7 Best Practices in Transportation Demand Management

7A Transportation Demand Management (TDM)

7B Parking Management

7C Programs that Promote Transit Use and Carpooling

7D Land Use Management and Urban Design

7E Employer-Based TDM Strategies

7F Congestion Pricing

Best Practices
Transportation Demand Management (TDM)

What is Transportation Demand Management and How Does it Work?

Transportation Demand Management, or **TDM**, is a general term for strategies that increase overall system efficiency by encouraging a shift from single-occupant vehicle (SOV) trips to non-SOV modes, or shifting auto trips out of peak periods. This supports the Urban Mobility Plan's focus on moving people and goods rather than motor vehicles. 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 impact on travel behavior, system efficiency, and SOV rates. TDM programs are usually implemented by public agencies, employers, or via public-private partnerships.

This section presents an overview of TDM issues and considerations. The sections that follow explore TDM strategies and supportive elements in more detail, discussing parking management, high-occupancy travel promotion, land use and design, employer-based programs; and congestion pricing. Each of these elements combine to affect the success of TDM.

Issue #1. Where have TDM programs been proven to work?

TDM, both in the form of individual strategies and comprehensive programs, has been applied to great effect in cities around the world. A few examples include:

Bellevue, WA. Due to the Commute Trip Reduction program, the drive alone commute rate in downtown Bellevue fell by 30% between 1990 to 2000.

London, UK. In 2003, London began charging SOV drivers to enter its central business core during

Source: Nelson\Nygaard

Categories of TDM Strategies

Improved Transportation Options

- Biking and walking
- Transit and ridesharing

Incentives to Use Alternative Modes and Reduce Driving

- Universal transit passes
- Telework and flexible work schedules
- Road and parking pricing
- Road space allocation (bike lanes, transit-only lanes)

Parking Management

- Parking cash-out programs
- Priority parking for carpools, vanpools, and short-term parkers
- Land Use Management
- Mixed-use development
- Increased densities in transit corridors

Policy and Institutional Reforms

- Commute Trip Reduction Act (CTR)
- Growth and Transportation Efficiency Centers (GTEC)

Impact of Selected TDM Strategies

Strategy	Modal Share Impact
Congestion pricing	London: 37% vehicle speed increase, 30% decrease in peak period delays; 50% decrease in bus delay.[1] 14-30% increase in transit ridership (London, Stuttgart, Singapore)[2]
High capacity transit	20-72% of new riders shifted mode from auto[3]
Parking management (includes pricing and availability stratigies)	40-50% reduction in parking demand under peak period and long-term parking pricing increases; SOV mode share 16%- 25% lower when employees paid for parking [4]
Transportation-efficient development	15-24% SOV reduction[5]

1 Litman, Todd (2006). London Congestion Pricing: Implications for other cities. Victoria Transport Policy Institute. http://www.vtpi.org/london.pdf (accessed December 20, 2007).

2 Metro (2005). Metro 2040 Modal Targets Report--Evaluation of Potential Measures for Achieving Modal Targets. Appendix E. http://www.metro-region.org/files/planning/appendix_modaltargets.pdf (accessed December 20, 2007).

3 Metro (2005). Case studies in seven cities that added Bus Rapid Transit service

4 Metro (2005). Case study of pricing increases for peak period and long-term parking

5 Metro (2005). Extrapolated from a study on commute trips in a mixed-use, gridded, transit-adjacent neighborhood, assuming commute trips make up 25% of all trips.

Sources:

City of Pasadena(2006). Traffic Reduction Strategies Study. www.cityofpasadena.net (accessed October 30, 2007).

Litman, Todd (2006). London Congestion Pricing: Implications for other cities. Victoria Transport Policy Institute. http://www.vtpi.org/london.pdf accessed December 20, 2007).

Litman, Todd (2007). Guide to Calculating Mobility Management Benefits. Victoria Transport Policy Institute.

Victoria Transport Policy Institute, "Online TDM Encyclopedia". www.vtpi.org/tdm/ (accessed October 30, 2007).

Metro (2005). Metro 2040 Modal Targets Report--Evaluation of Potential Measures for Achieving Modal Targets. Executive Summary. http://www.metro-region.org/files/planning/modaltargets.pdf (accessed December 20, 2007).

daytime hours. Since then, vehicle traffic speeds have improved, bus ridership has increased, and accidents and air pollution have declined in the city center. Topping it off, millions of dollars of toll revenues have been invested in improved transit service.

Arlington, VA. Compact residential and commercial development along the Metro rail line has allowed the county to grow rapidly without major expansion of the highway network or parking facilities, while maintaining low tax rates.

Issue #2. How does one determine which TDM strategies will work in a given situation?

The particular set of strategies applied will depend on the overall goal and desired result. Objectives might include congestion reduction (peak-period or all day), roadway and parking cost savings, pollution reduction, increased options for non-drivers (i.e. transit-dependent populations), energy conservation, increased livability and accessibility of neighborhoods or improved public health. Most likely it will be a combination of these objectives that leads to the implementation of TDM programs. Many resources exist to help agencies and employers choose the right mix of strategies. A good place to begin is the Guide to Calculating Mobility Management Benefits (Littman, 2007), which outlines which strategies are most effective for achieving specific results.

Issue #3. Which individual TDM strategies are proven to be most effective?

It can be difficult to determine exactly what the effectiveness is of any one strategy, and TDM works best when complementary strategies are packaged together (for example, increased bus service combined with subsidized transit passes). However, certain strategies, such as congestion pricing (tolls that vary based on time of day and/or roadway congestion levels), parking management, compact mixed-use development, and provision of high capacity transit service have repeatedly achieved notable success in reducing travel demand and shifting travel away from single-occupant vehicles to more efficient modes.

In 2005, the Portland-area Metropolitan Planning Organization (Metro) undertook a literature review and case studies to quantify the effects of various TDM strategies. Summary results appear in the sidebar table.

Best Practices
Parking Management

What is Parking Management and How Does it Work?

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. Managing parking helps to reduce the undesirable impacts of parking demand on local and regional traffic levels and the resulting impacts on community livability and design. At the same time, smart management of parking helps to ensure access to retail businesses, provides access for visitors to regional and neighborhood attractions and supports neighborhood vitality.

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. And, when free or inexpensive parking is offered, it leads to overuse, often by long-term or all-day parkers who occupy valuable spaces at the expense of short-term parkers, limiting access to retail businesses and service industries catering to short-term users (i.e. healthcare and medical services).

Parking demand that exceeds supply 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. A look at several recent studies show that "parking search" traffic accounts for between 30% and 45% of all traffic in dense urban districts (see sidebar). Therefore, parking management is integral to any transporation demand management program.

Source=Patrick Siegman

Source=Seattle Dept. of Transportation (SDOT)

Pay station technology provides flexibility in managing parking demand.

Recent estimates of Parking Search Traffic as share of overall traffic

- Brooklyn, NY – 45%
- SOHO (Manhattan), NY – 28%
- Cambridge, MA – 30%

Best Practice Locations

- Redwood City, California (On-Street Pricing)
- San Francisco, California (Off-Street Pricing, Zoning)
- Seattle, Washington (Downtown and Urban Center Zoning – Caps instead of minimums)
- Bellevue, WA (Unbundling)
- State of California (Cash-out and Unbundling laws)
- United Kingdom (Zoning – Caps instead of minimums)

Issue #1. What are some of the most effective Parking Management practices?

The most effective parking strategies are cost-based or pricing measures that link parking rates more directly to demand or provide financial incentives and/or prime parking spaces to preferred markets such as carpools, vanpools and short-term parkers. This reduces total parking demand, shifts travel to other modes, reduces vehicle miles traveled (VMT) and ensures a minimum number of parking spots are always available, avoiding the "circling" problem adding to congestion. Specifically, these strategies include:

- **Variable Market Rate On-Street Pricing** – Setting variable parking rates that fluctuate with demand helps optimize parking availability, free spaces for short-term users, and eliminate search traffic. The implementation of this strategy in Seattle would rely on new parking meter technology and the removal or raising of the on-street parking rate cap. Alternately, variable on-street parking could be realized through the designation of various parking categories, so that different areas of the city have on-street parking rates that better match the area's unique parking demand. Adopting market rate parking could entail charging for on-street parking on days and times that it are currently free (in Seattle this includes evenings after 6 p.m. and Sundays).

- **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. Overall, this serves to reduce parking demand and shift peak-hour commute trips to non-SOV modes. Including the price of parking in an overall lease can increase costs by as much as 25% – whether or not the tenant has a car – but be perceived as an "invisible" cost by the customer.

- **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. The City of Seattle is instituting a 10 percent parking tax in phases—the rate will be 5% of the parking fee charged by the commercial parking business until July 1, 2008; and will be gradually increased to 10% by July 1, 2009.

A variation on the parking tax is seen in Vancouver B.C.,where parking tax rates are based on the square meters of taxable parking area. The tax applies to all commercial parking, whether a fee is charged for that parking or not, and revenues help fund the expansion of roads and transit services in the Greater Vancouver region.

- **Parking Cash-Out** – An employer based strategy which 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.

Issue #2. What are some other effective Parking Demand Management practices?

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. This strategy can be accomplished by brokering shared-parking agreements among private lot owners who either experience offsetting times of peak demand or share customers who would walk between uses if allowed to leave their car in one place. This strategy can also be achieved through the construction of public, shared parking facilities within areas of dense, mixed land uses.

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.. These systems are sometimes called Dynamic Parking Guidance Systems as the numbers change every few minutes. This strategy reduces parking search traffic which leads to a reduction of emissions, fuel consumption and wasted time; promotes better use of existing parking facility capacity; and can direct parking traffic onto dedicated roads.

Parking maximums impose limits on the number of parking spaces to be provided at new developments through off-street parking requirements,

Source: SDOT

Flat rate parking can be programmed for evening or weekend use.

and can help encourage transit use and other alternatives to single-occupant automobile use. The City of Seattle currently has a maximum amount of parking allowed per square foot for office and commercial developments in the Center City ("parking caps"), and this concept could be extended to residential development as well. In addition, rewards could be offered to developers who "underpark" their building by not building up to the maximum levels allowed.

Park-and-ride lots can help alleviate demand for parking in congested areas. For example, provision of new or expanded park-and-rides in areas with sparse local transit service but with proven regional transit connections to Seattle's Center City can help reduce the number of people who drive into downtown, especially during the critical peak hours.

Parking enforcement and education can help manage the on-street supply and free spaces for short-term parkers. In downtown Seattle, an average 1/3 of the parked cars on any street have disabled parking placards that authorize qualified drivers to park in paid parking areas for free and for an unlimited time. At the same time, some of the short-term on-street spots are being used by all-day parkers who simply add more money to the paystation every two hours. Additional parking enforcement can help deter both of these problems and public education campaigns can educate people about the proper use of disabled parking placard privileges and short-term on-street spaces.

Issue #3. Where do various Parking Demand Management practices work best?

Cost-based strategies have the most dynamic impact on consumer choice in areas where land values are high and where attractive alternatives are readily available, such as Seattle's Center City or other high-density commercial areas. In these areas, previously hidden costs will tend to be higher, increasing the incentive to switch to carpooling, transit, walking, or cycling.

Parking Cash-Out, is a cost-based strategy that will be most effective in areas where significant numbers of employers provide free parking to employees at all levels, there is little or no on-street free parking available as an alternative, and there is good transit service oriented to commute hours. A recent King County Metro report found that because few Seattle downtown employers offer parking benefits today, parking cash-out would have limited application in the market. It could, however, potentially apply to growing employment centers surrounding the downtown core.

Shared Parking/ Park Once strategies work best where multiple destinations are within walking distance of the same parking facility, and when those destinations either share patrons, or have different periods when parking demand is highest. Shared parking is also effective in mixed use developments, either when there is a mix of uses on or near a single site. This strategy relies either on a public authority willing to broker arrangements among private facility owners and/ or to construct and manage public off-street facilities, or conditions that would cause private owners to develop shared arrangements on their own (i.e. due to scarce or high-cost real estate for new parking, or local regulations limiting parking).

Electronic Parking Guidance Systems are best suited to areas with high levels of traffic and high incidences of "parking search" traffic—typically city downtowns and dense commercial centers.

Parking maximums are most appropriate in downtowns and commercial centers where land is scarce and expensive and where attractive travel alternatives are readily available.

Park-and-Ride lots are particularly useful in locations where local transit connections to regional stations are sparse or infrequent and when the total trip is less than driving all the way to the destination; for example, where dedicated transitways offer significantly higher speeds than a parallel roadway. Park-and-ride is generally less effective the closer the parking lots are to the final destination.

Parking enforcement and education programs are most effective when targeted to areas with high incidences of observed parking infractions and where short-term parking is favored, such as in commercial centers and downtowns.

Issue #4. Where has Parking Demand Management proven successful?

Parking Demand Management strategies have been shown to be effective in cities around the world, including:

Los Angeles, CA. Elimination of employee parking subsidy resulted in single-occupancy vehicle commute share dropping from 69% to 48%. Providing a cash-out option resulted in a drop in the same rate to 55%.

Eugene, OR. Parking demand declined 35% following off-street rate increases and increased enforcement of on-street time-limits. As commuter parking declined, spaces were freed for customer use.

Redwood City, CA. Since March, 2007, the City has successfully used demand-responsive meter rates to maintain an average 18% availability rate and average parking stay of 72 minutes among downtown spaces that were previously always full all the time. This allows for greater access by more shoppers and visitors, as spots are not occupied by day-long employees.

Seattle, WA. In 2007 city officials eliminated the minimum parking requirement for office and commercial developments downtown, and no minimum parking requirements for downtown residential uses have been in place for over 20 years. Instead, Seattle uses parking maximums, which cap the amount of parking allowed per square foot of office and commercial space downtown. Parking requirements have also been eliminated in commercial zones in Urban Centers throughout the city.

Coconut Grove, FL. In-lieu fees have been paid in lieu of 938 spaces since 1993. Some of the resulting $3,000,000 in revenue has been used to construct a 416-space, public garage with ground floor retail—a 56% reduction in spaces and a many-times greater reduction in curb-cuts. Remaining funds have paid for a transit study and a parking mitigation study.

Sources:

Metro (2005). Metro 2040 Modal Targets Report--Evaluation of Potential Measures for Achieving Modal Targets. Final report.

City of Pasadena, 2006. Traffic Reduction Strategies Study.

Dan Zack, Redwood City Downtown Development Coordinator, telephone interview, June 2007.

Todd Litman, Parking Management Best Practices

Schaller Consulting "Free Parking, Congested Streets", 2006.

Schaller Consulting, "No Vacancy: Park Slope's Parking Problem and How to Fix It", 2007.

Donald Shoup, "Cruising for Parking", Access 30(2007): 16-22

California Center for Innovative Transportation, http://www.calccit.org/itsdecision/serv_and_tech/Parking_Systems_Technologies/parking_systems_tech_summary.html (accessed on 12/28/07).

King County Metro, July 2003. "The Downtown Seattle Access Project Parking Cash-Out Experience—Results and Recommendations", Draft Report.

Boston Metropolitan Area Planning Council, Sustainable Transportation ToolKit, Accessed online at http://transtoolkit.mapc.org/index.htm (1/1/08).

Seattle Department of Transportation, 2007. Email correspondence with Mary Catherine Snyder, Senior Transportation Planner, on 12/28/07/

Best Practices
Programs that Promote Transit Use and Carpooling

Which Programs and Improvements Will Promote Increased Transit Use and Carpooling?

There are many proven strategies for increasing the number of people riding buses and carpooling more often. They include:

- **Put more transit service in place—buses, trains, vanpools and foot ferries**—so it is easier for more people to get around without a car.
- **Build compact communities** with sufficient density to support high-frequency transit service.
- **Get low cost or free transit passes into more people's hands.** These can be subsidized by employers, developers or public agencies.
- **Improve and distribute transit and carpool rider information** utilizing the best technologies and promotional tactics. These services make bus ridership easier and more customer-friendly, such as with real time bus and train arrival and departure times, and help match potential carpoolers together.
- **Build park-and-rides and HOV lanes where appropriate.** They are integral for promoting transit use and ridesharing, alleviating congestion, and reducing overall vehicle miles traveled.
- **Support car-sharing** to help reduce auto ownership rates and build transit ridership.

Issue #1. What is the measured impact of providing HOV lanes, and what is their usage in the Seattle area?

By giving priority to transit, vanpools and carpools, HOV lanes help increase transit ridership, and optimize the flow and person throughput of congested freeways. HOV lanes move one-third of the people on rush hour freeways in only about 18% of the vehicles. HOV facilities have been shown to reduce vehicle trips on a particular roadway by between 4% and 30%. HOV lanes are most effective when separated from general-purpose

Case Study:
FlexPass Program; King County.
King County Metro offers an annual universal transit pass program called FlexPass. FlexPasses are 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. FlexPasses also cover up to $65 of monthly vanpool fares. Employees holding a FlexPass are eligible for the guaranteed ride home program, offering eight reimbursable emergency taxi rides per year, and receive discounts on programs including Flexcar car sharing memberships and Amtrak tickets. The cost per pass varies each year based on company size, number of years as a client, pass utilization rates, and proximity to transit. Companies may also elect to create a custom FlexPass to add services, such as Community Transit buses. In 2007, first-year FlexPass clients in downtown Seattle paid $287 per pass for the entire year, amounting to less than $24 per month. For regular PugetPasses purchased by individuals, a one-month pass covering Metro buses and Sound Transit Express routes is $90; to purchase a pass with the same Sounder rail benefits conferred by a FlexPass would cost an individual $171 each month or $1,881 for the year. Companies have the option to share up to 50% of the cost of the pass with employees. A lost FlexPass can be replaced for $50; no other fare media offer this replacement option.

Case Study:
U-PASS Program; King County and the University of Washington.

The University of Washington has set up a U-PASS program that offers similar benefits to FlexPass. U-PASSes are avaliable to every student, faculty, and staff member at the University. The U-PASS covers unlimited rides on Sounder trains and King County Metro, Sound Transit, and Community Transit buses. The pass also includes vanpool fare subsidies, a Night Ride Shuttle, and discounts at businesses and Flexcar. Faculty and staff are eligible for Emergency Ride Home and discounted parking for occasional driving days. U-PASS holders also receive discounted parking rates when they carpool. In 2007, a U-PASS costs $44 per quarter for students, or $61.80 for staff. Passes are automatically mailed to students, who then decide whether to return it or pay the $44 with tuition bills. This deeply discounted pass, combined with high parking rates and free shuttles, helps the University of Washington manage parking and traffic congestion on and around campus.

Case Study:
Eco-Pass Program; Cities of Denver, Boulder and Santa Clara.

Santa Clara Valley Transportation Authority and the Greater Denver area Regional Transportation District provide both employee and residential annual Eco Passes at deeply discounted rates, good for all area transit services, on the condition that a pass is purchased for every employee or for every resident within a condo community, apartment building, or neighborhood association (i.e., there is universal enrollment). The cost per pass varies depending on size of the company or residential area and proximity to high-quality transit service. The cost to the company or residential community per annual Eco Pass varies between $7.50 and $120, which is only 0.6% and 9%, respectively, of an Adult Express Pass purchased by an individual.

lanes by a barrier, are connected to a larger HOV network, and when they are consistently enforced to deter violations. Analysis done by Washington State Department of Transportation shows many of the region's HOV facilities reaching capacity now or in the near future. This raises questions of whether WSDOT should raise the HOV definition from 2 to 3 persons in some locations, build new HOV facilities to increase physical capacity, or address specific bottlenecks.

Issue #2. How effective are transit pass programs? Are they only for the workplace?

In recent years, a growing number of transit agencies have teamed with universities, employers, developers and even residential neighborhoods to provide universal transit passes. In Seattle, these include the FlexPass program for employers, and the U-PASS program through the University of Washington for students and staff (see sidebar). These passes typically provide unlimited rides on local or regional transit providers for low monthly fees, often absorbed entirely by the employer, school, or developers. This strategy serves to increase the transit mode share and reduce VMT, emissions and congestion.

Universal transit passes are usually extremely effective means to reduce the number of car trips in an area; reductions in car mode share of 4% to 22% have been documented, with an average reduction of 11%. By removing any cost barrier to using transit, including the need to search for spare change for each trip, people become much more likely to take transit to work or for non-work trips.

Issue #3. How do promotional efforts support TDM?

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. Extensive employer TDM marketing and education campaigns are instrumental in Commute Trip Reduction plans in Washington (see section on "Employer-Based

TDM Strategies") and have been shown to lead to up to 21% transit ridership increase. 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 King County, 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 (see sidebar).

Issue #4. How can park-and-rides support TDM goals, even though people drive alone to reach them?

Park-and-rides are particularly useful in increasing transit ridership in locations where local transit connections to regional destinations are sparse or infrequent. Specifically, park-and-rides are most appropriate in outlying areas where it is difficult to reach transit any way other than by driving, as opposed to within dense urban areas where walking, biking, and taking local connector buses are viable. Park-and-rides are especially effective when the total trip time is less than driving all the way to the destination; for example, where dedicated transit ways or HOV lanes offer significantly higher speeds than a parallel roadway. By providing a park-and-ride, the commuter is encouraged to replace the longer auto trip all the way to his or her destination with a shorter trip to the park-and-ride, reducing overall VMT. Park-and-rides are generally less effective the closer the parking lots are to the final destination.

Issue #5. How can passenger-ferry service encourage transit use and reduce travel demand?

Passenger-only ferries accommodate only walk-on passengers, and therefore are often referred to as "waterborne transit." Examples include the Elliott Bay Water Taxi service and Washington State Ferries Vashon-Seattle service, soon to be taken over by the newly created King County Ferry District. Passenger-only ferries range in size from large seagoing vessels to small water taxis, and so they can be tailored to any market reachable by water. They alleviate roadway congestion due

Case Study: In Motion; King County, WA.

In Motion programs have been rolled out in ten neighborhoods in King County. Residents register and pledge to eliminate a set number of drive-alone trips each week by using some other mode. Then, participants log the trips they make by taking the bus, walking, bicycling, or carpooling instead of driving alone. Registrants earn points for each SOV trip saved, and win prizes such as gift certificates to neighborhood businesses or vouchers for use toward transit fare. All registrants receive information, maps, and free bus tickets to encourage trying new travel modes to explore their community. Because the trip logs include round-trip miles traveled, staff can estimate the number of gallons of gas saved and pounds of CO_2 kept out of the atmosphere by In Motion participants. This evidence quantifies for residents the environmental impact of their actions. Combined with ongoing newsletters and the opportunity to win prizes, In Motion messaging and incentives work together to encourage individuals' transportation behavior change.

Bus-only lane
Source: Nelson\Nygaard

Case Study: TravelChoice Program; Alameda, CA.

TravelChoice, an innovative program to reduce driving and congestion while promoting healthy physical activity—was conducted in the city of Alameda, CA from April 3 to July 1, 2006. TravelChoice used targeted outreach tactics to connect interested residents with information and incentives to add more walking, bicycle riding, public transit, and carpooling into their daily routines. Post surveys showed drive-alone trips were reduced 14%, primarily due to a 34% increase in transit usage and a 5% increase in carpooling.

to the simple fact that they do not use roadways and do not accommodate auto traffic. Providing more foot ferries to downtown Seattle and other Seattle area destinations has potential for reducing auto travel demand and roadway congestion. In addition, passenger-only ferries provide system redundancy, even if they may generally serve only a small portion of trips.

Sources:

City of Pasadena, 2006. *Traffic Reduction Strategies Study.*

King County Metro. "FlexPass Programs." http://transit.metrokc.gov/cs/employer/ctr-fpprograms.html (accessed December 21, 2007).

King County Metro. "In Motion." http://www.metrokc.gov/kcdot/transit/inmotion/index.htm (accessed December 21, 2007).

Metro (2005). *Metro 2040 Modal Targets Report--Evaluation of Potential Measures for Achieving Modal Targets.* Final report.

University of Washington. "U-PASS Program." http://www.washington.edu/commuterservices/programs/upass/info.php (accessed December 21, 2007).

Washington State Department of Transportation. *Exploring Hot Lanes and Value Pricing to increase efficiency and reduce congestion.* Folio accessed on 11/9/07 at www.miraiassociates.com/project_pdfs/CRA_poster.pdf

Best Practices
Land Use Management and Urban Design

Planning for Low-Traffic Neighborhoods

Transportation-efficient development is characterized by higher density and mixed and uses, access to frequent transit service, and opportunities for short pedestrian and bicycle trips to a rich mix of desired destinations. Mixing housing and even employment with other services and retail opportunities allows residents to make necessary daily and weekly trips without using a car. Land use policy impacts transportation, sustainability and public health as a properly designed community encourages walking and biking while reducing the need to drive for daily needs. Local governments such as the City of Seattle can encourage transportation-efficient development with comprehensive neighborhood planning that includes parking strategies, design guidelines, and incentive programs. To achieve the maximum benefit, new residential density should be focused in areas with the greatest access to transit service, and coordinated with new transit investments.

Issue #1. How is the City of Seattle planning for transportation-efficient development?

The Puget Sound Regional Council (PSRC) developed *Vision 2020* as the regional strategy for accommodating expected residential and employment growth in King, Pierce, Snohomish and Kitsap Counties through the year 2020. PSRC is currently updating this plan as *Vision 2040*, which will offer increasingly specific goals and priorities for how and where to house 1.7 million additional residents and 1.2 million new jobs forecasted for Puget Sound by 2040. Following the direction of the state Growth Management Act, this plan designates urban centers where growth will be concentrated. Correspondingly, the Seattle Comprehensive Plan *Toward a Sustainable Seattle* targets growth in designated urban centers and villages. Together, these plans promote transportation-ef-

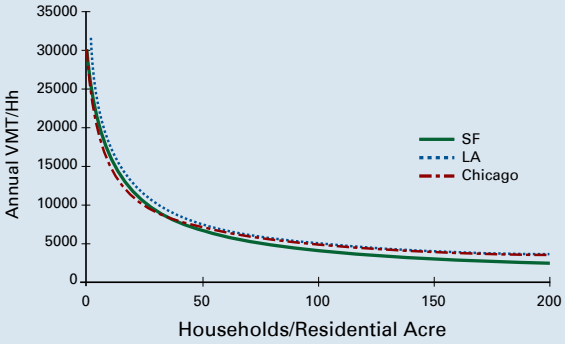
New dense housing development in downtown Vancouver increases walk trips.
Source: istockphoto

Vancouver, Canada

As a deliberate transportation strategy, Vancouver increased housing capacity in the downtown area to reduce commuting times and congestion, in what became known as the "living-first strategy". From 1991 to 2002, the number of residents living downtown increased by 62%, to 76,000, but car trips into downtown remained essentially constant. In 1994, walking and cycling trips made up 20% of all daily trips into the downtown and together made up the third-highest used mode behind auto and transit trips: by 1999, walking and cycling trips made up 35% of all daily trips and are now the most frequently used mode.

Creating a safe pedestrian environment promotes walking.
Source: Nelson\Nygaard

Vehicle Miles Traveled vs Residential Density



ficient development by establishing housing and employment targets for carefully selected centers and corridors throughout the metropolitan area and region. In effect, the region and city are already working toward compact, mixed-use, well-defined growth nodes. As development is already proceeding at a rapid rate in these centers, careful attention will be required to assess how more growth can best be accommodated and how additional considerations such as housing costs will be addressed.

Issue #2. Has transportation-efficient development been proven to reduce travel demand?

The shape of the city plays a critical role in how much and how often people travel by car. When neighborhoods are compact and many of a person's daily needs can be found within a few minutes walk, the number of vehicle trips per household decline rapidly. In cities as diverse as Los Angeles, Chicago, and San Francisco, there is a very strong correlation between households per residential acre and both the number of vehicle miles per year that a household drives and the number of vehicles that a household owns (Holdsclaw 2002). One typical study, based on the National Personal Transportation Survey, showed that households in higher-density urban areas make about 25% fewer trips by auto than the average American household (Litman, 2007).

In Arlington, Virginia, a focused program to encourage compact residential and commercial development along the Metrorail line has allowed the county to grow rapidly without major expansion of the highway network or parking facilities, while maintaining low tax rates. Vancouver, Canada, has also increased downtown housing density without increasing auto trips.

The relationship between density and vehicle miles travelled (VMT) has been modeled in a number of cities (See Sidebar). In every case, the rate of auto use declines substantially with increased densities; as a dense multi-use environment encourages walking, biking and transit trips.

Issue #3. Won't new development add to traffic and congestion downtown?

Residents of lower-density areas add significantly to traffic congestion on downtown streets when they drive into the city. This travel is a particularly important contributor to congestion during peak commute hours. By creating more transportation-efficient housing opportunities inside its borders, the city can decrease overall regional travel demand, and decrease auto travel into and out of the center city.

Additionally, as the city grows, by ensuring that new development is compact, offers a mix of uses, and is accessible to pedestrians, cyclists, and transit riders, Seattle can work toward the goal of creating the fewest possible new auto trips. Transportation-efficient development will also magnify the impact of all other transportation demand-management efforts. Nearly all strategies to promote transit ridership, walking, and bicycling are more effective when applied to households living in compact, mixed-use communities.

Issue #4. But what about Seattle residents who prefer lower density neighborhoods?

Transportation-efficient development is not a one-size-fits-all strategy for the whole city or region. It will look different in each neighborhood, based on urban village growth targets. For neighborhoods that do become more compact, transit-efficient development will bring a variety of quality-of-life benefits, including lower overall transportation costs, a more comfortable and attractive pedestrian environment, improved access to retail and services, and more efficient transit service.

Density doesn't always mean high rises.
Source: Nelson\Nygaard

Sources:

City of Pasadena, 2006. Traffic Reduction Strategies Study.

Litman, Todd. "Land Use Impacts on Transport: How Land Use Factors Affect Travel Behavior" Victoria Transport Policy Institute, April 2007.

John Holtzclaw, Robert Clear, Hank Dittmar, David Goldstein and Peter Haas, "Location Efficiency: Neighborhood and Socio-Economic Characteristics Determine Auto Ownership and Use?" Transportation Planning and Technology, Vol. 25, March 2002.

Best Practices
Employer-Based TDM Strategies

Employer-Based TDM Strategies

Employer-Based Transportation Demand Management strategies reduce vehicle trips by providing employees with incentives, information, and additional transportation options to commute via modes other than the single occupant vehicle (SOV), to commute during off-peak times of day, or even to eliminate certain work trips altogether. This transportation market is largely responsible for peak period congestion conditions twice each weekday. As such, modal shifts for these trips can significantly reduce regional vehicle miles traveled and carbon emissions, alleviate congestion during peak periods and improve air quality, all while making better use of the existing transportation infrastructure throughout the day.

Issue #1. What are the most common and effective Employer-Based TDM strategies?

Employer-Based strategies fall roughly into four categories:

1. **Financial Incentives** – This category either reveals the true cost of driving to the workplace, or makes non-SOV options relatively cheaper for the employee to use. Examples include:
   - Realizing the True Cost of Parking: Instituting parking charges; unbundling free or subsidized parking from employee benefits
   - Overall Incentives to Reduce Parking: allowing employees to purchase individual days of parking on a pro-rated basis comparable to monthly rates; providing a few free days of parking each month for employees who usually commute using a non-SOV mode; offering lower parking rates to carpools and vanpools; offering cash in lieu of free parking and allowing employees to make the choice

Best Practice Locations – Employer-Based Programs

Washington State –
Commute Trip Reduction program (CTR), Growth and Transportation Efficiency Center plans (GTEC)

Cambridge, MA –
Parking and Transportation Demand Management Ordinance

Arlington County, VA –
Arlington County Commuter Services

Montgomery Co., MD -
Transportation Management Districts/Traffic Mitigation Plans

Vanpools can be an effective employer based strategy.
Source: Nelson\Nygaard

Best Practice Employers – Key Strategies

CH2M Hill (Bellevue, WA) –
Parking Cashout, Guaranteed Ride Home

Puget Sound Energy (Bellevue, Tacoma, WA) –
Transit & Vanpool Subsidies, Guaranteed Ride Home, Bike Parking, Showers/Lockers

Amgen, Inc. (Seattle, WA) –
Parking Charges, Transit Passes, Guaranteed Ride Home, Bike Shelters, Showers/Lockers, Flexcar (carsharing), Free Downtown Shuttle

Children's Hospital and Medical Center (Seattle, WA) –
FlexPass, Showers/Lockerooms, Bike Commuting Events, Commute Assistance in Employee Orientation

University of Washington (Seattle, WA) –
U-Pass, High Parking Charges for SOVs, Motor Pool Vehicles for Business Use, Promotions and Commuter Website

Microsoft Corporation (Redmond, WA) –
FlexPass, Transportation Fairs, Commute Information Online, Guaranteed Ride Home, Lockers/ Showers

Stanford University (Palo Alto, CA) –
Parking Charges/ Cash Out, Transit Passes

Intel (Santa Clara, CA) –
Bike Facilities, Rideshare Program

Cisco Systems (San Jose, CA) –
Shuttle, Parking Cash Out

- Transit Subsidies: Provision of free or subsidized transit passes, vanpool vehicles or fares, and/or shuttle services to reduce the cost of these high-capacity modes and create cost-competitive alternatives that make SOV commutes seem more expensive by comparison
- Pre-tax benefits: Allowing employees to withdraw money from their paychecks before taxes are deducted, for use toward the purchase of transit passes

2. **Facilities and Services** – This category of tactics provides the necessary facilities, services or infrastructure to make non-SOV commute options more appealing and viable. Examples include:
   - Bike and Walk Facilities: secure workplace parking for bikes, as well as shower and locker facilities that can also be made available for those who walk to work
   - Preferred Parking for Carpoolers – Provision of preferred spaces for carpool and vanpool vehicles
   - Vanpools, Shuttles, and Car-sharing – Provision of free vanpool vehicles, shuttle services, or car-sharing programs for employees so they do not need to bring a private vehicle to work
   - Guaranteed-Ride-Home – This employer-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)
3. **Flexible Scheduling** – This strategy allows employees to reduce their number of weekly commute trips and shift work trips to non-peak 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
   - Flexible Schedule – Allowing employees to offset work hours from the typical 9-5 standard and shift commute travel to off-peak hours

4. **User Information** – The employer provides information on available alternatives to driving alone, through: a designated Employee Transportation Coordinator; use of print marketing; information kiosks; websites; ridematching services; and/or participating in employee-oriented informational/educational sessions on available transportation options

Issue #2. Why do employers implement TDM strategies?

Cost Savings – Many companies are finding that it costs less to pay employees not to drive than it does to provide them with free or cheap parking spaces. Offering cash to employees who choose not to drive alone to work can amount to significant reductions in parking acquisition and maintenance costs.

Employee Attraction/Retention – Like free parking, many TDM strategies are essentially employee benefits that add to a company's appeal to potential and current employees. These benefits can also help hiring managers attract a broader range of job candidates, including working parents, students, or individuals without a car who require flexible schedules and commute options.

Tax Incentives – Transit subsidies can be deducted as a business expense. Pre-tax programs offer savings to employers as well as employees. When funds are removed from paychecks before taxes are applied, employers save on payroll taxes. In Washington state, employers who provide financial incentives for employees to commute by non-SOV modes and offer a Commute Trip Reduction (CTR) program can also receive CTR tax credits. Companies can claim 50% of the amount paid, up to $60 per employee per year, against B&O and public utility taxes.

Regulatory Requirements – In some cases, employers implement TDM strategies in order to comply with local or state regulations, such as Washington's Commute Trip Reduction Act. CTR law requires companies of a certain size to set SOV reduction targets and develop TDM plans for meeting them. CTR-affected employers must designate an Employee Transportation Coordinator to provide commute information and assistance and support implementation of planned TDM programming. The law was first passed as part of

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	8.50%
Monetary Incentives Alone[4]	Subsidies for carpool, vanpool, transit	8-18%
Services + Monetary Incentives[5]	Example: Transit vouchers and Guaranteed Ride Home	24.50%
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)

the 1991 state Clean Air Act and initially applied to Washington's 10 most populous counties. The 2006 renewal, the CTR Efficiency Act, targets designated urban growth areas and congested corridors, and requires jurisdictions to update CTR plans and better integrate these into comprehensive planning. This 2006 renewal also authorizes jurisdictions to designate concentrated employment and housing areas as Growth and Transportation Efficiency Centers (GTECs) to be included in CTR plans. GTECs expand regulatory influence to smaller employers and residential communities, encourage a comprehensive approach to trip reduction that includes broader geographic issues such as land use and parking, and provide additional state funding for implementation of TDM measures. Downtown Seattle has been approved by the state as a GTEC.

Issue #3. What programs are available to help King County employers successfully implement TDM and CTR?

King County Metro assigns an Employer Transportation Representative to assist CTR-affected companies with programming, goal setting, and mode split measurement. Surveys have found that employees at CTR-affected companies in Central Puget Sound made 14,200 fewer vehicle trips each day in 2005 compared to 1993. This trip reduction is estimated to reduce peak travel delay by 11.6%.[1]

For all businesses, and especially non-CTR affected companies, Transportation Management Associations offer customized commute planning, commute benefits consultations, and information on ridesharing, transit, and non-motorized transportation free of charge. These TMAs partner with governments and transit agencies to develop programming, marketing, and incentive programs for employers and employees alike. They include the Urban Mobility Group in downtown Seattle, TransManage within the Bellevue Downtown Association, the Greater Redmond TMA, and the Duwamish TMA serving businesses from the stadium area to King County International Airport. These organizations all represent opportunities to broaden the reach of TDM programs and bolster the effectiveness of individual employer efforts.

1 WSDOT. "Commute Trip Reduction." www.wsdot.wa.gov/TDM/CTR/overview.htm (accessed December 21, 2007)

Sources:

Arlington County, TDM Master Plan, 2006.

Commuter Challenge. www.commuterchallenge.org

Duwamish TMA. www.duwamishtma.org

Greater Redmond TMA. www.grtma.org

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

Shoup, Donald (1997), "Evaluating the Effects of California's Parking Cash-out Law: Eight Case Studies," Transport Policy, Vol. 4, No. 4, 1997, pp. 201-216.

TransManage. www.bellevuedowntown.org/transmanage

Urban Mobility Group. www.urbanmobilitygroup.com

Washington State Department of Transportation.

WSDOT. "Commute Trip Reduction." www.wsdot.wa.gov/TDM/CTR/overview.htm (accessed 21 December 2007).

Best Practices
Congestion Pricing

What is Congestion Pricing and How Does it Work?

Congestion Pricing describes a number of techniques that use charges to provide disincentives to drive vehicles in certain areas or on particular roadways during periods of peak congestion. Congestion pricing differs from traditional tolling in that tolls are generally fixed amounts charged on a single roadway; while congestion pricing involves variable charges based on levels of congestion or time of day and can be charged over a wide area rather than only on a single roadway. Modern technology has eliminated the need for toll booths, or for delays associated with toll paying, as automated systems can check vehicles entering the toll area. Typically transit and carpools are exempt from paying the toll; where carpools are not exempt, riders still benefit from being able to share the toll. Congestion pricing has been implemented in a number of European cities and is being considered in several US cities including New York City and San Francisco. Congestion pricing has been proven to reduce congestion, increase transit ridership, provide more reliable travel times, decrease pollution, and reduce the number of auto accidents—all while raising critical new revenues for the transportation system.

Issue #1. What are some examples of congestion pricing?

There are several main types of congestion pricing strategies:

1. **Variably priced lanes** – variable tolls on separated lanes within a highway, such as Express Toll Lanes or High-Occupancy Toll lanes (HOV lanes that single-occupant drivers may use if they pay the toll)
2. **Variable tolls on entire roadways** – the same approach as for variably priced lanes, but for an entire roadway

The "C" symbol indicates the Congestion Pricing Area in London.
Source: istockphoto.com

Case Study: London

Since 2003, London has charged a congestion fee to most motorists entering or leaving its central area between 7 AM and 6:30 PM weekdays; residents receive a 90% discount, and motorcycles, taxis and some other vehicles are exempted. In 2005, the fee was increased from £5 (about $10) to £8 ($16). In 2007, the fee zone was roughly doubled in size to approximately 16 square miles.

Drivers can pay at vending machines or by Internet or mobile phone, and discounted passes are available. A network of cameras records license plates entering and leaving the zone which are then checked against payment records. Fines increase with time from £40 to £120.

In 2004/2005, the program generated £190 million in total revenues (£118 million in fees and £72 million in fines), of which £97 million was invested in improvements to public transportation.

The program has proven effective in reducing congestion. Within three years, average car speeds within the zone had increased 37%, and peak period delays had decreased 30%. Bus delays

Map showing London's expanding congestion zone.
Source: Flickr

Case Study: London (cont'd)

declined by 50% within the first three years of implementation, and bus ridership had increased 14%. Due to reduced delays, average taxi fares had declined 20 to 40 percent. While traffic on peripheral roads increased 10% after introduction of the program, traffic signals were retimed and there was no net increase in travel times outside the zone.

Concerns about the program included overcrowding of the transit system and impacts on business. Transit service has been increased significantly to meet the increase in ridership, and economic concerns have reduced significantly since the congestion fee was imposed. In a survey by London First, whose member companies account for 23% of the city's GDP, 91% of businesses reported no negative impact. A major delivery company, meanwhile, reported a 50% reduction in its delivery times.

In 2004 the program's champion, Mayor Ken Livingstone, was re-elected by a wide margin.

3. **Cordon charges** – either variable or fixed charges to drive within or into a congested area within a city
4. **Area-wide charges** – per-mile charges on all roads within an area that may vary by level of congestion
5. **Variably priced ramps** – variable tolls to use freeway on or off-ramps

Issue #2. What are the benefits of congestion pricing?

There is a consensus among economists that congestion pricing represents the single most viable and sustainable approach to managing traffic congestion. While the ultimate impact of a congestion pricing scheme depends on the availability of alternative travel choices (i.e. transit, ridesharing, bicycle facilities), the amount charged and the presence of alternate routes, the results are compelling. Congestion pricing in some areas has led to a 26% reduction in congestion delays and a 15-30% increase in transit ridership. One study estimates that congestion pricing can reduce up to 5.7% of VMT and up to 4.2% of vehicle trips in a region, while other studies suggest approximately 20% of trips would be diverted from the network.[1]

Issue #3. How does congestion pricing work?

Congestion pricing works by shifting some trips to other transportation modes or to off-peak periods, encouraging people to think about the value of their trip – whether it can be made at a different time or in a different way – taking advantage of the fact that the majority of rush hour drivers on a typical urban highway are not commuters. By removing a fraction (even as small as 5%) of the vehicles from a congested roadway, pricing enables the system to flow much more efficiently, allowing more cars to move through the same physical space. Similar variable charges have been successfully utilized in other industries - for example, airline tickets, cell phone rates, and electricity rates.

1 TRAC Washington State Transportation Center, "Destination 2030 – Taking An Alternative Route", 2007

Issue #4. Where has congestion pricing been successfully applied?

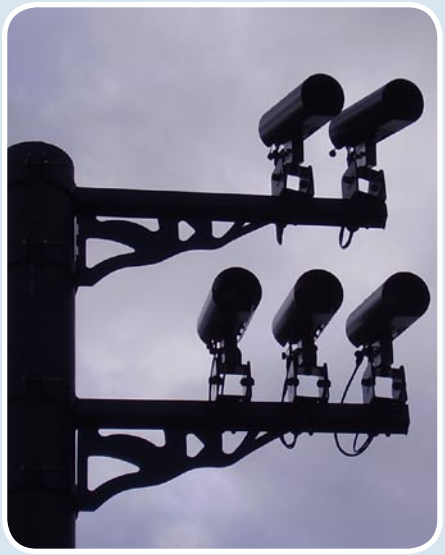
Congestion pricing is increasingly being used as a traffic management tool. For example:

Stockholm, Sweden – Implemented on a trial basis in 2006, Stockholm's Centre City congestion tax was made permanent after traffic fell by 20 percent and a majority of residents, who had initially opposed the idea, approved of it in a referendum. Fees vary by time of day, ranging as high as 20 kroners or about $3 for each entry or exit, with a maximum daily charge of 60 kroners. Fees can automatically be deducted from bank accounts, or payment can be made by Internet or by cash or credit card convenience stores. Alternative-fuel "eco cars" are exempt.

San Diego, CA – Since 1996 an eight-mile reversible toll lane in the median of Interstate 15 has been open to solo drivers who pay a toll using electronic transponders. Carpoolers use the lane for free, and revenue from the project is used to improve transit services in the area. Tolls range from 50 cents to $4 per one-way trip under regular conditions, and sometimes as high as $8. Variable message signs inform drivers of the going rate. Traffic flow is monitored in the Express Lanes to ensure that service on the HOV lanes is maintained at free-flow conditions.

Issue #5. Isn't congestion pricing unfair to low-income populations?

Congestion pricing has a variety of equity impacts. By assigning costs to those that impact roadway congestion, the system adds an element of equity. Road tolls can represent a greater financial burden on lower-income motorists than on higher-income motorists, but they are not necessarily more regressive than other road funding options typically used in Washington, such as fuel taxes or sales taxes. And any real or perceived inequities can be overcome when revenues are invested in new and enhanced transit service. Congestion pricing programs can be designed to include discounts or free passes provided to low-income households. Even for lower-income groups, paying a fee may be worthwhile to allow a working parent to avoid fines at their childcare center or to reach an urgent appointment.



Cameras capture license plates of cars entering the zone.
Source: Wikipedia

All vehicles are expected to pay.
Source: Swedish Road Administration

"ERP" in operation indicates the toll is in effect in Stockholm.
Source: Nelson\Nygaard

Issue #6. How does congestion pricing affect businesses?

Congestion pricing makes the transportation system more efficient and improves travel times and reliability on formerly congested routes. In this way, congestion pricing can improve access to formerly gridlocked locations, increasing these areas' attractiveness for businesses, residents, tourists and shoppers alike.

One important question is whether congestion pricing might depress retail and commercial activity by deterring customers, and whether cordon pricing in particular could create incentives for businesses to locate just outside the pricing boundary. Experience in London already shows this is not the case (see sidebar Case Study: London). However, regulatory and governmental differences between Seattle and London may make it easier for Seattle businesses to locate outside of Seattle's central business district if a cordon were applied. A group of businesses comprising 22% of the city's GDP called London First supports the congestion charge, and a survey of its members found 91% of businesses reporting no negative impact. Positive impacts are greater for certain industries, especially those businesses relying on fast delivery of inputs or products, on-time employee arrival, and staff travel to meetings.

Cordon or area tolls can also be structured to lessen the impact on specific travel modes and user groups. As mentioned above, transit, taxis, emergency vehicles, and carpools can be made exempt from paying the toll. In addition even particular zones within a tolled area may be exempt (i.e. a shopping or tourist district). This allows cities to target tolling policies to reach preferred outcomes.

In contrast, commercial vehicles such as delivery trucks pay the same toll as private vehicles. In London, commercial vehicle travel into the zone during the toll period declined much less than private care travel (in the first year, a decline of 5% for vans and 7% for trucks, versus 34% for private vehicles.) This implies that routing and scheduling of commercial vehicles changed only slightly after the zone was created. It is important to remember that the charge to enter the CBD is balanced against the increased access for commercial vehicles and reduced travel times.

Issue #7. What are the opportunities for applying congestion pricing in the Seattle region?

This year the Federal Highway Administration selected the Puget Sound region as an FHWA "Urban Partner". This would prioritize federal funding for congestion pricing projects in this region if transportation agencies decide to pursue such solutions. This designation is primarily focused on SR 520, but may provide broader opportunities.

Possible applications in Seattle might be a toll zone around Seattle's downtown business core, priced I-5 Express Lanes into downtown, priced freeway ramps accessing the Center City, additional HOT lanes around the region, tolled regional freeways and roadways, or increased fares for ferry riders who bring their vehicles on to boats during peak periods. The first potential application of pricing under the UPA would likely be morning rush-hour tolling on the 520 bridge. Revenue could be used to help pay off bonds issued to finance construction, provide for maintenance, operations and enforcement of the system, and to fund new or enhanced transit service, or programs that support biking, walking, telecommuting and using transit instead of driving alone.

Photo Sources:

Flickr user "dlisbona". License: Creative Commons Attribution 2.0 Generic, http://creativecommons.org/licenses/by/2.0/deed.en

Wikipedia user "Genesis12"