

# Chapter 7 - Transportation Demand Management

## Transportation Demand Management

Transportation Demand Management (TDM) is a set of planning processes, strategies, and policy decisions that are aimed at relieving congestion and improving efficiencies of the transportation infrastructure. TDM strategies result in more efficient use of transportation resources and provide a variety of economic, social, and environmental benefits. This section will focus on TDM strategies that are, or could be used in the Richmond region.

### RideFinders

RideFinders, a division of the GRTC Transit System, is the regional non-profit TDM/rideshare agency that works to move more commuters in fewer vehicles around the Central Virginia region. RideFinders' efforts help increase the efficiency of the region's transportation infrastructure, protect the air quality, enhance the quality of life, and sustain a healthy economy. RideFinders' mission is to foster increased efficiency of the transportation system by influencing travel behavior by mode, time, frequency, trip length, or route. The expected results are: reduction of traffic congestion, energy conservation, improved air quality, and a reduction in transportation-related expenditures of individuals, employers and governments.

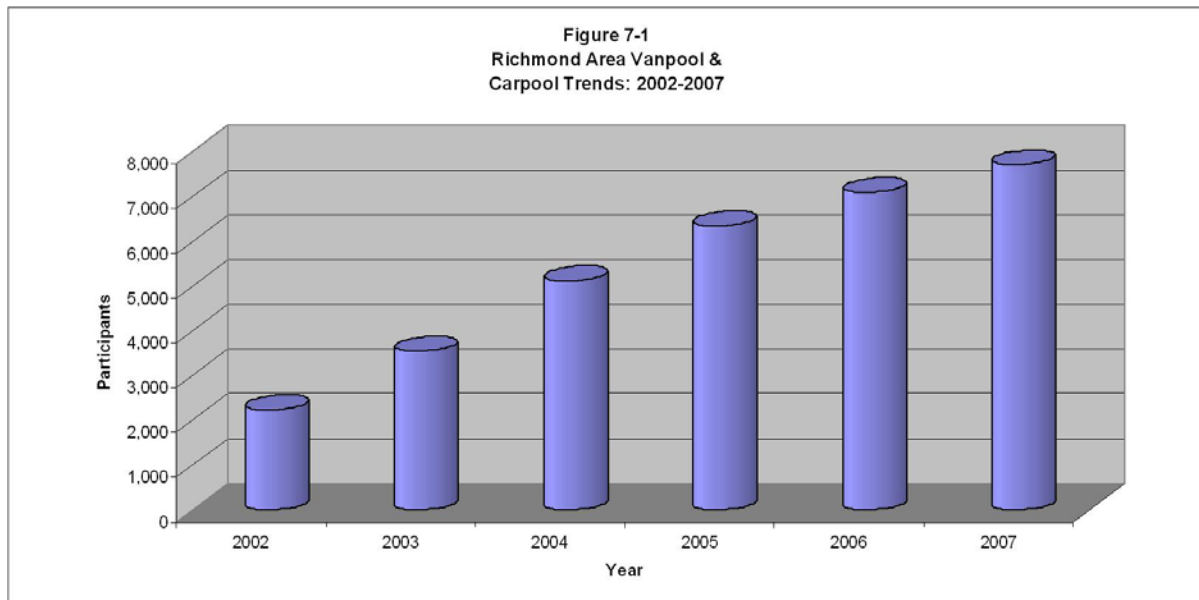
The list below contains the programs and services RideFinders provides for commuters and employers throughout the Central Virginia region.

- Transit Information and transit media
- Vanpool Formation Services
- Carpool Matching
- Telework Consulting
- Clean Air Program
- Downtown Commuter Guide
- Emergency Ride Home Program
- Transportation Planning
- Employer-Based Marketing
- Employer Relocation and Site Analysis Services
- Commuter Choice Program Development
- Bike and Pedestrian Commuter Service
- Park and Ride Lot Information

Carpooling is the sharing of rides in a private vehicle among two or more individuals and is the most common type of TDM alternative to driving alone. In addition to a matching service to help form carpools, RideFinders provides management for a fleet of approximately 68 vanpools serving Greater Richmond locations. Vanpools are an important alternative to driving alone, falling midway between transit and carpools in terms of carrying capacity and flexibility, economics, and convenience to the user. Vanpools usually involve groups of seven to fifteen people – mainly commuters – traveling together in a passenger van on a routine basis.

The vanpools managed by RideFinders serve commuters in areas such as Brandermill, Stephens Church, Amelia, Chester, Chesterfield, Colonial Heights, Mechanicsville, Hopewell, Sandston, Bottoms Bridge, Ladysmith, and Midlothian. In addition, RideFinders vanpools serve long-distance commuters to Washington, D.C. and Blackstone, and from Hampton, Charlottesville, Williamsburg, Newport News, Gloucester, Fredericksburg, and Orange, Virginia.

The graph below shows that, for the six year period, vanpool and carpool participation grew at an average annual rate of approximately 30%, from around 2,234 participants in 2002 to around 7,722 participants in 2007.



Source: RideFinders FY 02 - FY 07

Not all carpools and vanpools in the Richmond area use the services of RideFinders, so it is not known precisely how many carpools and vanpools operate at any given time. Previous Census data indicates that the commuter mode share for carpooling and vanpooling was approximately 12 percent. Note that a transportation household survey is planned to be conducted for the Richmond area in 2009; this should result in an updated estimate of the mode share for carpooling and vanpooling.

With regard to vanpools, market penetration need not be limited to trips of 20 miles or more if favorable economics and commensurate time-savings are made available. This can be achieved through subsidy programs, single-occupant vehicle (SOV) parking disincentives and development of such time saving measures as preferential high-occupancy vehicle (HOV) lanes, access and parking.

## Employer Complementary Support Measures

Driving alone is such a long-standing habit for most commuters that few even think of trying an alternative without encouragement and assistance. Providing complementary programs and services that increase commuters' awareness of their alternatives, enhance the convenience of using an alternative, as well as reduce the need for a personal automobile during the workday, are important support measures that employers can offer.

Complementary programs and services fall into three categories: TDM program marketing, site amenities and design, and supporting activities.

### TDM Marketing

As a complementary measure, program marketing features dissemination of information on available TDM services and incentives to the public at large, the business community, or targeted to specific travel markets. Program marketing often also includes personalized trip planning assistance and special promotional activities such as transportation fairs or Commuter Information Days that can increase commuters' interest in ridesharing.

Marketing of TDM can be directed to commuters at several geographic levels: regional, local area, and individual employers. Regional marketing typically is sponsored by regional ridesharing or planning agencies, transit operators, and local governments. These agencies often promote the use of TDM generally, but some regional programs target the use of specific regional strategies or services such as public transit. Regional commute groups increasingly focus on employer-based TDM marketing activities because of their greater effectiveness in promoting TDM to employees.

TDM marketing can also be targeted to a smaller audience in a defined local area, for example, an employment, shopping, or residential complex. Developers and property managers are often the sponsors of these programs generally as a condition placed on the development project by a local planning board. TDM marketing in a local area can also be sponsored by groups of employers and/or developers (e.g., transportation management associations). To these groups, joint marketing could result in cost savings over individual promotion. At employment sites, local area marketing is often targeted to new tenants by the leasing agent or building manager. Residential-based programs often target new residents through realtors and property managers.

The third geographic level of program marketing is at an individual employment site. Here, marketing is done by employers who promote use of TDM options to their employees. Employer marketing efforts do sometimes include general promotion of TDM, but most often market the specific TDM services and incentives provided by the employer or options available only to employees at that site.

There are three components of TDM marketing that warrant attention: information dissemination, transportation coordinators, and special promotions.

- Information Dissemination – Regional distribution methods might include mass mailings, websites, newspaper, radio and television advertising, and roadside signs. At

individual employment sites, information dissemination typically relies on posters, bulletin boards, flyers distributed desk-to-desk, in-house newsletters, broadcast e-mails, new employee orientation, paycheck inserts, voicemail announcements and periodic promotional events such as transportation fairs. Local area information dissemination utilizes mass mailings to new tenants or new homeowners, information distributed through realtors and building managers, Chambers of Commerce, posted notices, newsletters, website links, and promotional events.

The most basic level of information dissemination is passive postings, such as carpool ridematch boards, information “take one” displays, kiosks, mass mailings, and roadside signs that inform commuters of assistance available from a remote source such as a regional ridesharing agency. At this level, the commuter must make the effort to follow-up with a call or mailback card to receive more information.

The highest level of information assistance is provided by a commute information center, centrally located within an employment area, at a transit station, or at an individual employment site. At this level, the commuter still makes an effort to use the center’s resources, but receives immediate, personalized assistance. These centers are staffed, generally full-time, and provide both information on available services and personalized commute planning. RideFinders’ Commuter Store, located in downtown Richmond, serves as an outlet for distribution of transit fare media, personalized ridematching assistance, and other commute-related products and services.

- Transportation Coordinators – Transportation professional liaisons a.k.a. Transportation Coordinators or Employee Transportation Coordinators (ETCs), offer individual trip planning assistance at employment sites, as well as performing more general marketing and information functions. At employment sites, the ETC generally serves as the administrator of the company’s commute program and manages the program’s development, implementation, marketing, administration, and evaluation. At some job sites, the ETC position is a full or part-time position. In the Central Virginia region, most of the ETC job functions are incorporated as a part of an already established position. ETCs are at the heart of RideFinders’ efforts to help Central Virginia maintain the region’s air quality and reduce traffic congestion. RideFinders offers free training, recognition opportunities and total support to these liaisons to the business community.
- Special Promotions – TDM marketing often includes special promotions such as periodic prize drawings, contests, awards for ridesharing, commuter or bicycle clubs, and other activities to attract the attention of commuters, generate excitement about the use of commute alternatives, and reward ridesharers. They are often sponsored in conjunction with area-wide commuter promotions such as annual *Try Transit* ridesharing week, *Clean Commute Day*, or *Air Quality Action Days*. Special promotions are widely used, especially at employment sites, in part due to their low cost and high publicity value. In addition, transportation or rideshare organizations may appeal to the general public through mass media commercials on television, radio, press releases, and public service announcements.

While RideFinders provides all three of these methods, a role still remains for local jurisdictions and the MPO to encourage the use of these available resources by more businesses within the Central Virginia region.

### Site Amenities and Design

Many employment sites, especially those in suburban areas, were designed with the expectation that employees would primarily arrive by private automobile. The goal of the second group of complementary programs, site amenities and design, is to change the work site to make it more “friendly” to commute alternatives.

- “Rideshare Friendly” Work Site Design – This refers to work sites that: accommodate the space and maneuvering needs of transit and vanpool vehicles; provide safe, attractive rideshare loading areas and preferential parking areas; and minimize the walking distance for high-occupancy-vehicle (HOV) commuters. Some sites also target the special needs of bicycle and pedestrian commuters. They include bicycle parking protected from theft and from weather, showers and personal storage lockers, and bicycle maintenance facilities.
- On-Site Services – On-site services include cafeterias and restaurants, dry cleaners, ATMs, convenience shopping, video rental stores, printers and copy shops, and other personal or business-related service establishments commuters need to perform workday errands. Availability of service establishments on-site or within walking distance can minimize both the true and perceived need for a personal auto.

Again, RideFinders has a strong and vested interest in working with developers regarding site design issues. However, this activity is best left to local jurisdictions during the design review and negotiation phase rather than attempting to retrofit existing developments.

### Supporting Services

Supporting services are program elements that address two concerns that commuters often have about use of commute alternatives: the fear of being stranded without transportation in the event of an emergency and the fear that use of ridesharing will hinder their advancement in the company.

- Emergency Ride Home (ERH) Programs – These programs, also called guaranteed return trip, are “commuter insurance.” ERH programs offer free or subsidized emergency transportation, generally by taxicab or rental car, to commuters who use alternative commute modes to address concerns about being stranded without transportation, responding to personal emergencies, or working late unexpectedly. RideFinders has an ERH program for registered carpool or vanpool commuters, cyclists and pedestrians, and bus riders. When registering, they must certify that they are committed to this alternative mode at least three days a week.
- Corporate Commitment – Corporate commitment reflects a willingness of upper level corporate management to devote resources to the TDM program, provide tangible incentives, establish a corporate “culture” that supports employees’ use of commute alternatives, and to participate in local and regional transportation-related programs. It

is typically demonstrated by an extensive package of incentives offered to commuters, but also includes supportive work environment policies. Strong corporate commitment is sometimes manifested by ridesharing among corporate executives.

## **Preferential High Occupancy Vehicle (HOV) Treatments**

HOV facilities are designed and operated to give rideshare commuters priority treatment. Preferential HOV facilities are an effective way to encourage travelers to use higher-occupancy modes of travel by allowing rideshare commuters exclusive use of HOV lanes. The resulting reduction in travel time serves as an incentive to encourage use of HOVs.

HOV lanes are introduced two ways:

- Add a Lane: The HOV lane(s) are introduced as entirely new capacity.
- Take a Lane: The HOV lane(s) are introduced by reallocating current facilities, thereby taking capacity away from existing traffic.

While adding a lane has been successful nationally, taking a lane has generally not been embraced by citizens.

Programming HOV facilities relies significantly on available resources and the ability to dedicate those resources toward an HOV project. Increasingly, federal and state funding programs and regulations (such as the federal Clean Air Act, Congestion Management System requirements, and local traffic mitigation ordinances) may place higher priority on the inclusion of HOV facilities in state and regional transportation system plans. Currently, the Richmond area has no HOV facilities nor does it have any planned.

## **Economic Incentives**

Two key factors in the decision to use one mode over another are the relative time and costs. Financial incentives, termed user subsidies, offered directly to commuters by employers or public agencies, have been effective. Recent studies have concluded that subsidies are a frequently present component of effective employer trip reduction programs. Most commonly, subsidies are provided by employers who need to reduce parking demand or to alleviate access problems. Alternatively, public agencies may offer subsidies to commuters to achieve localized or area-wide trip reduction goals.

Some of the more common subsidy programs include:

### Employer/Developer-Provided Incentives

- Transit Pass Subsidies: An agency purchases transit passes, tickets or tokens for employee use. The agency can either cover the full cost, share-the-fare with the employee, or pre-tax the fare cost. In other cases, the employer agrees to reimburse employees for their purchases. Currently 24 organizations are enrolled in the GRTC Transit System electronic farecard program.

- Vanpool Operating Subsidies: Vanpool subsidies can take many forms. Employers that provide the vehicles, underwrite insurance and capital costs, or help employee groups arrange vanpool leases are providing an “in-kind” form of financial incentive. Commuter Choice allows employers to subsidize up to \$115 per month per employee vanpool participant to help defray the out-of-pocket costs.
- Rideshare Subsidies: Rideshare subsidies represent a means to more equitably implement a financial incentive by allowing employees to choose the alternative that best suits their travel needs, and then apply the rideshare subsidy to that mode.
- Other Financial Incentives: Other financial incentives that provide a real, monetary incentive to using alternative travel modes do not involve direct subsidy payments to users. These include:
  - use of fleet vehicles for ridesharing
  - free or discounted fuel for pooling vehicles
  - free or discounted maintenance and repair for pooling vehicles
  - extra vacation for commute alternative users
  - free or discounted equipment (shoes, bicycle helmets)

#### Public Agency-Provided Incentives

- Transit Fare Discounts: Fare discounts targeted to commuters are fairly rare, because commuters represent "choice" riders (i.e., having a choice of commute options). Service is generally the most costly to operate during the peak periods, and premium express-type commuter service most often commands a fare surcharge, not a discount. However, transit operators have experimented with free fares to increase ridership.
- Transit Subsidies: While "user-side subsidies" are prevalent in elderly and disabled services, some limited examples exist of public sector agencies offering commuters direct subsidies for using transit. In some cases, cities or counties match employer transit subsidies. In other cases, transit operators sell passes to employers at a discounted rate if the employer provides a subsidy match. Finally, some public agencies have provided free transit tickets to commuters to use transit on a trial basis.
- Vanpool Start-up Subsidies: Some public agencies have subsidized the start-up costs of vanpools. This is accomplished by either providing a one-time start-up incentive to new vanpools or subsidizing all or part of an individual's vanpool fare for the first few months of operation. RideFinders' VanStart program, as well as the VanSave program, subsidizes the cost of empty seats. VanStart provides a temporary subsidy for a short, one-time period to allow the vanpool time to get the necessary number of riders to fill the vanpool. The owner-operator or van lessee must register the vanpool with RideFinders and request VanStart assistance within the first (3) months, and the van must already have at least 50 percent of its passenger capacity filled. VanSave is a program that allows existing vanpools that have suffered a loss in riders to continue to operate until riders can be built up to a break-even level. The vanpool must have been operating for at least six months, be registered with RideFinders for at least 30 days, and must have lost at least 25 percent of its passengers for more than 30 days.

Perhaps another effective method for providing user subsidies and transit discounts is to provide financial incentives to employers rather than directly to travelers, so as to reinforce in-house trip reduction programs and assist in compliance with requirements. Revenue for public subsidies can come from a variety of sources. User fees, such as parking revenue or taxes, can be utilized. Business taxes and developer fees can also be utilized. In addition, municipalities can secure federal grants for pilot programs. The City of Richmond Employee Trip Reduction Program implemented in January 2004 is an excellent example: using a mix of federal, state and local funds, to date approximately 1,000 employees or 20 percent of the City's workforce have enrolled in the program, with about half of those enrolled using the program on a regular basis. The program provides transit swipecards for participants, as well as vanpool subsidies for certified vanpool riders.

Subsidies, when combined with parking charges, produce the most effective programs examined to date. This suggests that the inclusion of financial incentives in TDM programs is a critical consideration for developing an effective program.

As an example, the Commuter Choice Program, operated by RideFinders, refers to the Internal Revenue Code [(26 USC 132(f)] which permits employers to offer employees a tax-free benefit to commute to work by bus or vanpool. The Commuter Choice Program provides an attractive incentive for employees to choose public transit or vanpools. Employers select one of several program options to implement. Almost fifty (50) Richmond area employers participate in the Commuter Choice Program, some of which include the following:

- Chippenham-Johnston Willis Hospital
- City of Richmond
- Department of General Services
- Department of Minority Business Enterprise
- Federal Bureau of Alcohol, Tobacco and Firearms
- Federal Highway Administration
- Fourth Circuit Court of Appeals
- Joint Legislative Audit and Review Comm.
- Library of Virginia
- Office of the Attorney General
- Senate of Virginia
- Troutman Sanders
- Tucker Pavilion
- University of Richmond
- U.S. Dept. of Housing and Urban Development
- Va. Board for People with Disabilities
- Va. Dept. of Agriculture
- Va. Dept. of Conservation and Recreation
- Va. Dept. of Correctional Education
- Va. Dept. of Corrections
- Va. Dept. of Criminal Justice Services
- Va. Dept. of Environmental Quality
- Va. Dept. of Forensic Sciences
- Va. Dept. of Health
- Va. Dept. of Juvenile Justice
- Va. Dept. of Medical Assistance Services
- Va. Dept. of Rail and Public Transportation
- Va. Dept. of Transportation
- Va. Employment Commission
- Va. House of Delegates
- Va. Information Technology Agency
- Va. Lottery
- Va. Retirement System
- Va. State Police
- Va. State Corporation Commission
- Va. Transit Authority
- VCU Dental School
- VCU Health Systems

## Parking Supply and Pricing Management

The development and management of parking supply involves many public and private sector groups. The public sector plays several roles in parking supply:

- Localities set "parking requirements" in codes. Requirements in zoning codes usually vary with the type of land use.
- Some localities build and manage off-street parking supply.
- Localities control supply and regulation of on-street parking.
- Localities influence rates charged by private providers of parking.

The private sector also has an important role in parking. Where the market allows, commercial parking operators provide and price surface lots and garages available to commuters and shoppers.

Policies that influence parking supply, price, and location raise equity issues across affected parties. For example, supply or pricing changes at an activity center, whether downtown or suburban, may favor or disadvantage activity center growth and the economy relative to other centers in a region.

### Parking and Demand Management

Parking is a vital element of any Transportation Demand Management program. Research has shown that parking pricing is, by itself, just as effective in reducing trips as a combination of several demand management strategies implemented without parking pricing. Therefore, the MPO and area local governments should examine parking policy as an integral part of any demand management program.

Localities can integrate parking into their demand management efforts through two broad approaches: pricing and supply management. Note, however, that several of these measures require approval at the state level before they can be considered.

### Pricing

Parking pricing can serve the objective of trip reduction. Methods such as increased rates or surcharges at public and private facilities, removal of parking subsidies, implementation of regulations and agreements encouraging parking pricing as a demand management measure, changes in commercial parking rate schedules, parking taxes or other means, can reduce vehicle trips significantly.

Objectives will determine what strategies and policy instruments should apply. For lessening localized traffic problems, parking pricing or subsidy removal or changes in public parking rates at employment centers will be effective. However, to achieve regional objectives of improved air quality or trip reduction on routes traversing several jurisdictions, multi-jurisdictional pricing efforts are necessary.

It is important to appreciate that pricing can also bring results opposite to those desired. For example, pricing can divert some parkers to alternative parking facilities or shorten their parking stay. Planners need to anticipate these possible results along with mode shifts.

Governments may take several approaches to pricing parking. They may:

- Impose or increase fees and surcharges for solo drivers or long-term parkers in public parking facilities
- Give price preference to carpools and vanpools.
- Tax the providers of parking
- Impose parking pricing through regional regulations
- Tie funding allocations for road improvements to requirements for local trip reduction plans incorporating parking pricing

Employers also can play a role in pricing. They may:

- Remove, reduce or cash out employer-provided parking subsidies
- Reverse "early bird" or monthly discounts favoring long-term commuter parking
- Impose parking pricing and discount parking for carpools where free parking prevails, or where carpools enjoy no price breaks
- Develop parking regulations and pricing for commercial and retail mixed-use areas and manage and enforce parking

### Supply Management

Parking supply measures support the objective of trip reduction. Revising minimum or maximum rates, allowing below minimum rates in proximity to transit or for demand management programs, and providing shared parking at mixed-use developments are important considerations in a trip reduction program.

As with pricing, program objectives will determine what strategies and policy instruments should apply. For new developments in proximity to transit, maximum rates and controls on street parking will provide incentive for transit use. Adding carpool stalls where supply is limited will provide an incentive for pooling, especially where stalls can be located near to building entrances. Also worthwhile are flexible requirements allowing for reductions in normal on-site minimum parking requirements in return for support of ridesharing and transit encouragements, peripheral parking and transit facilities.

Localities influence the supply of parking at and around developments through:

- Parking code measures
- On-street controls (meters, timed zones)
- Controls on the amount of parking built and operated by the public sector

Localities can exert the most direct control over parking supplies through the zoning code. Parking codes establishing the amount of parking developers must provide can be set with low minimums and/or maximums to insure overly ample supplies are not provided. Or, localities can allow reductions in minimum requirements in return for traffic mitigation.

## Variable Work Hours and Compressed Work Weeks

Work hour management is an important component of travel demand management because work hour policies contribute heavily to peak hour congestion. There are three types of variable work hours with potential application as demand management tools:

- Staggered work hours - Staggered hours are staged starting times set by employers.
- Compressed work weeks - Compressed work weeks allow employees to work more hours in fewer days than the usual eight-hour per day schedule.
- Flextime - Flextime allows employees to set their own arrival and departure time within a band of time.

Employees and employers may find alternative work hours improve quality of life issues, traffic congestion, and employee performance. Variable work hour programs in settings where workers need and want more flexibility in their schedules may reduce absenteeism, tardiness, and turnover.

RideFinders routinely introduces flexible work arrangements when promoting TDM strategies to local employers. Many organizations throughout the Richmond region have begun their own variable work hour programs with (and without) the assistance of RideFinders.

## Teleworking

Teleworking is a demand management strategy for reducing home-to-work trips by allowing employees to work at home or in a telework center. Teleworking employees usually work at home one to several days per week, but generally report to a central office location on the remaining days. To be able to work at home, employees are linked to the work place by computer and modem and other electronic communication devices.

Not only can the strategy reduce the number of work trips, it may dovetail with other employer objectives including improved morale and productivity. A recent nationwide study conducted showed a 63 percent increase from 2004 to 2006 in the number of employers who allowed their employees to work remotely at least once per month. The increase went from 7.6 million in 2004 to 12.4 million in 2006. (Source: "Telework Trendlines for 2006," WorldatWork.)

The Telework!VA program provides incentives for Virginia businesses to establish or expand telework programs for employees. The Telework!VA program was launched by the Virginia Department of Rail and Public Transportation (VDRPT) to help reduce the number of commuters on Virginia roadways. Telework!VA provides guidance to companies on how to design a telework program, offering step-by-step instructions, case studies of successful implementation, and other resources including financial incentives.

Participating employers must be either a private for-profit business, or a nonprofit organization classified as such under Section 501(c) of the Federal Internal Revenue Code, and must have a location with 20 employees or more in northern Virginia, the greater Richmond area, or the Hampton Roads area to be eligible for the Telework!VA financial incentives.

The program reimburses a percentage of costs employers incur. Eligible expenses include, but are not limited to, leased equipment such as computers, fax machines or modems, or telework center space of up to \$3,500 per employee. Businesses are eligible for reimbursements of up to \$35,000.

Although it is difficult to estimate reductions in transportation demand specifically due to teleworking, according to market research posted by VDOT, 14 percent of Virginia's workforce is estimated to telework. And, over half of the workforce would like to join in if their job position allowed. When financial incentives are offered, over one-third of top management of both small and large businesses would be willing to consider a formal telework program like Telework!Va.

RideFinders is the point source for information and assistance in central Virginia for the TeleworkVa! incentive program. RideFinders has provided program administration assistance to the following local area employers: Dominion Aviation, Covington Travel, Dunmar, Family Focus, Uptime Solutions, Tec Access, Peoples Income Tax, Keener Communications, Instant File System, Party Perfect, Creative Office Environments, Astyra Corporation, Sermat Construction, Exhibit Inc., and Elite Fence.