



Smart Growth America
Making Neighborhoods Great Together

Transportation Demand Management

State of the Practice

2013

Transportation Reform Demonstration Project:
Creating jobs and economic development in Michigan by
removing barriers to coordinated federal, state and local
public transportation investment and management

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PURPOSE

The purpose of this document is to provide an overview of the state of the practice for transportation demand management (TDM). This document will be incorporated into project reports identifying framework strategies for TDM for the communities of Grand Rapids, Washtenaw County, and the greater Detroit region.

These communities have chosen to investigate TDM strategies under the Michigan Sustainable Communities Smart Growth America Support Project. Strategies will build from existing conditions to pursue (or set) national best practices for transportation demand management for the region while serving as a statewide and national model for other communities.

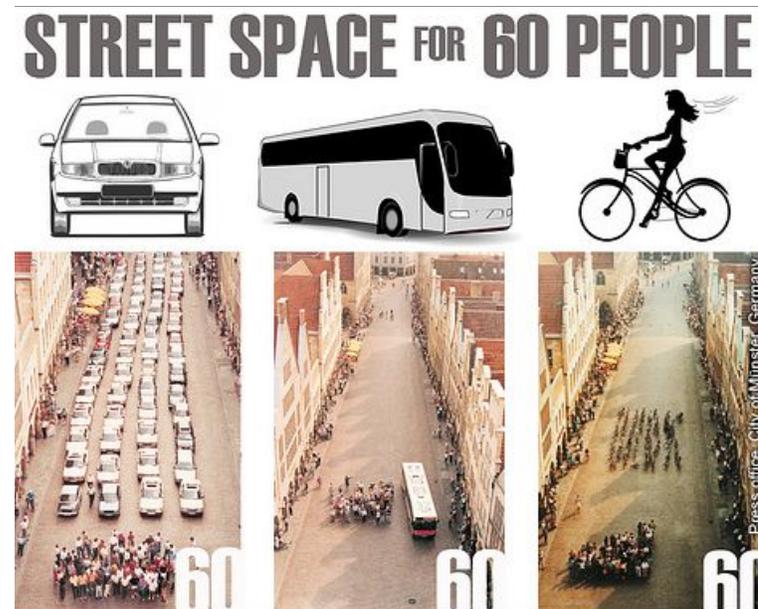
This document will be used in the first stage of the planning process as an assessment tool for helping to determine a strategic focus for each community. Community representatives and the consultants will use this document as a framework for assessing where each community's transportation system is strong and what elements hold the greatest potential for improvement.

TRANSPORTATION DEMAND MANAGEMENT OVERVIEW

Despite common perception, few places have a consistent traffic problem – they have a rush hour problem. The nearly universal hours of the traditional workday means that legions of workers, students, and visitors hit the streets at the same time – generally between 7:30am and 9:30am in the morning and 4:30pm and 6:30pm in the evening. This means that streets and highways are congested and challenged to operate efficiently during these select hours of the day, but generally have abundant capacity during all other days and times.

Transportation Demand Management (TDM) seeks to do two things – 1) promote more efficient modes of travel to move more people in the same amount of roadway space (Figure 1) and 2) spread the travel demand across more hours of the day to take advantage of space and capacity when it's available (Figure 2).

Figure 1 Roadway Space Consumption



Road space occupied by 60 people in cars, a bus, and on bicycles
Source: City of Munster, Germany

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TDM is a general term for strategies that increase overall system efficiency, most often by encouraging a shift from single-occupant vehicle (SOV) trips to non-SOV modes, or shifting trips out of peak periods. TDM seeks to reduce auto trips – and hopefully vehicle miles traveled – by increasing travel options, by providing incentives and information to encourage and help individuals modify their travel behavior, or by reducing the physical need to travel through transportation-efficient land uses. The cumulative impact of a comprehensive set of TDM strategies can have a significant benefit on system efficiency, accommodation of new growth, and success of a metropolitan area. TDM programs are usually implemented by public agencies, employers, or via public private partnerships.

Figure 2 Time of Day Capacity Constraints



Peak Direction Rush Hour Traffic - Washington, DC

Source: <http://livewirepast.wordpress.com>

LEADING PRACTICES

TDM is a common term today. Most places associate it with measures such as transit benefits, carpool matching, and telecommuting. All are very important measures, though still often only lightly used, but the leaders in transportation demand management go much farther in adopting comprehensive and ambitious strategies. Leading practices include:

- Integrated TDM programs across multiple employers and institutions closely coordinated with the municipality and transit authorities;
- Strong regional leadership and coordination of transportation demand management strategies, often including mode split targets with regular measurement and reporting of performance and progress;
- Pricing and incentives to influence mode choice and travel demand;
- Adoption of public policies that imbed transportation demand management (and predictability) into the land development process; and
- Broad and effective public outreach and promotion programs that not only improve the public's awareness of alternative modes, but actively assist them in their day to day travel planning and choices.

Integrated Transportation Demand Management

Standard transportation demand management practice is often employer-based, and these programs can be highly effective. More effective, however, is the integration and coordination of TDM strategies across multiple employers in an area. Coordination avoids the “tragedy of the commons” where one employer bears the burden of reducing employee auto trips while a competitor's employees get a “free ride” even while the net effect on the system diminished. The

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integration of TDM measures such as employee shuttles not only has cost efficiencies for all participants, but makes a more efficient system overall for employees, roadway networks, transit providers, and the general public as a whole.

Often this integration and coordination occurs through a voluntary member-based and controlled Transportation Management Association (TMA). TMAs work in close collaboration with local authorities, but are frequently privately funded and operated. Model TMAs allow the participation of large and small employers alike to enable even small employers to provide comparable travel services to their employees. Pooling resources dramatically improves the economic efficiency of all

Mayo Management in Rochester, MN

The Mayo Clinic in Rochester, Minnesota is the largest integrated medical center in the world and a flagship presence in the city. In 2010, the city of Rochester adopted a comprehensive mobility plan that included aggressive mode split goals for 2030. Recognizing the value they had in the city, and the value the city goals held for them, the Mayo Clinic has partnered with the city to establish a transportation management association to implement a host of programs including expanded TDM offerings at the clinic and an extensive commuter bus system from outlying areas. The city and institution continue to collaborate on a bicycle master plan and bike share feasibility study.

and the trip reduction effectiveness of TDM measures.

Leadership and Performance Measurement

Highly successful TDM programs often have at their root a strong champion and leader. Some regions have dynamic political leaders who eloquently make the case for collective action in managing travel demand. In other places, a major institution leads by example, encouraging other area employers or generators to join in the effort.

Equally important to leadership, is defining a measurable goal and regularly evaluating progress toward it. We achieve what we measure, goes the old adage. Today's leading regions set mode split targets, define strategies and policies to achieve them, establish appropriate measures for performance, and standardize data collection and reporting schedules and responsibilities.

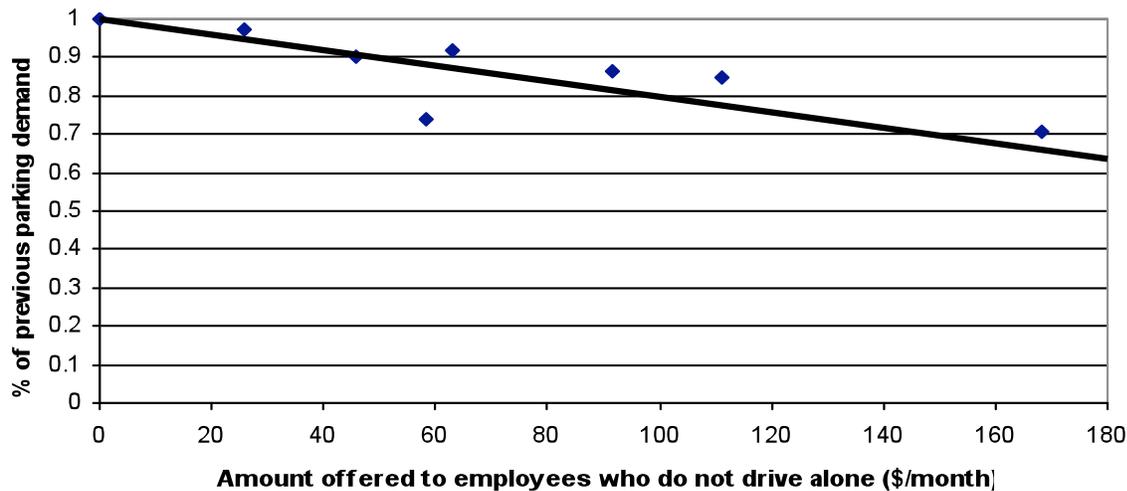
Santa Monica's "No Net New Trips"

For decades, Santa Monica politics had been dominated by growth opponents who used traffic fear as their primary tool for stopping development. The city's award-winning 2011 Land Use and Circulation Element update, however, commits to no net increase in vehicle trips, by locating new growth with transit, establishing new neighborhood retail centers, imposing a multimodal transportation impact fee, and enacting robust Transportation Demand Management requirements. To implement the plan, the city is writing new (and updating existing) ordinances, and investing in multimodal transportation options. Santa Monica's General Plan is the first plan in the State of California to significantly exceed statewide Greenhouse Gas reduction targets.

Pricing and Incentives

According to the Encyclopedia Britannica, “So long as they are not artificially controlled, prices provide an economic mechanism by which goods and services are distributed among the large number of people desiring them.” Similarly, incentives or benefits are a means by which to compensate travelers for the inconvenience inherent in certain modes of travel. In transportation demand management, these two mechanisms most often materialize in parking rates, road tolls, and transit programs.

Figure 3 Effects of Parking Cash-Out on Parking Demand



Source: Derived from Donald Shoup, “Evaluating the Effects of Parking Cash Out: Eight Case Studies,” 1997. Based on the cost in 2005 dollars.

Parking Pricing and Management

Parking management has a direct and profound impact on automobile travel demand. If parking is free, convenient, and abundant there is little incentive to travel via any other mode. But parking is never free. Parking has a substantial cost to employers and property owners in its construction, maintenance, operation, and opportunity cost (land that could be put to other revenue or value-producing use but which instead is held as surface parking). These costs are often hidden to employees and travelers or dramatically subsidized as a “loss leader” or “the cost of doing business”, but are still paid by all in higher rents and passed on to all customers. Making parking costs transparent to travelers helps better inform their commute decisions and balance the costs and benefits of alternative modes.

Leading practices include market-rate or cost-recovery parking pricing, unbundling parking from tenant leases or purchases, separate value accounting for employee benefits, and other practices.

Alternate Mode Incentives

Driving is fast, comfortable, convenient, and typically relatively cheap even when true parking costs are included. Alternative modes do often have penalties to the traveler in terms of time, comfort, and cost. However, encouraging the use of non-auto modes has broad benefits to regional economies and stakeholder employers and institutions in the form of greater transportation system reliability, resiliency, and capacity for additional growth.

Typically most effective are direct incentives or benefits such as employee transit or bicycle benefits or parking cash out programs.

FlexPasses in Seattle

King County Metro offers an annual universal transit pass program called FlexPass, available only for purchase by employers. Participating employers must purchase a FlexPass for all regular, full-time employees. The pass provides unlimited transit rides on King County Metro buses, Sound Transit regional express buses, and Sounder commuter rail, as well as a portion of vanpool costs and the guaranteed ride home program

Development Practices and Processes

Every place changes and develops over time. While it is important for today's employers and institutions to adopt demand management strategies, some of the most dramatic and effective programs have been those that anticipated the potential cumulative impact of growth thirty years out and established expectations and requirements for development in the present, even prior to a clear evidence of need. Establishing clear, consistent, and predictable policies provides a good framework to ensure equitable review and approval of diverse developments, whether they occur next year or next decade, and reduce the ultimate cost and consequences of traffic for a more sustainable future.

The best examples have adopted comprehensive public policies and established development review processes that require transportation demand management for all major developments that include bold strategies like maximum parking allowances and proffered bicycle infrastructure elsewhere in the network.

Four decades of TDM in Arlington County, VA

In 1972, Wilson Boulevard in Arlington County, VA was not much to look at. Cars were king. Parking ramp billboards marketed the area as "Parkington". But with premium transit coming to the corridor, county leaders envisioned a different future where vibrant high density growth concentrated at the transit stations while the traditional neighborhoods were protected and thrived off it just beyond. Development codes were adopted requiring projects to mitigate their traffic impacts, promote alternative modes, and invest in establishing a multimodal system for the area. Today, more than thirty years later, the corridor produces 33% of the county's tax base on just 8% of its land while Wilson Boulevard – that critical car corridor – has seen just 5% more in traffic volumes .

Information for Trip Planning and Decision-Making

One of the largest obstacles to efficient travel management is the lack of information. Many commuters simply do not know the range of travel options available to them, their cost, how to use them, or when they are available. Uncertainty is a tremendous deterrent.

Getting information out broadly is a major challenge and can require substantial cost, but it can also bring about the largest return on investment. Advertisements and promotional campaigns, such as carpool days, commute challenge weeks, or rideshare months can encourage commuters to try different modes once or twice, which is sometimes all it takes to change behavior.

Technology has been an enormous boon in encouraging and enabling management of travel demand. Travelers now have available to them an array of trip time and cost calculators – many of which include environmental or social cost calculations in them as well. These convenient tools allow travelers to determine the right mode of travel for them on that particular day according to their particular needs. Leading practices integrate information across a variety of modes and systems including taxi, transit, bicycle, and driving. Emerging tools include dynamic ridesharing and other social media connections. This is a resource sure to continue to expand in breadth and effectiveness.

Figure 4 Chicago's Trip Planning App



Source: RTA – www.goroo.com

Travel options in your hand

Smart phones and open source data has revolutionized travel. There is an app for nearly everything. One challenge, however, is that every system seems to have its own site forcing a traveler to consult multiple sources in order to plan their trip most efficiently.

In November 2012, the Regional Transportation Authority of Chicago released “goroo” a full website and app that combines the information of multiple transit providers in addition to weather and traffic information for walkers, bicyclists and auto commuters to make better decisions about the comfort and efficiency of their trip and options for connecting to, or substituting, transit services, a leisurely stroll or, soon, a transfer on one of the city’s shared bikes.

Beyond real time schedule information, the mobile site includes walking and bicycling information, updates on delays or detours, and information on major area attractions.

TOOLS AND TECHNIQUES

In addition to these broad approaches, there are also a wide range of specific and effective tools utilized in successful TDM programs. Tools fall into three major categories:

- Expanded transportation options, which can include improvements to cycling and walking options as well as transit and ridesharing strategies;
- Incentives to use alternative modes, which includes commuter benefits for transit use and flexible scheduling; and
- Parking management, which includes a host of parking incentives and disincentives.

Expanded Transportation Options

Enhanced Bicycle and Pedestrian Facilities

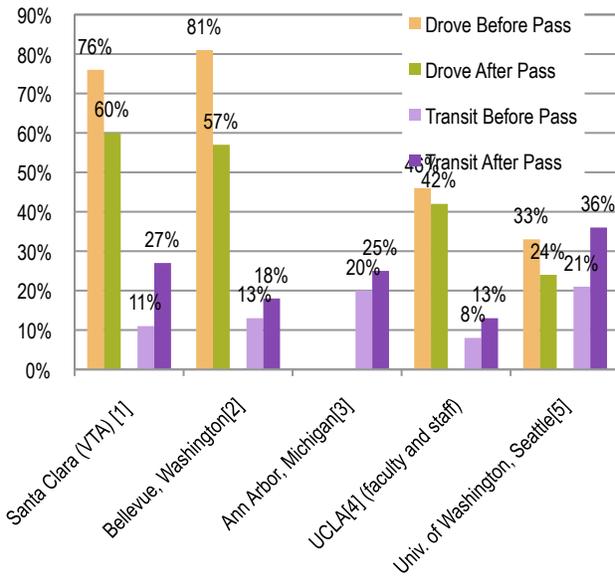
Although responsibility and authority for developing broad bicycle and pedestrian networks generally falls to the municipality, individual employers or institutions can make a significant difference by providing bicycle and pedestrian connections and accommodations on their own campus or site. Simply making it safe and possible (and preferably attractive) to get from the general transportation network to and into the facility can dramatically improve use of non-motorized commute modes. Accommodations include pedestrian-oriented entrances, good sidewalks and lighting, attractive landscaping or art, seating, bicycle accommodation in parking ramps, secure bicycle storage, and employee shower and changing facilities. Many large employers, campuses, business districts, and municipalities are establishing bike-share programs to further enhance and enable this mode of travel.

Pass Programs

Some employers directly cover employee transportation costs (up to a certain level) providing compensation in addition to wages. Employer subsidies for transit, bicycling, and vanpools up to the federally allowed monthly limit are considered qualified transportation benefits under federal tax law and may be excluded from an employee's wages.¹ Consequently, neither the employer nor the employee is taxed on the benefit. Direct employer subsidies are generally greatly valued by employees and significantly impact their travel decisions.

¹ For further details about qualified transportation benefits, see the current IRS Publication 15-B.

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¹ Santa Clara Valley Transportation Authority, 1997.

¹ 1990 to 2000;

http://www.commuterchallenge.org/cc/newsmar01_flexpass.html.

¹ White et. al. "Impacts of an Employer-Based Transit Pass Program: The Go Pass in Ann Arbor, Michigan."

¹ Jeffrey Brown, et. al. "Fare-Free Public Transit at Universities." *Journal of Planning Education and Research* 23: 69-82, 2003.

¹ 1989 to 2002, weighted average of students, faculty, and staff; From Will Toor, et. al. *Transportation and Sustainable Campus Communities*, 2004.

¹ 2002 to 2003, the effect one year after U-Pass implementation; From Wu et. al, "Transportation Demand Management: UBC's U-Pass - a Case Study", April 2004.

¹ Mode shift one year after implementation in 1994; James Meyer et. al., "An Analysis of the Usage, Impacts and Benefits of an Innovative Transit Pass Program", January 14, 1998.

¹ Six years after program implementation; Francois Poinette et. al. "Finding a New Way: Campus Transportation for the 21st Century", April, 1999.

Vanpools

Vanpools serve longer-distance commutes along corridors with very limited or no existing transit service. They consist of a group of five to 15 commuters who rideshare to and from work in vans leased from an outside operator who owns and maintains the vehicles and provides insurance and other support. In some cases, vans can be provided by an employer or can be owned by an individual. One of the vanpool participants serves as the primary driver and another as a backup driver. (Volunteer drivers usually ride free in exchange for their additional driving and coordination responsibilities.) The cost for participants depends on the size of the van, the length of the commute trip, the number of participants, and the availability of employer or government subsidies. Average costs are approximately \$100 per month per person.

Carpool

Although carpools are typically formed voluntarily, institutions, employers, developers and property owners can encourage and accommodate them through the establishment and reservation of preferred parking spaces and free or reduced parking costs for designated and registered carpools.

Vanpools in Minneapolis

Metro Vanpool is the regional commuter vanpool program for the seven-county Twin Cities metropolitan area of Minneapolis. The program is subsidized by the Metropolitan Council. Metro Transit provides administrative support. Metro Vanpools must have five to 15 people sharing the ride to and from work an average of three or more days a week. Metro Vanpools that operate exclusively within the seven-county metropolitan area receive a 55% subsidy on the van lease, whereas those that start or are traveling to locations outside the seven-county metropolitan area receive only a 50% subsidy on the van lease. Vans are leased monthly to the primary driver and cover the van, insurance, maintenance, repairs and 24-hour roadside assistance.

Rideshare and Ride Matching

One of the greatest impediments to carpool and vanpool formation can be finding suitable partners with similar work schedules, origins, and destinations. Facilitated rideshare matching can overcome this obstacle by enabling commuters who are interested in ridesharing to enter their travel preferences into a database and receive a list of potential rideshare partners. The success of these programs is largely determined by the number of participants and, in turn, the number of potential matches that can be made. Rideshare programs may be administered through individual employers, but are often most effective when coordinated through a transportation management association or other larger scale program.

Car-Sharing

Shared vehicle programs are gaining wider and wider application across the country. Shared vehicles can be provided through a separate (typically private) car-sharing company or by the employer or property owner who owns, maintains, and manages the vehicle. Car-sharing enables employees to commute via a non-auto mode but still access an automobile for necessary daytime trips such as meetings or personal errands or appointments.

Shuttles

Some employers provide, or contract with transit providers to operate, direct shuttles to and from employment sites and transit or parking facilities. Employer shuttles pick up employees at a parking lot, regional bus stop, or commuter rail station, and drive them to their workplace. Some employers also operate daytime shuttles, allowing employees to leave their jobsite for lunch or running errands, making it unnecessary for them to drive. Shuttles can be operated by a local transit system, an employer, a municipality, a nonprofit, or a partnership of a combination of these entities.

Incentives and Supportive Policies

Travel Subsidies or Benefits

Direct subsidies may include the provision of free or subsidized transit passes, vanpool vehicles or fares, and/or shuttle services to reduce the rider's cost of these high-capacity modes and create cost-competitive alternatives that make SOV commutes seem more expensive by comparison.

Federal code allows pre-tax benefit for employees. Employers can further promote the allowance by establishing systems to allow employees to withdraw money from their paychecks before taxes are deducted for use toward the purchase of transit passes.

Guaranteed Ride Home

This employer- or association-provided benefit allows for a set amount of free taxi rides or use of car-share vehicles for unplanned trips home that cannot be accommodated by the employee's normal commute mode (e.g., working late past last scheduled bus, carpool passenger with sick child at school). Statistics on such programs indicate that although they tend to have relatively low employee utilization rates, they have very high satisfaction rates from participants providing a high benefit for a low cost to employers.

Flexible Scheduling

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This strategy allows employees to reduce their number of weekly commute trips and shift work trips to nonpeak hour times of day. Examples include:

- Telecommuting – Allowing employees to work from home or a non-office location one or more days a week;
- Compressed Workweek – Enabling employees to compress regularly scheduled hours into fewer work days per week; and
- Flexible Schedule – Allowing employees to offset work hours from the typical 9-5 standard and shift commute travel to offpeak hours.

Employer Assisted Housing and/or Live Near Your Work Programs

Walking is the most affordable, reliable, and efficient mode of transportation, however it is many ways the most limited as well. Most people cannot reasonably walk farther than a mile from home to workplace, but for those who can and do they generally report lower levels of stress, higher levels of work and life satisfaction, and greater productivity in both.

Employers across the county, and particularly those in highly competitive markets or industries, are beginning to implement employee housing assistance programs. Such programs typically take the form of down-payment or first time homeowner assistance, but increasingly there are examples of developments using live near your work as a component of a larger traffic mitigation program.

The leading talent in today's increasingly mobile workforce is often times choosing where they want to live before they are choosing where they want to work and then looking at employment opportunities nearby or tele-working options worldwide. Savvy employers see the benefits of investing in attractive, livable communities adjacent to their worksites as a means of attracting, and retaining the top talent for the next generation of innovation.

Not all Live Near Work programs involve housing subsidies. Some are as simple as real estate marketing of the nearby community. Staff that can walk to work can save upwards of \$10,000 on average in annual transportation costs – the equivalent of a sizable wage bonus to employees at no cost to employers.

Parking Management

Parking management is a general term for strategies that encourage more efficient use of existing parking facilities, reduce parking demand, and shift travel to non-SOV modes. The supply of free or inexpensive parking at the final destination is a key decision factor cited for choosing to drive a personal auto rather than taking a bus, bike, walk, or carpool. Parking demand that exceeds supply

John Hopkins neighbors in Baltimore

Since 1997, John Hopkins University has helped more than 300 employees purchase homes in the neighborhoods surrounding their campus. Through a partnership with Baltimore City and the State of Maryland, and partially funded by the Rouse Company Foundation, the program provides up to \$17,000 in down payment and settlement costs for first-time home buyers. The program has resulted in much improved safety and livability in the target neighborhoods, strong relationships with the city and civic leadership, and improved overall retention for the institution.

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results in the common phenomenon of “circling”—cars going round and round the local area searching for limited parking, leading to more congestion and delay. Therefore, parking management is integral to any transportation demand management program.

- Variable Market Rate On-Street Pricing – Setting parking rates that fluctuate with demand helps optimize parking availability, free spaces for short-term users, and reduce search traffic. As a general rule, on-street spaces should be priced according to demand while off street spaces should be priced to recover construction, operating, and maintenance costs.
- Unbundling Parking Costs – Requiring that parking spaces be leased or sold separately (“unbundled”) from the rent or sale price gives a financial incentive inducing individuals to drive less or own fewer cars, or encouraging companies to increase transit commute rates among their employees.
- Parking Tax – Parking taxes can be assessed and designed to target specific types of parking behavior, such as taxing peak-hour, commuter, or early-bird parking.
- Parking Cash-Out – An employer based strategy that allows the employer to charge employees for parking while giving employees a bonus or pay increase to offset the cost of parking. Employees may use this increase to pay for parking or may choose an alternative mode and “pocket” the difference.
- Shared Parking/ Park Once is a strategy that seeks to shift parking demand into shared, public facilities rather than a proliferation of dedicated, accessory lots — reducing the volume of parking and local vehicle trips as well as the number of curb cuts on local sidewalks.
- Electronic Parking Guidance Systems direct motorists from the main access roads of a defined geographic area to parking facilities with available spaces. The number of spaces currently available in a specific car park or as a total number for a defined area is shown on variable information signs, and may also be presented via phone, the Internet, or in-vehicle navigation systems.
- Parking maximums impose limits on the number of parking spaces that the municipality will allow to be provided at new developments through off-street parking requirements, and can help encourage transit use and other alternatives to single-occupant automobile use.
- Park-and-ride lots can intercept traffic outside of highly congested areas and transfer them to transit or carpools for the final leg of the journey.
- Parking enforcement and education can help manage the on-street supply and free spaces for short term parkers.
- Parking permit reform: allowing employees to purchase individual days of parking on a pro-rated basis comparable to monthly rates .
- Priority program such as providing a few free days of parking each month for employees who usually commute using a non-SOV mode; and/or offering lower parking rates to carpools and vanpools.

Parking Management in Arlington County, VA

Arlington deployed a wide range of parking management techniques countywide to curb traffic and increase transit ridership, including:

- Reduced parking minimums close to Metro stations - In the Rosslyn-Ballston corridor, the County's Zoning Ordinance significantly reduces minimum parking requirements for certain uses.
- Parking and transportation demand management conditions - The County requires developers to agree to a number of parking and transportation demand management conditions, through the site plan approval process.
- Shared parking - Most parking in Arlington is privately owned and managed. The County operates just one garage, at Ballston Metro Center, however it requires that private parking be open and available for public use beyond the times of the specific building needs. This mandated sharing provides a vital resource for area restaurants, entertainment and cultural venues, and other off peak uses.
- Unbundled parking pricing - Although Arlington does not have a comprehensive policy regarding the unbundling of parking costs from housing costs, several new developments have adopted the practice.

Arlington's policies overall have had an extremely positive impact on development feasibility in the Rosslyn-Ballston corridor. In the 1960s and 1970s, retail sales and population were declining sharply. Now, Arlington County has the lowest vacancy rates and highest rents in the entire region, outside the District of Columbia. It has remained attractive for development because of its location, transportation access, good government services, and predictable development review and approval process.

ORGANIZATIONAL STRUCTURES

As a region makes decisions about types of strategies to implement to manage transportation demand, a structure for carrying out the strategies is equally important to discuss. In some regions, a public or private entity takes the lead and manages implementation; in many, a public-private partnership is set up to access the advantages of each.

Transportation Management Organizations\Associations

TDM measures can be implemented on an employer-by-employer scale, but regional impacts are most easily achieved when multiple entities work together. Transportation Management Organizations or Associations (TMO\TMA) have been proliferating around the country for the past decade and are especially adept at implementing TDM due to their broad-reaching memberships and flexible funding.

TMO/TMAs are typically nonprofit organizations and, as such, are eligible for government funds inaccessible to private organizations. By pooling resources, individual stakeholders can leverage resources further, do more marketing and advertising and reach a wider range of individuals.

Challenges can arise in coordination with government agencies and addressing unmet needs of area residents or individuals not represented on the TMO/TMA.

Private Entity

A private employer along a corridor or in an area can lead TDM efforts, often with some of the advantages of a TMO. Private entities have maximum flexibility in implementing different strategies and often demand a high return on their investments, sometimes leading to a more successful program. As strategies take shape over the long term, however, private entities may not maintain interest or obligation to continue participating, especially if the return on the investment is not high enough. Also, the needs of all affected individuals may not be served by one private entity as the leader for TDM. Finally, private entities are typically not eligible for local, state, or federal funding that can sometimes offset costs.

Public Agency

Public agencies can also take the lead in implementing TDM measures. In many regions, these include regional or metropolitan transit districts or authorities, local planning or transportation departments, or metropolitan planning organizations. Public agencies by nature have a broader mission to address regional unmet needs, typically have greater access to federal and state funding, and can best coordinate with other governmental programs or organizations, such as transit systems. Despite these advantages, public agencies may not be able to access as much private funding and often have more constraints than a private entity might in implementing different measures.

FUNDING AND PARTNERSHIPS

Funding transportation demand management initiatives can be enhanced through partnerships and especially by the creation of a TMO. While businesses themselves can offer employee transportation benefits and in some cases take advantage of federal tax incentives. TMOs have much greater flexibility with raising funding and accessing additional funding streams. These can include:

- District assessment/tax - Assessments levied through a TMO or other type of business improvement district can help fund TDM programs and are often the largest source of income for these entities.

Lloyd TMA – Portland, OR

Participating Lloyd Transportation Management Association businesses pay no dues. Instead the association is funded through three sources:

- A Business Improvement District that is a "fee/assessment" on property owners. The BID then provides membership to all businesses located in buildings paying the assessment. The BID generates 40% of the TMA's budget.
- Parking meter revenue which supplements the BID and is targeted toward programs that serve business and employee needs. This accounts for roughly one-third of the budget.
- Commissions on the sales of transit passes. The TMA receives 3% on all transit passes sold to businesses through the TMA and/or its Transportation Store. In 2005, the TMA sold over \$1.2 million in transit passes, and therefore received about \$36,000 in commissions (comprising the balance of the TMA budget).

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- Parking revenue - Parking revenue can be used on an individual employer level but also on a larger scale, especially if the organization is allowed to collect revenue from parking meters.
- Direct employer contributions - Direct contributions to services is the most common type of funding, especially for smaller-scale or early-phase efforts. Contributions can be assessed based on a formula or collected as part of dues for a TMO.
- Local government contributions - For special projects, local governments sometimes supply grants or potentially state or federal funding for certain types of initiatives, such as directly-operated transit. Typically, governmental contributions are not allocated on an ongoing basis.

EDUCATION AND OUTREACH

Social marketing and incentive programs are proving increasingly popular and effective at promoting non-SOV travel. Social marketing seeks to influence individuals' behavior to achieve a broad social good (in the case of TDM, reducing drive alone trips). Awareness and educational programs, workshops, and community outreach efforts may take the form of promotional campaigns similar to product advertising.

Incentive programs build on this marketing effort to frame non-motorized, transit, and high-occupancy travel as a social norm, by offering prizes or cash rewards to residents who use non-SOV modes. In Seattle, Metro's bi-annual Wheel Options campaign gives commuters a chance to register and win a sweeping variety of prizes for getting to work any way other than driving alone. The county's In Motion programs extend this opportunity to residents in general.

Figure 6 Seattle Metro TDM Advertisement



Source: <http://www.kingcounty.gov/employees/ETP/Promotions.aspx>

Employers can easily provide information about commute options in employee lunch and break rooms as well as via intranet sites, periodic emails, and employee newsletters. Employers and TDM entities can also hold events to promote use of alternatives to driving alone (e.g., transportation fairs, bike to work day, contests, etc.).

Another strategy is to have an employee transportation coordinator. This is an individual whose responsibilities are to find transportation options and develop transportation programs for employees. Few employers offer an on-site coordinator, a practice which is common typically at

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only the very largest of employers. This service is also commonly provided through a TMA or government entity or agency.

PERFORMANCE MEASUREMENT

No matter what type of strategy an area decides to implement, keeping tracking of its effect on the region is critical to maintaining participant momentum and supporting funding. For some measures, such as transit service, tracking the number of passengers supplies an acceptable metric to measure success. However, the primary goal of TDM measures is to reduce single-occupant vehicle travel in an area. Therefore, measuring the trip reduction impact is a more telling method for gauging success. The below table displays the estimated effects of each type of strategy and combination of strategies.

Figure 7 Impact of Selected Employer-Based TDM Strategies

Strategy	Details	Employee Vehicle Trip Reduction Impact
Parking Charges ¹	Previously Free Parking	20%-30%
Information Alone ²	Information on Available SOV Alternatives	1.4%
Services Alone ³	Ridematching, Shuttles, Guaranteed Ride Home	8.5%
Monetary Incentives Alone ⁴	Subsidies for carpool, vanpool, transit	8-18%
Services + Monetary Incentives ⁵	Example: Transit vouchers and Guaranteed Ride Home	24.5%
Cash Out ⁶	Cash benefit offered in lieu of accepting free parking	17%

¹ Based on research conducted by Washington State Department of Transportation.

² Schreffler, Eric. "TDM Without the Tedium," Presentation to the Northern California Chapter of the Association for Commuter Transportation, March 20, 1996.

³ Ibid

⁴ Washington State Department of Transportation

⁵ Schreffler (1996)

⁶ Donald Shoup (1997), "Evaluating the Effects of California's Parking Cash-out Law: Eight Case Studies," Transport Policy, Vol. 4, No. 4, 1997, pp. 201-216. <http://www.commuterchallenge.org> (accessed November 2, 2007)

LEARNING FROM THE LEADERS

By far, the best transportation plan is a good land use plan where employment, amenities and education are easily accessible and attractively designed and located. While most communities still struggle with the seamless union of land use and transportation planning, design and development, transportation management strategies can help communities and stakeholders more efficiently use the systems and resources they have and ensure they have space and services for continued growth.

Which tools or approaches work in a particular locale depends on transportation resources, community cultures, and stakeholder commitment.

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