accounts such as salaries, benefits, travel, etc. Employees receive the benefit completely free of all payroll (Social Security and Medicare) taxes, federal income taxes, and Virginia, DC, and Maryland state income taxes.

Agencies may permit their employees to swap some of their pre-tax income for transit or eligible vanpool benefits, up to a maximum of $115.00 per month. Employees benefit because they save on federal payroll and income taxes since the benefit amount is no longer considered to be taxable salary. Agencies benefit because their payroll costs are reduced and their payroll taxes do not apply to the funds used for the benefit. The benefit is also exempt from Virginia, DC, and Maryland state income taxes.

Agencies are permitted to share the cost of commuting with their employees. Agencies may give their employees part of the commuting expense, tax-free, in addition to their salary, using appropriated funds. Employees can then exchange part of their gross income (in lieu of salary) to pay the remaining amount, up to the maximum total monthly limit of $115.00. For example, an agency provides an employee with a transit pass worth $35.00. The employee could then supplement this by acquiring an $80.00 transit pass using pre-tax income to receive the maximum allowable monthly benefit of $115.00. In this situation, the employee would save on Federal payroll and Federal, Virginia, DC, and Maryland income taxes, in the amount of $80.00, and the agency would save on payroll taxes in the amount of $35.00.

The Washington Metropolitan Area Transit Authority (WMATA) administers the SmartBenefits Program in the National Capital Region. SmartBenefits is a web-based program that allows employers to load the dollar value of an employee's Metrochek benefit directly to a SmarTrip® card. SmarTrip® is accepted by Metrorail and Metrobus in addition to commuter and local bus services. WMATA's future goal of operating in a "paperless" environment will result in a fully integrated regional transit system that accepts SmarTrip within the next few years.

Federal Teleworking Program

Congress appropriated $5.0 million in September, 1992, to establish telecommuting centers in the greater Washington, D.C. area, and to promote and implement telecommuting within the federal government. Since then, Congress has provided additional funding to promote the measure. An additional $1.0 million was appropriated in 1993 and an additional $5.0 million was appropriated in 1995. In 1998, $2.1 was appropriated and 11 federal agencies were required to allocated $50,000 annually for Telework Center user fees.

This successful program has resulted in the establishment of several Telework Centers that offer employees the opportunity to work closer to home. The centers are typically leased office space, and are equipped with basic office needs including telecommunications equipment, copiers, and computers. Employees work at these centers instead of their normal work locations which eliminates their need to commute between home and work, one or more days a week. The program is administered by the General Services Administration.

In 2007, the GSA announced an aggressive teleworking initiative, calling for 50 percent of all employees to Telework at least one day per week by 2010. Figures show that about 10 percent of GSA employees Telework in 2008. The GSA plans to encourage employees to utilize Telework Centers (which could result in increased funding for the Telework sites) in addition to employees' homes in order to reach this goal.

Congestion Mitigation & Air Quality (CMAQ)

The Congestion Mitigation & Air Quality (CMAQ) Improvement program is part of the current federal transportation legislation, the Safe, Accountable, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The total authorized funding is $6.0 billion for the six years of the act. CMAQ provides a flexible funding source for state and local governments to use in funding certain various transportation projects and programs that help meet Clean Air Act requirements. CMAQ was reauthorized in 2005, providing $8.6 billion over 5 years to reduce air pollutants caused by transportation-related sources. CMAQ funds are typically subject to a state or local funding matches, and states may acquire and distribute CMAQ funds in different ways, depending on their overall SAFETEA-LU funding allocation structure. CMAQ funds are only eligible for use in areas that do not meet the National Air Quality Standards (non-attainment areas) and former non-attainment areas that are now in compliance (maintenance areas).

Emergency Commute Preparedness Plan

An organization's ability to cope with a natural or man-made emergency is largely dependent on creating an Emergency Commute Plan for emergency situations. It is the responsibility of the ETC to help develop and implement an Emergency Commute Plan.

It is essential for all federal agencies to plan, develop and test Emergency Commute Preparedness Plans prior to when a disaster strikes. This future planning effort will enable the agency to continue functioning as well as possible during the disaster recovery time period.

Most agencies have a heavy reliance on technology and automated systems. A disruption, for even a couple of days, could cause major disruptions to the productivity of a federal agency.

The continued operations of an organization will depend on management's awareness of potential disasters, their ability to develop a plan to minimize disruptions of critical functions and the capability to recovery operations expediently and successfully.

A business continuity plan for emergency preparedness requires:

- Developing procedures and actions that enable an organization to continue critical business functions during a crisis or a disrupting event.
- Assisting employees in commuting in the event of a natural disaster or regional emergency.

The goals of an Emergency Commute Plan are to:

- maintain critical operations
- protect the image and reputation of the agency
- provide solutions that either eliminates trips to work, shift work hours, or use alternative transportation.

In order to develop such a plan, the ETC will need to work with other key staff members to oversee the planning process and to arrange for testing and implementation of the plan.

Specific TDM and TMP strategies that need to be considered by the business community in an Emergency Commute Preparedness Plan should include the following:

CARPOOL FORMATION

An employee commute survey can be used to help the business organization prepare in advance for emergency transportation needs. The survey should contain questions on employees' commute patterns to assist them in receiving a free commuter Matchlist of all alternative commute options available in the region. Commuter Matchlists contain the names of co-workers, as well as employees from other neighboring companies.

Perhaps the most effective way to promote ridesharing is through a personal approach, such as by actively matching employees with one another to facilitate carpool formations through the use of zip codes.

A geographic density plot report to identify emergency carpools and vanpools should be developed and analyzed. These could be groups of two (or more) employees who would commute together in an emergency situation. A key person who would be the primary contact for the other partner(s) should be

designated, as well as an alternate, in case the key contact is unavailable. These density plots are also very useful during emergencies in identifying which employees might be impacted by a local crisis such as a power outage, road construction, or even damages from an earthquake.

If the agency has fleet vehicles, they should consider allowing employees who carpool to use them. This is a great incentive to promote carpooling in the aftermath of a disaster since employees' cars may be disabled, and transit could be disrupted.

Agencies should designate an emergency carpool meeting point for employees near the worksite. For example, in the Washington metropolitan region, the Metropolitan Washington Council of Governments (MWCOG) has created an emergency plan for the region that recommends "super-carpooling" as an option; whereby motorists fill their cars to capacity to speed up emergency evacuation.

PUBLIC TRANSIT

Under emergency conditions, there may be barriers to travel such as road damage, gas shortages, and long lines at gas stations. Employees need to determine which transit routes to utilize to travel between work and home to avoid such obstacles, in advance. Agencies should keep current transit schedules on hand and posted on employee bulletin board(s) and/or the agency website.

To learn about bus and train service in advance, employees can request regional and local transit service information from their employer's Commuter Center, local public transit or TDM/rideshare office.

If agencies are already distributing transit passes or a transit benefit voucher on site, they should be ready to do so in an emergency as well. Agencies should obtain clearance and finance approval from management prior to a disaster in order to be ready in a crisis. Agencies may even consider providing free passes or passes at a discount to encourage transit ridership under emergency circumstances.

If there is no direct transit service to a company's worksite, an emergency shuttle service between transit stations and the worksite should be established. If the agency has access to fleet vehicles, they can be used as shuttles. It is strongly suggested that these operational arrangements are made in advance. Establishing routes, schedules, drivers, and back-up drivers, and determining any applicable costs and legal/risk issues should be done in advance of a disaster.

In many regions, during actual or potential transit strikes, many TMP strategies such a carpooling and teleworking have helped alleviate commuters' stress and the need to travel to work.

BICYCLING AND WALKING

Agencies should encourage employees to walk or bicycle to work if it is safe to do so. Those employees who live within walking or bicycling distance have the advantage of being able to avoid the highways and major arterials in the aftermath of a disaster.

Agencies should identify those who live within two miles of the worksite for walking, and those within 10 miles for bicycling. Agency management should also arrange a meeting to discuss the possibility of these options in the event of an emergency, as well as issues such as bike storage, clothing lockers, and shower facilities.

Agencies should also obtain advance approval for casual dress to make it easier for employees to bike or walk, especially if clothing storage is not available at the worksite.

If available, agencies should also arrange for cyclists and walkers to have access to showers and/or clothing storage.

EMERGENCY WORK SCHEDULES

Agencies should allow flexibility in allowing employees to select their own start/end times. Doing so increases an employee's chance of finding a carpool partner, riding transit, and avoiding peak congestion.

If flexible schedules are not an option, agencies may want to alter start times on an organization-wide basis, or by departments. Start times should be established that enable workers to avoid rush hour traffic (6:00–9:00 A.M.). Or, those employees who are able to arrive to work earlier or later than peak hours should be identified.

Another option is to schedule employees for longer hours and fewer days per week. In these compressed work schedules, employees work four ten-hour days (or three 12-hour days) instead of the typical five eight-hour day work schedule. Modified work schedules allow employees to avoid commuting altogether once or twice each week, and may help them avoid peak traffic hours.

TELECOMMUTING

Before disaster strikes, agencies should identify and list employees who have tasks that can be accomplished while working at home, or at alternative sites such as local Telework Centers. If the organization has multiple sites, the additional location(s) may serve as alternate worksites. If employees are to telecommute from home, it must be determined whether the necessary equipment (e.g., computer, high speed internet access, touch-tone phone for retrieving voicemail messages, etc.) is available at home. Although some jobs may not appear to be appropriate for teleworking initially, in an emergency, all employees may need to work from home or another worksite location.

Have employees keep other work accessible at home or in their car, so that they can continue to work and be productive in the event of a disaster. Examples include reading, writing, or editing.

The agency should gain support from all levels of management. Management's support, especially from immediate supervisors, is essential to ensure that "telework" is effective and how this will impact productivity. One way of gaining support for this strategy is to provide information and training about telecommuting since managers need to be comfortable with managing distributed work.

Alternative facilities where employees could work should be identified in case the organization's building became inaccessible. Remote offices can also support employees who work from home. For a period of time immediately after a catastrophe, employees working from home may need a place to gather for meetings and to coordinate efforts with their co-workers. Having up-to-date density maps readily available will help in designating alternate work locations and in identifying impacted employees. This information should be revised periodically to reflect staffing or address changes.

The agency will need to determine equipment needs and resources for each employee or work unit and at a minimum, the types of equipment necessary for employees to accomplish their work. An inventory of available equipment for telework should be compiled, with such items as laptop computers, modems, cellular telephones, and pagers and fax machines.

Agencies should develop a remote access capability to the office computer network. As more and more job functions become technology-based, accessibility requires interfacing via high speed internet. Many companies have back up files stored at off-site locations which can be accessed in the event of an emergency. Having a Virtual Private Network solution in place can greatly increase employees' ability to remotely simulate the office while providing computer network security and firewalls.

Employees and managers should be trained on telecommuting procedures. Agencies with experience in implementing emergency response programs have found that employees with prior teleworking training and existing policies were able to respond quicker and more effectively to unexpected circumstances. Training employees and managers in telework methods will increase an agency's ability to successfully implement the emergency plan.

Agencies may also consider establishing a teleworking pilot program and monitor the results. A pilot program for a select number of employees will help to refine and polish emergency teleworking procedures.

2.2 Local Jurisdictional Requirements

Arlington County

Arlington County has a TMP ordinance that is used as a guide for new developments. It prescribes strategies that should be included in the TMP based on one of four land use categories. Which category is applicable will depend on the proposed project's consistency with planned land uses and/or density levels as stated in the General Land Use Plan, as well as forecasted traffic congestion problems.

Performance measures include:

- Reduction of peak hour work travel by achieving a reduction in single occupant vehicle trips.
- Peak hour level of service at major intersections at or better than LOS D.

Transportation Management Associations, Commuter Stores, commuter information displays, telework, flexible work schedules, parking preferences for vanpools, carpools, car sharing vehicles, and bicycles, are identified as key elements of the workplace-related traffic demand management process.

City Of Alexandria

The City of Alexandria's Transportation Demand Management (TDM) program is a component of the City's Office of Transit Services and Programs. The program is geared toward encouraging residents, businesses, commuters, and visitors to use a non-drive-alone mode of transportation when possible. The following is a list of transportation options, programs, and services available in the City.

TRANSPORTATION OPTIONS

Bus

DASH – local bus system; peak-period service to Pentagon

Fairfax Connector – Fairfax County bus system that serves some sections of Alexandria

Metrobus – regional bus service with many routes in Alexandria

Rail

Metrorail – Four Metrorail stations (yellow and blue lines) serve Alexandria

VRE (Virginia Railway Express) – Commuter rail line that stops at Union Station in Alexandria (adjacent to King Street Metrorail station)

Amtrak – stops at Union Station in Alexandria (adjacent to King Street Metrorail station)

Rideshare – carpool/vanpool HOV/HOT lanes

I-395

Washington Street

Patrick Street/Rt. 1

Henry Street/Rt. 1

Bicycle/pedestrian

The City offers numerous on-street and off-street bikeways designed specifically for bicycle travel or with key elements that support safe bicycle travel.

Support Programs and Services

Commuter Connections – The City of Alexandria is a member of the regional Commuter Connections network, which provides carpool and vanpool matching and a guaranteed ride home in cases of emergency and unexpected overtime.

Carshare Alexandria! – The City supports carsharing as a way to reduce vehicle ownership, which encourages the use of alternative modes of transportation and decreases parking demand. Through the Carshare Alexandria! program, City residents can receive

reimbursement of fees for a first-time membership in Zipcar or Flexcar.

www.alexride.org – Visit www.alexride.org, the City's Transportation Demand Management (TDM) Web site, to link to maps and schedules; learn more about transportation options and programs; get real-time traffic information; and to sign up for eNews – Transportation Alternatives, the City's e-mail service providing information on transportation initiatives, programs, and updates. Phone number: 703-838-3800.

Employer Services – The City supports the efforts of employers to encourage non-drive-alone commuting and telework by assisting with transportation benefits program development, implementation, marketing, and ongoing support.

Transportation Management Plans (TMPs) — Special Use Permit

The Transportation Management Plans (TMPs) are now part of the City of Alexandria Zoning Ordinance, Article XI, Division B, Development Approvals, Section 11-700 – Transportation Management Special Use Permits. This ordinance was enacted by City Council on May 16, 1987 to offset the traffic impact of new developments.

The ordinance requires that projects of the sizes indicated below, submit a special use permit application which must include a traffic impact analysis and a transportation management plan:

Office	50,000 or more square feet of usable space.
Retail	40,000 or more square feet of usable retail sales space.
Industrial	150,000 or more square feet of usable industrial space.
Residential	250 or more dwelling units.
Mixed-use	Any combination of space including one or more of the foregoing uses, at the threshold size applicable to that use. If the threshold is satisfied in any of the uses, the TMP must be prepared for all uses present in the project.

A TMP fund is established to finance the transportation strategies to induce people to use public transportation. Some of these strategies are: discounted fare media, shuttle bus service, registration fees for car sharing, bus shelter maintenance, bicycle lockers and parking facilities, and some administrative costs of the plan.

The fund stays in an account belonging to the TMP holder but the City can claim this money if no approved transportation activities are conducted.

As of July 2006, 54 transportation management plans have been prepared. Among these 45 are active; 3 were prepared but the projects developed in a manner that did not require a TMP or were not developed, and 6 have been prepared and are in the approval process.

In the Transportation and Environmental Services Department (T&ES), the Office of Transit Services & Projects (OTS&P) administers the TMPs. City staff verifies compliance with the conditions of TMPs through the following documents:

Semi-annual Fund Report — This form is used to record the TMP financial contributions made by a TMP holder to support the transportation activities. It also records the expenses incurred and gives a summary of the contribution, the expenses and the balance to carry over, if any. Deficits are shown as additional contributions by the TMP holder to avoid carrying negative balances.

Residential and Commercial Surveys — The objective of the surveys is to find out the modes of transportation used by residents and employees of developments holding a TMP. The survey measures the effectiveness of the transportation strategies carried out by TMP holders, as these strategies are intended to stimulate single occupant vehicle (SOV) drivers to switch to transit, join a carpool, ride a bike, and use any other means of transportation.

TMP Annual Report — This report is a narrative of the activities carried out during a year, gives a summary of the survey, and indicates what activities are planned for the coming year.

The TMPs are conveyed in perpetuity with the land.

Permanence of the TMP Ordinance — Prior to the signing of any lease/purchase agreements, the applicant/developer shall prepare appropriate language to inform tenants/owners of the transportation management plan special use permit and conditions therein. The City Attorney's office reviews and approves such language.

The Director of T&ES may approve modifications to agreed TMP activities, if the changes are consistent with the goals of the TMP.

For additional information you can contact the TMP Coordinator in the Office of Transit Services & Programs (OTS&P), at 703-838-3800, or visit www.AlexRide.org.

Prince George's County

Princes George's County enacted a Transportation Demand Management District (TDMD) Ordinance in 1993 to provide the County and its communities with a formal and legally recognized procedure for orchestrating and monitoring trip reduction in areas of the county which cannot meet the General Plan level of service standards solely through roadway improvements.

TDMDs may be created by a petition to the County Council or formally instituted by the Council within the boundaries of a master plan, including Transit District Development Plans (TDDPs). In areas that have approved TDDPs , such as West Hyattsville, New Carrollton and Prince George's Plaza, TDMDs have been enabled in the Council's approval of the TDDPs.

A TDMD could be established by petition or through adoption of an Area Master Plan. A TDMD could be triggered when 20% of the intersections or interchanges in a given area begin to operate at LOS E or 10% at LOS F. The proposed thresholds that would trigger trip reduction requirements may differ in each TDMD.

Currently, the Prince George's County Council has enabled but not authorized any TDMDs. Trip reduction goals are determined in each area by existing capacity, comparable trip generation rates for proposed land use, and planned improvements.

Performance measures may include:

- Reduction of peak hour work travel from trip generation levels calculated using the Guidelines for the Analysis of the Traffic Impact of Development.

- Peak hour level of service at major intersections at or better than the General Plan LOS standard for the area.

Monitoring and compliance measures in the TDMD Ordinance include monitoring reports and annual reports by the Transportation Management Association or other responsible entity to the Planning Board. Violations for unsuccessful compliance, non-compliance resulting from deceitful actions, and non-compliance resulting from non-cooperation include varying levels of penalties.

Transportation Management Associations, parking policies, and bicycle programs are identified as key elements of the workplace-related traffic demand management process once the TDMD is authorized and the TMA is created.

Greater detail on the boundaries and status of TDMDs within the County can be obtained from Mr. Faramarz Mokhtari of the Transportation Planning Section of the Prince George's County Planning Department at 301-952-3867.

Montgomery County

Montgomery County, under its adequate public facility ordinance, requires proposed developments in traffic congested areas to offset the impact of new peak-hour trips generated by the new development. A traffic impact area is defined, and baseline traffic counts collected from this area prior to construction to establish the existing setting which must be maintained. Activities to reduce trips are prescribed on a case-by-case basis through the development approval process. These requirements are made part of the conditions of approval of the development and culminate in negotiation of a Traffic Mitigation Agreement (TMA) with the developer.

Montgomery County's most urbanized areas have been designated as Transportation Management Districts (TMDs). Existing TMDs are located in Bethesda, Friendship Heights, North Bethesda and Silver Spring. A fifth TMD has been established, but not implemented, for Greater Shady Grove. All new developments generating more than a minimal number of peak hour trips which are located within the County's Transportation Management Districts are required to undertake some type of traffic mitigation measures. Those generating larger numbers of trips are required to have TMAgs.

The performance measure used for Montgomery County's program is no increase in peak hour traffic volumes in the defined area as a result of the proposed development, or in some cases no increase beyond a defined level. Under the County's recently-adopted

Growth Policy, measures of impact are evaluated for both local intersections and on a broader "policy area" basis.

Monitoring and compliance measures for developments with TMAgs may include driveway counts, periodic progress reports, and annual reports by the developer or other responsible entity.

To assist in obtaining traffic mitigation objectives, public parking in TMDs and many other urbanized areas of the County is carefully managed. A policy of constrained supply applies to most of these areas. New developments within Parking Lot Districts (PLDs) may forgo provision of on-site parking if payments are made to the PLD. Office developments within TMDs and certain other areas of the County may opt to reduce traffic impacts by reducing parking provided on-site. Under the zoning ordinance, two sets of reductions, of 15 percent each may be obtained in return for certain actions, including annual payments in support of TMD activities. To implement these provisions, developers must enter into a Parking Reduction Agreement with the County.

In addition to development-based traffic mitigation, Montgomery County has an active program of employer-based traffic mitigation efforts. In November 2002, Montgomery County enacted County Council Bill 32-02, amending County law regarding the County's four TMDs. Effective March 2003, the purpose of the law [Montgomery County Code, Part II, Chapter 42A Ridesharing and Transportation Management] was to implement uniform requirements for employers in all TMDs in order to increase progress toward reducing traffic congestion and reaching commuting mode share goals.

Under Chapter 42A, all employers with 25 or more employees in the TMDs must implement the following transportation demand management (TDM) strategies:

- File a traffic mitigation plan (TMP)
- Submit an annual report of the employer's TDM activities
- Participate in the Annual Commuter Survey

Employers must file a traffic mitigation plan (TMP) within 90 days of notification. County guidelines require the employer's TMP to include the following elements:

- Designate an Employee Transportation Coordinator (ETC) a/k/a Transportation Benefits Coordinator (TBC)
- Post and/or distribute transportation information to employees
- Facilitate TMD presentations to employees/HR staff
- Promote MWCOG's Guaranteed Ride Home program
- Participate in the County's Annual Commuter Survey
- Provide American with Disabilities Act (ADA) transit information
- Provide a permanent display for bus/rail schedules and other information about commuting alternatives and "better ways to work."

Employers are encouraged and assisted by TMD staff to implement other TDM strategies, such as:

- Car/vanpool incentives
- Alternative work schedules
- Subsidized transit passes
- Pre-tax payroll deduction
- Enhanced Guaranteed Ride Home program
- Car sharing parking and/or incentive programs
- Air Quality Action Day participation
- Preferential parking for carpools/vanpools
- Formal telework (telecommuting) policy
- Bicycling/walking amenities (bicycle racks, changing rooms and showers)

The above-mentioned TDM activities are implemented by employers with assistance from Montgomery County's Commuter Services staff and their contractors. Activities are documented by employers with the submission of annual reports.

Commuter Services also operates a rideshare matching program in concert with the region-wide MWCOG Commuter Connections program. Prospective rideshare participants are matched with carpool, vanpool, or transit arrangements upon request. A program of personalized follow-up to ensure satisfaction with the commuting information and/or arrangements provided is an essential part of the County's rideshare program. Carpool and vanpool vehicles are also eligible for parking discounts in the County's public parking garages.

The Annual Commuter Survey developed by Commuter Services and administered through employers is used to create a database of employee commuting patterns in the TMDs and throughout the County. The survey helps monitor progress toward achieving mode share and other commuting goals. The survey also helps the Department of Public Works and Transportation determine what changes to programs and services are necessary.

Transportation Management Districts, developer Traffic Mitigation Agreements, parking management and reduction policies, personalized ride-matching assistance programs, and employer-based programs – including filing of Traffic Mitigation Plans, and undertaking strategies such as transit subsidies and telework programs – are key elements of the workplace-related TDM process in Montgomery County. Together these efforts are encapsulated in the slogan used by Montgomery County Commuter Services: "Better Ways to Work."

Note: Montgomery County's employer TMPs (Traffic Mitigation Plans) are not required for Federal government employers. However, Montgomery County will happily work with all Federal agencies within Montgomery County and endeavor to have them voluntarily undertake the same types of strategies we promote with private sector employers.

Loudoun County

1. Loudoun County will require Transportation Demand Management strategies for both residential and non-residential development. Staff will develop transportation demand management (TDM) standards that will be used by applicants to create TDM plans. These TDM standards will encourage new and existing development to implement strategies that will ultimately reduce vehicle trips and vehicle miles traveled. Examples of such strategies include providing employment opportunities suitable to local residents and housing suitable to local workers, and connectivity of neighborhoods and retail/commercial areas.

2. The County will encourage existing and new employment and business uses to support alternative travel modes by offering ridesharing and car/vanpooling, minimizing the availability of parking beyond current County requirements, and providing site amenities (e.g., transit shelters and bicycle lockers) as appropriate. Employers should also investigate other incentives (e.g., parking cash out programs and telework policies).

Prince William County

Prince William County uses a proffer system to encourage Transportation Demand Management measures with respect to new public and private sector developments within the County. It has a formal proffer policy that sets proffer amounts for housing units sized to explicitly account for unfunded road improvements, parkland, schools, etc., but the policy does not currently account for needed and unfunded transit improvements. The County is in the early stages of updating its comprehensive plan and considering the advisability of amending its proffer policy to incorporate an allowance for transit as this update is being written (2007).

Fairfax County

From the Fairfax County Comprehensive Plan, 2007 Edition. Policy Plan - Transportation, Amended through 7-10-2006

Objective 5: Promote Transportation Demand Management (TDM) to support efficient use of the County's transportation system.

Policy a. Promote and market public transit, ridesharing, use of HOV/HOT lanes, bicycling and walking with all potential users.

Policy b. Promote TDM strategies including teleworking, teleconferencing, tele-education, alternative work schedules, flexible work hours and/or variable pricing.

Policy c. Implement parking management programs and parking controls in activity centers to encourage use of mass transit, HOVs and non-motorized transportation.

Policy d. Encourage and support employers and landowners to establish transportation management associations (TMAs).

Policy e. Work with private and public employers by establishing alternative commute programs to reduce SOV use.

Policy f. Work with the County residents, developers, homeowner associations and property management companies through residential based programs to promote use of public transportation, HOVs, non-motorized travel, and other alternatives.

Policy g. Work with Fairfax County Public Schools, private schools, and area colleges to establish programs that encourage the use of bicycling, walking, carpooling and transit.

Policy h. Require that applicants for rezoning and special exceptions show evidence that they have analyzed and evaluated potential TDM strategies.

Encourage proffers of TDMs and develop enforcement mechanisms and proffers in support of the County's transit system.

Policy i. Develop TDM strategies and programs in cooperation with MWCOG and other local jurisdictions.

In 2008 the Fairfax County Department of Transportation will complete a study on integrating TDM into the land use and approval process. The results of this study may lead to changes in the existing policies.

District of Columbia

Though the District of Columbia has no TMP ordinance, MWCOG provides TMP services to the District.

3.1 Alternative Modes of Travel

This section of the handbook describes different Travel Demand Management (TDM) strategies that can be included in a Transportation Management Program (TMP). TDM strategies may be classified based on their characteristics and their ability to reduce SOV trips (as applied alone) as follows:

Alternative Modes of Travel (Reduce SOV trips)

- Carpool Programs
- Vanpool Programs
- Transit Service/Shuttle Service
- Bicycle/Pedestrian Facilities & Site Improvements

Incentives & Disincentives (Do not reduce SOV trips by themselves)

- Economic Incentives
- Subsidies
- Travel Allowance
- Parking Management
- Employer Complementary Support Measurements
- Guaranteed Ride Home
- Commuter Center

Alternative Work Arrangements (May or may not reduce SOV trips)

- Variable Work Hours
- Flex-time
- Compressed work week
- Staggered Work Hours
- Telecommuting

Each strategy is described in detail, including benefits, applicability, factors for success, complementary measures, effectiveness, and cautions. Strategies should be selected based on program objectives, work site analysis, and employee needs/preferences.

Studies show that TMPs are more effective when they include TDM strategies from each category. Section 4 presents a detailed process on how to select the appropriate TDM strategies for a specific worksite.

Carpool Programs

Carpool programs using personalized matching involves introducing and matching potential ridesharers. Most people are hesitant to rely solely on a matchlist and need help when approaching their potential rideshare matches. As in most social situations, someone has to "break the ice", and in the case of ride-matching, it is an ETC who can bring the appropriate people together.

To increase ridesharing, the ETC can:

- Personalize the employee's introduction to ride-matching by marketing the program and meeting the potential ridesharers in person;
- Personalize the matching formation process, and reduce the anxiety involved in meeting and finding people who are potential carpoolers; and
- Assist in the maintenance of existing and new arrangements through on-going follow-up on the status of carpools and vanpools.

Through personalized assistance to employees, the employer can develop a high profile transportation program, which will increase ridesharing at a worksite and serve as an excellent marketing tool for the program. Employees will feel more comfortable when approaching rideshare partners if someone has taken the first step to introduce them to one another. Personalized assistance takes the social reluctance out of ridesharing.

Personalized assistance is essential to a ridesharing program in medium to large size federal agencies where employees may not know their colleagues who appear

on the matchlist. In smaller agencies, the ETC may not have to dedicate as much time to personalized assistance because most of the employees may know each other and do not need the ETC for the initial introduction.

Complementary measures include: Commuter Connections rideshare matching program, preferential parking for carpools and vanpools, guaranteed ride home program, and marketing efforts. goDCgo.com, a clearing house for alternative travel modes including ridesharing in Washington, DC, is an invaluable resource when planning alternative commute options in Washington, DC.

The following factors should be considered when implementing a personalized assistance and ride-matching program:

- Commuters with less than 10 miles and/or 20 minutes commutes are less likely to carpool. The regional average distance traveled for carpoolers/vanpoolers is 20.9 miles one-way.
- Carpools require riders to commit to a regular, agreed upon schedule. This can cause difficulties for workers whose hours are not consistent from one day to the next. A staggered work hour program can make it more difficult to form carpools because employee work hours are not compatible throughout a worksite. However, the effect that flex-time has on ridesharing is less clear. Flex-time may create a similar effect as a staggered work hour program in some cases, or may allow employees to shift their arrival times to accommodate carpool schedules.
- Conditions which foster ridesharing include: not having an available car, a long commute, tight parking supply, availability of nearby (or in-route) HOV/HOT lanes, limited transit service, high concentrations of employees in a general work area and/or residential concentrations of employees.
- Cooperation with nearby employers, such as through a Transportation Management Association, will significantly increase the likelihood for successful placement of employees into carpools.
- Even though the ETC can play an active role in bringing potential ridesharers together, the ETC should communicate to the employees that they are responsible for making the final selection. Employees need to be prepared to screen potential matches for many issues such as a preference for smoking, type of music, flexibility of schedule, etc.
- It should be assumed that those who request and receive a list, will act on the list.
- Provision of follow-up assistance to start and maintain carpools is strongly recommended.

Vanpool Programs

Vanpooling is an arrangement where several people (7-15) share a ride between home and work in a van. For the purpose of employer subsidies, a vanpool should have a seating capacity of at least 6 adults (not including the driver). At least 80 percent of the van mileage should be for transporting employees between their residences and place of employment. It is also required that van use is with at least ½ of its passenger capacity (the van drive does not count towards this requirement).

Vanpooling is ideal for employees who live at least 15 miles from the work place. The regional average trip length of vanpools is 29 miles.

There are four basic types of vanpooling, as follows:

Third Party Vans: A group of employees lease a van from a vanpool vendor and fares are paid to the vendor by the employees.

Owner-Operated Vans: An individual employee independently buys a van and administers all aspects of the program.

Employer-Purchased or Leased Vans: An employer buys or leases a van and administers the program, recovering the cost through fares. However, this is not considered to be an option that is legally available to federal agencies.

A federal agency and its employees can benefit from vanpooling as follows:

- Employee productivity is enhanced as a result of reduced commuting stress;
- Tardiness is minimized because the driver and riders must maintain a reliable schedule to maintain a successful vanpool, which will in turn allow them to consistently meet an agency's start schedule;
- Morale and general satisfaction with work increases;
- Employer/federal agency savings are achieved because of reduced parking expenditures;
- Savings in commute time result when used with High Occupancy Vehicle (HOV) or High Occupancy Toll (HOT) lanes;
- Employees benefit from savings in commuting costs;
- Employees gain increased "down" time on the van/bus to read, sleep, or work;

- Congestion is reduced, since each van can remove as many as fourteen other vehicles from the road; and
- Air quality is improved, since one van pool reduces up to 275 pounds of pollution every day.

Vanpools can be formed only if an adequate number of employees with similar work schedules live near each other, and is only cost effective for long distance commuters who live at least 15 miles away from the office. An employee spatial distribution study that shows the location of where employees live in relation to the work place is one way to determine the vanpooling potential at a worksite.

Complementary measures to vanpools include preferential parking for carpools, the Guaranteed Ride Home Program (administered by the Metropolitan Washington Council of Governments), the regional rideshare-matching program (administered by the Metropolitan Washington Council of Governments and its network members), driver training programs, and flextime. goDCgo.com, a clearing house for alternative travel modes including ridesharing in Washington, DC, is an invaluable resource when planning alternative commute options in Washington, DC.

The following factors should be considered when implementing a vanpool strategy:

- The highest potential for successful implementation of a vanpool is among employees who live 20 or more miles from work and who have travel times of 30 minutes or greater.
- It is best to cluster 15 to 30 people for a 12 or 15 passenger vanpool. The cluster area should generally be no greater than two to three miles in size, but with commuting distances of greater than 30 miles, larger cluster areas may become viable. Clusters oriented to the vanpool route can be set up; these are composed of smaller groups picked up along the route to work.
- Caution should be utilized in driver selection. The driver is usually permitted to take the van home on weekends and overnight.
- Most vanpools start with less than a full complement of riders. Subsidies, including local government support, should be sought to subsidize the cost of empty seats for several months to increase ridership.
- "Erosion" of interest in vanpools should be expected - some potential riders will change their minds.
- Adequate insurance for the vanpool is necessary. Adding to a driver's own automobile coverage is generally insufficient.
- Maintenance and upkeep of vehicles is an issue. Access to an alternate van in the case of a breakdown is necessary.

Transit Service/Shuttle Improvements

Although transit usage varies greatly between metropolitan areas, only about 5.0% of American commuters use mass transit on average. However, when compared with other metropolitan areas in this country, the Washington area enjoys a relatively high rate of transit usage. Approximately 19% of commuters report that they utilize transit on a regular basis according to the most recent 2007 MWCOG "State of the Commute" Survey. Although traditional transit services may not be able to meet all transportation needs in a cost-effective manner, the ETC can help market transit along with other transportation alternatives. Regional transit service is available in many different forms including: Metrorail, Metrobus, commuter bus service, various express bus services, commuter train service, and soon-to-be water shuttle service along the Potomac River. Additionally, more local county and city transit service providers such as Ride-On (Montgomery County, MD), the CUE Bus (City of Fairfax, VA), the Fairfax Connector (Fairfax County, VA), DC Circulator (Washington, DC) and others help to extend regional transit service coverage. goDCgo.com, a clearing house for alternative travel modes including transit information for Washington, DC, is an invaluable resource when planning alternative commute options in Washington, DC.

Federal agencies benefit when their employees use mass transit because employee productivity may increase as a result of reduced commuting stress. Employees like to use mass transit because in many cases it reduces their commuting costs. It also may eliminate the need for an extra automobile for commuting purposes. Commuters perceive the cost of using transit in two contexts: first, how the transit fare compares with the cost of driving (mainly fuel and tolls) and parking; and second, ease of fare payment.

Mass transit is an excellent choice for commuting where services are readily available and accessible. The Metropolitan Washington Area has one of the best regional transit networks in the country, and organizations are increasingly discovering the importance of selecting worksite locations with good transit accessibility and nearby community amenities such as retail, restaurants, and other support activities (e.g., day care, banks, etc.). Though not all locations enjoy immediate transit access, organizations may be able to overcome this with short-distance, high-

frequency shuttle service between the worksite and closest transit station.

Transit service improvements provided by the agency might include:

- Shuttle buses from nearby transit stations or residential areas to the worksite.
- Express buses from park-and-ride lots to the worksite.
- Shuttle buses between multiple company sites or between the worksite and nearby retail areas (generally mid-day trips)

Complementary measures include transit subsidies, travel allowances, a guaranteed ride home program, transit system marketing efforts, convenient payment (Commuter Center), flextime, and parking management programs.

The following factors should be considered to encourage transit use by agency employees:

- Consider transit availability at the worksite and employee's residences.
- Look for concentrated residential locations of employees.
- Be aware of the current level of transit utilization at the site. It is important to remember that not all employees will be able to use transit due to limited availability. The level of transit usage at the site could be economically infeasible to attract more employees from SOV trips.
- Transit programs can be very expensive to operate; therefore, it is very important to identify the market potential for the service, and weigh the cost and trip reduction benefits of the new transit service against those for other TDM strategies.
- Employees should always be aware of transit crime both on the system, and while waiting for the service.
- Make transit route brochures available in convenient locations.
- Assist employees in determining the best transit route from home to work.

Bicycle/Pedestrian Facilities and Site Improvements

Bicycling and walking are often overlooked in modern day commuting. With growing interest in health and exercise, both bicycling and walking are becoming increasingly popular modes of commuting.

Benefits include:

- Reduced need for parking
- Improved employee health and well-being
- Reduced stress in the work place
- Overall attitude and morale improvement
- Low commuting cost

In many areas weather conditions, the unavailability of safe travel routes, work site showers and lockers, and the remoteness of the work site make conditions difficult for walking and bicycling. An ETC should use good judgment when promoting these options. The ETC should also realize that walking and bicycling might only provide seasonal alternatives to driving alone and might not be year round options. Additionally, walking and bicycling are usually feasible alternatives only for employees who live relatively close to work. In Europe, the percentage of employees who bicycle and walk to work is from 20% to 25%. In comparison, less than 3% of American commuters travel to work by bicycling or walking.

There are three important ways in which bicycle and pedestrian facility improvements may be implemented by a TMP:

- As a primary mode of access to the worksite,
- As a feeder mode to connect with transit or ridesharing modes for longer trips, and
- For circulation within a worksite and/or to nearby facilities that provide access to local community amenities such as retail, restaurants and other support activities (e.g., day care, bank, etc.)

Bicycle and pedestrian facility improvements should not be disregarded even if worksite characteristics are not suitable for their implementation as a primary mode to access the site. Improvements to these facilities for use as a feeder mode and for circulation will provide an incentive to the employees to use transit.

The following factors should be considered when promoting bicycling and walking as a TDM strategy:

- Provide special attention to bicycle facilities when overnight storage is required or bicycles need to be left at transit stations.
- Currently, certain buses and Metrorail trains are equipped to transport bicycles. Collect and disseminate specific information on availability. Also, WMATA does not currently allow bicycles to be transported on trains during their rush periods from 6:00-9:00 AM and from 3:00-7:00 PM Monday-Friday (except holidays).
- goDCgo.com, a clearing house for alternative travel modes including bicycling information for Washington, DC, is an invaluable resource when planning alternative commute options in Washington, DC.
- Contact local Bike/Walking Clubs to help educate bicyclists and pedestrians on safety precautions such as: always riding with traffic,

wearing a helmet, watching out for car doors, wearing reflective clothing when it is dark outside, etc.

- On days of poor air quality, encourage employees who are bicyclists and walkers to use another commute alternative. The current regional air quality forecast and ozone alerts may be accessed through Clean Air Partners.
- If the work site is located in a remote or unsafe area, encourage walkers to walk in groups and during day light hours.
- Provide adequate bicycle storage and shower and locker facilities at the worksite.
- Provide adequate information regarding regional and local bicycle paths and travel routes on the agency website and/or through brochures and maps. There are bicycle-specific maps available at most map and book stores, and the Washington Area Bicyclist Association (WABA) provides facility information, maps, tips, and support. A list of bicycle maps and trails can be found in the Commuter Connections Resource Directory (Appendix A.5). Commuter Connections will offer a regional bicycling route-finding service. Encourage bicyclists to use this tool to help find a safe and dependable route to work.
- Participating in the Washington area's annual Bike-to-Work Day is a good way to introduce employees who are not regular bicyclists and/or do not usually bicycle to work, to this form of travel. Bike-to-Work Day is usually held each year in the spring.

3.2 Incentives & Disincentives

Economic Incentives

Subsidies

Transportation costs play an important role in determining how employees choose to travel to work. Financial incentives for ridesharing can cause a shift from solo commuting to ridesharing.

Most employers offer subsidies in one or more of the following:

- Vanpool subsidy: The Federal agency provides a financial incentive on a limited or continuing basis to ridesharers.
- Empty seat subsidy: Employers or Transportation Management Associations may subsidize the empty seats on a vanpool for a limited amount of time to keep the ridesharing arrangement in place without causing the remaining riders to pay extra.
- Transit subsidy: The Federal agency can pay part or the full cost of a transit pass or voucher to encourage use of public transportation. These subsidies are described in Section 2.1 – D.

The agency can offer these subsidies by either providing direct payment to the employees by check or voucher, or through a payroll deduction process in which the federal agency itself handles the administration of the program, including payments to transit operators.

Subsidies are beneficial in that they make driving in a single occupant vehicle less attractive and more costly than other transportation modes. Subsidies can significantly increase the APO and reduce trips especially in conjunction with increases in parking prices. Subsidies work best when solo drivers have to pay to park and ridesharers are allowed to pay a reduced fee, which results in an economic inducement for the ridesharers.

Complementary measures include parking management programs, a guaranteed ride home program, a regional rideshare matching program, and transit marketing efforts.

The ETC should be aware that employees may be resistant to the program at first since most subsidy programs are introduced along with a pay-for-parking scheme.

Travel Allowance

A travel allowance program is based on providing every employee with an equal amount of money to spend on transportation. The program is considered to be a "cafeteria-style" benefit plan for transportation because employees can decide how to spend the benefit themselves; Employees can use the allowance to pay for parking or for carpool, vanpool, or transit expenses. The program rationale is that employees will try to generate and maximize a profit by spending only part of the allowance on transportation costs, which makes driving alone a poor economic choice. The Internal Revenue Service considers any travel allowance taxable; however, if an employee opts for a transit pass or voucher, the $115.00 per month is considered non-taxable.

Selecting the appropriate amount for a travel allowance can be difficult. One way to determine an amount is to set an amount that it is equal to the cost of parking in the building. If the allowance is less than the parking cost, then employees would be responsible for providing the balance of the parking cost.

The most important benefit of a travel allowance is that it is equitable. Every employee receives the same amount of money irrespective of rank, tenure, or mode choice. Additionally, the program is a constant reminder to employees that parking is not free, and at the same time, compensates employees for losing their free parking. A travel allowance program also rewards bicyclists and walkers by allowing them to save the allowance. The solo driver will have to spend most of their allowance on commuting, while ridesharers should be able to at least partially save their money. Individual employer experiences with allowances have found an SOV reduction of 20% or more as a result of providing travel allowances.

A travel allowance program is applicable in all settings where employees are required to pay for parking and where parking may be scarce. If ample free parking is available, then a travel allowance program will not be as successful.

Complementary measures include preferential parking for carpools, a guaranteed ride home program, a regional rideshare matching program, and marketing efforts.

The ETC should be aware that, like a parking pricing program, some employees will likely contest the idea of covering a partial cost of parking or paying taxes on the allowance. Program marketing literature can mitigate these potential criticisms by highlighting ways that employees can reduce commuting costs and save the travel allowance for other needs.

Parking Management

Parking management is a set of strategies used to balance the supply and demand for parking. Parking management is one of the most powerful tools that can be used for modifying mode choice. The decision of commuters to drive alone, carpool, vanpool, or use mass transit depends a great deal on the cost, availability, and the location of parking.

Parking in most urban areas costs a minimum of $5,000 per space to construct for a surface parking space, $18,000 per space for an above ground parking deck, and up to $25,000 per space for below ground parking. In addition, there are on-going costs for maintaining and operating parking lots. A parking management program can result in major cost savings for the federal agency.

There are three parking management strategies that are commonly used to reduce the number of solo commuters to a work site. These include:

- The pricing of parking: Most commuters (over 90% nationwide) park for free at work. Most employees consider parking to be a right rather than a privilege. Research on this issue has shown that employees who are charged for parking tend to alter their travel behavior. One option for implementing a parking pricing program is to offer differential rates for solo drivers versus ridesharers. It should be noted that the Federal government currently considers any transit subsidy above $115.00 as taxable income to the employee, and that parking subsidies are tax free up to $220.00 per month per employee.
- Preferential parking: By offering preferential parking to ridesharers, employees will be encouraged to drive together instead of driving alone. Usually, preferential parking is located close to parking lot elevators or main building entrances, and these spaces are usually marked, with a monitoring system put into place.
- Parking supply reduction: The best way to ensure trip reduction through parking management or any other TDM strategy is to limit the amount of parking available to employees. If employees are not all guaranteed parking spaces for their single occupant vehicles, then some employees will look for other commuting options.

Other strategies include: providing peripheral parking areas with shuttles, separating parking charges from the building lease, and sharing parking facilities with neighboring offices or worksites.

The benefit of a parking management program for an employer is that it can substantially reduce the need for parking and will modify employee travel behavior toward non-SOV travel. Some employees like parking management programs because non-solo drivers are rewarded for making the choice to use an “alternative” means of travel. Additionally, parking management programs can reduce overall congestion and fuel consumption while improving air quality.

From an application viewpoint, parking pricing and travel allowance strategies are ideal for a setting in which on street and/or off street parking supply is limited and expensive. Initially most pricing programs are faced with antagonism from employees. Preferential parking can still be applied in areas where parking is cheap and abundant. Preferential parking is not appropriate where most parking is convenient and near entrances.

Complementary measures to a parking management program include a regional rideshare matching program, transit subsidies, travel allowances, and marketing efforts.

The following factors should be considered when implementing a parking management program:

- A pricing strategy may be controversial. Make sure the employees understand how the choice was made and what the impact will be.
- The Federal government currently considers free parking as a non-taxable benefit up to $220.00 per month. A subsidy and travel program may impact employee income taxes. Let employees know which subsidies are considered taxable income.
- If the agency’s work force is organized into labor unions or other associations with bargaining power, check the agreements to circumvent potential problems.
- Do not allow a pricing strategy to result in parking spillover into neighborhoods or residential communities that are adjacent to the worksite. Spillover parking can result in strained relations with the community.
- Consider the availability of off-site, local parking facilities. The projected reduction of SOV trips may not be achieved if drivers are able to locate “inexpensive” parking within walking distance to a worksite.

Employer Complementary Support Measurements

Guaranteed Ride Home

A Guaranteed Ride Home (GRH) program is a very useful element in a successful TMP. Some commuters are reluctant to rideshare because of a fear that they will not be able to get home in case of an emergency or if they have to work overtime. A GRH program guarantees these commuters a ride home in an emergency situation (e.g., sick child at school). While this is not generally the primary motivating factor for traveling to work other than driving alone, the program does remove this one potential barrier to using alternative forms of commute travel.

A GRH program is based on offering the riders a convenient and reliable mode of transportation. The most common transportation options for GRH programs include:

- **Taxi service:** This is a subsidized service; most taxi companies bill the employer directly.
- **Short term auto rental:** This is most appropriate for employees who need to travel more than 40 miles from the work site.
- **Shuttle services:** Some airport shuttles serve the GRH market. Dial-a-Rides are also an option.
- **Back up vans:** If there is a back up van, the ETC may choose to make it available for the GRH program.
- **Public transit:** An accessible bus or rail service may also present a viable option.

MWCOG offers a comprehensive GRH service under the Commuter Connections Program. This program is used by many employers, and federal agencies can take utilize the program.

For employers, a GRH program can improve the ridesharing program and reduce the need for parking spaces. Additionally, this type of program encourages employees to rideshare without worrying about working overtime or attending to personal emergencies. Employees are generally receptive to GRH programs.

The existence of the program can increase interest in the other elements of the TMP by encouraging commuters with an initial interest in GRH program to explore various alternative commute options.

A GRH program is applicable at any agency. The federal agency will need to pick the combination of transportation options that works best for each location and employee needs.

The following factors should be considered when implementing a GRH program:

- Typically, about 7% of eligible employees use a GRH program in a year, thus the cost of operating the program is lower than generally expected.
- Establish procedures to prevent employees from abusing the program. One option is to limit usage of the program to a few times a year per employee.
- Address use of the program during snow emergencies by permitting employees to share rides with employees from neighboring agencies or companies that may have differing snow emergency or leave policies.

Commuter Centers

A Commuter Center at the federal agency provides personalized service to commuters from a prime location. The Commuter Center should not be defined as being in the ticket selling business — the Center is in the people business. In other words, the Center's focus should be customer service. Just as the GRH program eliminates the fear and anxiety of ridesharing, a well implemented Commuter Center should eliminate the inconvenience of finding accurate and timely information and services needed by the ridesharers.

This concept has the following benefits:

- Provides multi-modal marketing of regional transportation alternatives for commuters and employers;
- Centralizes transit information and fare purchase operation for employers, commuters, and visitors;
- Operates from a prominent location;
- May use a for-profit small business to manage the Center;
- Allows employees to purchase transit fare by check or credit card; and
- Provides a mechanism to distribute and exchange transit benefit vouchers.

Commuter Centers can serve large numbers of transit and ridesharing employees, perhaps for multiple agencies. The degree that Commuter Centers offer personal service and convenience is thought to increase frequency of use and increased awareness.

Complementary measures include transit subsidies, travel allowances, transit services, guaranteed ride home, regional rideshare matching program, and marketing efforts.

Factors to be considered when implementing this strategy are as follows:

- The employer-provided commute fringe benefit amount is currently set at $115 per month for CY2008, and this benefit may be used for vanpools.
- Selling commuter-related retail products may meet with opposition from nearby businesses.
- Time-sensitive tickets or passes may require additional staffing to meet demand as the new time period approaches.

Sales Outlets

Sales outlets provide convenient, one-stop shopping for schedules, fares, and information about the many transportation options available in the National Capital Region. Sales Outlets are a valuable resource for smaller federal agencies in particular because the Sales Outlets are a cost-efficient way for federal agencies to provide commuter services. Sales Outlets are located in the District of Columbia, Montgomery County, the City of Alexandria, Arlington County and Fairfax County. A complete list of Sales Outlets throughout the region can be found at the Commuter Connections website.

3.3 Alternative Work Arrangements

Alternative Work Schedules/ Variable work Hours

These strategies allow the scheduling of work hours outside of the traditional 9:00 AM to 5:00 PM, 5-day a work-week pattern. Given that 40% of all families report scheduling conflicts with the traditional work day, variable work hour programs are an attractive alternative.

Several demographic and economic changes have made variable work hours programs more practical. These changes include: the influx of women into the labor force, the increase in multiple worker families with multiple demands, the growing number of single parents, and the need for flexibility on part of a large aging population.

The three most popular strategies include:

- Flextime: Employees can select their arrival and departure times and length of their lunch period. They work eight hours (not including lunch break) and have to be in the office during a core period.
- Compressed Work Week: Employees can complete the number of weekly hours in fewer days per week. Common deviations include a four-day work week, or working 80 hours in nine days and taking the tenth day off.
- Staggered Work Hours: The employer staggers the arrival and departure time of groups of employees so that employees do not all arrive and leave work at the same time.

For the federal agency and its employees, variable work hour programs provide the following benefits:

- Reduced traffic congestion during peak hours,
- Reduced peak hour bus overcrowding by spreading peak trips,
- Increased productivity,
- Reduced operating costs (for the day off),
- Reduced staff turnover and improved recruiting,
- Extended customer service hours,
- More flexibility for employee personal needs,
- Reduced commuting time by shifting trips to off-peak hours,
- Increased job satisfaction,
- Occasional three-day weekends,
- Improved air quality by eliminating some commute trips,
- Increased transit use as a result of permitted schedule changes for employees,
- Facilitated child care and ridesharing (flextime), and
- Better communication across time zones.

In addition to reducing peak period vehicle trips (i.e., shifting these trips to other off-peak times), flextime and compressed work week strategies may reduce the total number of vehicular trips. Flextime suits most government operations and is highly successful in the Washington metropolitan region. Flextime schedules are particularly useful for agencies that need to communicate with other time zones or need extended hours of operation.

Staggered hours, if well planned, are a good tool for decreasing traffic congestion in the vicinity of the work site by metering commute trips throughout the day, as well as reducing the number of total trips. Staggered hour schedules are appropriate in organizations where units can work independently of each other. This strategy may create some difficulty to people trying to participate on a ridesharing program.

Flexible work hours permit employees to adjust work schedules to accommodate transit or carpool arrangements and as a result, may result in a shift to HOV or HOT-lane facilities (for example, transit to carpool). Staggered and compressed schedules appear to decrease VMT and to increase travel time savings, though the extent varies widely.

The following factors should be considered when implementing these strategies:

- Make sure that these strategies are in line with the goals or requirements of each specific worksite and each specific job description. Give special attention to the relationship between the changes and the measures of effectiveness of a program.
- Try to be flexible; these programs may not suit the needs of all employees and may conflict with existing arrangements for ridesharing, child care, taking kids to school, or other personal programs.
- Do not force employees to be on a schedule if it does not fit their needs.
- Make sure that the agency's legal counsel reviews labor laws and that specific state and federal laws do not prohibit agency's employees from

participating in a specific program. Dedicate enough time to trouble-shooting once the program has started. The agency will need to monitor the program very closely.

- Compressed work weeks may be tiring for some employees, so it is important to watch for employee fatigue and/or decreases in productivity.
- Cross train employees so that they can provide adequate coverage if another employee is out of the office.

Telecommuting

Telecommuting is becoming increasingly popular in corporate America. According to the American Interactive Consumer Survey conducted by The Dieringer Research Group (2004) there are 44.4 million people teleworking at least 1 day per week. The American Interactive Consumer Survey estimates that there will be over 100 million teleworkers by 2010. Telecommuting refers to the option of working at home or at an office close to home on a full or part-time basis. Although computers and other telecommunications technologies facilitate telecommuting, the telephone is still the most basic tool for working at an alternative location.

There are currently three popular forms of telecommuting.

- Work-from-home: This is the most common and the least expensive form of telecommuting.
- Satellite Work Center: This form of telecommuting refers to an arrangement whereby an employer provides some of its employees with the option of working at an alternative office located closer to home. Satellite work centers are usually housed within the existing company infrastructure. Often, when an employee works at a satellite work center, their supervisor and co-workers are still reporting to the normal work site. A complete list of Telework Centers can be found at the Commuter Connections website.
- Neighborhood Work Center: The neighborhood work center leases or sells space to a number of different companies. The neighborhood work center provides an opportunity for employees to work closer to home. Tenants in a neighborhood work center usually share support services such as clerical help, telecommunications equipment, photocopying machines and office supplies.

Many experts believe that satellite and neighborhood work centers will replace the work-at-home option in the near future. Although work centers are more expensive to set up, they are easier to sell in concept to management because they more closely resemble the traditional office.

Telecommuting is very popular with employees. There are many factors accounting for the growth in telecommuting, with increasing technological support and decreasing computer prices being the two most important reasons. The following lists some of the benefits of telecommuting to employers, employees, and the community:

- Increased productivity as a result of fewer distractions, continuous work time;
- Improved morale and employee satisfaction;
- Decreased absenteeism based on the ability of employees to work in spite of emergencies, such as car trouble or weather conditions;
- Improved recruitment and ability to retain skilled workers;
- Opportunity to expand hiring to include the handicapped and others unable to meet traditional working hour requirements;
- Decreased overhead in times of office expansion;
- Reduced employee commuting time, stress and cost; and
- Reduced trips to the central work site resulting in reduced VMT (i.e., less traffic congestion, air pollution, and highway cost).
- Increased ability for business continuity in the event of a natural or man-made disaster

Telecommuting is applicable for jobs that can be performed at least part time, away from the office. Telecommuting requires jobs to be portable. It is being widely used in many sectors of the economy as an alternative work arrangement. Telecommuting is ideal for employees who have strong time management skills, who are above average performers, and who can work with little direction.

An updated and enhanced interagency telework website is available to federal employees at www.telework.gov. The website provides users with recent telework guidance and legislation, policies, reports, studies, and on-line telework training. Additionally, users may search an on-line database for answers to telework-related questions, and if the feature is unable to locate the answers on-site, questions are automatically routed to experts who will respond via email. The site is intended

for employees, managers, and telework coordinators, and was developed by the General Services Administration (GSA) and the Office of Personnel Management. (OPM)

The following factors should be considered when implementing telecommuting as a TMP strategy:

- Telecommuting is NOT a substitute for childcare or eldercare arrangements.
- Job performance has to be measured by results under clearly defined tasks and deliverables.
- Telecommuting may not work for all employees, so make sure it is a voluntary program. Employees can come back to the office if working at home does not work for them. Additionally, supervisors have the right to ask the employees to come back to the office if the employees' productivity is decreasing, or other problems arise.
- The agency's labor unions should be involved in designing the program. Some unions may initially have problems with decentralizing the work force or may not fully understand telecommuting.
- Spell out all arrangements in a Telecommuting Agreement. Any violation of the rules may result in termination of the telecommuting arrangement. Gain agreement between the employer and telecommuter on ownership and use of equipment.
- Do not expect the program to be perfect; adjustments will be necessary. Make sure that communication channels within an organization are open for discussing potential problems.
- This strategy may require the agency to address "cottage industry" inspection laws, liability for injuries occurring while working at home, and the application of OSHA regulations. The employer, with reasonable notice, may make on-site visit to determine the site is safe.
- Help employees understand tax implications relating to the home work space.

4.1 Initiating the Program

This section serves as a guidance tool for the ETC or the person in charge of creating a TMP for a worksite. The TMP process may have started because of the agency's need to respond to a trip reduction regulation, to solve a transportation-related problem, to expand employee benefits, or to reduce commuting-related expenses. Regardless of what initiated the program, there are four key steps to the TMP process: 1) Initiating the program; 2) Selecting the trip reduction strategies; 3) Implementing the program, and 4) Monitoring progress. Each of these is described in this section of the handbook.

There are four components to initiating the program: establish goals and objectives, select bases for measurement, evaluate the work setting, and evaluate employee behavior. Please note that these items are listed as components rather than steps since they should not be implemented in a linear sequential order (i.e., one after the other), and the components complement and influence each other. For example, goals and objectives could be redefined or made more specific as the work setting and employee behavior are evaluated. Similarly, if the goals and bases for measurement are established by a trip reduction regulation, the work setting and employee behavior evaluation should be focused to address the regulation.

Establish Goals and Objectives

Set Management Goals

Goals are broad statements derived from the mission of the program. They should include what a federal agency wants or needs to accomplish. Sample goal statements might include:

- "To reduce traffic congestion, conserve energy, and improve air quality by seeking to reduce the number of employee single occupancy vehicle trips in the workday commute."
- "To make the best use of limited on-site parking facilities and travel ways."
- "To comply with NCPC master planning requirements and other government mandates."
- "To support mass transit as a resource for the agency, as well as other governmental bodies, businesses, and the community at large."
- "To reduce the impact of trips generated by the agency on the local and regional road network."

Set Program Objectives

Objectives differ from goals in that they describe problem-related outcomes of the TMP, not the tasks. Measurable program objectives are preferable. Program objectives that are measurable become the criteria by which the program's effectiveness can be assessed. Each objective should assign responsibilities with target completion dates. Objectives should also define criteria that may be used as a "roadmap" to successfully accomplishing each objective and that detail measurable outcomes.

The ETC could decide how to reach the stated objectives in several different ways. For example, an agency may determine an objective to be: To increase

the Average Passenger Occupancy (APO) employee ratio from 1.22 to 1.52 persons per vehicle, within a certain period of time The agency could set several contributing objectives as stated in the following examples to reach this primary objective:

Increase the percentage of employees using transit to 28% by the end of the first year as measured by a pre-program/post employee survey.

Increase the percentage of employees in carpools from 12% of the workforce to 44% by end of the first year.

In all likelihood, the objectives will include a mix of strategies to achieve the desired end result based on employee needs and desires.

Select Bases for Measurement

There are currently several metrics that are commonly used for measuring the success of TDM strategies which include: Average Passenger Occupancy, Number of Vehicle Trips, Mode Split, Vehicle Miles of Travel, and Level of Service. Changes in these measures over time will provide indicators of a TMP's effectiveness. The advantages and disadvantages of each are discussed below. Three measures of effectiveness more widely used by regulating agencies are: the number of vehicle trips during the peak periods of the daily total, the level of service along adjacent roadways, and the average vehicle occupancy.

Average Vehicle Occupancy

Average Vehicle Occupancy (AVO) represents the ratio of employees to vehicles. Typical numbers can range from 1.05 to 1.50 persons per vehicle. Average Vehicle Occupancy (also referred to as Average Passenger Occupancy or Average Vehicle Ridership) is calculated as follows:

$$\textbf{AVO} = \frac{\textbf{\# of employees reporting to the worksite}}{\textbf{\# of vehicles in which employees report}}$$

AVO is increased by reducing the number of vehicles. Vehicles that count as "zero" include vanpools with seating for nine or more, buses, and bicycles. Employees who work from home all day or who work compressed work weeks have zero vehicles on days they do not report to the worksite. Vehicles left at transit terminals, park & ride lots, etc. more than two miles from the worksite are not counted. Carpools are counted as a fraction of a vehicle (i.e., 1/4 vehicle per person for a four-person carpool).

The inverse of AVO is the Vehicle per Employee Ratio (VER).

EXAMPLE: (assumes 200 employees)	*Persons*	*Vehicles*
Drive Alone	150	150
2 person carpool	24	12
3 person carpool	6	2
4 person carpool	0	0
Vanpool	2	0
Bus	10	0
Commuter Rail	4	0
Bike	2	0
Walk	2	0
	200	164

In this example, the AVO equals 1.22 and the VER = 0.82.

This measure of effectiveness can be assessed through cordon counts or surveys. Cordon counts should allow for employees who walk, bike, park off-site, or ride transit.

The advantages of using AVO as a basis for measurement include:

- Reflects the number of vehicles per 100 employees and can be used to estimate impact of part-time ridesharers.
- Easy to understand by transportation community.

The disadvantages of using AVO as the measure of effectiveness include:

- Not easily understood by the public and non-transportation management personnel. Seemingly small increases (e.g., 25% increases in APO from 1.10 to 1.37) could require significant changes in behavior.
- Difficult to measure through multi-tenant site cordon counts as changes in usage may be the result of normal daily traffic fluctuations, weather, observer error, an unusually high number of visitors, or other employers.

A deviation of this measure (useful to assess your carpool program) will be calculated as:

$$\textbf{AVO} = \frac{\text{\# of employees traveling by/in private vehicles.}}{\text{\# of private vehicles in which employees travel}}$$

Vehicle Trip Reduction

Vehicle Trip (VT) reduction measures the number of trips rather than the number of persons per trip or miles reduced. VT reduction could be measured as a daily total, peak period or peak hour reduction depending goals and objectives.

This measure of effectiveness can be assessed through surveys or vehicle counts.

An advantage of using VT is the close relation with most of the desired objectives (e.g., reduce vehicles on the road).

The disadvantages of using VT as the measure of effectiveness include:

- Increases of VT could be experienced if the vehicle left at home is used by other family members in the peak period though VMT may be reduced.
- Increases in VT can occur if the vehicle is driven to a site, such as a park and ride lot. Since much of the pollution occurs with the cold start condition, pollution may not be reduced at the same rate.
- It may account for part-time trip reductions (such as those produced by compressed work schedule or telecommuting).

Mode Split

Mode split is the percentage of people using each mode (i.e. transit, bicycling, walking, etc.) of travel. By analyzing the current travel modes and commuting characteristics of those using each mode, the appropriate target group of employees can be identified. The following is an example of a mode split table:

Drive Alone	75%
2 person carpool	12%
3 person carpool	3%
4 person carpool	0%
Vanpool	1%
Bus	5%
Commuter Rail	2%
Bike	1%
Walk	1%
	100%

Even if other measures of effectiveness are required; it would be useful to collect this information to assist you in selecting your TDM strategies. This measure of effectiveness can be assessed by drawing an imaginary line around the site (i.e., “cordon”) and counting in the field the traffic by type that crosses the cordon. Cordon counts should allow for employees who walk, bike, park offsite, or ride transit. Employee surveys can also be used to collect the information.

The advantages of determining mode split include:

- Reflects actual behavior, not simply commute trip lengths.
- Easy to understand by public and others.
- The disadvantages of using mode split as the measure of effectiveness include:
- Benefits such as reduction in air pollutants, traffic congestion and parking needs are not readily quantifiable from mode split.
- Changes in mode share in High Occupancy Vehicle (HOV) modes such as carpooling may come from other HOV modes (bus to carpool) that effectively may increase the number of trips.
- Changes in mode split also may be due to a relocation of home or work location where transit service is different from the previous location.
- Neglects the part-time use of other modes.

Vehicle Miles of Travel

Vehicle Miles of Travel (VMT) is a measure of the number of trips multiplied by the distance of those trips. For instance, five single occupant vehicles traveling 20 miles to work each day would equal 100 vehicle miles of travel. If two of those five people formed a carpool, VMT would decrease to 80.

This measure of effectiveness can be assessed through surveys.

The advantage of using VMT is that it relates closely with most of the desired objectives (e.g., to reduce traffic and air pollution).

The disadvantages of using VMT as the measure of effectiveness include:

- Benefits, such as the reduction in air pollutants, traffic congestion, and parking needs, are related to commute characteristics of workforce. One long distance commuter that reduces their VMT by 40 miles per day is equivalent to four employees reducing their VMT by 10 miles per day each. However, given the fact that much of pollution is related to the initial starting of an engine (i.e., "cold start"), the removing of four cold starts versus one is significantly better.
- VMT tends to yield better benefits for programs in remote sites that are best served by carpools and vanpools. Therefore, similar organizations in different settings could have significantly different VMT benefits for similar mode splits.

Level of Service

Level of Service (LOS) is a standard measure of traffic flow through average travel delay. LOS designations are determined for intersections and specific road segments. These intersections and roadway segments are usually selected based on: their proximity to the site, traffic access patterns and whether they are currently perceived as problem locations. A description of each LOS designation is provided in Appendix 2.

This measure of effectiveness requires computation of data collected during a traffic survey and counts at the specific location.

The advantages of using LOS includes:

- Relates closely with most of the desired objectives (improved traffic flow, expanded passenger capacity of roadways).
- This measurement is frequently used by area transportation and planning professionals.

The disadvantages of using LOS as the measure of effectiveness include:

- LOS is more applicable to broad, region-wide or corridor TMP programs because of the wide range of variables and environmental conditions affecting the LOS.
- Imprecise measurements of average travel speed, etc., can result in mislabeling LOS for a particular road segment or intersection.
- It is extremely difficult to discriminate between commuter and non-commuter traffic impacts.
- Requires some technical background to perform the computations.

Evaluate the Work Setting

Before a federal agency can select the TMP strategies that will be most effective, it must understand the existing situation. This includes analyzing the work site's infrastructure and services, current levels of usage, and current management policies.

Conduct Work Site Analysis

This component provides a description of the work site's transportation-related infrastructure, services, and amenities. The analysis should include:

The number, price, location, and assignment of parking by type;

- Identification and evaluation of existing mass transit services to the area;
- Transportation programs of nearby worksites;
- Bicycle and pedestrian facilities;
- Highway access (including HOV/HOT lanes);
- Traffic conditions in the nearby area (e.g., congested intersections);
- Approved improvements for transportation facilities.
- Availability of on-site nearby services; (e.g., restaurants, child care, banks, supermarkets, laundry services, etc.)

Identify Existing Transportation Programs

This section should describe the Federal agency's existing programs and policies for reducing travel by single-occupant vehicle. It would include the name of the ETC, current level of resources, services offered, alternative work hours policy, transit subsidy program and its participation level, parking assignment and pricing policies. MWCOG and other sources may be able to provide the agency with information about the existing levels of participation in the various TMP services offered in an area.

Evaluate Employee Behavior

As one of the initial steps, it is important to collect information on current commuting behavior, percentages of employees using each mode of travel, the number of vehicles being used to transport employees to the site, arrival and departure times, and employee perceptions and attitudes about their decision to use or not use a particular commute mode. There are four methods of collecting data about employee behavior: surveys, vehicle counts, focus groups, and internal personnel records. The method selected will depend on the program objectives and budget. Each of these methods is described below.

Surveys

Purpose of surveys:

1. Determine current travel behavior (mode split, average vehicle ridership, vehicles per employee).
2. Identify clusters of common employee intents (similar residential location and similar hours).
3. Find out employees' awareness of commute alternatives.
4. Discover attitudes about commuting; interest in ridesharing (why people do not currently rideshare).
5. Determine which incentives or disincentives would cause drive-alone commuters to change their mode of travel.

Tips on surveying:

1. Focus very precisely. Every item should directly address one specific issue or topic.
2. Keep each item brief. The longer the question, the greater the burden on the respondent, which leads to more error and bias.
3. Strive for clarity.
4. Use common words.
5. Use simple sentences. Two simple sentences are better than one compound sentence.
6. Avoid specific sources of bias. Do not ask leading questions.
7. Use structured questions.
8. Classify multiple-choice answers carefully by ensuring that the list of answers is all inclusive, mutually exclusive, and there is more variance in the meaning between categories than within them.
9. Choose appropriate categories.
10. Use scaling effectively to position the answer within some category or along some spectrum.
11. Select appropriate sample size.
12. Place sensitive questions at the end.
13. Supply complete information.
14. Make questions applicable to all respondents.
15. Ask additional questions if one will not result in complete information.
16. Test the survey on objective volunteers.
17. Try to repeat the same questions over time for comparison.
18. For a conservative approach, treat each non-respondent as a drive-alone for existing and future conditions.
19. Do not disregard the probability of conducting a two-part survey instead of one long survey.

Types of survey questions:

1. Open-ended or unstructured questions. Only the question is expressed and not alternative answers are listed for the respondent.
2. Multiple choice or structured questions. Ask a question and list the alternative answers for the respondent to choose.

Vehicle Counts

Purposes of vehicle counts:

1. Determine current travel demand (average daily traffic, peak hour/period traffic, level of service).
2. Identify traffic congestion "hot spots".
3. Determine baseline conditions from which to measure success in reducing trips including time of day.

Tips on vehicles counts:

1. Count vehicles entering and exiting all driveways to the site simultaneously.
2. Count during peak periods, from 6:30 to 9:30 AM and from 3:30 to 6:30 PM.
3. Autumn is the optimal time of year to conduct a count.
4. Count on Tuesdays, Wednesdays, or Thursdays, not around holidays; avoid counting between Thanksgiving through New Year's Day, between Memorial Day through Labor Day, around the Spring Break/Easter season, and during the Jewish High Holy Day season.
5. Count vehicle trips only (not person trips).
6. Count all traffic entering and exiting the facility.
7. Qualified transportation consultants should be contracted to do vehicle counts and/or to collect other data as needed.

Focus Groups

A focus group is a small group of persons (8 to 12) that is selected to represent a cross-section of a large group and assembled to discuss a particular problem, issue, or idea. While surveys focus more on determining quantitative measures of employee behavior, focus groups can better reveal qualitative factors in employee commuting decisions.

Focus groups are developed as a survey technique by companies testing new products before they are released to the market place. Be aware that you can expect to get a slightly higher approval/participation rate from the focus group testing than you will when the idea is actually implemented. The focus group is excellent for testing out new ideas (i.e. get employees reaction), such as a new shuttle bus program or guaranteed ride home program.

Focus group interviews are used as a way of facilitating an understanding of employee needs and feelings towards the commute to work and alternatives to the single occupant vehicle. Focus groups can reinforce the importance of talking with employees in a one-on-one or small group manner to aid project design. As a direct outcome of these sessions, the commute alternatives can be better delineated, the reasonableness of the values of each alternative's attributes confirmed, and the clarity of the survey instruments improved.

The purposes of the focus group sessions could include:

1. Identify employee perceptions of the future commute.
2. Identify important factors determining mode choice and mode captivity, describe ideal systems, and note tradeoffs.
3. Identify groups within target population with access to similar transportation resources.
4. Evaluate performance of components of current transportation systems and identify problems currently faced by employees.
5. Identify the range of policies the federal agency should consider implementing.
6. Test survey instruments or promotional ideas for clarity, length, and reasonableness.

Tips on focus groups:

1. Determine needed level of sophistication.
2. Make participants feel comfortable so you can get their true opinion (e.g., there are not right or wrong answers, their answers will not affect their jobs, do not lead them to an answer, etc.)
3. Prepare a Focus Group Plan.
4. Do not generalize based on focus group findings.
5. Make participants aware that the meeting is for planning purposes and some of the ideas may not be implemented, (i.e., do not create false expectations).

Internal Personnel Records

Personnel records offer an opportunity to roughly estimate the potential for various types of TDM strategies. Depending on the number of employees, home addresses or home zip codes could be plotted on a map and referenced. By clustering similar groups of employees by home location or route to work corridor, the potential demand for services, such as the extension of transit service or a new vanpool, can be assessed.

Access to position titles or grade levels could examine the need for different levels of service and marketing strategies.

Other Sources

Other possible secondary sources of data to evaluate trends and effectiveness of particular measures include the following:

- Management interviews.
- Data collected for other purposes (parking permits).
- Metropolitan Washington Council of Governments (MWCOG).
- Trade associations such as the Association for Commuter Transportation, American Public Transit Association, and Institute of Transportation Engineers (ITE).
- Local planning agencies.
- Local transit and ridesharing agencies.
- Transportation Management Associations.
- Washington Metropolitan Area Transit Authority (WMATA).

4.2 Selecting the TMP Strategies

Step 1: Identify Baseline Traffic Conditions

Division by Modes

Arrival time vs. # of trips

Departure time vs. # of trips

Calculate AVR day and AVR peak

Miles of Travel

Miles vs. # of trips

Total miles

Average miles per trip

Mean

Time of Travel

Minutes vs. # of trips

Total time

Average time per trip

Mean

Number of Parking Spaces

Parking Fees

Levels of Parking Usage; Supply vs. Demand

Calculate (if applicable) LOS of Adjacent Roadways

AVR – Average Vehicle Ridership (AVR)

AVO – Average Vehicle Occupancy (AVO)

Deviations -to include telecommuting

to include compressed work week

to focus improvements during peak hour

Step 2: Define Your Modal "Bias"

1 Transit Favorable

Means that most non-SOV employees arrive by transit.

2 Rideshare Favorable

Means that most non-SOV employees arrive by rideshare.

3 Neutral

Transit and rideshare use are more evenly split.

Step 3: Set TDM Goal

- **Set by Regulation**
- **Target to Satisfy an Internal Goal**
- **Converted to Simple Measures**

Step 4: Develop Modal Shift Reduction Factors

(11 factors of importance)

Least Important	More Important	Most Important
Employer Size	Legal Requirement	Support of Carpooling
Location Density	Support of Transit	Financial Incentives
General Marketing and Support	Support of Vanpooling	Restricted Parking
Alternative Work Arrangements		Parking Charges

Step 5: Develop Different Alternatives

Step 6: Compare Different TDM Strategies

Step 7: Select the TMP

4.3 Implementation Tasks

The Federal agency should have analyzed the work site, identified existing transportation programs, set goals and objectives, evaluated employee needs and concerns, and selected TMP strategies prior to proceeding with implementation. The next step of the process brings these items together in the form of an implementation plan. This section of the Handbook provides an overview of the implementation process and lists many of the tasks that could be considered for inclusion. The ETC is encouraged to contact GSA, Commuter Connections/MWCOG, or NCPC for assistance in implementing some of these tasks.

The sample work statements (provided in the appendix) can be selected as appropriate or edited by the Federal agency to direct the level of effort in preparing, implementing and monitoring a TMP. The listed statements are not inclusive of all possible applications, and the Federal agency may need to supplement this section as needed. Conversely, some sample work statements may not be appropriate for some projects, particularly if information is readily available from secondary sources.

The following provides an outline of the components for inclusion in the implementation plan. A brief summary of each service or product to be offered should be prepared. The plan summary should include:

- Task Description/Objective
- Identification of transportation mode(s) impacted by task
- Description of current and forecasted levels of participation
- Marketing Plan
- Performance measure and monitoring procedures
- Budget
- Timetable
- Responsibilities and staff time allocations

Beginning the Implementation

The following tasks are suggested as initial steps in implementing a TMP:

- Designate the agency's Employee Transportation Coordinator and obtain on-going training for them.
- Determine time and resources available for TMP preparation. Assess the need for outside expertise.
- Contact GSA regarding support for the ETC and preparation of the TMP.
- Contact MWCOG for information about available resources at the regional and local levels.
- Contact NCPC regarding TMP requirements for the agency's planning efforts.
- Contact the locality's Planning Department regarding TMP requirements at the local level.
- From management interviews, determine current policies and programs regarding parking, alternative work hours, and transit subsidies.
- From agency interviews, determine existing and projected parking needs and the official parking requirements. Develop a table that shows the number of spaces needed by type (handicapped, visitor, carpool/vanpool, etc.) and square footage, and the annualized cost per space to build and maintain.
- From zoning/code documents, determine the minimum and maximum amount of site parking space required or permitted.
- List all applicable agencies that provide transit, vanpooling, ridesharing, and other types of transportation services for employees as a resource. Through interviews with those agencies, verify the services provided, level of service (e.g., frequency and distance from transit stop to site), and costs.
- Identify the facilities available to support walking and/or biking to the work site (number of racks, bike lockers, clothes lockers, showers, lighting, and paths).
- Identify the type and quality of roadway, bicycle, and walking access to the worksite, including location of nearest freeways, operating conditions, and proximity to high occupancy vehicle facilities.
- Identify factors that make alternatives to driving alone particularly convenient and attractive (e.g., high occupancy vehicle lanes, tight parking supply, expensive parking)

- Identify the locations of the following local community amenities: cafeterias, restaurants, banks, ATM machines, day care facilities, post office and dry cleaners.
- Formulate program goals.
- Develop and administer the employee survey. The survey results should be compared to previous period results if available, in order to identify any trends or changes in the use of modes. From the survey, the following relevant factors should be identified which could influence existing employer commute patterns:
  - How employees choose to commute by mode (drive alone, 2-person carpool, 3-person carpool, 4+ person carpool, vanpool, transit, commuter rail, walk, bike, telecommute) and how frequently they use each mode to commute each week;
  - Where employees live;
  - Employee frequency distribution by travel time and distance. Produce a histogram of each and calculate descriptive statistics;
  - Interest and acceptability of various alternatives through surveys or focus groups;
  - Arrival and departure time in 15 or 30 minute increments;
  - Occupations of employees;
  - Car availability to individuals (i.e., cars per household, and workers with drivers licenses per household);
  - Employees' predisposition towards each of the modes;
  - Advantages, disadvantages, and willingness to try each of the modes; and
  - The potential for each mode as compared to the existing mode share.
- Determine the proportion of employees who are qualified to use each of the various alternatives (i.e., market potential) under current and proposed conditions.
- Determine the duration of use for each method of commuting (e.g., how long have they been a member of a carpool?)
- Identify the benefits, challenges, and features of options that compete with the agency's programs.
- Catalog the operating and regulatory constraints faced by those competitive options.
- Perform necessary field measurements of traffic levels.
- Calculate current effectiveness measures (e.g., mode split, APO, etc.).
- Establish program objectives.

Selection of TMP Strategies

The following tasks are involved in selecting the appropriate TDM strategies as commuting alternative components of the TMP:

- Prioritize the needs and challenges facing the agency.
- Summarize current strategies including the program, pricing level, promotional effort, and methods of reaching or providing the program to employees.
- Adopt general guidelines for selecting TDM strategies. For example: "Maximize participation in the programs to reduce cost per employee served and cost per employee placed into a commute alternative other than driving alone."
- Propose new strategies or changes to existing strategies.
- Determine whether the TDM strategies under consideration directly contribute to fulfilling the agency's TMP objectives.
- Determine whether selected TDM strategies match the needs of the target employee group.
- Estimate the costs of each TDM strategy selected.
- Evaluate the marketing effort necessary for each strategy and seek ways to improve acceptance or expand the strategy to new groups of employees.
- Determine internal and external channels of providing commuting information to employees on a periodic or continuous basis.
- Develop the program to incorporate commuter information dissemination as part of the new employee orientation program. Consider using the program as a marketing tool to attract potential candidates.
- Create a branding image for the program among employees that is preeminent, distinctive, and employee-oriented. It is advisable to include a program logo and slogan on all marketing materials.

Implementing Selected Strategies

Activities used to implement and market these strategies should be determined based on the strategies selected. A work plan including responsibilities, timeline, and budget should be developed as a guide for implementing the TMP. The following tasks are suggested as steps in this implementation process, depending on the specific strategies chosen:

Personalized Assistance and Ridematching

- Offer "Meet Your Match Parties" - Small gatherings are usually arranged by the ETC to bring together and introduce people from the same neighborhood or zip code. These meetings are informal and can be scheduled during breaks or as a "brown bag" lunch.
- Meet all the new employees and introduce them to the ridesharing program. New employees are usually more receptive to changing their mode of transportation.
- Introduce potential carpoolers to each other.
- Schedule presentations for different departments. Let the employees know who the ETC is and how the ETC can help them.
- Refer potential ridesharers to existing carpools. Track the existing carpools so that in case a carpool or vanpool needs a rider, the ETC can refer a potential carpooler.
- Be available. Let the employees know that the ETC is available to assist them and that they have an "open door" policy.

Vanpooling

- Decide on the vanpooling arrangement that will suit the needs of the federal agency.
- Identify potential vanpoolers based on a plot of employee residences (i.e., density map), an employee survey, or review of employee records.
- Develop employee interest by announcing potential routes.
- Determine potential demand by meeting with identified potential candidates. Combine with "Meet Your Match" parties/gatherings.
- Identify possible drivers among the potential vanpoolers.
- Arrange a gathering for potential vanpoolers if there is enough interest.
- Describe the program components such as cost, insurance, maintenance, etc.
- Select drivers and back-ups.
- Conduct a driving record check on the drivers and the back-ups. Obtain a medical certificate from them.
- Discuss and establish procedures for collecting fares for the first month.
- Order vans and set up a van delivery date in accordance with agency vehicle pool policies. Make arrangements for the bus by working with any of the following: a commuter company, an independent operator, or a charter company.
- Make sure the ETC keeps the vanpoolers interested if there is a delay period.
- Provide on-going assistance once the program is operational and track the ridership.

Transit

- Evaluate the potential for transit usage by assessing access and system availability between employee homes and the work site. Valuable questions include: What is the distance from the transit station to the worksite? Is the scheduling of service compatible with the federal agency needs? Are the areas where the employees live easily served by transit?
- Negotiate with local or regional operators for changes in routes or stops to improve service.
- Provide shuttles to and from transit stops/stations if needed.
- Provide transit information on routes, schedules, fares, both in hardcopy form and on the agency website. Try to customize this to the worksite by setting up a map showing appropriate routes and schedules.
- Provide SmartBenefits to all employees or set up a Commuter Center to sell transit and vanpool fare media.
- Assist in initial trip planning by identifying routes and schedules for employees.
- Promote the transit program by distributing marketing materials and by featuring articles on transit riders in the employee newspaper or other federal agency publications.
- Address employee safety concerns by improved patrols (especially in winter months), enhanced lighting and "buddy system" for transit riders who must walk any significant distance to a transit stop.

Bicycling/Walking

- Provide maps identifying bike routes and walking paths both in hardcopy form and on the agency website.
- Provide bicycle parking that will protect the bikes from the weather and from theft and vandalism. Bike racks, enclosed bicycle lockers, and provision of indoor parking are all popular options.
- Showers and lockers are a necessity for most bicyclists and some of the walkers. If you can not offer such facilities, you may choose to make arrangements with a local health club or with a nearby building.
- Offer your bicyclists and walkers an incentive for not driving to work. If you subsidize carpoolers and vanpoolers, you may choose to also give those who walk/bike a travel allowance.
- Make literature on bicycling safety available.

Subsidies

- Determine the feasibility of charging for parking and/or offering subsidies. Conduct a small survey by calling at least 5-10 other nearby employers and asking them about their parking operations.
- Charge market value for those who opt to drive alone.
- Select appropriate subsidy level (e.g., 25% for 2 person carpool, 50% for 3 person carpool, 100% for 4+ carpools and vans).

Travel Allowances

- Decide on the appropriate amount for a travel allowance. (This may already be determined through an existing agency or Federal government policy.)
- Obtain management support for the program. If the Federal agency currently pays for employee parking, the ETC may be able to demonstrate some cost savings.
- Introduce the program to employees.
- Ask employees who wish to participate to fill out a form on a monthly basis that identifies how they wish to spend their allowance. If employees opt for driving alone and reserving a parking space, the agency may purchase parking passes to maintain the employee tax benefit. If the employee gets cash, it is taxable. For transit passes or vouchers, the amount of the pass or voucher is taxed, unless it is subsidized for $115.00 or less.

Parking Management

- Form an internal committee to evaluate existing parking conditions, to research and inventory parking in the surrounding area, and to develop an appropriate strategy.
- Develop scenarios based on different pricing strategies (if using pricing or travel allowance).
- Make a presentation to management on the different strategies.
- Check labor union agreement (if necessary).
- Introduce the strategy to the employees, while allowing them to offer feedback.
- Implement the strategy by making subsidies/travel allowance available or by adding appropriate signs for preferential parking. For preferential parking, one needs to identify conditions under which employees can participate. This includes: carpool size, how the spaces will be marked, and how the system will be enforced.

Guaranteed Ride Home

- Define program objectives and target market.
- Estimate the number of trips to and from the worksite over a period of time. The federal agency should survey the employees to develop some baseline estimates. Typically, 1% to 20% of eligible employees use GRH resources each year.
- Identify the transportation options that the federal agency will offer in the GRH program.
- Present the program to management to gain their support.
- Establish criteria for eligibility. This includes who may use the program and how often.
- Develop a budget based on the number of anticipated trips, administrative and marketing costs.
- Select vendors for the options that the agency intends to offer.
- Determine fees; GRH service should be free or offered at a nominal cost.
- Write the policies and procedures for the program.
- Determine marketing strategies (e.g., branding, website design, brochures, articles, flyers, etc).
- Tie-in MWCOG's Commuter Connections GRH program if possible.

Commuter Center

- Identify location, office space, and functional requirements for the Center.
- Identify staffing and contracting requirements, and start-up costs.
- Identify available services and any additional service needs for the site; the Center could provide information and sell fare media for local and regional transit agencies.
- Estimate agency demand for farecards, SmarTrip cards, tickets and tokens. Include estimate for number of senior and disabled users.
- Establish approved payment forms and related internal controls (cash, check or credit card on site, or by telephone or mail with check or credit card).
- Develop vendor consignment agreements with service providers.
- Assess need to collect a nominal transaction fee on some items to help cover costs.
- Connect the Commuter Center with the regional ridesharing program, Virginia Railway Express, MARC, Metrorail/Metrobus, and other potential transportation services and amenities for employees.
- Utilize MWCOG resources and displays if possible.

Variable Work Hours

- Determine employee interest by surveying employees or meeting with representatives from different departments.
- Select the appropriate program that has the most realistic chance of success within the Federal agency.
- Solicit management support for the program of choice.
- Appoint a project coordinator. This can be the ETC.
- Involve labor unions and legal counsel in the design of the program. Labor union response to these programs varies. Additionally, legal counsel needs to review labor laws that affect the worksite.
- Develop formal policies for the program through a proposal that describes the rules. Rules are necessary for all logistical issues such as: banking of hours, work day start and end period, core hours, core days, coverage, supervision, etc. Involve federal agency accountants in the policy definition. This will help the processing of payroll, holiday pay, vacation, overtime, etc.
- Review the operational needs of the agency's work units. This includes phone operations, inter-office mail, computer support, etc.
- Identify eligible employees. Some employees may be excluded because they perform vital functions that require their presence during regular business hours.
- Hold informational sessions for supervisors and employees to explain the policies and procedures.
- Address individual concerns and hardships for those who may not be able to participate.
- Start the program by posting employee schedules and by setting a kick-off date.

Telecommuting

- Gather support from key members of upper and middle management. Look for easy successes, and initially persuade managers who are most favorable towards alternative work arrangements.
- Select a telecommuting "champion." The ETC needs to identify someone within the federal agency who will coordinate the various components of the telecommuting program and who would serve as a good spokesperson for telecommuting.
- Form a steering committee from the main departments to be involved in the pilot program. This may include human resources, accounting, representatives from participating departments, information systems, legal counsel, etc. The steering committee is usually chaired by the telecommuting champion or coordinator.
- Develop policies regarding the objectives of the program, frequency of telecommuting, workman's compensation, resources, technology, selection criteria, scheduling, etc., with help from the steering committee.
- Hold sessions to inform the potential participants and their supervisors about the basics of the program, the policies, the selection criteria, and explain why the federal agency is experimenting with the concept of telecommuting.
- Select telecommuters either by surveying the potential telecommuters and telemanagers, or by letting employees participate who have their supervisor's approval and who are willing to work at home.
- Develop a training program to provide telecommuters and telemanagers with guidelines for completing and supervising remote work.

- Evaluate the program at interim periods to document benefits and issues. Conduct focus groups with the telecommuters and the telemanagers to troubleshoot.
- Provide information regarding telework sites.
- If the program is successful, develop plans for expansion to other departments.
- Use the program as part of the agency's COOP plan for business continuity in the event of a natural or man-made disaster

Marketing Strategies

After determining appropriate TMP strategies for the federal agency, an effective ETC will analyze the information collected to determine where efforts to modify employee commute patterns are most likely to be successful. A strategic marketing and branding approach is required to maximize the effectiveness of the program by providing services, pricing levels, promotional strategies at the right time and place to targeted segments of the workforce.

The American Marketing Association defines the process of strategic marketing as "The planning process that yields decisions in how a business unit can best compete in the markets it elects to serve. Strategic market decisions are based on assessments of product market and pertain to the basis for advantage in the market. The plan that is the output of the process serves as a blueprint for the development of the skills and resources of a business unit and specifies the results to be expected. In many companies these are called strategic business plans.." To grow or to adapt to changes in the marketplace, an organization can offer new services and/or enter new markets. Marketing strategies must reflect the federal agency's overall strategic direction.

Depending on attitudes or current commuting conditions, or both, some employees are predisposed to try ridesharing, while others may be more resistant to change. By knowing which employees to target, the ETC can focus their efforts in places that are more likely generate the desired results.

The target population may be viewed in two ways when preparing to market alternative commute modes. The first way concerns employee attitudes such as the willingness to rideshare. The second way concerns characteristics that shape the individual commute of each employee. These include parameters such as travel distance between home and work, work schedules, and proximity of other nearby employees which taken together, may qualify prospective candidates for one form of ridesharing or another.

Commuter Decision-Making Process

Attitudes determine whether those who qualify to rideshare may be willing to actually participate in the program or not. When preparing to undertake the campaigning process, one must not only consider the commute characteristics that qualify individual employees for particular alternate modes and their attitudes about ridesharing, but also how these two aspects interrelate. It is equally important to understand the five-step dynamic nature of the employee's decision-making process and how the TMP needs to address each of the steps:

Awareness: Although employees may be aware of the agency's various commuter programs and services, they still may not possess detailed knowledge regarding their specific benefits and costs. These employees can be labeled as Inform Me. To move to the next step, these employees will require personalized information pertinent to their own specific needs.

Interest: Employees are provided with more information about the TMP's services and discover that it may meet their needs. To move to the next step of inquiry requires a means for facilitating an action by these employees. These employees are asking to Encourage Me. They are employees with a strong interest in ridesharing or other commute alternatives, but who need encouragement to actually change their commute behavior.

Inquiry: At this point, employees are actively seeking additional information and/or assistance. The ETC must be prepared to respond to questions about specific features and real and perceived impediments among these Convince Me employees.

Trial Use: The decision to try an alternative on a part-time or trial basis can allow employees to try new commuting options without committing to a long-term change in behavior. These employees are placing the option On Trial. Positive experiences can lead to the final step - regular use.

Regular Use of Mode: Employees are convinced that the program or service meets their needs. They may require ongoing attention however, to be sure that they

do not revert to their old habits. These individuals can serve as valuable testimonials for convincing co-workers to modify their travel behavior as well. These commuters are the program's Champions. They perceive it to be in their self-interest.

Components of a Marketing Plan

To implement the various selected TDM strategies, the ETC must determine how to utilize one or more of the marketing components of Product, Price, Promotion, and Place. This is a brief overview of marketing. The ETC is encouraged to obtain additional information on the subject and seek specialized training in TMP marketing from MWCOG, GSA, internal agency Office of Public Affairs (OPA), and others. Several examples are provided simply to illustrate the various components of the marketing strategy.

PRODUCT

A federal agency's TMP includes information on the various features of the different potential commute modes and usable transportation facilities, as well as the services provided. The ETC has several options to affect changes to the product including making improvements, opening new markets, backing away from other markets, or eliminating the product altogether.

Changes to the product include the following:

Quality	Improvements in the quality of the information could include maintaining the accuracy of the ridematching database, keeping literature racks filled with the latest transit schedules, or making the information available on the agency website.
Features	Locating providers of van conversions to add "captain chairs" in a vanpool could be an example of changing the product's feature.
Packaging	Matchlists could include "Helpful Hints for Forming Carpools" or "Sample Vanpool Driver/Rider Agreements"
Support Services	Special arrangements for van repair and maintenance services could be made so that repairs could be done on site.

PRICE

Pricing decisions, like subsidizing a program, cross-subsidizing one program from another, or changing market price, are an integral part of the TMP's strategy. Pricing is readily adaptable and generally clear to employees.

Pricing strategies could come in several forms:

Subsidies	SmartBenefits could be offered to employees
Discounts	A Commuter Club could be formed using nearby merchants who provide extra discounts to ridesharers.
Payment Period	Bi-weekly payments might be arranged to cover vanpool expenses.
Payroll Deduction	SmartBenefits could be purchased either using agency-appropriated funds or on a pre-tax basis or through payroll deduction and delivered on a set schedule.

PROMOTION

The promotion or communication strategy is aimed at providing the right message through the right channels to influence employees to take one of the steps in the five-step decision process discussed above.

Promotional strategies include:

Advertising	The agency website, posters, cafeteria table top displays, and rewards provided in exchange for taking some action such as completing a survey or visiting the Commuter Center are examples of advertising tools that could be used. Extolling the benefits to employees in terms of cost savings, etc., are the most effective. Check to see if there are limitations on size and frequency of materials for display. Examine the potential of jointly developing materials with another agency. Leave room for the ETC name and number for more information.
Personal Selling	Carpool formation meetings are effective in addressing specific concerns and bridging the anxiety factor of people facing changes.
Promotions	Transportation fairs and vanpool demonstrations in conjunction with

special events such as National Transportation Week (in May), Washington, DC area Bike to Work Day, Earth Day, Blood Drives, etc. can increase visibility of the program and the ETC. Public agencies often will lend a hand in planning the event.

Publicity — Internal newsletters highlighting people who ride the bus or carpool can foster word-of-mouth advertising (one of the leading sources of referrals for TMP's). An attractive webpage with multiple links to various service providers and relevant information is currently one of the best ways to publicize the different programs.

PLACE

"Being at the right place at the right time" is the fourth component of the marketing strategy.

Place considerations include:

Location — A central, highly visible location for the ETC will foster increased foot traffic, questions, and ultimately sales. A successful operation would have a "store" appearance to foster face-to-face assistance. Acceptance of payment in the form of checks and credit cards will supplement cash and debit card machines. Also, a highly visible location on the agency website will also make it more convenient for employees to use the available on-line services and locate pertinent information.

Inventory — Maintaining adequate consignments of transit passes, tokens, and farecards, as well as schedules, will facilitate increased use.

Coverage — Peak demand for services generally falls in three areas: early morning (before work begins), midday, and late afternoon. Scheduling meetings and breaks around these periods can maintain adequate coverage.

Retaining Commuters through Complaint Handling

Marketing TMP services differs from selling products, such as new cars, in the following ways:

- The end result is intangible - the commuter often cannot easily touch and feel the end result of their decision.
- The commute trip is inseparable from the provider; in other words, transit options are limited to the transit services available in the Washington metropolitan area.
- Lost opportunities are not recoverable:
  - + Studies have shown that a typical business hears from 25-30% of its dissatisfied customers. 40-60% of customers who did take the time to complain about their service experience reported being dissatisfied with the outcome of their complaint. 69-80% of customers who reported being completely satisfied with the outcome of their complaint planned to re-purchase the service.
  - + Studies have also shown that a typical dissatisfied customer will tell eight to ten people about the problem. One in five will tell twenty. It takes twelve positive service contacts to make up for one negative incident.
  - + The average business spends six times more money to attract new customers compared to the amount spent keeping current customers. Yet customer loyalty is in most cases is worth ten times the price of single purchase.

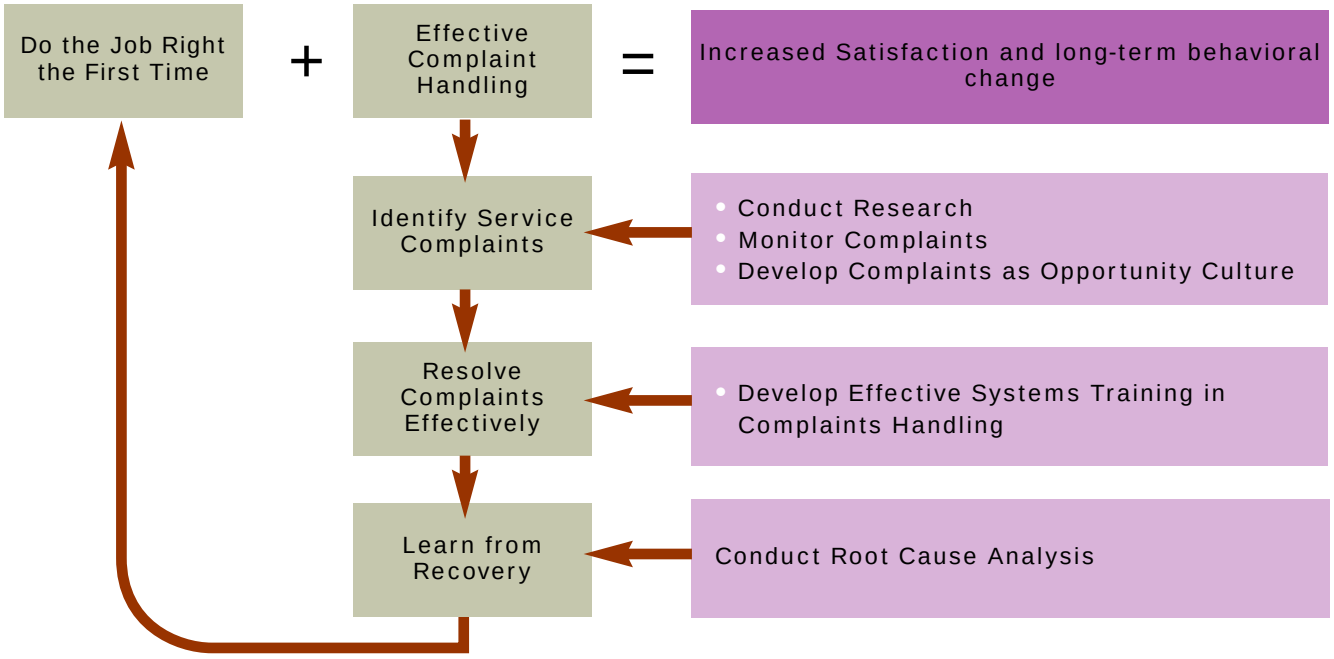
For the reasons listed above, it is essential that customers have a mechanism through which to complain so that any service failures may be corrected. Typical reasons why customers decide not to complain include the following: not worth the time and effort, no one would be concerned about the problem (or resolving it), did not know where to report complaints.

Below is a diagram of an effective complaint handling process:

It is recommended that TMP administrators maintain a service complaint log so that all service failures can be documented. A complaint log will allow administrators to see what, if any, problems are being reported repeatedly. With this knowledge, administrators are able to more easily identify the points of failure, and to more effectively find solutions to customer complaints.

Summary

The challenge is to select the most appropriate TMP services and then tailor the marketing strategy to the federal agency's situation. Under each TMP strategy, there are numerous packaging, pricing, promotion and place decisions to be made. The information collected and analyzed to this point will help the ETC implement the most appropriate strategies selected for their agency.



4.4 Monitoring & Evaluation

What Is Evaluation?

A successful evaluation methodology will use procedures that determine one or more of the following:

- The extent to which the program has achieved its stated objectives (e.g., increases in AVO).
- The extent to which the accomplishment of the objectives can be attributed to the program (direct and indirect effects).
- Degree of consistency between program implementation and the plan (relationship of planned activities to actual activities).
- The relationship of different tasks to the effectiveness of the program (productivity).

Why Evaluate?

There are many reasons for developing a monitoring system, including:

- Requires the federal agency to examine the clarity of its objectives, the ease with which the objectives are measurable, and the possibility of the goals being achieved.
- Helps determine the best way to redirect efforts when it is determined that elements of the program have or have not achieved their desired results.
- Provides staff with data to reinforce their efforts or to recommend new directions in which to move the program.
- Provides management with a tool to direct the organization's TMP into productive channels.
- Shows evidence to other agencies and the public of the diligence and sincerity of the agency.
- Supplies factual information for public relations campaigns.
- Helps other federal agencies anticipate problems in implementing similar programs and provides a measuring stick against which others may measure their success.

Methods of Evaluation

There are several different methods for collecting the data for evaluation purposes. Some of the most commonly used methods involve:

- Employee surveys.
- Program participation documentation (e.g., registrations for preferential parking, applications for subsidies).
- Vehicle counts.
- Time sheets/Activity logs.
- The evaluation method and data collection requirements will depend on the measures of effectiveness being used.

Measures of Performance

Measuring the extent to which the program has achieved its stated objectives (e.g., increases in APO) will include methods to determine:

- What was the change in Mode Split or Average Passenger Occupancy over the year?
- How many people were placed into a carpool per year or per 100 employees?
- How many new vanpools were formed?
- How many people were placed as riders into new and existing vanpools per year?
- How many customers were served?
- How many requests for assistance were filled?
- How many SmartBenefits were provided to employees? What was their sales value?
- Measuring the extent to which the accomplishment of the objectives are attributable to the program (direct and indirect effects) may require designing an evaluation along the lines of the effort used by MWCOG, as follows:
- What is the estimated change in Vehicle Miles Traveled (VMT)?
- What is the estimated change in Vehicle Trips?
- How has demand for parking been affected?
- What reduction in pollutants is estimated?
- How much money did our employees save as a result of the program?
- To what degree did employees try an alternate mode as a result of marketing efforts rather than through existing programs or services of the agency (e.g., employees who form a vanpool on their own)?

Some research indicates that the indirect effects of a program may equal or exceed the direct effects.

Evaluating the degree of consistency between program implementation and the plan (relationship of planned to actual activities) may determine whether for example, the number of matchlists produced were sufficient to form new carpools. Other evaluation techniques include:

- Which implementation tactics were the most effective?
- Were all planned activities carried out on-time and within budget?
- Was the number of carpool formation meetings adequate?
- Was customer response time within the pre-established performance goal (e.g., requests received by 10:00 a.m. will be filled the same day for 95% of the employees)?
- What level of staffing did it take to form and maintain a carpool?

The federal agency and taxpayers will want to see that the investment in the program is being used efficiently and effectively. Benefit/cost ratios or productivity matrices can be produced to provide this measure.

Evaluation Implementation Considerations

There are three basic methods of conducting an evaluation: by mail, phone, or e-mail. The following provides some guidance in achieving high response rates.

The key goal of any commuter survey plan should be to obtain the cooperation of the management of each division and to make them feel involved with the data collection, while retaining control of the survey administration. Inefficiencies due to communication problems, improper methods of distribution, and bad decisions will inevitably occur. The federal agency's ETC must find ways to develop constructive relationships with each division, while maintaining as much hands-on control as possible.

Survey methodologies generally seek to achieve the highest possible rate of response at a reasonable cost. Data derived from surveys with high response rates should be more accurate than data derived from low-response surveys for at least two reasons: 1) a higher response yields a larger data set, which reduces the sampling error for the data; and 2) more importantly, the chance for bias or non-coverage error to skew the survey results decreases as the response rate gets higher.

Independent of the distribution method, the ETC should give close attention to questionnaire design. A good questionnaire should be easily formatted to be distributed by mail, telephone or e-mail/internet. The "menu" below presents the basic elements of a survey. Each survey effort is unique; this list is just a guide.

Selecting the Sample

Respondents are usually selected from some kind of master list that either approximates or actually is the group under study. Typically, a systematic random sampling design is used: the master list is sorted on any of several characteristics that are assumed to be important to how respondents will answer the survey questions. Next, every Nth employee is selected for the survey. The sampling interval is determined by the ratio of total cases on the master list to the desired number of sample cases.

Sample Size

An estimate of the survey response rate can be used to determine what sample size is desired, given the number of completed responses the federal agency wants to obtain. For example, if the federal agency wants to obtain 300 completed surveys, and the Federal agency estimates a response rate of 60 percent, the Federal agency would need to start with a sample size of 500 cases.

After the records are selected, they need to be tagged with an identification number. This number allows for confidentiality (NOT anonymity) of response while also allowing the federal agency to mark off responses as completed, so that the follow-up calls are only made to non-respondents.

Pre-notification of Potential Respondents

Whatever the distribution method chosen, the ETC should take every opportunity to notify employees of the survey in advance. Survey goals should be explained, as well as the consequences of low response. The ETC should be designated as the contact for questions. This information should be circulated by newsletter or bulletin board.

Quality of Packet Materials

There are numerous books available on questionnaire design and formatting. The following points are suggested in questionnaire preparation:

- Generally, the questionnaire should have generous amounts of white space.
- The questionnaire should be as brief as possible while still allowing the federal agency to obtain the desired information. Questionnaires that are too long and/or contain repetitive questions will be met with low response rates.
- There should be no typographical or grammar errors.
- Each question should be clear and have a single purpose.
- Answer categories (if provided) should be unambiguous, exhaustive, and mutually exclusive.
- Questions should be numbered consecutively for ease of data entry; do not divide the questionnaire into numbered sections where question numbers begin at one again, for example.
- Pages should be numbered if the survey is distributed or summarized in more than one page.
- There should always be a question soliciting input, comments, etc.
- Instructions and definitions should be provided in the body of the questionnaire.
- Questionnaires should be reviewed by “fresh eyes” after every significant draft. Where budget and time allow, questionnaires should be pre-tested with actual potential respondents. They will almost always find problems that the person preparing the draft did not see.
- The packet should always have a cover letter or some sort of introduction, even if it is generic, and even if it is made to be a part of the questionnaire itself. The introduction should reinforce the importance and benefits of participation, highlight any instructions for completing the questionnaire, and explain any methodological techniques such as identification numbers for mailing control.
- Official letterhead recognizable to the respondent should be used, with a suitably impressive signature. Sometimes the best signature is that of a mid-level person, but often the highest-level signature is the best.

Degree of Personalization

Recent research shows that, given controlled follow-up attempts, the degree of personalization is the single most important predictor of response rate differences. Generally, the highest effective level of personalization should be used. Personalization becomes ineffective or counter-productive when the information is inaccurate or the subject matter of the survey is extremely sensitive.

Degree of Follow-Up

This is very important to achieving high response rates. To allow for effective follow-up, survey participants must be assigned identification numbers. Survey materials must be marked with this identification number to allow for tracking of response, to avoid unnecessary follow-up mailings and duplication of response.

OTHER SPECIFIC CONSIDERATIONS ARE:

Mail Surveys

Full contact information should be a part of the questionnaire, should the questionnaire be separated from the rest of the packet materials.

Questionnaires should be reproduced to quality standards.

Effective methods of distribution:

- Stamped, first-class U.S. mail to home address
- Metered, first-class U.S. mail to home address
- Bulk rate or other U.S. mail to home address
- Company or internal mail to work location
- Paycheck envelope insert
- Other self-delivered method

Methods that rely on the respondent to pick up the questionnaire will not be effective.

The survey may be personalized with elements such as actual ink signatures on cover letters, instead of copied or machine-generated signatures; actual stamps on envelopes; hand-addressed envelopes; etc.

This identification number should be applied with a stamping device, if possible, because this is a piece of information where personalization is to be avoided. One initial mailing, one post card reminder/thank you, and one follow-up mailing to all non-responders are recommended.

About eight to ten weeks after the first mailing, the project usually winds down, the dataset is considered to be final, and data analysis and reporting can begin.

Telephone Surveys

Telephone survey guides are used. Due the difficulty of reaching some individuals, several (up to four) calls should be made to each person in the sample. The decision to call at work or at home may be a function of the agency or the employee's position.

In cases of low response to interview requests, the federal agency may wish to conduct a brief mail follow-up survey of the non-respondents, in order to estimate whether the rate of non-response is a source of bias, and if so, to what degree.

The mail follow-up should confirm any basic demographic information, as well as collect answers to a few of the fundamental substantive questions on the phone survey. The answers of the non-respondents can be compared to those of the respondents; any large differences would allow the federal agency to estimate the potential effects on the mail survey data of non-response bias.

E-mail Surveys

E-mail surveys are simple and cost-effective. The formatting of an e-mail survey is critical to its success. One of the benefits of e-mail surveys is that employees of a worksite are typically on the same system, resulting in consistency of responses. Turnaround time for response is also good.

One of the pitfalls of e-mail surveys is that employees might perceive them as simply more "junk" e-mail and be less likely to respond. E-mail is also a less formal means of communication and therefore may not carry the weight or authority of actual mailings.