TDM*toolkit*

OCTOBER 2002

TRANSPORTATION DEMAND MANAGEMENT

TRANSPORTATION DEMAND MANAGEMENT TOOLKIT

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This Transportation Demand Management Toolkit *is an update to the* Transportation Demand Management Toolkit for Colorado Smaller Cities and Rural Communities *developed by Carter & Burgess and UrbanTrans Consultants in 1998.*

INTRODUCTION

Introduction

It's no secret that Colorado is one of the nation's most popular places to live, work and play. Thanks to a thriving economy, breathtaking natural beauty and abundant recreational opportunities, Colorado offers an exceptional quality of life that people elsewhere find hard to resist. In fact, Colorado's many charms have made it one of the fastest-growing states in the country.

According to the U.S. Census Bureau, Colorado's population grew over 30% between 1990 and 2000, over 2.3 times the rate of growth in the nation as a whole. Even more substantial, employment in Colorado grew by nearly 50% between 1990 and 1999, over 2.5 times the national average for employment growth. While growth rates may have slowed somewhat in recent years, the Colorado Division of Local Government forecasts a continuation of above-average rates of growth through 2010. These positive growth trends continue to strengthen economic opportunities and bolster community development initiatives all over the state.

At the same time, many communities have struggled to keep pace with the negative side affects of success. Worsening traffic congestion and air quality are often the most obvious and visible consequences of growth, threatening the very qualities that make Colorado so attractive. Addressing these transportation-related challenges is critical to maintaining Colorado's high quality of life while continuing to reap the benefits of economic growth and business vitality.

More and more, addressing these critical challenges requires a comprehensive, well-rounded approach to transportation. Communities of all sizes are facing budget constraints and other limitations to roadway capacity enhancements, and many are turning to other innovative strategies to compliment and balance their approach to transportation decision-making and investment.

Transportation Demand Management (TDM) is a critical element in developing a well-rounded transportation strategy at any scale. From developers working on a site plan to regional governments forming a long-range transportation plan, TDM can provide a cost-effective compliment to any strategy by addressing the *demand* for transportation, and by focusing on partnerships between both public and private sector stakeholders.

TDM and the TDM Toolkit: Developing a Balanced Approach to Transportation

The TDM Toolkit, developed by the State of Colorado, is designed to provide detailed information that will help you incorporate TDM into your overall transportation strategy. The Toolkit is targeted to a wide audience, all of whom play an important role in the transportation system:

- State governmental agencies
- Regional governments
- City and county governments (both large and small)
- Public transportation agencies
- Schools and universities
- Property developers
- Property managers
- Employers

The TDM Toolkit provides an overview of the concept of TDM, outlines a variety of opportunities to integrate TDM in your area, summarizes core and supporting strategies to consider, and details key steps and partners to integrate in developing and implementing a TDM plan. The Toolkit also includes extensive references to relevant case studies which illustrate real-world examples of a variety of TDM applications from around the state and throughout the country.

What is TDM?

Transportation Demand Management (TDM) is simply a way of describing a wide range of programs and services that make the most efficient use of existing transportation facilities by managing the actual "demand" placed on these facilities. Using strategies which promote alternative modes, increase vehicle occupancy, reduce travel distances and ease peak-hour congestion, TDM efforts can extend the useful life of transportation facilities, enhance community mobility, and improve air quality. TDM approaches can include:

- Strategies to promote alternative modes of travel, such as carpooling, vanpooling, transit, biking and walking.

- Projects designed to maximize the efficient use of existing parking resources.

- Efforts to shift travel demand to "non-peak" periods, by promoting flexible work schedules and variable work hours.

- Attempts to eliminate the demand for some trips through teleworking, teleconferencing, etc.

How TDM Can Benefit Your Area...

TDM can play an important role in your area by complementing your current and future transportation programs and investments. These are just a few examples of how TDM could benefit your area:

Relieve labor shortages by increasing access to employees who live far away.

TDM Solutions: Vanpools; Intercity Transit Services

Increase parking availability by getting more employees to rideshare and/or charging a parking fee to employees who drive to work alone.

TDM Solutions: Carpooling, Vanpooling, Transit and other alternative modes; Parking Management

Decrease traffic congestion at key inter sections by spreading out starting and quitting times at local businesses and universities.

TDM Solution: Variable Work Hours

Keep businesses operating during snow storms that close down mountain roads.

TDM Solution: Telecommuting

Make it easier for residents to walk, bicycle or take transit by providing pedestrian walkways, bicycle storage, and passenger loading areas.

TDM Solution: TDM-Friendly Site Design

And, of course, TDM offers these additional benefits:

- ✓ Improved air quality

- ✓ More travel options for residents and visitors

- ✓ A positive environment for continued economic growth

- ✓ Better access to airports and regional facilities

- ✓ Increased employee productivity

- ✓ Reduced energy consumption

- ✓ Better use of land

One final note: This Toolkit is a comprehensive guide to TDM strategies of all sorts. Not every TDM program will be appropriate for your community, so pick and choose as you see fit.

TDM TOOLKIT ORGANIZATION

The following is a description of how the TDM Toolkit is organized to help you on your way:

SECTION 2
TDM Applications
Not sure where to begin? This section includes a summary of six different types of applications where TDM can play an important role... from integration of TDM into long-range transportation plans to development of a TDM plan at individual worksites.

SECTION 3
Nuts and Bolts: Core and Support Strategies
An in-depth look at the nuts and bolts of TDM, including information on the "core" and "support" strategies that are often the key ingredients of any TDM plan.

SECTION 4
Developing a Plan
Here you'll find an overview of the primary steps central to developing a TDM plan in your area – from meeting with stakeholders to securing program funding and developing an evaluation plan.

SECTION 5
Implementation Alternatives
Once you've got a plan in place, finding the best fit for implementation of the plan is critical. This section explores key partnership opportunities and provides guidelines for consideration of several implementation alternatives, including Transportation Management Associations (TMAs) and Employee Transportation Coordinator (ETC) networks.

SECTION 6
Setting Goals and Measuring Results
Information on setting goals for your TDM program and tracking its performance.

SECTION 7
Local and National Examples
This section has eight detailed case studies summarizing TDM programs from around the state and across the country.

SECTION 8
Other Resources
You're not alone! This section provides a brief summary of resources at the state and national level for additional information and technical assistance.

We hope this TDM Toolkit will provide the resources and tools you need to meet the transportation demands of a healthy, growing city while preserving all the best qualities of your community and region. *Good luck!*

For more information from CDOT on TDM programs and technical assistance, contact:

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SECTION TWO: TDM APPLICATIONS

TDM APPLICATIONS

TDM Applications

The are a wide variety of opportunities to explore the application of TDM strategies. Before you explore the Nuts & Bolts of TDM in the next section, take a look at the following six different applications where TDM programs and services can play an important role:

1. City / County / Regional Transportation Plans
2. Major Corridor Planning or (Re)Construction Projects
3. Subarea Planning or Major (Re)Development Projects
4. Universities and Colleges
5. Development Projects
6. Employment Sites

While there are many other applications for TDM programs, this section is intended to give you a feel for the many ways that TDM can help address a wide array of community and transportation challenges. A brief Colorado case study is provided for each example to illustrate a real-world application of these concepts.

City / County / Regional Transportation Plans

Integrating TDM into a comprehensive, long-range transportation planning strategy.

<u>Description</u>: Developing or updating a city, county, or regional transportation plan provides a clear opportunity to explore the integration of TDM into an area's long-range transportation strategy. These efforts typically involve an analysis of the existing transportation network, development of forecasts of future transportation needs, assessment of fiscal and other limitations, and a discussion of community goals and objectives for future transportation investments.

<u>Opportunities for TDM</u>: Incorporating TDM into a community's transportation plan recognizes that, more often than not, no single approach to solving transportation problems can be effective. As a complementary part of a balanced transportation plan, TDM can help:

- manage the long-term demand placed on the transportation network, reducing or delaying the need for expensive capital investments,

- expand the array of transportation choices available to residents, employees, and tourists,

- provide easy-to-implement, near-term solutions to current transportation challenges,

- provide low-cost alternatives to capital projects with high financial costs or unacceptable community or environmental impacts,

- provide enhanced mobility options for citizens that do not, or cannot, drive, including students and seniors, and

- strengthen partnerships with private sector stakeholders, like major employers and developers, that are often an important financial contributor to the overall transportation network (in building parking and pedestrian/bicycle facilities, subsidizing transit passes, etc.).

Case Study:
The City of Boulder – Transportation Master Plan Update (2002)

The City of Boulder has actively promoted the use of TDM and other management strategies in its comprehensive planning process since the late 1980s. Recognizing the need to address a combination of transportation concerns and quality of life issues, Boulder turned to TDM as an integral element for all of their transportation planning and services. The setting for TDM was the 1989 Transportation Master Plan (TMP) goal for shifting 15 percent of single-occupant vehicles to other modes, so as to minimize the growth in overall traffic and air pollution. This goal was later revised by the 1996 TMP to indicate holding congestion to 1994 levels and reducing single-occupant vehicle travel to 25 percent of all trips. In each TMP, the provision of new alternative mode infrastructure, marketing, and education programs were featured as the means of accomplishing these goals.

Starting with the creation of the Alternative Modes Center (later renamed GO Boulder), the City has actively promoted alternative forms of transportation side by side with the implementation of bicycling, pedestrian, and transit infrastructure. Every two years, the City evaluates the performance of its TDM and alternative mode programs against overall City traffic and transportation. Despite an overall increase in all trips, Boulder reduced the total number of all single-occupant vehicle trips by 3 percent and in-city commute trips by 4 percent. Furthermore, growth in vehicle miles traveled was less than population and employment growth in the City, indicating the City is making inroads towards holding congestion steady, despite growth.

The City of Boulder is currently revising its TMP again, this time with the objective of enhancing the City's TDM program. The 2003 TMP should be complete by June 2003.

Principal TDM Elements:

- Provides pedestrian and bicycle networks

- Developed the easily-identifiable and well-utilized community transit network (HOP, SKIP, JUMP, LEAP, BOUND, DASH, and STAMPEDE).

- Established an Employee Transportation Coordinator (ETC) network of over 100 employers

- Developed an aggressive marketing and education program through its citywide liaison, GO Boulder

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Major Corridor Planning or (Re) Construction Projects

Integrating TDM as a complement to a planned major investment and/or as part of a construction mitigation plan.

<u>Description</u>: Major corridor planning projects or (re)construction efforts are often a critical element in a community's transportation decision-making process. These projects offer an opportunity to examine future transportation needs in a specific corridor and explore an array of investment alternatives to meet future travel needs.

<u>Opportunities for TDM</u>: Opportunities for the development and integration of TDM include:

- development of an easy-to-implement, near-term TDM component as part of a phased corridor investment plan,

- formulation of a TDM program that complements a major capital investment (i.e., developing an integrated rideshare program as part of a Bus/HOV investment),

- development of a TDM congestion mitigation program that provides travel alternatives and advanced traveler information during corridor (re)construction, and

- development of a TDM program in corridors where major roadway expansion is not feasible or undesirable.

Case Study:
T-REX

The reconstruction of Interstate 25 in southeast Denver, known as "T-REX," involves the addition of two lanes of general purpose traffic and a new light rail transit line parallel to the roadway. Over the course of six years, commuters will experience extended delays and unpredictable travel times. CDOT turned to TDM as a means to help *mitigate* these negative effects, and, *build* a user base for the transit investments in the corridor.

One year into the reconstruction effort, a collaboration of regional and local implementers have developed and implemented the TDM program for T-REX. Included in the steering committee are: T-REX project managers, CDOT, the Denver Regional Council of Governments (DRCOG), the Regional Transportation District (RTD), the City of Denver, and various Transportation Management Associations (TMA) on the corridor. As described below, services have met with varying success. The Smart Community element was implemented as a website, available at http://www.trexproject.com/. The vanpool subsidy element was very successful, with new vanpools quickly filling within the first few months of operation on the corridor.

Principal TDM Elements:

- Subsidizes the employer provision of free transit passes (called ECOPasses) to commuters

- Creates and markets an internet-based information network for alternative transportation (called a Smart Community)

- Subsidizes the provision of new vanpools for I-25 commuters

- Promotes and markets commuter information for the corridor

Contact:

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Subarea Planning and (Re)Development Projects

Integrating TDM into a specific community subarea or major (re) development.

<u>Description</u>: Community "subareas," such as a downtown or suburban business district, often exhibit specific characteristics that give them an identity all their own. As such, these areas are often appropriate for a more tailored TDM plan that meets the specific needs or interests of the area.

<u>Opportunities for TDM</u>: Opportunities to consider development of a subarea TDM plan include:

- downtowns, suburban business districts, or other areas with high concentrations of employees, peak-period congestion, or parking constraints,

- large infill or redevelopment projects where significant investments in transportation infrastructure provide an opportunity to explore innovative alternatives, and

- large retail, tourist, or special event destinations, where significant traffic volumes, peak-period congestion, or parking constraints degrade the visitor's experience.

Case Study:

Lowry Redevelopment Authority

Located in eastern metropolitan Denver, sharing land with the cities of Denver and Aurora, the former Lowry Air Force base was converted to a residential and commercial redevelopment community in the early 1990s. Over the past twelve years, 3,000 residents and 5,000 employees have made Lowry their home of operations. Lowry's build-out population in the next five years will extend to almost 10,000 residents and employees each.

The Lowry Redevelopment Authority recognized the need to be proactive about providing viable transportation options to residents and employees in its planning and ongoing operations. TDM strategies are incorporated into each commercial development application. Among the many strategies and elements deployed includes Lowry-specific access information, including walking, bicycling, and bus routing information. This information will be developed as a real-time service on Lowry's Smart Community, the LowryLink.com website. In order to coordinate all the activities, Lowry uses a citizen and business subcommittee dedicated to overseeing the transportation options program.

Principal TDM Elements:

- Developed TDM-Friendly site design criteria into its development review guidelines

- Provides pedestrian, bicycle, and bus routing information and timing information specific to Lowry

- Provides ongoing information and alternative mode marketing materials

- Developing real-time bus location information into its Smart Community

- Provides bicycle racks, bicycle lockers, and bus shelters in high-use areas

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Lowry Redevelopment Authority
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Universities and Colleges

Integrating TDM as part of a comprehensive campus access plan.

Description: Major university and college campuses often have unique transportation challenges that present excellent opportunities for the development and integration of TDM strategies. While some campuses contain a large residential component, and others are largely "commuter colleges," they often face similar challenges with parking constraints, peak-period congestion, and access.

Opportunities for TDM: In many cases, university populations – from students to teachers to staff members – are amenable to exploring transportation alternatives. Opportunities for TDM include:

- development of a TDM program as part of the development or update to a comprehensive campus transportation plan,

- formation of a university-wide transit pass program, or

- Initiation of a university transit shuttle program connecting the main campus to off-site parking facilities, nearby activity areas, residential complexes, or special events/athletic facilities.

Case Study:
University of Colorado at
Colorado Springs

The University of Colorado at Colorado Springs (UCCS) exhibits a well-rounded approach to offering commuter services to its students. Unlike more traditional residential universities, like the University of Colorado at Boulder, UCCS tends to be more of a commuter college. Although the majority of students have a full course load, they also tend to work 32 hours per week or more. Given a lack of direct transit routes in Colorado Springs to the campus, UCCS has had to provide a more rounded program, which also reflects the reality that students are commuters by nature. To this extent, parking services play a key role in the development and encouragement of travel options.

UCCS successfully implemented an off-site parking facility, connected by a high-frequency shuttle service called FasTracks, as a means of addressing short-term parking shortages. The benefit to the Community was decreased traffic volume on the principal arterial serving UCCS, greater use of the City's transit system (FasTracks is the highest volume service for Springs Transit), and an increase in revenue to be designated for other alternative transportation purposes, such as bicycling and pedestrian services.

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Development Projects

Integrating TDM programs at a multi-tenant development project.

Description: Whether in the planning stages or already complete, multi-tenant and/or multi-use development projects offer a prime opportunity to develop tailored TDM programs that address the specific needs of the site.

Opportunities for TDM: TDM programs can be developed at a variety of stages, and managed in a variety of ways:

- a TDM plan can be a key component of the development planning process. A strong TDM program can mitigate forecast traffic volumes in and out of the property, and can help better integrate a project with surrounding projects and neighborhoods.

- a TDM program can be introduced once a project is constructed, and can be framed as a project amenity to prospective tenants concerned about access and parking alternatives at the project location.

- TDM programs can also be used to mitigate the expense or impact of proposed expansion efforts. By reducing the number of vehicles coming in and out of the project, TDM programs can reduce the need for expensive access road upgrades and new parking facilities.

Case Study:

Colorado Center

The challenge is a familiar one to many urban planners – how does one encourage high-density commercial development without placing a traffic and air quality burden upon surrounding neighborhoods and uses? This challenge was a reality to Denver planners for the proposed Colorado Center complex at I-25 and Colorado Boulevard. Featuring two large office buildings, a movie theater, restaurants, and a restaurant/ entertainment attractor, Colorado Center had the potential to overwhelm the capacity of the adjacent arterials and their interchanges with I-25.

The project developers and the City of Denver used TDM strategies as a means of addressing these potential problems. First, the Colorado Center development required a ceiling on peak-period vehicular trips, as a condition of approval in the Planned Unit Development. If biannual vehicle counts show a greater number of trips than allowed within the ceiling, then the site is required to contribute a monetary fine. Second, shared and paid parking was implemented across all uses, so as to minimize parking effects. Third, the Colorado Center participates in TDM activities and marketing developed by Transportation Solutions, the local TMA. Finally, the Colorado Center was actively involved with developing a TDM-friendly Site Design approach to its property, pending a new Light Rail Station onsite. This station will be the flagship station for the T-REX light rail line, and as such, feature a full array of modal alternatives serving the entire Colorado Boulevard and Cherry Creek area.

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Employment Sites

Integrating TDM programs at single employment locations.

Description: Transportation challenges impact employers in a variety of ways. The commute to work is often a major factor in employee recruitment, retention, and even productivity. A lack of sufficient transportation alternatives can limit an employer's access to labor markets, especially in areas with high housing costs. Parking and other facility costs can hamper expansion plans and escalate operating costs.

Opportunities for TDM: Employer-based TDM programs offer a variety of benefits to both the employer and the employee. Federal tax laws provide tax incentives for both employers and employees to implement employer commute programs (see the "Incentives" area of the Nuts & Bolts section of the Toolkit). In addition to the benefits of these tax incentives and of improving overall worksite accessibility, some situations where employers may want to consider a TDM program include:

- when extremely long or frustrating commute times are negatively impacting an employer's ability to recruit and retain quality employees,

- when overlapping work shifts are causing short-term parking crunches,

- when high local housing costs force lower-income wage earners to live far from work, limiting employee access and causing higher than normal absenteeism,

- when expansion plans may require expensive or difficult-to-construct parking facilities, or

- when employee parking limits the availability of parking for customers or visitors.

Case Study:

Agilent Technologies

Agilent Technologies, on Garden of the Gods Road in Colorado Springs, has been at the forefront in providing proactive transportation options to employees. For over twenty years, the site (formerly Hewlett Packard, from which Agilent was spun-off) has offered a variety of transportation services, including subsidized vanpools, preferential parking for carpoolers and vanpoolers, incentive and marketing programs for the use of alternatives, discounted bus passes, and sheltered access to regional transit systems. Agilent plays a leadership role for the Garden of the Gods Transportation Management Association, and has been active in promoting transportation alternatives to the surrounding business community.

Although many services have been discontinued, including subsidized vanpools, Agilent Technologies continues to provide its employees with a variety of services and incentives. For example, in an average month in 1998, over 24,000 commuter trips were via alternative mode, with the majority of commuters having carpooled. Given the fact that travel times are short (only 23 minutes on average), this is a high use of carpooling and other options. Credit is given to Agilent's proactive marketing and incentives.

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SECTION THREE:
TDM STRATEGIES: NUTS & BOLTS

NUTS AND BOLTS: *TDM Strategies*

This section reviews both core and support TDM strategies that will form the base of your TDM program. You've seen the various ways that TDM can address a wide range of concerns facing your community. Now, you're ready to explore the ins and outs of individual TDM strategies. This section begins with a review of core strategies and concludes with an analysis of support strategies. Not only is each strategy defined, but considerations for implementation, program descriptions and real-life examples are included.

Core TDM strategies include:	**TDM support strategies include:**
☐ Transit	☐ Rideshare Matching
☐ Intercity Services	☐ Guaranteed Ride Home
☐ Vanpools	☐ Parking Management
☐ Carpools	☐ Incentives
☐ Walking	☐ Marketing and Education
☐ Bicycling	☐ Market-Based Strategies
☐ Variable Work Hours	☐ Intelligent Transportation Systems
☐ Telecommuting	☐ TDM-Friendly Design Considerations

NUTS AND BOLTS: *TDM Core Strategies*

TRANSIT

Description

If your community would like to offer regular passenger service to residents, employees, or visitors, then transit programs should be considered. Transit provides passenger service to the general public. Key principles of transit include: predetermined schedules, standard fares, and either local and/or regional service. Local transit service generally operates within one community or area. Regional services connect rural areas or distant communities to a larger town or regional center. Typically in Colorado, the public sector operates local transit services and many regional services, however, the regional and intercity bus services operated by the private sector are also an important part of the transit network. This section describes services operated by the public sector. Services operated by the private sector are described in the following section.

Considerations

Transit is not just an urban solution. Transit service is increasingly important to rural resort communities as well as to communities that have employees but not jobs. While it is common to think of transit as something that works in big cities, several of Colorado's largest transit systems are in small towns. While Denver's Regional Transportation District (RTD) is the state's largest system, the Roaring Fork Transit Authority is the second largest, carrying four million annual passengers in the Aspen to Glenwood Springs corridor. The Town of Vail and City of Colorado Springs vie for third place, with each system carrying about three million annual riders. In the Vail Valley, Avon Beaver Creek Transit and Eagle County RTA also provide a significant amount of service, carrying an additional two million passenger trips annually.

Size doesn't matter. Generally, transit is thought of as big buses operating on city streets. But there are many types of transit services, each appropriate to different sizes and types of communities. Today's transit systems provide a wide range of services that can be tailored to meet the needs of each community:

- ✓ *Fixed route bus service* is often used in communities over 20,000 in population, or in an economy with a strong resort or college sector.

- ✓ *Demand response services*, sometimes known as "dial-a-ride" services, are often more appropriate in smaller communities.

- ✓ *Fixed and flexible routing* combinations may best suit communities between 10,000 and 20,000.

Transit is an important alternative transportation option in its own right. As a shared ride service, it can offer greater flexibility than carpools or vanpools. With a carpool or vanpool, you have one departure time. While with transit, you can often take a later bus.

Transit is a natural travel complement. Some people take the bus when they cannot make their vanpool or carpool schedule. Having transit available makes being in town without a car much more appealing to people who may carpool, bicycle, walk, or simply catch an odd trip into town with a friend or family member.

Transit works in rural Colorado. Rural transit often provides rides to people who do not have access to a vehicle or who are unable to drive, provides access to employment opportunities, and reduces the numbers of cars on the road in congested resort communities.

Program Development

For transit services to be successful, they need to be well planned. It is important to know what market you want to serve and to design services that will be effective for that market. To draw automobile users to transit, three key amenities must be offered: price, convenience, and appeal:

- ✓ The price must be competitive with the out-of-pocket costs for making a trip by automobile. A transit development plan should identify fares that will translate into transit users. High initial fares often predict the failure of transit.

- ✓ Consumers often measure convenience in terms of speed and directness of the service. Designing routes that are direct and that do not require more than one transfer is important. Marketing efforts should identify how transit offers conve-nience, such as the ability to read a book rather than wait in traffic.

- ✓ Acceptance and appeal of the service is directly related to the quality of the service. High quality service with an image and identity that suits your community, not other areas, are key to a transit system that offers public appeal.

Rural communities have the option of providing either small or large scale services. Which type of program to develop depends upon the objectives and target markets for transit. For example, many resorts provide transit mobility for tourists. However, providing access to jobs is also a very important function of transit services. Services in rural communities that have focused on the needs of people who are elderly or disabled in the past may need to add the low-income market segment to those they serve, with a focus on work trips.

Transit patronage can also be enhanced with an incentive program. Often, new riders will need a reason for "trying out" your transit system. Partnerships with retailers and restauranteurs, financial incentives, and other promotions are essential elements of your transit development plan.

Examples

Many of the resort communities operate regional services so employees who live some distance from the resort can access jobs. Communities served by employment shuttles include:

- ✓ Glenwood Springs, Carbondale, Basalt and El Jebel to Aspen/Snowmass;

- ✓ Buena Vista, Leadville, Eagle, and Dotsero to Avon/Beaver Creek/Vail; and

- ✓ Fairplay to Summit County.

INTERCITY SERVICES

This section focuses on an important part of Colorado's transportation network: regional and intercity bus services. Travel between Colorado's cities and towns creates demand for intercity transportation services. Although these services are primarily operated by the private sector, the public sector has a vested interest in working closely with these providers in order to maximize public transportation resources.

Regional bus service transports people over relatively long distances. Service may be fixed or flexible at either end of the route, but generally much of the route is in "express" mode. In Colorado, either the public or private sector may operate regional services. For example, service between Glenwood Springs and Aspen is operated by Roaring Fork Transit Agency, a public sector operation. Yet, resort shuttle services and airport services such as Best Mountain Tours, Colorado Mountain Express and Front Range Express are more often operated by the private sector.

Intercity bus service is defined as regularly scheduled bus service that operates with limited stops over fixed routes connecting two or more areas that are not in close proximity. Intercity services in Colorado are operated exclusively by the private sector; i.e. Greyhound, TNM&O, Powder River Transportation and Turismos Rapidos.

Considerations

Existing Services. An understanding of existing private sector services in your area provides a starting point for assessing service needs in your region. Research providers, scheduling and service availability in your area to determine unmet transportation needs and service gaps.

Funding Opportunities. Limited funding is available through two sources. First, the federal rural transportation program Section 5311 (f) provides funds for a variety of intercity services. Second, NHS and STP funds for certain capital intercity bus projects under TEA-21 exist. Tapping into these funds creates an opportunity to measurably improve intercity services in Colorado.

Program Development

Developing a thorough understanding of intercity service gaps in your community coupled with research into funding opportunities are the first two steps in program development. Furthermore, setting a goal to better integrate intercity services into the overall transportation network with the private sector at your side is critical. Attention to the following strategies will assist in strengthening your program:

- ✓ **Integration Strategies.** Strategies to better integrate private sector transportation networks include, marketing, creation and placement of directional signage, development of passenger amenities (such as bus shelters and kiosks), and the location of intercity bus terminals at or near public transit facilities such as bus stops and park-and-rides. Projects such as these can help leverage the private sector investment in the state's transportation network.

- ✓ **Service Strategies.** Service improvement strategies include the addition of feeder routes to the existing intercity network or route extensions and providing accessible vehicles for service routes. New or additional routes would likely involve some sort of from the public sector, at least at the outset, and this is an eligible project for federal rural transportation funds under the intercity program.

Examples

In Vail the Transportation Center includes access to local public transit, private regional carriers and the intercity station. Commuters, residents and visitors are able to transfer between private and public transportation sources with ease. In Pueblo, the intercity station is located at the north end of the city. Both local transit bus and regional carriers service the station.

VANPOOLS
Description

Are there employers in your community whose employees commute from outlying towns? Are there a significant number of commuters in the region travelling to work in your downtown business district? Vanpooling may provide a realistic alternative for these groups and others who travel over 15 miles to their jobs or to school. Generally, vanpools work best for groups of 6-15 people who live relatively close to each other and work for the same employer or for employers in the same general area. One of the members of the vanpool can drive or participants can alternate driving responsibility.

Considerations

Vanpools are an attractive alternative to transit. Vanpooling provides the convenience of door-to-door service and the cost-savings associated with splitting commute costs. Participants dramatically reduce the wear and tear on their personal vehicles, avoid the stress frequently associated with longer commutes and parking, and reduce the demand for parking spaces at worksites and congested commercial areas.

Vanpools can be used for attracting employees. Employers can expand their labor market by coordinating vanpools for workers living in nearby towns. In some scenarios, vanpools offer greater

convenience than transit by providing employees tailored transportation services designed to fit commute patterns and work schedules.

Attracting passengers is the principle concern for vanpools. Convincing employees to leave their cars at home, even a few days a week, means providing an alternative that is reasonably comfortable and convenient. Perhaps most important, however, is developing an alternative that is also cheaper than driving. Vanpools offer a uniquely cost-effective alternative by carrying six or more people. Dividing commute costs between six people can result in significant savings. The key ingredient, of course, is vanpool participants.

Partnerships enable successful vanpool programs. Forging partnerships between local employers, public agencies and non-profit groups to market vanpool programs and creating public-private partnerships to facilitate ridematching and promotional efforts are both important components in developing a base of vanpool users.

Program Development

Developing a successful vanpool operation requires effective organization and aggressive marketing. Financing the purchase, insurance and maintenance of a vanpool fleet can be accomplished in a variety of ways. In most areas, vanpool efforts incorporate one or more of the following:

✓ **Employer-sponsored Programs.** Companies purchase vans, provide insurance and maintenance costs, and administer ridesharing. Employers have the option of either purchasing or leasing vehicles, with cost recovered through passenger fares, reduced parking, and improved employee productivity.

✓ **Third-Party Programs.** This setup involves a ridesharing organization, public agency, public-private partnership, or van leasing company which leases vans to commuter groups or small employers.

✓ **Owner-Operated Programs.** This approach allows individuals to purchase a van and charge passengers for commuting costs. These programs can be supported by subsidies from employers or facilitation from public agencies. With owner-operated vanpools, the maintenance and insurance costs are paid by individual owners. In some areas, public agencies and private, non-profit groups have encouraged owner-operated vanpools through the following efforts:

- providing low- or zero- interest loans for the purchase of vehicles
- arranging the purchase of vehicles at wholesale prices
- creating exemptions from state and/or local taxes for the purchase of vehicles
- helping individual operators or smaller companies secure better maintenance and insurance rates

It is important to remember that, for a vanpool program, empty seats represent lost opportunity. Private corporations, rideshare agencies and public agencies can all contribute to empty-seat financing. Once on the road, a vanpool and its passengers are their own best advertisement for additional passengers. An empty-seat subsidy can jump start new or additional vanpools, but should be limited to a specific period of time, encouraging current passengers to recruit new vanpoolers to fill the empty seats.

Finally, it is important to explore park-and-ride opportunities for vanpools throughout your community. Sometimes, this can be as simple as asking merchants to grant permission for two riders to park in their lot during the day.

Examples

In the San Fernando Valley of California, a coalition of public agencies, the local rideshare agency, van leasing companies and local businesses developed and implemented an alternative subsidy program to convince individual commuters to try the vanpool option. Commuters interested in joining existing vanpools could receive up to six months of fare reductions, based on the following schedule:

Month	Percent Discount
1	50
2	40
3	25
4	15
5	10
6	10

This technique focuses promotional efforts on the individual commuter rather than empty seats. The empty-seat subsidy is an effective means of getting a vanpool started for commuters interested in vanpooling, but the temporary fare reduction focuses on commuters more reluctant to give up their cars. During the 16 months that this program was in place in California, 673 people joined vanpools, with 92 percent of them continuing to vanpool after the six-month subsidized period. Direct phone contact with employee transportation coordinators and other representatives provided the most successful means of marketing this program. Commuters were willing to make a trade-off between the lower fares and the conveniences of the automobile in order to sample vanpooling. Changing travel habits is extremely difficult, but this short term subsidy approach proved just enough to convince a few commuters to try new options: 92 percent of those that tried vanpooling realized they had found a better way.

CARPOOLS

Description

Carpooling is the most common and flexible way for commuters to share a ride. More informal than a vanpool and more flexible than inter-city bus options, carpools generally have two or more passengers who live in the same neighborhood or along the same route using a private vehicle to travel to common or nearby destinations. One person may drive every day, with passengers pitching in for gas and/or parking expenses, or participants may rotate driving responsibilities, circumventing the need to reimburse the driver.

Considerations

Carpooling is all about trust. The majority of active carpoolers are spouses, relatives, neighbors and co-workers. Why? Sharing a ride to work with someone requires a significant amount of trust – trust that your ride will show up every morning and trust that your ride will be safe and pleasant. If a community promotes carpooling, it must address the necessity for trust.

Carpools can be relatively convenient. Carpooling with a spouse, neighbor or co-worker reduces the amount of time lost at one or both ends of the journey. Time is often cited as the

most important element driving individual commute decisions. While some time is naturally lost picking up and dropping off passengers, the private and public sectors can work together to offset lost time with carpool travel lanes, parking, or financial incentives.

Marketing commuting costs helps in developing a successful carpool environment. Carpooling with family members or spouses can eliminate the need for a second car or greatly reduce the wear and tear placed on a second vehicle. Similarly, reimbursements from passengers can significantly reduce commuting expenses. Financial incentives from public and private sources can create cost benefits which outweigh losses in either comfort or convenience.

Program Development

So what steps should you take to improve the carpooling environment in your community? How can you develop a solid foundation for carpooling in your community by addressing the comfort, convenience and cost factors? Assuming that a baseline group of residents are currently sharing a ride, efforts should focus on commuters who are prime carpool candidates. The biggest hurdle in this process is simple inertia. "Why should I try something new? Sure the congestion is getting worse, but driving alone is not so bad." The fundamental challenge is comfort and trust. Initial outreach efforts should focus on commuters at the workplace. They may not even realize one of their co-workers lives just around the block. The public and private sectors should work together to eliminate obstacles and provide incentives to carpool.

With assistance, employers and property managers can implement any number of strategies designed to promote carpooling among workers. Your community, working with employers, can provide

a ridematching bulletin board or organize informal brown-bag lunch gatherings to introduce employees living in the same general area. The opportunity to meet co-workers from your neighborhood can directly and positively impact the comfort factor.

As a slightly different variation, your community could coordinate through local employers an emergency ridesharing network. This network would help employees get to work during unusually bad weather conditions. Already, many hospitals and other organizations that cannot afford to have their employees stranded at home appoint employees with four-wheel-drive vehicles as emergency drivers. Often times, after shar-

ing a ride during a snow storm, these employees wind up carpooling more frequently.

There are other tools your community could use to promote carpooling:

✓ In order to address common fears of having to work late or attend to an emergency during the day, your community may develop a "guaranteed ride home" program, whereby carpoolers can receive a free, occasional taxi ride home.

✓ Your community could request the implementation of preferential carpool parking close to the building entrance in de-

velopment approval. Preferential parking, in use at many Colorado employers, can improve the overall travel time for employees sharing a ride.

✓ Ridematching services can focus on arranging carpools for those working for different companies in the same general area. Congested areas like the central business district are often the best place to begin such programs. Efforts may involve more proactive programs which attempt to find potential carpool candidates or more interactive approaches such as an on-line ridematching service.

✓ Public sector groups can develop facilities which improve the time or cost advantages of carpooling. These could include incorporating high-occupancy vehicle lanes into roadway improvements, using parking meters to reduce the number of free on-street parking spaces or developing a managed parking lot providing free spaces for those sharing a ride. These approaches are most appropriate along congested roadways or in downtown locations where parking is limited.

Examples

Excellent examples of carpool promotion can be found throughout Colorado. The case studies for Aspen and La Plata County, included in this toolkit, detail the innovative carpool programs each of these communities have implemented. Additional examples are provided in the *Intelligent Transportation Systems* and *Rideshare Matching* supporting strategies, detailed later in this section.

WALKING

Description

Walking is an often-overlooked alternative to driving alone in both rural and urban communities, due to the typical distances involved. However, walking can be the perfect compliment to other TDM strategies, such as transit and carpool programs. A safe and convenient environment for pedestrians can dramatically increase the number of residents walking to offices, stores, or schools during the day. Walking, then, enables sharing a ride or taking the bus as a realistic commute alternative.

Considerations

Pedestrian investments can assist economic redevelopment. In many areas, traditional commercial centers have been revitalized through a series of pedestrian improvements. The interest in enhancing these "Main Street" districts ranges from improving the business climate to preserving small town character. The walkability of the town center often represents its best quality, allowing residents to window shop on weekends and workers to run errands after work.

Program Development

The are many cost-effective ways to enhance the walkability of your community. The first step should be to consider where people are going to and where they're coming from. The majority of residents will only consider walking to destinations that are five to ten minutes away. Mapping out the areas within a reasonable walking distance to the town center or to other neighborhood destinations can prioritize the areas deserving the most attention. Within these "ped-sheds," a field survey of *missing links* will often reveal a few select sites in the area that serve as barriers to walkers. These may include undeveloped residential lots without sidewalks, unsafe intersections, or large parking lots. A few obstacles, especially near a popular destination, may keep the majority of people from walking and may be relatively easy to improve. More detailed site-design issues are addressed in the *TDM-Friendly Site Design* portion of this section.

Examples

Iowa City, Iowa, with a population just over 50,000 incorporated sidewalk improvements, crosswalk upgrades, streetscape enhancements and lighting additions as the central feature of a successful downtown redevelopment effort. With a range of businesses, many of whom had once fled the downtown area for locations on the edge of the City, returning to this pedestrian-friendly area, more and more residents are able to run errands before and after work, reducing the number of trips they take in their cars. Additionally, by incorporating a transit facility into their redevelopment plans, Iowa City officials made it more realistic for residents to take the bus downtown and then walk to work.

BICYCLING

Description

Although often underestimated, bicycling remains a popular mode of travel during pleasant months of the year throughout Colorado. Similar to walking, bicycling can serve as a compliment to transit service, extending the reach of alternative modes of travel to commuters. Furthermore, employers and employees realize a wide array of benefits by enhancing bicycle facilities and promoting bicycle commuting. Your community can assist bicycle commuting through public facilities, partnership programs, and incentives.

Considerations

Bicycling can help employees save money and maintain their health. Employees who bicycle more and drive less save significant amounts of money on fuel, vehicle maintenance, parking and even automobile insurance. The health benefits associated with riding to and from work, even a few days week, have been associated with increased productivity, decreased absenteeism, reduced stress and fewer on-the-job injuries.

Bicycle commuting can also save employers costly overhead. Employers with active bicycle commuting programs can save money on parking spaces and health insurance. The design, construction, maintenance, and property tax costs associated with providing employee parking are extremely high. With 10-15 bikes fitting in the same space as one automobile space, increasing the number of employees bicycling to work can yield substantial cost savings, reduce the size of parking lots, and open up more spaces for revenue-generating customers. Health insurance rates may be reduced with healthier employees, who file fewer medical claims.

Program Development

Your community may encourage bicycle commuting through promotional activities and incentives. Although many of the following program suggestions are best implemented at individual employers, your community must play an active role in developing complimentary public bicycle facilities and technical assistance to employers as they develop bicycle commuting programs.

✓ **Physical amenities.** Many workers who would like to ride their bikes to work are concerned about riding in business attire and arriving to work sweaty. Medium to large sized companies may consider installing showers and lockers, allowing employees to change before and after work. These amenities are often viewed as a significant aspect of a company's benefits package. Other similar options include provisions to use the facilities of a nearby healthclub and revisions to the company's dress code.

✓ **Bicycle parking.** Providing secure bicycle storage presents another opportunity for employers to encourage bicycle com-

muting. Bicycle lockers and storage areas represent the best way to ensure safety and protection from the weather.

✓ **Guaranteed Ride Home.** Addressing common concerns about bicycle breakdowns, bad weather, or being stranded at work, companies may sponsor or participate in a guaranteed ride home program. Offering to pick up employees who have a flat tire, drive home commuters faced with inclement weather in the middle of the day and provide free taxi service in the case of a midday emergency, guaranteed ride home programs can ease many concerns which prevent people from biking to work.

✓ **Bicycle routes.** Many employees, especially those new to town, may not be familiar with area bicycle routes. Employers may provide route maps to employees or post a municipal map displaying prominent bike paths connecting to the business.

✓ **Variable work hours.** Employers may choose to use "flex-time" arrangements as a means of promoting bicycle commuting. Allowed to arrive at work during non-rush-hour times of the day, more employees could bicycle without struggling against congestion and fumes.

✓ **Bicycle access.** Improving bicycle access onto a company's property can greatly improve the ease of the bicycle commute. Even if municipal bike paths are well designed and maintained, the final stretch through a large parking lot or across a dangerous intersection may keep many people from riding. These improvements will increase the appearance and value of the company's property, and walkers and bikers alike will enjoy a

smoother journey to work. More details are discussed in the portion of this section on *TDM-friendly Site Design.*

Bike racks in a visible location near the building entrance provide a secure and convenient amenity.

Examples

The City of Greely recently surveyed businesses and discovered that 70% of employees lived within five to seven miles of work. Armed with this information, the Greeley Smart Trips Program focused efforts in 2002 on bike commuting. They have created a bike commuter club program that offers incentives to bike commuters. Additionally, they have created a bicycle depot pilot program that provides a convenient space for commuters to transition from commute-mode to work-mode.

VARIABLE WORK HOURS

Description

The 9-to-5 job is becoming a thing of the past now that employers have discovered the advantages of variable work hours. By varying the time of day or number of days that employees come to work, companies are operating leaner and employees are loving their new-found flexibility. Flex-time allows employees to choose when their work day starts and ends, as long as they're on the job during a specified core time. Another popular arrangement is the compressed work week, where employees work four 10-hour days, three 12-hour days or complete 80 hours of work in nine days.

Considerations

Local jurisdictions, employers and employees all benefit. Communities that promote variable work hour strategies to employers can reduce congestion, spread out the peak hours of congestion or provide commuters the flexibility to adjust their schedule to catch the bus or join a carpool.

More companies are offering variable work hours to their employees. A recent survey of 1,020 employers showed that 69 percent offered variable work hours programs in 1997, compared with 58 percent in 1992. *(Survey conducted by Hewitt Associates, Lincolnshire, Illinois.)*

Variable Work Hours programs are a hit with employees, according to a study of companies that offer alternative work schedules. As many as 88 percent of participating employees reported improved job satisfaction, and 43 percent said the programs helped facilitate child-care arrangements. Meanwhile, 30 percent of the supervisors surveyed noted an increase in productivity among participating employees. *(Source: Commuter Transportation Services, Inc.)*

Program Development

Variable work hours programs can include one or more of the following approaches:

✓ **Flex-time.** With a flex-time program, employees work five eight-hour days each week, but they are allowed to choose their work arrival and departure times, as well as the length of their lunch break. Flex-time programs generally require employees to be present during a specified core time when meetings or other company-wide events are scheduled.

Note that a flex-time schedule allows employees to work early or late, depending on their personal preferences. Some people may come to work at 6 a.m. and leave at 3 p.m., while others will arrive at 9:30 a.m. and work until 6:30 p.m. However, all employees must complete their usual number of hours by the end of each workday.
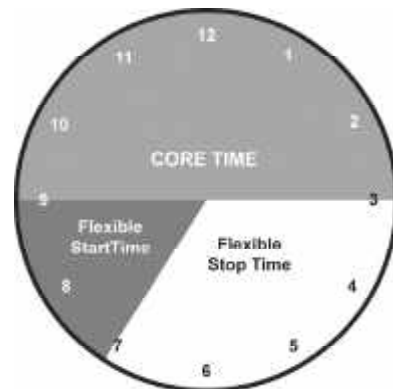
✓ **Compressed Work Week.** In a compressed work week, employees complete their required number of work hours in fewer-than-normal days per week (or per pay period). This arrangement allows employees to have one or two days off each week or one day off every other week, depending upon which type of compressed work week program is preferred.

The two most popular compressed work week schedules are the 4/40 and 9/80 programs, although other variations also exist. Each of these programs are described below:

4/40 Program. Employees work four 10-hour days each week, with the fifth day off. To ensure five-day coverage, you may want to consider having half the company take Mondays off and half take Fridays off.

9/80 Program. Employees work 80 hours in nine days, with the 10th day off. This schedule usually translates to eight 9-hour days and one 8-hour day (this shorter day is often the Friday that the employee works). In a company with two major work groups, each group might take off alternating Fridays.

3/12 Program. Employees work three 12-hour days each week, with two days off. (Employees often get the four additional hours to make a 40 hour work week as credit for working longer days.)

Compressed Work Week Considerations. – In any compressed work week program, there must be adequate coverage in the office for employees who are taking their day off. Generally, this means that not everyone takes the same day off.

- Employers may want to rotate days off every six months so that every employee gets a three-day weekend.

- Another option is for small departments or work groups to have everyone take the same day off and simply close down the department for the day. This is common for public agencies that want to extend customer hours during work days.

- To encourage ridesharing, you may want to give carpoolers, vanpoolers and employees who ride the bus a day off as a preference over non-ridesharers.

- Employees who must attend important meetings may change their scheduled day off with advance notice.

- Some employees may need to be exempt from the compressed work week program because of child-care duties, medical reasons, transportation problems or conflicts with school.

- You may also have employees who cannot follow a compressed work week schedule because of their job duties. These may include customer service representatives or computer operators who are required to maintain 24-hour coverage.

✓ **Staggered Work Hours.** This concept involves spreading out employee arrival and departure times by anywhere from 15 minutes to two hours. By staggering these shifts, you can help reduce bottlenecks in employee parking lots, in streets at the entrance to your office park or building, and even in elevators. Reducing congestion through staggered hours benefits air quality by reducing vehicle idling time in congested conditions or by allowing employees to avoid the peak travel period. Communities have asked businesses to voluntarily stagger their start and stop times to reduce localized traffic problems.

Examples

Flex-time has been an integral part of how the United States Forest Service does business. The Forest Service has found that flex-time not only helps employees better manage their home and work life, but it also can benefit the employer through improved productivity. The community also benefits from flex-time by spreading out the peak travel times and helping people to ride the bus or carpool. The North Regional Office in Missoula, Montana, touts their programs as a positive contributor to reducing traffic in and around the community.

The County of Ventura in California conducted a pilot study using compressed work week schedules. They found that compressed work weeks increased productivity, improved morale and encouraged ridesharing in that employees were less likely to need their car for errands before and after work. Most employee wanted to go directly home after working the longer days. Citizen also reacted positively to the extended work hours. Most could now visit County offices before or after their work day. For the community, this meant a reduction of 10 to 20 percent of work related trips for county employees.

TELECOMMUTING

Description

Simply defined, telecommuting is working at home or another off site location, full- or part-time. While employees may be hooked up to the main office via a sophisticated computer network, it's possible to telecommute, with as little as a pen, paper and phone.

Telecommuting, for Coloradans, can offer greater independence and mean more time with your family and less time on the road. Imagine putting in a full day's work without ever getting into your car!

Considerations

Telecommuting increases options. Perhaps the main reason people are telecommuting now is simply because they can. In the United States, 15.7 million people telecommute (AT&T Survey,1998), consisting of company employees working at home or another off site location, on a full- or part-time basis.

Jobs are more portable than they once were. The U.S. used to be largely an industrial nation. In fact, in 1950 only 17 percent of workers were in information or service businesses like sales, public relations, personnel, banking, health-care and publishing. By 1980, that number grew more than half. Teleworking is a viable option for large and small companies in today's economy. In fact, more than 65% of teleworkers are employed by firms with less than 100 employees. *(Source: www.telecommute.org/resources/facts.shtm. They cite IDC/LINKFLASH)*

Telecommuting offers needed flexibility. While these factors may make it possible to telecommute, others may make it necessary. Some of the changes in our lifestyles are dictating a need for change in our work styles. The standard "nine to five" schedule was designed around a traditional family that doesn't exist anymore. Picking up and dropping off small children at day-care, arranging after school care – or even handling the growing demand of elder care – cause many employees to need more flexibility in their schedules. While telecommuting is not a substitute for child care, it can allow some workers much-needed freedom.

*The benefits of telecommuting include:*

- Increased productivity
- Savings on facility costs
- Reduced absenteeism
- Recruitment and retention of skilled employees
- Improved customer service
- Business continuity in the event of an emergency or disaster
- Reduced traffic congestion and improved air quality.

Communities throughout the United States have promoted telecommuting to both employers and residents. Telecommuting can address a variety of community concerns including:

Mitigating disruptions in a disaster – How many of your residents missed work in the past few years because of bad weather or other related emergencies? Employees' home offices become a community's hidden asset when an emergency occurs. During a major storm in central New Jersey, telecommuters at Bellcore and American Express Travel maintained their productivity while many of their office counterparts missed work for a whole week. Telecommuting helped get the newspaper out after a fire at the Dallas Times Herald. It also kept people at the California State Public Utilities Commission working productively at home after an earthquake.

Increased cost of housing – In their search for affordable housing, people are moving further from the cities and from their work sites. They face longer commutes and often wind up searching for work closer to home. Telecommuting can ease the strain of commuting long distances every day. It is a viable option for a firm when it is faced with the possible loss of key employees because of increased local housing costs.

Economic development – Telecommuting can also help with economic development. Telecommuters tend to spend more money at local businesses if they telecommute even one day per week. The City of Encinitas, California, estimated that for each telecommuter, $1,200 annually is returned to local businesses such as dry cleaners, restaurants and banks.
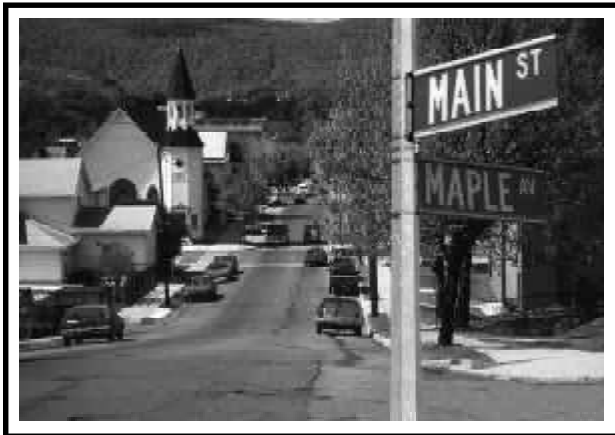
Program Development

Telecommuting is fast changing the way that people do business. Instead of just being a place where people go, work is now something that they do. Telecommuting programs can focus on any number of options. Here are some of the ways telecommuting can work:

✓ **At Home**. Currently the most popular option, this involves little or no outlay in time or cash for employers. Some employers only allow employees that have home computers to telecommute. Others may provide portable computers to help those that would otherwise not be able to work from home.

✓ **At Satellite Work Centers**. Often confused with "branch offices," satellite work centers differ in one important respect: all the people who work at them also live near them. For example, if an employer in Boulder had many employees living in Estes Park, the employer could lease office space in Estes Park for the occasional use of employees. The employees' managers would continue to work from the main office.

✓ **At Neighborhood Work Centers.** Similarly, neighborhood work centers provide an opportunity for employees to work closer to home – in this case, in office facilities with employees of other firms. Tenants in a neighborhood work center usually share support services, such as clerical help, telecommunications equipment, photocopying machines and office supplies.

Many experts believe that we'll soon see more satellite and neighborhood work centers. In Japan, where housing is at a premium, telecommuting is already almost entirely satellite and neighborhood work center-based.

Although more difficult and costly to set up, work centers are sometimes easier to sell in concept to management – perhaps because they more closely resemble the traditional office.

Satellite and neighborhood work centers also have the potential to solve the growing jobs/housing imbalance problem that many communities in Colorado are facing by moving the jobs closer to where the employees live.

NUTS AND BOLTS: *TDM Support Strategies*

The core strategies reviewed thus far have included alternative means of travel and alternative work arrangements. The second part of this section describes critical support strategies designed to improve the effectiveness of core TDM strategies.

RIDESHARE MATCHING

Have you even wondered who would get you to work if your car broke down and you needed a ride? Ridematching can help. Ridematching is a service that identifies people that live and work close to each other. The idea is that if you know someone that lives close by, you may decide to share the ride together and leave a car at home. Matching services can offer full-time partners or simply, a person to call in the case of an emergency. In Denver, hospitals match up key personnel that own four-wheel drive vehicles with other essential staff to help get people to work in the case of severe weather.

Ridematching is usually done through a computerized matching system. A variety of vendors have developed inexpensive, effective software for matching. The system identifies people living within the same grid that work at the same work location. Some systems can matching people from area park-n-ride lots or from child care facilities. Employees simply fill out a brief ridematching form that requests information about work schedule, days of travel, nearest cross streets to their home and their work location.

Ridematching systems are set up to respect confidentiality. Most systems provide the prospective rideshare partner with the work telephone number only. One town has developed a portable system that they can take to work sites and provide matching services over the lunch break for employees.

Increasingly, ridematching services are being offered on-line. Travelers can find a person to share the ride by use of the Internet or from information kiosks set up at local transportation, community or retail centers. Ridematching can also be an option for students and tourists.

Less sophisticated, non-computerized systems have been developed by employers using index cards and bulletin boards to help match people. At the work site, matching can be as simple as plotting the home locations of employees on a map and then hosting brown-bag lunches for those employees that live in the same areas. The idea is that when people become more comfortable with their neighbor, they may be more likely to share the ride to work.

When you have six or more people that are willing to share the ride from a particular area, the carpools can be consolidated into a van. Ridematching can continue to bring in new riders to the vans. The Cities of Fort Collins, Loveland and Greeley advertise empty seats on their vans in a local newsletter. This effort has been successful in maintaining strong ridership in all of their vehicles.

Ridematching is most effective when offered region-wide. The larger the database, the more likely the system will find a good match. Government agencies have typically managed ridematching services in their community. Ridematching services is an eligible expenses under a variety of state and federal funding categories.

Dynamic Rideshare Matching

Your community can use computer technology to help match potential carpoolers within minutes of a journey. The ITS technology used for this service is relatively simple – all that is required is a computer database. A World Wide

Web Site, for example, can be set up to accept trip information from someone interested in a regular or occasional rideshare opportunity. The computer would immediately match this trip with other similar trips in the rideshare database. The potential carpooler would no longer need to wait for someone to enter this information manually – it would all be recorded instantly. Benefits from the use of dynamic rideshare matching are reduced cost of labor devoted to rideshare matching, immediate results for the carpooler, 24-hour access, easily recorded results for evaluation purposes, low overall cost of implementation, and ability to operate with minimal staff time.

This system has recently been implemented in the Durango-area and is available at _http://www.scan.org/rideshare_ on the World Wide Web. In Missoula, Montana, where rideshare matching for rural students and employees is performed specifically at the University of Montana campus and area employers through portable computers, the local Transportation Management Association can produce a rideshare-match list of individuals interested in both a regular carpool arrangement and for infrequent, yet recurring, trips.

La Plata County currently operates a dynamic rideshare-matching web site.

GUARANTEED RIDE HOME

Employees who leave their cars at home also want to leave their worries at home — worries about not having transportation if they become ill, have a family emergency or need to work late. By providing a Guaranteed Ride Home Program, you'll be giving your residents the peace of mind to commute by carpool, vanpool or transit.

Communities have found that guaranteed ride home can be one of the easiest and most cost effective ways to encourage people to use alternative transportation options. In some cases, guaranteed ride home can increase ridesharing by as much as 15 percent.

The unique aspect of the guaranteed ride home is that it is rarely used. When you think about it, how many times do you have an emergency that requires you to get home quickly? The City of Bellevue, Washington, found that just 0.8 percent of eligible alternative transportation users accessed the guaranteed ride home service each year. The annual cost to the City of Bellevue was only $3,300.

RideArrangers, the alternative transportation service provider for the Denver region, developed a guaranteed ride home program that allows employers to pay $3 per employee each year to register. The program has helped people to use alternative transportation and the program has been cost neutral.

How Does it Work?

Guaranteed ride home programs offer a variety of ways for employees to get home by taxi, rental car, company car or other means. Usually regular alternative transportation users are given voucher forms that they can use in the case of an emergency, such as a family member injury, that requires their immediate attention. Some programs allow people that work unexpected overtime to use the guaranteed ride home service as well.

The person can use the voucher by simply filling out the appropriate information and handing it to the taxi driver or rental car agent (rental car arrangements need to have the car delivered to the work place). Some programs require the employees to get a supervisor's authorizing signature before it can be valid for payment. Most programs limit use to three or four times per year.

Role of Local Government

Communities can promote guaranteed ride home by developing a regional program, by setting up arrangements with local taxi operators or by simply encouraging employers to develop programs of their own. Guaranteed ride home is one of the easiest, most cost effective strategies you can develop or promote to help people use alternative transportation in your community.

PARKING MANAGEMENT

Too many cars…
> **Too few spaces…**
>> **Too much congestion…**
>>> **And no place to park!**

Sound familiar? If you're like many communities in Colorado, you're experiencing parking problems — too many people competing for too few spaces.

In fact, parking-related problems are one of the most frustrating side effects of success. Insufficient parking can cause employees to arrive at work late and stressed out from searching for a space. It can force customers to go elsewhere. And it can create traffic jams in downtown areas and around major work sites.

Expanding your parking facilities may or may not be an option, depending upon the development density of your community. Even if an addition is possible, it's going to be an expensive fix. In many urban areas, one parking space costs a minimum of $6,000 to create. Fortunately, there is a better way to deal with parking dilemmas.

Parking management refers to a group of strategies that can ease demand for parking while encouraging the use of alternative commute modes such as carpooling, vanpooling and transit. Parking management allows you to strategically reduce or reallocate parking spaces to benefit your community, your company, your employees and your customers or clients.

Whether your objective is to solve a parking-shortage problem, reduce traffic congestion, or free up more spaces for customers, parking management can help you tackle the transportation problems you face.

Parking management consists of three strategies: preferential parking, parking pricing and the transportation allowance.

Preferential Parking

This strategy reserves the best parking spaces for employees who share a ride to work instead of driving alone. "Preferred" parking could include:

- Covered parking that protects people and cars from the weather.

- An assigned parking space near the building entrance.

- A level-one spot in a multistory parking garage.

- Priority position on a parking space waiting list.

In Montana, the Missoula Parking Commission works with local business to create on-street spaces reserved for carpools and vanpools. Registered carpool and vanpool groups (set up by the employer) are given a hang tag that can be moved from vehicle to vehicle depending on who is driving that day. The spaces are usually located close to the front door on the building. The program helps to reduce the number of cars parking on the street and is an effective incentive to rideshare.

Parking Pricing

This strategy is designed to eliminate free parking in key locations around the community. Downtown retail areas rely on parking turnover to bring in business. If on-street spaces are taken up by employees, customer will have a hard time finding a place to park. Often downtown parking fees are designed to limit use to two hours.

For example, the City of Aspen has addressed parking through a number of initiatives. The City promotes a parking garage one block from Main Street. The garage charges 75¢ per hour or $7.50 per day. Users can get around town using the free bus service. Residential parking is usually limited to residents only or visitors for up to two hours (unless they have a guest parking pass) 8:00 a.m. to 6:00 p.m., Monday through Friday. In the commercial core, the City has set up parking stations that accept payment by coins, parking tokens and debit "smart" cards. A half hour of parking costs 50¢. The pay station will print out a receipt showing the amount paid, the date and the expiration time. Drivers must display the receipt on the dashboard.

Parking Pricing at Employment Sites. Parking pricing is one of the most powerful tools available for influencing how people choose to get to work. By charging for parking based on vehicle occupancy, employees are much more likely to switch from driving alone to sharing the ride.

In addition, you can greatly reduce parking expenses if your company has been fully subsidizing employee parking. New revenues from parking fees may be used to fund an employee transportation program that includes subsidized bus passes, rideshare incentives or a variety of other elements.

Implementation Suggestions. Charging for parking is rarely popular with employees, who often view free parking as a "right." For this reason, parking pricing strategies must be implemented with care and sensitivity. This can be done in part by explaining that you are attempting to create an equal level of subsidies among all transportation options, rather than favor driving alone by offering free parking.

Make sure the fee you charge for parking is in line with the market price in your area. If your rate exceeds the cost of public spaces, employees will simply park at another location. If no market rate for parking exists in your vicinity, charge a nominal fee and closely monitor its impact.

Base your parking fees on vehicle occupancy: for example, $20/month for single-occupant cars, $15/month for two-person carpools, $5/month for three-person carpools, and four-person carpools or vanpools park for free.

Watch out for parking "spill-over." If employees can find a less-expensive (or free) space on the street or in a neighbor's parking lot, they will park there and continue driving to work alone. This could defeat your program and create conflict with nearby businesses. To reduce the potential for spill-over, alert the owners of nearby parking facilities to the situation, and seek a mutually acceptable solution if problems arise.

Transportation Allowance

Another employer strategy is the transportation allowance. This strategy eliminates free parking, by providing each employee with a monthly allowance which is used to offset the cost of commuting. Employees are given the freedom to choose any commute mode they want, as long as they pay for all associated costs.

The transportation allowance should be equal to or less than the cost of paying for parking. Employees can use their entire allowance to pay for a parking space (or supplement the allowance with their own money). Or, they can select a less-expensive option such as riding the bus, vanpooling or carpooling, in which case they may pocket any surplus money not used for travel expenses. If employees walk to work and incur no commuting costs, they get to keep the entire amount!

The next two pages present two parking management tables featuring a variety of parking pricing and parking supply strategies. Parking managment strategies discussed in this section as well as additional approaches are outlined in each table.

Parking Pricing Strategies

Parking Transportation Allowance	Provides employees with a monetary credit towards purchasing commuting related transportation goods and services. Employees use credits (i.e., 'transportation allowance') to purchase their own transportation or pay for their own parking. Other versions of a transportation allowance program might allow employees to select from a menu of transportation goods and services that take advantage of tax incentives and business deductions.
Unbundled Parking Leases	A lease is unbundled when the charge for building or office space is separate from charges for parking spaces and there is the flexibility to vary the number of parking spaces rented. By unbundling parking leases, employers can use parking pricing strategies to reduce parking demand and reduce company parking expenses. Employers who are aware of parking costs may have a the ability to reduce parking expenses and better use existing parking resources.
Parking Fees or Charges	Parking rates can be based on time, day, or month. Parking charges target on-street or off-street parking. It can include pricing strategies to discourage all-day single occupant vehicle (SOV) parking. This can reduce parking demand in an area or free up parking for other short-term uses such as customer parking.
Tax Incentives and Disincentives	Federal, state, regional, and local tax rules may impact the types of parking management incentives that employers wish to offer. For example, some cities place a tax on parking. This tax can increase the cost of parking, thus serving as a disincentive to drive.
Peak Hour Pricing	Increasing parking charges during peak periods (i.e., during a major entertainment event) can influence how and when drivers use parking facilities. Peak hour pricing can thereby reduce demand for parking spaces during these periods.
In-lieu Parking Fees or Assessment Districts	Involves the collection of parking fees from a group of building owners and/or employers. The funds are used for parking improvements in the specific area. This can encourage shared-use of parking facilities.
Parking Enforcement	Local jurisdictions can step up enforcement of parking regulations as a means to ensure that changes in parking management policies do not create negative 'spill over' impacts on adjacent neighborhoods. Increased enforcement can enhance local jurisdiction revenues and create an incentive to obey parking restrictions.
Parking Cash-Out	Allows employees the opportunity to choose a parking space or receive the cash equivalent of the space (based on the "out-of-pocket costs to the employer"). The employee can determine whether to use the cash for alternative modes of transportation or keep the funds.

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Parking Supply

Maximum Parking Ratios	This strategy limits the amount of parking that is built. The objective is to increase land use densities by lowering the parking supply and encourage the highest and best use of land and the use of alternative modes of transportation.
Lower Minimum Parking Requirements	This measure can allow developers to build fewer parking spaces as required in local parking requirements. As with maximum parking ratios, the intent is to better manage the supply of parking.
Shared Use Parking	Parking spaces that can serve two or more land uses. For example, office employees can use a parking facility during the day and patrons of an adjacent restaurant or movie theater can use the same facility at night. This strategy increases the available parking supply in a multi-use area to mitigate highest peak parking demand.
Transit Supportive Development	An urban design and site planning approach that creates dense, mixed use development, designed for pedestrians and multiple modes of transportation It also encourages high density development around fight-rad transit stations and transit centers. Transit supportive development can include a variety of parking management strategies such as maximum parking ratios or lower minimum parking requirements, shared use and centralized parking facilities. It reduces the need for surface parking lots.
Preferential Parking	Reserving premium parking spaces. Preferential parking can be used as an incentive for ridesharing and the use of high occupancy vehicles such as carpools and vanpools. These spaces are generally located close to building entrances or in other convenient areas.
Time Restrictions	Simply shortening the permitted parking period for on- and off-street parking spaces is a very effective means to better manage a limited parking supply. Often used for customer, visitor, member or patient parking, short term restrictions on spaces are usually more conveniently located for easy access and shorter trip purposes. Long-term parking restrictions uses include all-day parking for employees or residents, which can be located farther away since it is accessed only once per day.
Parking Permits	Require a parking permit or decal to allow parking in restricted areas (e.g. employee permitted parking areas).
Land Banking	Reserving land for future parking needs. This can involve phased construction of parking.
Subterranean or Parking Structure	Projects providing structure or underground parking have a higher density, can be more easily accessible by transit and pedestrians, and are more likely to control access and parking pricing.
Satellite or Peripheral Parking	Parking located near or just outside of a central business district, retail, or employment center. When combined with more restrictive parking development standards and convenient shuttle service, this strategy can be used to reduce traffic congestion in core areas.

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INCENTIVES

The use of incentives can encourage travelers to use alternative transportation options. Some communities, such as Riverside and San Bernardino counties in California, will reward people up to $2 per day for their use of an alternative transportation mode (up to six months) when driving to and from work. Other communities, such as Loveland, Greeley and Fort Collins, have developed commuter club programs where commuters are eligible for discount coupons and special prizes by staying involved in transportation alternatives.

The incentive is a way to reward those that help to reduce traffic congestion and clean the air. There are five types of incentives that can be offered by either a community or an employer:

Cash

Travelers can earn cash to use towards a transportation expense or pocket the money as a benefit of their travel choice. The cash can help to offset the added costs related to a travel choice, such as a bus pass.

Prizes

Travelers can be eligible for a prize drawing every time they use alternative transportation. The prize can be as simple as a gift certificate to a local store. Drawings can be done monthly, quarterly or annually. Often an annual prize drawing could be tied to a "Bike-to-Work Day" activity.

Points

Travelers can earn points each time they use alternative transportation. For example, a commuter can earn 150 points for riding their bike to and from work one day or 75 points for sharing the ride to work in a carpool. The points can then be applied to a select set of items or gift certificates at retailers. Research has shown that points are three times as effective as cash for motivating people to try something new. The point reward is a common strategy of airlines to maintain a regular, repeat customer base.

Time Off

Some employers allow employees to earn vacation time by using alternative transportation. For example, an employee that uses some form of alternative transportation 60 times in a quarter can earn an extra four hours of vacation time. It may not sound like much, but it could mean up to two extra vacation days each year.

Recognition

People that use alternative transportation on a regular basis can be acknowledged in the local paper for doing something good for the community. Or, the city could provide "Good Citizen" certificates for people that consistently do something other than driving alone in their car. This not only encourages people to use alternative transportation, but it teaches others that reducing traffic congestion and air pollution is a priority for the community.

Federal Tax Incentives for Employers and Employees

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) amended the federal tax code to create financial incentives related to commuter benefits for employers and employees. The following section outlines four alternatives in implementing these tax incentives. Contact an attorney or accountant for specific tax guidance.

• **Employer-Paid Transportation Benefits.** Employers can pay for their employees to commute by transit or vanpool, up to a limit of $100/month. With this arrangement, employees get up to $100 in a tax-free transportation benefit. Employers get a tax deduction for the expense. Employers have found that providing transportation benefits offers significant savings over offering the equivalent dollar value to employees in the form of a salary increase.

• **Employee-Paid, Pre-Tax Transportation Benefits.** Employers can allow employees to elect to exchange up to $100/month in taxable salary for a tax-free transit or vanpool benefit. Employers save money overall since the amount exchanged is not subject to payroll taxes. Employees save money, too, since the amount of an employee's salary exchanged for transportation benefits is not subject to income tax, up to the specified monthly limits.

• **Shared-Cost Transportation Benefits.** Employers can share the cost of transit or vanpool costs with employees-and everyone can receive valuable tax savings. With this approach, employers can provide a portion of the cost of taking transit or vanpooling as a tax-free benefit and allow the employee to exchange taxable salary for a tax-free transit or vanpool benefit (up to the specified limits).

• **Parking Cash-Out.** Employers can offer their employees the option to "cash out" of their existing parking space. For example, if Company A subsidizes parking for their employees at $80/month, a parking cash-out program would allow employees to choose from the following options: (1) keep the parking space worth $80/month, (2) give up the parking space and receive $80 extra each month in taxable salary, or (3) receive $80/month in tax-free transportation benefits to pay for transit or vanpooling. Cash-out programs often work best for employers that pay separately for parking and for organizations with parking shortages or plans to expand parking facilities.

MARKETING AND EDUCATION

Marketing and education are the foundation of any successful TDM effort. A lesson too often learned throughout the country is that alternative transportation services do not sell themselves. Marketing is essential to raising people's awareness of the options and motivate them to try them out at least once.

While marketing can be an expensive endeavor, many communities have found creative ways to minimize cost and get the message out. In Canada, local college students were asked to stage a debate about the car. The students presenting a case for how cars benefit society and the other side debated the negative impacts of the car. The debate received local press attention and brought the debate home to many people. Another community provided flyers at local grocery stores as grocery bag stuffers. The method was effective in communicating with the community and the grocery store felt that they were partners in an important community service. One community had elementary school students submit posters about alternative transportation. The idea not only garnered local press attention, but got parents involved in helping their children understand the message.

As a rule of thumb, it is usually a good idea to set aside up to 15 percent of a projects budget for marketing. For example, if you set up a $100,000 shuttle service – put $15,000 into marketing the new service. Marketing can go beyond simply advertising the new service, it can be a way to educate people about the overall benefits of not driving their car.

Marketing can address the consumer in three areas:

Awareness – Let people know what services exist and how their use of these services can benefit them and the community.

Try – Convince people to try an alternative transportation option at least once. Some communities have asked people to sign pledge cards to use an alternative transportation option at least once during a weekly promotional effort. The company that collects the greatest number of pledge cards can win a prize or simply get recognition for their efforts.

Maintain – Once people try an option at least once, the message needs to focus on maintaining that person's participation in an alternative mode.

MARKET-BASED TRANSPORTATION STRATEGIES

Does your community desire to both reduce congestion and to raise revenues? If so, market-based strategies may be an innovative idea for you to consider.

By their very name, market-based strategies use the power of economics and the free market to help resolve congestion and traffic. Used for decades by other utilities, such as telephone and electricity service, market-based strategies involve the direct charging of drivers for their use of the road. Drivers are charged more when demand is high, such as at rush hour, and charged less when demand is low. This encourages many travelers to use other routes, different modes of travel, or change the time they make their trips.

The concept of market-based strategies is best illustrated by comparing it to goods and services with which we are already familiar:

- ✓ ***Long distance telephone service***. It costs more to make a call during the business hours than in the evenings and on the weekends.

- ✓ ***Movie theatres***. Movies typically cost less in low-demand times, such as during the afternoon.

- ✓ ***Passenger air service***. Plane tickets cost more toward the end of the business day than they do later in the evening.

Each of these examples demonstrates how price and cost can be used as both incentives and disincentives for travel. The end goals of market-based strategies are to 1) more evenly spread traffic throughout the day, reducing rush-hour traffic, and 2) encourage travelers to use other ways of getting around town. An additional benefit is that they can be used to either raise a more stable revenue-source for transportation or lower other taxes, such as sales and property taxes. To the traveler, benefits include: improved safety, ability to consistently predict how long a trip will take, and most importantly, a faster trip due to less congestion.

Certain strategies are better at accomplishing one type of objective than others. Some types of strategies to consider include:

- ✓ **Area-wide congestion pricing**. Area-wide pricing involves charging a fee for every trip made by drivers. Fees would be higher in rush hours.

- ✓ **Facility/Corridor pricing**. Similar to area-wide pricing, drivers are charged a fee for every trip, but on specific facilities only, such as a highway that passes through your town.

- ✓ **Vehicle Miles Traveled fee**. This strategy charges drivers a fee for every mile they drive. It is best used for reducing vehicular travel, revenue generation, and replacing other revenue sources

- ✓ **Pricing "express" lanes**. This strategy would set a fee to access particular lanes, such as HOV or express lanes. The advantage of this strategy is that it involves a voluntary action by drivers; they still have other, free lanes to access.

- ✓ **Parking pricing**. Useful in reducing traffic and helping potential customers access your town's retailers, parking pricing charges drivers a fee for using on-street spaces or parking lots/garages.

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✓ **Parking cash-out.** This strategy allows employees the opportunity to choose a parking space or recieve the cash equivalent of the space.

Currently, the best examples of market-based transportation strategies reside in southern California. Two separate projects have recently been implemented.

The first, in San Diego, opened existing Bus/Carpool lanes on I-15 to single-occupant vehicles, provided they purchased a monthly permit. The permit system was later replaced with an electronic tolling system with the toll constantly changing to reflect real-time congestion. This system holds the distinction of being the world's first "dynamic pricing" facility, where the value of the toll changes with congestion.

The second California project involved permitting a private company to construct new lanes of traffic on state route 91, a heavily congested freeway in Orange County. The private company permits carpools of three or more to access the lanes for a heavily discounted fee. Single-occupant vehicles or carpools of two must pay the full-rate toll. The toll value changes throughout the day, however unlike I-15 in San Diego, SR-91's toll value varies based upon a fixed schedule.

Many communities in Colorado have also investigated and implemented market-based strategies. Aspen and Telluride, for example, have implemented a version of parking pricing. Boulder has considered implementing parking pricing, area-wide congestion pricing, and a Vehicle Miles Traveled fee. A recently completed handbook by the City of Boulder for evaluating your community's readiness for market-based strategies is included in the appendices of this toolkit.

Market-based strategies are best utilized in conjunction with other TDM policies, as they require the presence of travel options in order to maximize the effectiveness of these strategies. In essence, market-based strategies are really support strategies to other TDM policies. However, these strategies can be very effective in reducing traffic and raising revenues, achieving up to a 20% reduction in congestion.

Examples:

In an effort to market commute options to businesses of all sizes, King County DOT launched the Downtown Seattle Access Project (DSAP). DSAP focused exclusively on the downtown Seattle central business district and was designed to address parking issues while increasing transit ridership. As part of the project, DSAP set a goal to partner with buidling managers to design building-wide trip-reduction programs. One such partnership, the Commute Options Program, was launched in 2002 and included the following:

- *FlexPark* - unique approach to parking cash-out that gives employees incentives such as cash, Flexcar membership, free parking days, bus pass, in return for relinquishing their parking space

- *Flexcar* - enrollment in the car-sharing program

- Carpool with discounted priority parking spaces

- *Bicycling* - worksite support includes lockers and shower memberships at adjacent gym

- *Area FlexPass* - unlimited access on regional bus and rail

INTELLIGENT TRANSPORTATION SYSTEMS

Intelligent Transportation Systems (ITS) is a fancy way of saying "using new technology for travel". Developed under a landmark transportation legislation in 1991, ITS has rapidly grown to be a viable means of helping travelers have an easier commute. ITS, at its core, provides information to travelers on a variety of modes, including the personal automobile. ITS components have become so popular, many automobile manufacturers are offering variations of ITS as a standard option. Although ITS can work as a stand-alone program, it is best utilized as a supporting strategy to other TDM programs.

ITS relies upon computer technology to maximize the efficiency of the existing transportation system. In fact, ITS was originally conceived as a way to increase the capacity of the nation's transportation system without building more roads and lanes to meet ever-increasing demand. This technology can be relatively simple, such as providing an information site on the World Wide Web, or complex, such as San Diego's active demonstration of automated cars and highways.

Although it may be fun to think about cars that drive themselves, this is not yet practical for any portion of the transportation network in Colorado. However, there are other aspects to ITS that have already been implemented in Colorado communities and have the potential to be a valuable asset to your community's TDM pursuits.

ITS strategies that compliment TDM programs include:

Smart Cards

Similar to a credit card, a smart card can be used for fare payment on transit service. For bus users, smart cards reduce the need to carry cash, eliminate the need for transfers in larger transit systems, and improve customer convenience. However, smart cards can also carry-on a life of their own, as they can become a community-icon. For example, local retailers could offer discounts for smart card users. This has the effect of increasing your retailers' and restaurateurs' business at the same time increase the use of local transit. Transit operators in Washington DC, Ventura County (California), Atlanta, and Minneapolis/St. Paul have begun using smart cards over cash payment.

Traveler Information Systems

Traveler information systems help travelers find the most efficient modes and routes of travel for their desired trips. This information can be accessed from home, work, shopping centers, libraries, and other locations where a computer can be set up. Like dynamic rideshare matching, a World Wide Web site can be established to provide information to travelers. This information can be either static, such as bus routes and scheduling,

or dynamic. Static information can be effective in encouraging the use of alternative modes.

For example, Honolulu, Hawaii, promotes a program called "Visiting-on-TheBUS". Visiting-on-TheBUS provides information on transit service to many places of interest in Oahu and Honolulu and receives, on average, over 700 calls daily. This information is advertised in tourist brochures, hotel rooms, and senior citizen centers. Dynamic information, which can include real-time bus service or traffic information, requires additional technology than simply a Web site. Global Positioning Satellite transponders, embedded loop detectors, and other networking devices are necessary to offer dynamic information.

Many commuters will alter their modes, time of travel, and routes as a result of this information. For example, almost 3 percent of commuters in Bellevue, Washington, do not drive alone to work as a result of real-time traffic information received through the Internet and radio. The San Francisco Bay Area has recently implemented a World Wide Web site called transitinfo.org that contains route, schedule, and fare information for all regional transit operators, thus being able to provide trip itineraries for short, local trips as well as for cross-regional trips.

Traveler Information Systems can have application in your community. For example, let us assume your community is a tourist destination in south-central Colorado. A visitor arriving at Colorado Springs airport would normally rent a car and proceed to occupy roadway and parking space in your town. However, a static Web site could be offered that provides trip itineraries between Colorado Springs airport and destinations within your town. This Web site would not only provide contact numbers (as many already do), but provide the specific information necessary such that the traveler would not need to bother calling anyone to use alternative modes.

Intelligent Transportation Systems provide a valuable and cost-effective complement to all of your TDM programs. ITS can not only help you reach a larger audience, but it can also help you ensure the long-term longevity of TDM in your community.

TDM-FRIENDLY DESIGN CONSIDERATIONS

Pedestrian and Bicycle Connections

In the process of promoting the viability of alternative means of travel, the design of pedestrian and bicycle connections should receive special attention. Whether it's a short walk from the bus stop to the front door of your office or a five mile bike ride from your home to your office, the majority of alternative mode commutes either start or finish with some type of pedestrian or bicycle trip. Ensuring the safety and convenience of these critical links in the transportation chain will go a long way toward improving the appeal of alternatives to the automobile. At the same time, strengthening pedestrian connections within business and commercial areas will allow workers to walk down the street to lunch or to the post office, reducing the number of vehicles on the road and easing the pressure on parking facilities. For many people, the need to drive to lunch or for errands is the main reason they need to bring their cars to work.

Throughout this section we've explored a variety of strategies designed to reduce the need for and length of travel in your community. We've seen the benefits and challenges associated with strategies as diverse as vanpooling and variable work hours. Clearly, reducing the overall demand placed on our transportation network is directly related to the choices available – choices about travel mode and travel time. At the same time, when we think about the factors that affect individual travel decisions, we should remember that travelling between point A and point B is a process largely affected by physical features. Have you ever been able to see your destination, but not been able to figure out how to get there in your car for some reason? Well, as we've come more and more to rely on the automobile as our primary means of travel, we've also managed to eliminate a lot of these types of physical barriers, making automobile travel more convenient. Recognizing the significant ways in which the physical landscape can impact our travel decisions, we turn our attention toward a set of basic design considerations which can make travel by alternative modes more convenient or even eliminate the need for some trips altogether.

Pedestrian and bicycle connections should provide direct, safe and interesting routes within and between residential neighborhoods and commercial districts. Willingness to walk or bike is directly related to the quality of the environment in which to do so. Here are a few basic principals to consider in   strong pedestrian and bicycle connections:

- Minimize opportunities for pedestrian/ auto conflicts by separating roads and parking from pedestrian walkways, consolidating driveways, creating safe pedestrian crossings and providing continuous sidewalks.

- Configure all intersections to support safe and direct crossing. Signalized intersections should include painted and signaled crosswalks, with sufficient signal time to allow pedestrians to cross.

- Design clear and direct connections between buildings and the street, allowing for convenient links from nearby paths, sidewalks or transit stops.

- Incorporate residential sidewalks that are at least five feet wide, allowing two people to walk side-by-side. Focus upon improving connections to and from neighborhood activity centers, such as parks, schools and retails centers.

- Incorporate sidewalks that are at least 10 feet wide in high-activity commercial areas.

- Designate and construct long-distance bikeways and improve roadways to allow for on-street bike lanes. For a two-way, off street bike path, the width should be 8 - 12 feet, with a 2-foot graded shoulder on each side. For a bike path shared with pedestrian traffic, an additional 2 foot minimum separation between bicyclists and pedestrians is needed. For a bike lane adjacent to a street, depending on whether or not the particular street allows parking, the width should be between 3 and 5 feet.

- Ensure a minimum five-foot buffer between walking areas and adjacent traffic lanes, using trees, landscaping or on-street parking to create a buffer zone.

- Eliminate physical barriers such as benches, poles and fences that block sidewalks and pathways.

- Include ample lighting for nighttime safety.

- Provide curb cuts for persons with disabilities at all intersections and for all connections between buildings and pathways.

Bicycle Amenities

Bicycle parking facilities at places of employment, transit stops and other key destinations are essential for bicycle commuters. The potential for theft or vandalism will seriously discourage bicycle travel. Bicycle parking facilities should be located in a convenient location, clearly visible from streets or parking lots. For short-term storage, provide racks to accommodate two to five bicycle spaces for every 100 automobile parking spaces provided. For long term storage and better protection from weather and vandalism, provide bicycle lockers and employment locations and transit stops. Employers can further encourage bicycle commuting by installing additional amenities such as showers, changing rooms and clothing lockers.

Transit Access and Visibility

To best support local and intercity transit activities, bus stops should be within 500 to 1,000 feet of the building entrance at major activity locations, with the entrance oriented toward public transportation facilities, not parking lots. See the diagram to the right. Nearby and safe transit connections not only improve the convenience of transit for current users, they help advertise the ben-

efits and ease of transit to potential users. Where connections across parking areas or across streets are necessary, walking paths should be well lit, clearly delineated and safe. Additionally, at high volume stops, bus shelters, outside seating, trash receptacles, newsstands, bike racks, and payphones should be provided. At low volume stops, bus benches and trash receptacles should be provided.
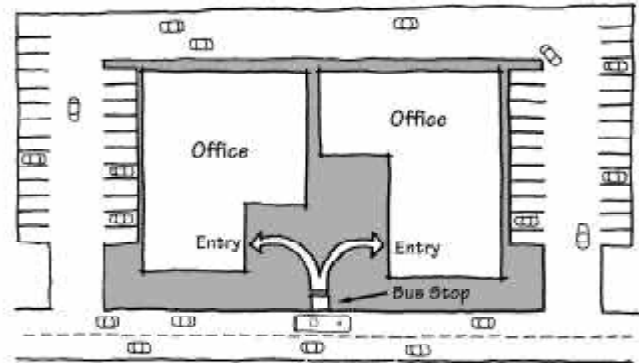
Example of transit stop in close proximity to office entry way.

Building Orientation

Reducing building setbacks offers more direct street access for transit-users, cyclists and pedestrians, as shown below. Additionally, locating parking areas to the side or behind buildings encourages on-street activity and safety. New development projects should cluster buildings and avoid campus-type office development, which discourages pedestrian and bicycles travel.

Passenger Loading Areas

To best support carpool and vanpool activities, offer a turn-out lane for passenger drop off in front of the building. This added convenience can significantly reduce the travel time lost picking up and dropping off passengers in a ridesharing situation. Be sure to provide adequate space for cars so as to avoid a "line-up" that could block traffic during peak commute hours. Provide passenger shelters and some services, such as newsstands and payphones.

Amount and Location of Parking

Communities and businesses that promote shared parking arrangements recognize the opportunity to reduce costs and promote trip-linking. Careful placement of adjoining commercial uses will often allow for shared parking arrangements which reduce costs for developers and preserve valuable land for more productive uses. Employers with traditional work hours can share a portion of their parking spaces with businesses that attract the majority of their customers in the evening. Retail projects with peak activity periods in the evening and on the weekends may share a portion of their parking spaces with a transit park-n-ride. In these and other similar situations, adjoining uses not only share the costs associated with providing parking spaces, they share the benefits of increased activity.

Retail uses will benefit from the activity created around a transit stop and transit users will benefit from improved access to retail services. In the process, the total number of trips required are reduced.

In order to reduce building setbacks and provide direct connection to building entrances for pedestrians, bicyclists and transit users, parking lots should be located to the side or in the rear of a building. Orienting parking lots to the rear of buildings improves the overall appearance of a street, enhancing the pedestrian environment found there. At the same time, parking spaces closest to the entrance of the building can be reserved for carpools and vanpools. The added convenience of parking near the building will improve travel times for those sharing a ride and provide an additional incentive to do so.
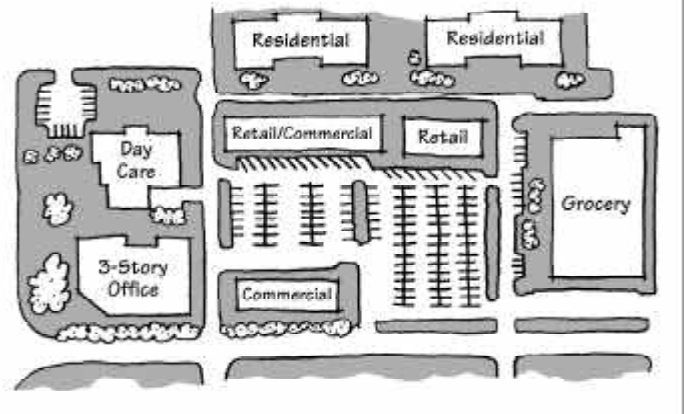
Access to Services and Amenities

In choosing whether to drive their own cars to work or to use alternative modes, many commuters factor in the need to run errands before work, during lunch and after work. The more services and amenities that are located near work, the more realistic alternative modes become. Two things can happen: 1) commuters may decide to leave their car at home because they know they can walk to the bank during lunch, and 2) commuters who do drive may still walk to the bank during lunch, reducing the total number of trips taken each day. Establishing transit, carpooling, vanpooling, bicycling and walking as realistic alternatives, in many cases, means promoting an environment where core services are available in walking distance.

For large facilities located away from established commercial and retail areas, encourage developers and employers to create a "village" atmosphere, where employees don't have to take their cars out during the day. Amenities could include restaurants, convenience stores, banks and/or ATMs, child care facilities, a post office outlet, health clubs, dry cleaners, news stands, etc. These features are often viewed as a significant amenity by employees, helping employers attract workers and helping communities reduce travel demand. For smaller facilities, provide convenient and safe pedestrian linkages to nearby facilities.

TDM*toolkit*

SECTION FOUR: DEVELOPING A PLAN

DEVELOPING A PLAN

Developing a TDM Plan requires a clear understanding of the transportation and/or air quality problems in your community, selecting the most appropriate TDM strategies and garnering commitment from partners. Building upon the TDM Strategies explained in the previous section, this section provides a brief introductory guide on TDM Plan Development. For further information about developing a specific plan for your community, contact:

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TDM Plan Development often includes the following steps:

1. Engaging the Right People
2. Defining the Problem and Identifying Potential Solutions
3. Choosing Strategies
4. Testing Strategies
5. Securing Funds
6. Developing an Evaluation Plan

Step I: Engaging the Right People
Who do I work with?

TDM relies heavily on both private and public participation to be successful. Therefore, invite key stakeholders in your community, such as: citizens, governmental transportation authorities, local TMAs/TMOs, regional metropolitan planning organizations, employers, commuters and even visitors/tourists to discuss both real and perceived transportation problems. Engaging those who could be affected by your TDM efforts encourages buy-in and acceptability. Section Five of this tool kit contains more detailed information regarding partnerships.

Step II: Defining the Problem and Identifying Solutions
What are the transportation problems in your community? What are possible solutions?

Your TDM plan should address the specific problems faced by your community. Problems your community may be facing could range from daily peak-hour congestion, increased traffic during peak seasons, decreased accessibility to goods and services during construction, or diminished air quality. Work with your partners to clearly define the transportation related problems facing your community. These conversations with part-

ners can lead to a greater understanding of both the problems as well as potential solutions available.

Most likely, a variety of transportation services and programs currently exist in your community, such as the ones listed below. Develop an understanding of the current services/programs and identify TDM strategies that enhance or complement the programs and services already offered in your community.

Services

· Public transit (bus and/or rail)
· Dedicated bike paths
· Park and ride facilities
· Intercity transportation providers

Programs

· Ridesharing
· Employer based commuting programs
· Bike commute programs

Also, you may want to look at future transportation and regional planning efforts. Many cities and counties are including TDM elements in their overall plans.

Step IV: Choosing Strategies
What TDM strategies should I choose?

Work with your community partners to choose the most appropriate TDM strategies. A list of potential strategies should be developed with input from stakeholders and a review of similar efforts throughout the state and elsewhere in the nation. Look at strategies that have a high chance of succeeding. For example, the City of Greeley found that 70% of residents surveyed lived within 5 to 7 miles from work and they reported an interest in bicycle commuting. Thus, the most appropriate TDM strategy for the City of Greeley was bicycle commuting.

Step V: Testing Strategies
Will the community accept the chosen strategies?

It is important to choose strategies that have a realistic chance of succeeding. Find out what is likely to work in your community by conducting interviews with employers and focus groups with commuters. Also, consider the administrative and financial aspects of implementing your chosen strategies. Test your strategies against the feasibility check provided to determine whether or not your strategies are realistic:

Feasibility Check:

✓ **Political:** Are the TDM programs and services poitically feasible? Will all necessary partners buy-in? Will commuters, employers and other markets accept it?

✓ **Financial:** What funds are available? What creative funding solutions can we come up with?

✓ **Administrative:** Are tools and resources available for this project? Who will manage this program? Are resources available for the necessary evaluation and reporting of accomplishements?

✓ **Realistic:** Are the program goals realistic in the time I have to accomplish them?

Once you've chosen and tested the TDM strategies that may be appropriate for your community, you should establish a set of goals. Additional information regarding goal setting and evaluation is detailed in Section Six: Setting Goals and Measuring Results.

Step VI: Securing Funds
What are my funding options?

Funding is a key element of any plan, and the funding opportunities for TDM Programs are unique in every community. The most successful TDM programs often feature innovative and creative approaches to funding. Work with your partners to determine where funding opportunities exist and to develop a tailored funding plan that taps into the resources available in your community.

Step VII: Developing an Evaluation Plan
How do I know it's working?

Prior to implementing your program, you should consider doing a baseline survey to determine existing conditions. All future surveys and evaluation tools can then be measured against results from the baseline survey. More specific information regarding evaluation is available in Section Six: Evaluation.

After developing your TDM plan it is necessary to consider implementation alternatives. The next section of the toolkit assists you in identifying the best person and/or agency to assign TDM implementation responsibilities.

TDMtoolkit

SECTION FIVE: IMPLEMENTING ALTERNATIVES

PARTNERSHIPS AND IMPLEMENTATION ALTERNATIVES

Partnerships

Finding the best home for your TDM program can be the single most challenging aspect of implementing your TDM program. As we have suggested, many TDM strategies require active participation from organizations and businesses throughout your community. Establishing partnerships early in the process will clarify the goals you set for your program and influence the strategies you select to implement those goals. Key Partnerships to explore include those with:

- **Employers**
- **Schools**
- **Neighboring Communities**
- **Private Intercity Providers**

Employers:

Businesses of all sizes recognize the fundamental role a vital and efficient transportation network plays in supporting a sound economy.

In many communities, travels to and from work during the traditional peak commute periods represent the only times when roadway networks are congested. From facilitating rideshare opportunities to promoting telecommuting possibilities, local employers are in an excellent position to influence the commuting habits of their employees. Often times, working with employers and focusing on providing mobility and scheduling the most direct avenue for communities to reduce travel demand.

Community leaders should consider working through the local Chamber of Commerce or Economic Development Office to develop partnerships with area businesses. These organizations recognize the importance of a vital transportation network and respect efforts to craft innovative and cost-effective solutions to transportation challenges. Meetings with local employers can begin with a discussion of the specific problems facing individual companies and an assessment of the most promising solutions. Employers should be encouraged to commit to an individualized package of solutions and community leaders should work to support and facilitate these specific approaches.

Schools:

Heavy and consistent travel occurs in and around local schools, colleges and universities. Establishing partnerships with area schools can result in innovative and effective TDM programs.

Parents are often challenged by the task of getting children to and from school safely every day. Developing and coordinating a SchoolPool program may provide realistic and effective alternatives for parents in your community. A SchoolPool is a program that allows parents to share driving responsibilities with other parents who live in the vicinity. Parents may decide to form a permanent arrangement with nearby families. Conversely, a SchoolPool program may simply provide a list of people parents can call on for part-time carpooling or emergency situations. Some schools and communities may wish to publish a list of parents with four-wheel-driver vehicles for transportation in particularly bad weather. Communities should work with area public and private schools, matching students who live near each other.

Across the country and in Colorado local public transit agencies have partnered with colleges and universities to offer substantially discounted transit passes to students and staff. Some colleges and universities bundle free carpool parking and/or

night shuttles into the transit pass. These types of college/university commute programs can result in reduced VMT and increased air quality while maintaining high levels of accessibility to their facilities.

Neighboring Communities:

With residents in Colorado's smaller towns and rural communities traveling longer and longer distances, the need to work together to provide innovative transportation solutions is greater than ever.

Changing economic circumstances have altered the type and location of employment and recreational activity in communities throughout the State. As these and other factors continue to evolve, some areas are left with more workers than jobs, some with more jobs than workers and others with more tourists than parking spaces. Individual communities can counteract many of the challenges they face by working together to fashion flexible and efficient transportation services between towns.

The TDM strategies employed by neighboring communities will depend upon the dynamics of travel and volume of travelers between those towns. Where two communities find relatively large numbers of residents commuting to and from concentrated employment destinations, intercity bus services can be considered. Vanpools and carpools may provide a more convenient option allowing commuters to access more dispersed destinations with flexible schedules. Groups of communities without one dominant travel corridor should consider creating a regional ridematching program to promote carpools and vanpools. This type of program is currently underway in southwest Colorado, with an interactive website facilitating the ridematching process. Whatever the solution, inter-jurisdictional cooperation and commitment will prove the key to success.

Private Intercity Providers:

Although public and private sector transportation services may not have historically worked together in your community, building a relationship between the two is important to ensure realistic and effective services exist in your community.

Creating a solid partnership between public and private sector intercity providers begins with communication. It is useful to keep in mind the basic differences between the public and private sector when working together. Private sector firms must make a profit to survive. Competition is a key element of the environment they work in and time is money. On the other hand, government is charged with developing and implementing plans that have broad-based support. Consensus building between the two sectors takes time. Recognizing and respecting these differences, being clear in all communications and setting reasonable expectations is important in developing a relationship between the public sector and private transportation industry. Initial steps might include:

· Get to know the private sector providers in your region. Find out what services they offer. This may include scheduled services such as charter, taxi, or package delivery. How large are their fleets? How many passengers do they carry? Are there several providers or just one?

· Invite the private sector to participate in the planning activities. Participation in the regional transportation planning process is one activity. Consider the ICB and regional bus modes in the planning and development of the region's transportation network. Consider private carriers in the development of facilities and policies.

Implementation Alternatives

Formally assigning the duties for TDM plan implementation is critical. Without a key staff or organization responsible for overseeing implementation and evaluation of TDM plans, even the most thorough TDM plan can struggle. Time

and resources spent in developing these key partnerships can lead to the identification of a solid implementation strategy for your TDM program. A variety of strategies to implement your program exist, and this section outlines some of your implementation options.

1. Transportation Management Associations
2. Employee Transportation Coordinators and Networks
3. Integration with City and/or County Transportation Staff
4. Neighborhood Transportation Cooperatives

Transportation Management Associations

You may decide to create an organization solely responsible for the implementation of TDM programs and services in your community. If so, you should explore the feasibility of a Transpor-

tation Management Association (TMA) or a Transportation Management Organization (TMO).

Definition: In the 1980s, Transportation Management Associations began to emerge as public-private partnerships designed to address traffic congestion and air quality problems in communities throughout the Unites States. Over 125 TMAs are in operation today throughout the United States- six in Colorado. The appeal of a TMA lies in the synergism of multiple organizations and individuals banding together to address and accomplish more than any one government agency, employer, developer or resident could alone. The need for the TMA stems from the realization that each group has a great influence on transportation and air quality, and each group has important contributions to improving mobility and air quality.

Before pursuing the idea of developing a TMA, a feasibility study should be conducted. This study should include a critical look at the employment base in your area, future growth, current and predicted transportation issues and infrastructure and accessibility.

Areas Served: The geographic scope of a TMA varies with each organization. Across the nation, one-third of all TMAs offer services region-wide and one-fifth serve as a Central Business District. The remainder serve suburban business parks, residential areas, transportation corridors and tourist venues. For example, in Missoula Montana, public and private organizations set up a TMA focused on improving transportation options for workers coming in from surrounding communities. The TMA has expanded services to address other work trips within and around Missoula.

Types of Activities: TMA services also vary by organization. The most common services are rideshare promotions and member advocacy.

Advocacy can range from working with the local transit provider to improve routing and services, to working with federal decision-makers on laws that can impact the commute. Other typical services include conducting promotional events at employment sites, producing periodicals and brochures promoting alternative transportation, forming vanpools and carpools, managing parking resources, selling transit passes, promoting the use of bicycle facilities and more. Additionally, some of the TMAs operate a shuttle service within their service area.

Funding and Budget: The annual budget for TMAs is between $75,000 and $2000,000. Two of the largest sources of revenue for a TMA are dues (34%) and grants (49%). In some cases, developers negotiated with cities to provide seed funding for a TMA as opposed to having to pay for road expansion or other facility improvements. In most cases, the end result has been positive for both the developer and the community.

When Do You Need a TMA?

The TMA exploration phase is designed to answer the fundamental question: does it make sense to form a TMA in this area? That question can best be answered by assessing the situation and comparing it to the "ideal" conditions under which successful TMAs are formed.

The following is a description of phases and specific criteria used for assessing TMA potential in a variety of communities around the country:[1]

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[1] The TMA Development phases were developed for the Atlanta Regional Commission in July 1996 by Stuart M. Anderson, Denise Watts and Eric N. Schreffler. The following descriptions of steps were written by Eric N. Schreffler and Stuart M. Anderson

Phase I - Area Characteristics

The first test for TMA potential involves the size and identity of the geographic area under consideration.

1. *Major activity center* - most TMAs in the United States are formed at major activity centers. In Colorado, TMAs serve areas including: the Garden of the Gods Corridor in Colorado Springs; Cherry Creek in Denver; and the Aspen area.

2. *Employment base* - how many employers and employees (i.e. commuters) would be located within the area – in other words is there a sufficient market for TMA services. While some TMAs have been formed by a single developer or a couple of employers, these are generally in areas expected to have very rapid growth.

3. *A well-defined area with an identity* - since TMAs service distinct geographic areas or corridors with distinct services, employers and commuters should be able to easily identify the service area. The more well-defined and commonly accepted the service area, the better.

4. *Vibrant and growing area* - TMAs seem to be most successful where significant growth in employment (and therefore traffic) is occurring now or in a built-out area with significant business activity. TMAs are not well-suited to areas in economic decline or areas where growth is expected in the future (where the "problem" is still 5-10 years away).

Phase II - Transportation Issues and Problems

Overall, the key to a successful TMA is the existence of a well-defined and "real" problem that some collaborative effort can best address. The lack of a "real" problem or the inability to define and form a consensus on the problem is perhaps the greatest pitfall of emerging TMAs. Without a clearly defined and agreed-upon problem, finding a common solution is impossible. Not only is a

well-defined problem a prerequisite, but realistic solutions must be available and funding for these solutions adequate and available. One or more of the following problems might provide this impetus:

1. *Traffic congestion* - The real or perceived severity of traffic congestion is generally the primary motivation for private sector action and TMA formation. Traffic congestion can be measured as existing or forecasted level of service at intersections, on roads within the area, or on highways leading to the area. A level of service (LOS) of D, E, F indicate a high degree of traffic congestion. However, it is equally valid to gauge the perception of business leaders and commuters as to how bad congestion is getting. The level of service may not indicate an existing congestion problem but the perceptions of traffic may generate an interest in improving or mitigating further congestion. Perceptions, however, can vary and may prevent meaningful consensus.

2. *Accessibility and mobility* - The ability of employees, customers and suppliers to get to a business can be just as problematic as the area's general level of congestion. Regardless of traffic congestion, the key question is "can people easily get to the businesses?" Once in the area or on the site, can people get around easily, including movement during midday hours and between sites.

3. *Employee recruitment and retention* - A specific and tangible impact of congestion or inaccessibility is the ability to recruit skilled workers and retain employees. Addressing congestion, accessibility and mobility can provide economic benefits to an area and its businesses.

4. *Air quality* - Some types of air pollution are highly localized (such as carbon monoxide and fine particulate matter) and require localized solutions. Business cooperation to reduce mobile source emissions can be an effective strategy to address air quality "hot spots."

Definition of TMA Criteria High-Medium-Low			
Criteria	High	Medium	Low
Employment	>50,000 employees	25,000-50,000 employees	<25,000 employees
Well-defined	Widely known area	Locally known area	Ill-defined
Growing	High growth	Built out, but vibrant	Stagnant
Traffic	Existing congestion	Congestion in future	No congestion
Accessibility	Access very difficult	Some/future difficulty	Easy access
History	Transportation issues	Involvement in other issues	No organized involvement
Champion	Readily identifiable	Potential champion	Unclear/no champion
Core group	Existing group	Potential stakeholders	Unclear/no stakeholders
Commitment	Resources identified	Commitments, but no resources	No commitment

Phase III - *Interest and Commitment of Stakeholders*

Finally, if the area seems appropriate for a TMA and a well-defined problem can be identified, the final test is whether the area's private sector (and public sector) stakeholders are ready and willing to undertake collaborative action.

1.   *History of involvement* - One way to determine the willingness of the business community or other interested parties to assume TMA responsibilities is to assess whether other problems have been tackled through collaborative action. Sometimes the process of creating a program or organization where one has never preceded is a daunting task.

2.   *Presence of a champion* - One factor cited for the early success of many TMA formation efforts is the presence of an individual business or community leader who makes a personal commitment to promote and facilitate the creation and formation of the TMA.

3.   *Core group of stakeholders* - Another success factor is a small group of advocates who are willing to serve as the TMA formation committee and provide the needed leadership and time to undertake the feasibility study and early formation tasks. This group should include four to five large employers or well-established developers that can commit time and resources to a long-term program, even if there is no "payoff" in the first few years.

4.   *Ability to elicit commitments* - Finally, while some stakeholders are supportive of the TMA concept, good intentions often fall by the wayside when it comes time to commit time and resources to TMA formation. Assessing the concrete commitment of stakeholders is important to determine long-term financial resources for maintaining the TMA, either in cash or in-kind services.

TMA feasibility assessments do not always result in a recommendation to form a TMA. In some cases, creating a formal organization is premature and some interim organization makes more sense. Two alternative organizational approaches to cooperative public/private partnerships are Employee Transportation Coordinator (ETC) Networks and Neighborhood Transportation Cooperatives. These arrangements are discussed in a 1986 U.S. DOT report, "Public-Private Partnerships in Transportation: A Casebook for Local Elected Officials." (Report # DOT-1-86-15)

Examples:

TMAs may serve small areas such as the Stapleton Area TMA in Denver, or large such as the TMA of Utah, which has oversight over the entire Salt Lake City metropolitan area. The typical TMA, though, has a subregional area such as the U.S. 36 TMO (Broomfield/Westminster), Downtown Denver Partnership TMA and the Southeast TMO (Denver Tech Center).

Employee Transportation Coordinators and Networks

Definition & Types of Activities: Employee Transportation Coordinators (ETC) are employees within an organization that are appointed the duties of understanding employee commute patterns and developing alternative transportation and TDM programs within their place of employment. Newemployees often meet with the ETC on their first day of work to learn about the options for travleing around the area. The personal intervention of an ETC is the single most crucial ingredient required in the formation of most carpools, vanpools and other commute alternatives. Even when employees have the necessary

information provided by their rideshare match-list and want to change their commute mode, they need the skillful encouragement and assistance of their company ETC to make the change.

Although the ETC's responsibilities rarely become a full-time job, most ETC's can devote up to one hour a week for every 50 employees. Their activities can range from passing out information to working closely with an employee to find a reasonable transportation solution. ETCs may be expected to do all or some of the following types of tasks:

· Research and disseminate information to employees about local rideshare organizations, transit services and/or other alternatives to driving alone.

· Survey and analyze employee commute patterns.

· Develop employee transportation programs based on employee surveys and service research.

· Advocate alternative transportation facilities and programs to upper management.

Area Served: Usually, an ETC serves the serves the employees of the company they work for.

Larger companies with multiple worksites may appoint an ETC to serve only their specific worksite or may appoint the ETC to serve the entire company.

Employee Transportation Coordinator Networks: Bringing ETCs together to discuss transportation dilemmas can build an active base of support over creative transportation solutions. Employee Transportation Coordinator Networks are informal groups, comprised of the designated coordinator within each member company, that meet periodically to share information. ETC Networks have been initiated prior to forming a TMA or after an unsuccessful TMA disbands. Some ETC Networks serve particular industries in a region, such as hospital networks. Most serve a specific geographic area, as with a TMA, where circumstances and transportation problems share some commonalities. ETC Networks work closely with regional ridesharing programs and serve as a convenient point for distributing information and updating programs and projects.[2]

Example:

The City of Aspen sponsors the Transportation Options Program (TOP), which educates and markets alternative modes of travel in Aspen, targeting visitors, employees, and residents alike. Membership for employers is free; the only requirement is that the employer designates an employee as its Transportation Coordinator. Currently, TOP membership includes thirty businesses with over 5,000 employees. The Transportation Coordinator is able to easily access a variety of city-sponsored commuter services such as targeted commuter assistance, flexible time promotion and commuter subsidies.

[2] Ibid.

Integration with City and/or County Transcription Staff

Definition and Types of Activities: Sometimes the best place for a TDM program is directly within the City or County transportation department. In this alternative, a staff member interested in TDM is assigned responsibilities for overseeing the TDM plan on full or part-time. Some jurisdictions may prefer to create a position and formally search for the appropriate TDM staff. Often, this alternative requires the motivation of a TDM "champion" within the City or County to advocate for the creation of a TDM program and staff position. Regardless, a staff person is assigned the duties of implementing and evaluating the TDM program.

Example:

The City of Greeley recognized the relevance of TDM to their overall transportation goals and decided to create a local version of a regional trip-reduction program.

Today, the Greeley SmartTrips Program operates trip-reduction services from within the City of Greeley's transportation department.

Neighborhood Transportation Cooperatives:

Definition & Types of Activities: Neighborhood Transportation Cooperatives generally fill a void in public and private transportation services by banding together individuals, interest groups and community organizations to provide a mobility service. Neighborhood cooperatives have initiated and operated residential ride matching programs, "club" bus service, and shuttle services. Perhaps the most common form of neighborhood transportation cooperative is the assumption or coordination of specialized (elderly and handicapped) transportation services by an existing social service organization. Combinations of public funds, user fees and donations are used. Unfortunately, a lack of consistent funding has often plagued these cooperatives.

Areas Served: These groups often serve areas without sufficient employer interest, but where a critical transportation need exists in a residential or commercial area.[3]

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[3] Ibid.

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SECTION SIX:
SETTING GOALS AND MEASURING RESULTS

SETTING GOALS AND MEASURING RESULTS

Each of the strategies illustrated in this TDM Toolkit has the potential to successfully address the transportation challenges faced by Colorado's communities. TDM evaluation efforts attempt to determine how, when and where individual travel behavior is modified in response to the strategies employed as part of your TDM program. While measuring and evaluating individual TDM strategies can be an extremely difficult endeavor, the more work that is done early on, the more useful evaluation efforts will be down the road. The ability to cite reliable and accurate data regarding the success or failure of individual TDM strategies and of the TDM program, as a whole will generate further support for programs that work.

Developing an evaluation plan often includes the following steps:

1. Understanding the Effectiveness of TDM Strategies
2. Setting Goals
3. Gathering Baseline Data
4. Implementing On-going Evaluation and Analysis

Understanding the Effectiveness of TDM Strategies:

TDM has proven highly effective in three praticular situations. Although TDM measures have become increasingly popular among decision-makers, research is limited on the effectiveness of TDM programs area-wide or along a corridor. TDM has been shown to be most effective in single work site locations where an employer offers employees a blend of incentives and disincentives to reduce single occupant vehicle travel. In some case examples, TDM has achieved as much as a 30 percent reduction in vehicle use.

Comprehensive TDM programs typically reduce peak-period automobile trips by 10 to 30 percent at worksites. On an area-wide basis, programs typically have less effective results (due to the variability of implementation from worksite to worksite). However, achieving substantial automobile trip reduction is possible. Some of the best experiences have been:

- Downtown Bellevue (WA): 17.8 percent reduction in automobile trips
- Bishops Ranch (CA): 16.6 percent reduction
- Minneapolis (MN): 15 percent reduction.

Transportation Management Associations (TMA) are organizations tasked with implementing commuter and TDM assistance programs within a given service area. These service areas may be small, such as the former University of Colorado Health Sciences TMA, or large, such as the TMA of Utah, which has oversight over the entire Salt Lake City metropolitan area. The typical TMA, though, has a subregional service area, such as the U.S. 36 TMO (Broomfield / Westminster), Downtown Denver Partnership TMA, and the Southeast

TMO (Denver Tech Center). A study conducted by the TDM Resource Center in 1996 found that TMAs typically reduce a minimum of 6 to 7 percent of total commute trips, and more if implemented in conjunction with transit improvements. A TMA formed in suburban Los Angeles, Warner Center, managed to shift nearly one-third of all commute trips into some form of shared travel. The program has been in operation for nearly fifteen years.

Some of the most successful applications of TDM involve mandates, pricing and/or parking management elements. Charging for parking can be a major motivating factor for commuters to consider some other form of travel. However, strong results require the active promotion of alternatives and a blend of public and private investment in support services, incentives and education. In a 1997 national study, and confirmed in a separate 1998 study for Los Angeles, charging for parking (approximately $2 fee) reduces auto commuting by a minimum of 12%, with a total reduction possible of 19 - 30% if conducted in conjunction with other TDM strategies.

Average Effectiveness: The effectiveness of TDM strategies are not mutually exclusive and are not cumulative. In that, it is difficult to separate the effectiveness of individual strategies that are implemented together as a package. Thus, one strategy may "double count" for the effects of other TDM strategies which are implemented in conjunction with it. This is the reason why most comprehensive TDM programs, which offer a multitude of services and strategies, appear to have a ceiling of approximately 30 percent vehicle trip reduction. However studies have been conducted over the past few years to attempt to ascertain the individual effects of programs. Results from these studies are shown in the table on the following page:

Effects of TDM Strategies

TDM Strategy	Automobile Trip Reduction
Financial incentives/subsidies (1997)	3-7% ($1 per day)
	6-15% ($2 per day)
Parking cash-out (1997)	10-13% (worksite)
Compressed work weeks (1998)	7-10% (worksite)
Telework (1997)	1-4% (area wide)
Walking/Bicycling improvements (2000)	1-2% (area wide)
Carpooling/Vanpooling programs (1996)	1-3% (area wide)
Marketing and promotion (1996)	1-3% (with other strategies)

Establishing Goals

While selecting a package of TDM strategies for your community should be grounded in larger community and transportation goals, establishing more narrowly defined goals for your TDM program will determine the way in which each of the TDM strategies are implemented. Developing an implementation plane designed to achieve performance targets should involve:

· Creating general and/or specific goals for your TDM program

· Developing a time-frame to achieve these goals

· Establishing TDM Milestones to assess incremental progress toward these goals

· Developing a system to measure cost-effectiveness and track success.

The types of goals you choose for your TDM program can vary.

TDM goals can be general, as in the following:

· Improve mobility options
· Shift travel demand to off-peak times or alternative routes
· Reduce vehicle miles traveled
· Establish a Transportation Management Association

· Enhance regional travel options
· Improve business climate
· Improve community awareness of various mobility options
· Improve air quality
· Reduce congestion

TDM goals can also be very specific, as in the following:

· Maintain current Level of Service (LOS) on all community streets
· Reduce traffic volumes at four key intersections in the central business district
· Reduce vehicle miles traveled by 10% over the next 15 years
· Shift 5% of all trips to alternative modes over the next 10 years

In most cases, the goals you establish for your TDM program will include a combination of both general and specific measures of success. TDM strategies attempt to address a wide variety of community concerns. As such, the goals you establish for your TDM program should track both traditional transportation measures of success and more broad-based economic and quality-of-life indicators. This approach recognizes that the quality of a transportation network is not only defined by its ability to move people from point to point, but also by its ability to support wider community goals.

Time Frames

Setting goals necessarily involves establishing some criteria for when you anticipate results. In creating an implementation and evaluation plan for your TDM program, the time-frame in which you expect to produce results will directly influence the types of programs you will need to put into place and the amount of money you will need to devote to those programs. Different TDM strategies produce results over different periods of time under different circumstances. In order to reach the goals you set forth in the TDM element of your transportation plan, it is important to recognize the key role that time plays in the effectiveness of individual TDM strategies. For example:

- Strategies which incorporate market-based or pricing approaches may produce short term results, as commuters may quickly change their travel habits in response to strategies which impact the costs of their journey.

- Rideshare strategies which use marketing, incentives and matching techniques to promote transit, carpool and vanpool use generally take longer to achieve results. These strategies may incur a fair amount of up-front effort and cost without yielding positive results for several years.

Setting goals for your TDM program must recognize the various time frames in which each of the strategies may produce results and incorporate a balanced mixture of short, medium and long-term strategies.

Milestones

Building TDM Milestones into your community's TDM program creates an environment where strategies are constantly measured and evaluated for effectiveness. Focusing on outcomes and keeping track of results allows community leaders and the opportunity to reset priorities and adapt and modify programs as they learn what works. TDM Milestones can be attached to individual strategies and to the TDM program as a whole.

If a community goal for your TDM program is to achieve a 10% shift of all trips to alternative modes by 2015, TDM Milestones might chart out a 3% mode shift by 2005 and a 7% shift by 2010. In additional to programs that track specific travel behaviors, TDM Milestones can track more general indicators that your program is producing results. For example, in the early stages of building partnerships with area employers, a TDM Milestone might set a target to have 20 new employers involved in rideshare matching programs by 2002. These targets provide motivation and help community leaders evaluate the resources they are committing to a program. While TDM Milestones recognize the initial time it takes for individual TDM strategies to build momentum, it also allows communities to assess which programs are producing the most cost-effective results. In this way, particular strategies may be expanded or the entire program may receive more emphasis.

Developing Evaluation Tools and Gathering Baseline Data

Various types and forms of evaluation tools exist including; surveys, focus groups, demographic data gathering and key-stakeholder interviews. Your evaluation tools should be designed to accurately track both quantitative and qualitative results of your TDM strategies. Doing so will ensure a well-balanced and thorough analysis of your program.

The most important part of all evaluation processes involves the collection of a set of baseline data. Communities should base the types of data they collect on the goals they've set forth in their TDM program. Efforts to reduce the vehicle occupancy of home-based work trips must begin with an assessment of current occupancy conditions. Efforts to reduce congestion in the central business district should begin with an analysis of current traffic volumes, level of service and hours of delay. While these sometimes cumbersome analyses may increase the initial costs of implementing a package of TDM strategies, the importance of reliable effectiveness measurements cannot be overstated.

Baseline measures of TDM effectiveness can include a wide range of quantitative and qualitative information:

· Changes in mode split on a region-wide basis
· Changes in mode split for commuters to specific organizations and destinations
· Awareness of community programs supporting alternative modes
· Reductions in traffic congestion region-wide or at specific interchanges (measured by traffic volumes, hours of delay or level of service)
· Reductions in vehicle miles traveled
· Improvements in air quality
· Increases in the number of mobility options available
· Safety and convenience of pedestrian and bicycle routes

More often than not, your baseline data-gathering tool can be edited to become one of your main evaluation tools. In this way, all future data gathering will be comparable to the baseline data.

Implementing On-going Evaluation and Analysis

Evaluation of your TDM programs and/or services should coordinate with the following:

· The timeline you have set
· Timelines created by funding sources
· Timelines created by key city/county/ regional partners

When creating a TDM evaluation plan, community leaders, regional planning agencies and area businesses should clarify TDM goals and time frames. Attempts to streamline the evaluation expectations of your partners and funders within your TDM plan will ensure your plan is easy to implement.

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SECTION SEVEN: LOCAL & NATIONAL EXAMPLES

LOCAL AND NATIONAL EXAMPLES

TDM programs and services have been developed and implemented in both large urban cities as well as smaller rural communities. Examples of innovative and successful TDM programs and services can be found throughout the nation and right here in Colorado. This section provides brief overviews of a variety of different TDM programs and services implemented by a mixture of rural and urban governmental and non-governmental institutions. As discussed earlier, most TDM programs are implemented by local governmental jurisdictions, Transportation Management Associations or Organizations or regional Metropolitan Planning Organizations.

The following case studies provide brief information on not only what TDM programs were planned and/or implemented but how they came into existence. Despite the fact that every community should create TDM programs and services that respond to the unique needs and characteristics of their community, a great deal of transferability exists in the programs and services introduced in these case studies. There are two ways to access the information provided:

1. Utilize the table below to narrow down the case studies most appropriate for you and your organization. Information regarding geographic location, type of TDM program and the operating institution is provided to assist you in referencing the case studies most appealing to you.

2. Review each of the case studies provided in order to glean ideas from0 programs implemented throughout the country.

	Location	Type of TDM Program	Operating Institution
Case Study I	Aspen, Colorado	Integration at Worksite Traveler/Tourist Services	City of Aspen
Case Study II	Greeley, Colorado	Integration at Worksite	City of Greeley
Case Study III	La Plata County (Durango), Colorado	Integration at Worksite	La Plata County
Case Study IV	Missoula, Montana	Integration at Worksite Traveler/Tourist Services	City of Missoula, TMA, and Missoula Parking Commission
Case Study V	Park City, Utah	Integration at Worksite	City of Park City
Case Study VI	Philadelphia/Wilmington Area, Delaware	Incorporation into Major Corridor Reconstruction	State DOT, TMA and Delaware Administration for Regional Transit
Case Study VII	Puget Sound Region, Washington	Incorporation into City/County/Regional/ Transportation Plans	Washington State DOT
Case Study VIII	Salt Lake City, Utah	Incorporation into Major Corridor Reconstruction	TMA operates, partnership between Utah Transit Agency, Wasatch Regional Council and Utah DOT

Case Study I
ASPEN, COLORADO

Aspen community and business leaders recognize the importance to reduce traffic, address parking concerns, and improve air quality.

The City of Aspen would seem to have it all - beautiful natural surroundings, an international tourist destination, a vibrant business community, and an interested citizenry in quality of life issues. Unfortunately, with Aspen's popularity comes stifling traffic and congestion, as this town of approximately 6,000 residents boasts more than 25,000 visitors *per day*.

Aspen endures severe congestion to the point where morning commuters from Glenwood Springs could expect a one-way trip to exceed an hour, although the physical distance is only 35 miles apart. Aspen community and business leaders recognize the importance to reduce traffic, address parking concerns, and improve air quality. Aspen's 1995 Transportation Plan identified parking management, alternative mode development, and Transportation Demand Management strategies as means of accomplishing these goals. In 1997, the City designated a portion of paid parking revenues to its *Transportation Options Program (TOP),* in addition to financing the City's free transit service.

TOP educates and markets alternative modes of travel in Aspen, targeting visitors, employees, and residents alike. Although the City of Aspen wholly finances the program, TOP offers special services to employer members. Membership is free; the only requirement is that the member designate an employee as its Transportation Coordinator. Currently, TOP membership includes thirty businesses with over 5,000 employees.

Services offered by the City of Aspen to TOP members and the public-at-large include:

- Carpool programs for employers
- Vanpools for employees
- Parking management in downtown
- Traveler information to visitors
- Radio and newsprint marketing
- Bi-monthly lunch meetings for TOP members
- Targeted commuter assistance
- Flexible time promotion
- Compressed work week promotion
- Commuter subsidies
- Guaranteed ride home program
- Discount transit passes
- Telecommuting
- Transportation Management Association
- Bicycle and pedestrian facilities and promotiom
- High Occupancy Vehicle (HOV) lanes.

Aspen has also sought to improve traffic flow by installing peak hour HOV lanes and allowing free in-town parking for carpoolers. Frequent carpool-specific promotions are a regular occurrence

Aspen implementation experience

Since TOP's creation, Aspen has developed a variety of promotional and service for area commuters. Some of these programs include:

1. *Visitor and Traveler Information*. In the last several years, Aspen has recognized that the visiting travelers are an important audience to reach in regards to TDM. To address this market, the City targets tourists through several channels. Aspen's *Visitor's Guide to Transportation* brochure is distributed in concierge packets, at the Aspen and Denver airports and in brochure racks citywide. The guide displays all city transit routes and explains to visitors that they do not need a car to enjoy Aspen. The City also partners with two large tourism entities including Stay Aspen Snowmass and Aspen Ski Tours. These two organizations ensure that transportation information reaches over 20,000 visitors per season before they arrive in Aspen. Transportation staff also serve on a special events review committee, ensuring that all major events staged in Aspen provide proper TDM information to their staff and guests.

2. *Commuter Advertisements*. The City also targets messages to commuters traveling from bedroom communities into Aspen for work each day. The City has found that the most effective means

to this end is drive-time radio and has responded by developing a radio campaign, "Zoom Right Up". This catchy jingle airs heavily on six major radio stations during drive time. Local radio stations have embraced the message and provide several free radio spots throughout the day and into the evening. Radio spots include pre-produced jingles as well as testimonials from local bus riders, carpoolers and bikers. Partnerships with local radio stations and newspapers have also resulted in frequent promotions such as the current Carpool Patrol, which allows local carpoolers to win incredible prizes by calling in to a radio station.

3. *Discount Transit Passes*. The City of Aspen worked with the Aspen Chamber Resort Association and the Roaring Fork Transit Authority to create a seasonal zone pass for employees. Many employers have since purchased these passes for their employees.

4. *Innovative Experiments*. The Aspen City Council is incredibly supportive of new and innovative TDM measures. Currently the City is supporting a three-year car share pilot program. The program, in its second year, has 20 members and one vehicle, with a second vehicle on the way.

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              Transportation Options Program
              970.920.5038

In an effort to address growing traffic and congestion issues, the City of Greeley pursued active participation in the regional SmartTrips program

Located one hour north of Denver and thirty minutes from the Front Range of the Rocky Mountains, the City of Greeley is home to the world's largest Fourth of July rodeo. Greeley's convenient location to Denver combined with its small-town reputation is attractive to many Coloradoans. Unfortunately, as more people become aware of Greeley's attributes, the transportation infrastructure becomes stressed. Hence, Greeley's employment and population growth have resulted in increasing traffic related problems.

In an effort to address growing traffic and congestion issues, the City of Greeley pursued active participation in the regional SmartTrips program- an alternative commute program. With seed money provided by the regional SmartTrips program the City of Greeley's Department of Public Works created and housed the Greeley SmartTrips program. The regional SmartTrips program provides the Greeley program funding and technical assistance in the form of survey development and analysis as well as transportation demand management research.

Greeley SmartTrips Priorities

The Greeley SmartTrips program has focused their efforts on four priority areas.

1. *TDM outreach to employers/businesses.* The success of TDM in Greeley clearly hinges on the ability of the program to connect with local businesses and employers. Greeley SmartTrips chose to focus efforts on the 11th Avenue Corridor that stretches from Greeley to Evans, features reliable bus service and is home to a variety of businesses and many commuters. Using professionally designed marketing materials Greeley SmartTrips approached and involved 84 businesses in a four-step business outreach model *(see table on next page).* This process was designed to incrementally increase the businesses level of participation in TDM efforts.

2. *Individual travel behavior documentation.* Greeley SmartTrips uses surveys to track and analyze attitudes towards traffic and alternative modes of transportation. In addition, Greeley SmartTrips offers commuters an on-line "Mile Mapper" tool which tracks the number of miles they commute using alternative forms of transportation.

3. *Marketing.* Greeley SmartTrips recognized the need to create marketing materials that would build credibility in the private sector. Therefore, they developed high quality marketing materials that command attention within the private sector. Furthermore, marketing materials are produced in Spanish and English in order to reach every citizen of this multi-cultural city.

4. *Special events*. Events such as Bike Month and Bus Month command the attention of Greeley SmartTrips and offer opportunities to directly market to commuters. In addition, Greeley SmartTrips pursues opportunities to promote special event shuttles to community events and festivals such as the Greeley Independence Stampede.

Greeley SmartTrips implementation experience

Of the 84 businesses Greeley SmartTrips approached, 41 allowed them to implement employee surveys in their companies. Findings from these surveys shaped the TDM focus of Greeley SmartTrips. Due to the fact that 70 percent of employees surveyed live within five to seven miles of work, Greeley SmartTrips has focused efforts in 2002 on bike commuting. They have created two programs that offer incentives and services to bike commuters.

1. *Commuter Bicycle Club.* Commuters who ride their bike to work at least four times are eligible to join the Commuter Bicycle Club. Each member receives a club card good for discounts at a variety of local retailers. The card also doubles as a bus pass for those times when mechanical problems occur or the commuter is simply too tired to ride. In addition, milestone prizes are awarded if commuters get a co-worker to start biking to work or they personally reach commute mileage milestones.

2. *Bicycle Depot.* Greeley SmartTrips has developed a bike depot housed at the City of Greeley office. The depot provides a convenient space for commuters to transition from commute-mode to work-mode. Restrooms and indoor secure bicycle parking are included in the depot. Additionally, an electric moped is available if and when bicycle commuters need to run errands during the workday. Within its first two months, the depot was used 92 times, yielding close to 600 VMT reduced.

Four Step Business Outreach Model:

Step One: Initial Contact with Company
· Contact employers and identify transportation issues and needs
· Explanation of services, programs and resources
· Implement employee survey

Step Two: Build Business Partnership
· Compile and share survey results
· Establish company-specific TDM goals
· Gain support for at least one SmartTrips program, service or resource

Step Three: Increase Employee Awareness and Participation
· Identify a company transportation contact
· Promote special events
· Implement at least one SmartTrips program, service or resource

Step Four: Maintain the Relationship
· On-going marketing
· Continued tracking of travel data
· Recognition

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Greeley SmarTTrips
lavellej@ci.greeley.co.us

Case Study III
LA PLATA COUNTY, COLORADO

Sitting in the midst of the beautiful San Juan Mountains of southwestern Colorado, many have considered the Durango-area blessed, including the Anasazi Indians who settled in the area in the 1200s AD. Indeed, a constant stream of new residents all aspire to enjoy La Plata County's wonderful natural environment. Between 1990 and 2000, the City of Durango's population alone increased by 20 percent while La Plata County's population increased approximately 35%. This growth in the residential and employment base, combined with La Plata County's popularity as a tourist destination and the increasing number of students at Ft. Lewis College, the four-year liberal arts college, have resulted in increased local traffic and congestion. Furthermore, Durango lies at the crossroads of U.S. highway 160 and U.S. 550. These busy thoroughfares contribute to the area's increasingly regional shopping and employment role. Altogether, the Durango-area endures traffic and congestion problems similar to many urbanized areas of Colorado.

La Plata County pioneered the pursuit for ridesharing in 1997. Although other communities, large and small, have attempted comprehensive rideshare matching efforts, La Plata County initiated a truly innovative approach that is best suited for cash-conscious communities. Their approach prominently features the Internet and local radio for connecting both regular commuters and one-time travelers. Rideshare participants may live or work anywhere within the San Juan Basin, which includes La Plata, San Juan, Archuleta, Montezuma, and Dolores counties, as well as northern New Mexico.

La Plata County implementation experience

La Plata County has enhanced its rideshare-matching program through a couple of innovative strategies:

1. *Rideshare World Wide Web page.* Perhaps the rideshare program's best innovation is in the use of the Internet. By developing the program initially for the Internet, La Plata County capitalized on an inexpensive means of developing a comprehensive rideshare portfolio. The online database software cost only $2,000 to develop and bring online, and it costs less than $50 per month to maintain. Finally, the site allows La Plata County to actively assist carpoolers without devoting significant staff-time to such an effort - only five hours per month is necessary to keep the online database active. In addition to providing general trip information and a "practice form", the web site directs users into entering their intended destination, origin, and frequency of trip, along with a contact email address (no other information is provided).[1] Once this information is entered, a new web page will appear that identifies the email addresses of individuals interested in carpooling for similar trips. The rideshare site also identifies different ways of obtaining carpool matches: "If you don't get any matches, try reversing your From and To places - you might find someone going the other way. Try choosing destinations *beyond* yours - you might find someone going your way." This system can be accessed at:

    http://www.scan.org/rideshare

La Plata County pioneered the pursuit for ridesharing in 1997.

2.   Partnerships. Recognizing that not everyone had access to the Internet and the World Wide Web, La Plata County also developed a cooperative program with the Ft. Lewis College radio station, KDUR, to promote ridesharing. Interested carpoolers lacking Internet access can call the radio station and have their names entered into the database. Multiple times during the day, the station will announce rideshare promotions and encourage listeners to visit the web site or call KDUR.

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1 Only providing an email address allows potential carpoolers to remain anonymous until such a time that each party feels comfortable meeting the other. Free email accounts are readily available from other web sites, further assuring privacy.
http://www.scan.org/rideshare/userguide.html
La Plata County, Southern Colorado Action Network Rideshare Matching, 1998.

Case Study IV
MISSOULA, MONTANA

Missoulians take pride in their enviable quality of life. Missoula , located in northwestern Montana, is a small city at the hub of five valleys along the Clarkfork River. For many, Missoula is an escape from urban ills. However, in recent years, traffic congestion and air pollution threaten this appeal.

Community and business leaders in Missoula recognize the importance of addressing growing traffic and parking issues, as well as their impact on land use and air quality. In 1996, Missoula incorporated a Transportation Demand Management (TDM) goal into the City's Strategic Plan and the Missoula Urban Area Transportation Plan. The goal is to attain a 10 percent reduction in VMT by 2007. At the time of the public hearing that established these goals, residents and business people pledged to work together with government to create a Missoula-specific package of strategies to reduce vehicle traffic. Eighteen strategies were subsequently identified.

The following list of recommended strategies are listed in order of priority:

- Parking controls
- Better transit service
- Flex-time
- More bicycle paths
- Parking charges (for employees)
- 4/40 work weeks
- Commuter subsidies
- "TDM-friendly" land use strategies
- Vanpool programs
- More walking routes
- Parking tax (all spaces)
- TDM ordinance
- Lower transit fares
- Telecommuting
- TMA (Transportation Management Association)
- Clean Air "No Drive" Days
- High Occupancy Vehicle (HOV) lanes

Missoula recognizes that TDM is not the only solution. However, TDM can be an effective tool for reducing some trips, as well as a complement to other strategies.

Implementation efforts

Over the years, Missoula has made great strides towards the accomplishment of these goals. Some program highlights include:

1. *Creation of Missoula-Ravalli Transportation Management Association (MR TMA)* – MR TMA is a private non-profit designed to work with employers and residents in Missoula, Ravalli, Lake and Sanders Counties on their transportation needs. Commuters can utilize the various services and products which include: carpool and vanpool matching, guaranteed ride home program, employee transportation coordination (ETC) network and training, school outreach for grades K-12, and TDM Resource Center.

2. *Vanpool Services* – MR TMA's vanpool program offers residents of the Bitterroot Valley, Mission Valley and Alberton areas (1-90 West) the opportunity to utilize the various vanpool routes. Currently there are five vanpools from the Bitterroot Valley, one from the Mission Valley (includes St. Ignatius, Arlee and Evaro), and one from the Alberton area (includes Huson and Frendchtown). In addition, MR TMA operates four vans with service to the University of Montana and the downtown areas. To support these vanpool efforts, MR TMA identified park-n-ride locations along the various corridors. The vanpool program will be adding two more routes soon and will continue to grow as funding permits.

3. *Missoula in Motion* – To support community outreach efforts, groups including the University of Montana, City of Missoula, Missoula Parking Commission, Mountain Line Transit, MR TMA and others joined forces under the umbrella name of *Missoula in Motion*. The purpose was to sponsor workshops and one-on-one outreach to local businesses, and to promote physical improvements that support TDM. *Missoula in Motion* is currently working with employers representing more than 8,000 employees to develop alternative transportation programs. For example, St. Patrick's Hospital now provides valet parking for carpool and vanpool vehicles, discounted transit passes and a point incentive program. They are also developing a telecommute program that may involve up to 200 hospital administrative employees.

4. *Parking Management* – The Missoula Parking Commission is working with area employers to create on-street reserved parking spaces for carpools and vanpools. The Commission continuously attempts to secure these spaces in a convenient location adjacent to the entrance of major businesses. The Commission is also examining a reduced parking rate for carpoolers and vanpoolers who use city-owned off-street spaces. The Parking Commission uses a portion of the parking revenues to fund alternative transportation programs including MR TMA, *Missoula in Motion*, a free downtown shuttle circulator called "The Emerald Line," and provides bicycle lockers at the central city-operated parking garage. In addition, the Commission co-sponsors a special event shuttle and has

partnered with the University of Montana and Mountain Line in an effort to establish a park-n-ride set-aside for downtown employees.

5. *Bike–Walk– Bus Week* – Every spring, Missoula hosts a series of events, competitions, prize drawings and retail discounts for participants to encourage alternative transportation.

6. *Free Bus Rides for Students* – The University of Montana negotiated an annual lump-sum payment to allow all students to ride *Mountain Line Transit* for free. Students simply show their student ID card when boarding the bus.

By creating a TMA and enlisting the cooperation and support of many private- and public-sector organizations, Missoula has made giant strides toward reducing its traffic and air pollution problems in a very short time.

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Case Study V
PARK CITY, UTAH

The City sees its role as providing capital-intensive service (such as transit, parking management, and area shuttles) and broad promotion of alternative modes.

Park City is located in the Wasatch Mountains of Utah, approximately 30 miles from Salt Lake City, and boasts a vibrant skiing industry. The City serves as both a resort destination and a suburban community to Salt Lake City, boasting over 7,000 residents and more than 20,000 visitors *per day* in the peak season. To top it off, Park City was featured globally when numerous events for the 2002 Winter Olympics took place here.

Park City exemplifies making the best use of public and private sector resources for the promotion of alternative modes and Transportation Demand Management. The City's transportation concerns date back to the late 1970s, when the first of two 3% sales tax surcharges on purchases over $100, dedicated for transportation, were approved by the electorate. These surcharges, in addition to business license fees, comprise the City's $2.5 million Transportation Enterprise Fund. The municipal transit service receives $1.6 million annually from this fund for operational expenses. Parking enforcement also receives a portion of the fund, as paid parking revenues do not cover all expenses. The City uses the remainder of the account as a "depreciation fund", for buses and other capital expenses.

Park City does not have year-round congestion. However, during the five winter months, Park City endures terrible traffic and limited parking availability. Transportation services originally designed to address the winter months' problems are also present in the off-season months. Year-round transit, shuttles, vanpools, and paid parking have served to decrease average household vehicular traffic in both peak and off-season months.

TDM services offered by Park City include:

- Clustered parking lots/garages
- Paid parking controls
- Transit service
- Free shuttles
- Bicycle and pedestrian facilities
- Alternative mode and bus promotion

Additional TDM services offered by area employers, including the Deer Valley ski resort include:

- Compressed work weeks
- Vanpools for employees
- Telecommuting

Park City employs a managed approach to promoting TDM. The City sees its role as providing capital-intensive service (such as transit, parking management, and area shuttles) and broad promotion of alternative modes. The private sector pursues the direct commute assistance to employees.

Implementation efforts

1. *City transit service.* Park City belays the notion that a community must be large, densely populated, and under the constant pressure of congestion in order to operate a successful transit system. Park City's transit system is small by urban standards - the City operates only eleven buses in the peak, winter months. However, the City's bus service remains successful throughout the year, with an average load factor of 32 riders per service hour in the winter and 25 riders per service hour in the off-season. Furthermore, Park City's transit system has enjoyed a 20% increase in riders in two years.

2. *Parking management.* Park City incorporates a variety of parking management principles including parking pricing and clustered parking. The City's parking pricing program, encompassing most of the basin, encourages residents and employees to use alternative means of travel year-round, as evident in the transit usage growth rate. Even during the summer, when parking is available, residents still use the bus rather than drive as a result of the paid parking program. Additionally, Park City is in the process of constructing clustered parking facilities on the edge of the City limits, with a planned shuttle service to connect these lots to the City center. Interestingly, the City has secured contributions from the Deer Valley ski resort and other private businesses towards the construction of these lots.

3. *Division of efforts.* Park City exemplifies making the "best use of limited resources". Rather than try to provide transit, TDM services, and alternative mode promotion altogether, the City has decided to use its resources in areas where it has the most effectiveness and leaves specific services to employers. For example, the City concentrates its efforts on promoting carpooling and vanpooling to seasonal employees, however, the Deer Valley ski resort actually operates the vehicles and coordinates service with its employees directly. Thus, the City's efforts are different from the employers' efforts.

4. *Advertisement trade.* Seeking to maximize promotional opportunities and minimize costs at the same time, the City established an "advertisement trade" with local media outlets. In exchange for on-the-air commercials or newsprint ads, the City offers free advertisement on the inside of all buses and shuttles. This program has been effective in placing "how to use the bus" ads on local TV stations, an expense the City could not have otherwise afforded.

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Case Study VI
Philadelphia / Wilmington Area, Delaware

I-95 serves as the principal connection between Philadelphia, Wilmington, and Baltimore. Reconstruction of I-95 in northern Delaware (New Castle County) was recently initiated by the Delaware Department of Transportation (DelDOT), with the focus on reconstruction, highway widening, and capacity improvements. Construction began in 2000 on the "North Section" (north of Wilmington and south of the Pennsylvania border). Additional construction activities will occur in the Wilmington area over the next few years.

In preparation for this project, DelDOT has worked with TMA Delaware and the Delaware Administration for Regional Transit (DART First State) to help mitigate construction impacts, and, to build the use of alternatives for the long-term. The term DelDOT uses for TDM efforts is "Integrated Transportation Management", whereby the focus is not simply on demand-oriented strategies, but also how TDM can be used in conjunction with transportation system management (TSM) strategies to best manage existing infrastructure.

One of the first tasks was identifying an "inverse mascot" – the Traffic Creep. The Traffic Creep "thrives on traffic congestion and smiles when he keeps drivers waiting in long lines." Travelers are encouraged to make the Traffic Creep unhappy by riding transit and ridesharing.

Specific efforts that have been intensified in the I-95 Corridor include:

1. *Corridor ridematching.* TMA Delaware and DART conduct coordinated and targeted ridematching for the I-95 Corridor. Registration for ridematching automatically includes the "Home Free Guarantee". Approximately 5,000 carpoolers have registered for the program since August 2000.

2. *Transit promotion.* Bus and rail transit promotion occurs throughout the Corridor, with focus upon new services that enhance convenience (such as the DARTCard, an electronic fare collection system). Marketing efforts highlight the cost and time advantages of using transit to Wilmington.

3. *Employer workshops.* Over 60 large employers in Wilmington have sponsored workshops on site for showing construction and traffic avoidance options to employees. These workshops, accompanied by a permanent "Commuter Corner" to be installed at offices, include information on how to rideshare and use transit throughout the reconstruction efforts. These workshops and commuter corners have outreached directly to over 30,000 commuters.

Contact: http://www.i95de.com/

Case Study VII
Puget Sound Region, Washington

TDM has been identified as the quickest and cheapest multi-modal option for the I-405 corridor.

Like many urban corridors, I-405 in the Seattle area has experienced increasing congestion. In response, the Washington State Department of Transportation (WSDOT) recently conducted an Environmental Impact Statement (EIS) to review four build alternatives for the corridor. Regardless as to which of the four alternatives was selected, WSDOT planned and implemented a comprehensive corridor TDM program with consistent strategies across all four alternatives.

WSDOT promotes a few core components about the I-405 Corridor TDM Program:

- Existing public and private TDM efforts will continue, with expansion in new and growing markets

- TDM is implemented by an alliance of regional and local entities

- Strategies are flexible, to respond to the needs of travelers

- TDM is funded through demonstration projects and on-going funding by WSDOT

Specific strategies enacted by the Corridor TDM Program include:

1. *Vanpools and transit*. In support of the goal to add 2,000 new vanpools in the next 20 years, WSDOT provides financial incentives to both users and providers of vanpools. For potential users, WSDOT finances an ongoing vanpool marketing program, a 50% vanpool fare subsidy for users of the corridor, and "value-added" incentives (such as frequent flyer miles). For providers, WSDOT provides a revolving no-interest loan fund for purchasing vans, owner-operated vanpool promotion, and other start-up subsidies. Transit subsidies, innovative demonstration programs for smart card technologies, state tax credits, and park and ride support are included, as well.

2. *Public information, education, and promotion*. The TDM program's information emphasis is on helping travelers plan TDM-friendly trips in the corridor. This includes trip-planning assistance for transit, interactive ridematching, and other awareness programs.

3. *Employer-based programs*. An extensive employer-based TDM effort is conducted for the whole corridor, in order to reduce single occupant vehicle commuting and vehicle miles traveled to worksites in the corridor. Efforts include: telework, alternative work arrangements, tax credits and other incentives for commute behavior, support for TMAs, parking cash-out incentives and financing, and an expansion of the Commute Trip Reduction (CTR) program to smaller employers.

4. *TDM friendly land use*. TDM friendly site design and land use efforts include broad transit oriented development planning, code changes that support TDM friendly redevelopment, design review support to local jurisdictions, developer and business incentives, and parking management programs.

WSDOT has identified success factors in the I-405 Corridor EIS planning process:

- The packaging of TDM strategies was approved by all key decision makers in the corridor, marking the first time TDM had been identified and approved in the early months of a major-planning process

- There is wide acceptance of TDM cost effectiveness across corridor stakeholders. This acceptance included not only public officials and decision makers, but also corridor citizens.

- TDM has been identified as the quickest and cheapest multi-modal option for the corridor. As such, the implementation is fast-tracked while build-based alternatives are arranged.

The I-405 Corridor TDM Program has a 20-year estimated cost of $350 – 400 M ($11 – 13 M per mile), yielding a 2 - 5% reduction of trips.

Contact:

http://www.wsdot.wa.gov/projects/I-405/

Case Study VIII
Salt Lake City, Utah

TDM got its start in the Salt Lake City metropolitan area as a result of concern regarding pending reconstruction of the I-15 Corridor. Coupled with the need to address long-term growth planning through efficiency-maximizing strategies, the Salt Lake Area Chamber of Commerce formed a partnership with the Utah Department of Transportation (UTDOT), Utah Transit Agency (UTA) Wasatch Front Regional Council, and other governmental agencies to develop a comprehensive TDM program for the Corridor and a regional Transportation Management Association (TMA).

Over time, the TMA became the principal representative for business concerns to UDOT, UTA, and the construction contractors. This was an important role, as construction along Main Street for the new TRAX Light Rail Transit system began to impede upon business operators' stream of revenue. The TMA of Utah is the primary conduit for business and employer outreach in the I-15 (Wasatch Front) Corridor. However, UDOT and UTA are the primary agencies responsible for delivering TDM services to the Corridor.

Specific strategies that were enacted for the Wasatch Front Corridor include:

1. *Community Coordination Team*. Demand management starts with coordinating the business community around corridor improvement projects. The Community Coordination Team (CCT) is a representative body of small and large groups within the corridor. They are tasked with reviewing month-to-month construction activities and developing targeted demand management strategies with employers and neighborhoods that will be particularly affected in the months ahead.

2. *Demand-management focused contractor bonus*. The TMA of Utah and the CCT have control over a corridor reconstruction effort's bonus to be paid to the design/build contractor. If the contractor satisfies business and commuter concerns, it receives a bonus; if the contractor does not satisfy demand management concerns, then bonuses are not awarded.

3. *Employer-based programs*. An extensive employer-based TDM effort is conducted for the whole corridor, in order to reduce single occupant vehicle commuting and minimize construction impacts. Efforts include: telework, alternative work arrangements, leased and no-interest van pool programs, co-op and ECO transit passes, tax credits and other incentives for commute behavior, guaranteed ride home, vanpool and carpool matching, and alternative modes and Commuter Choice promotion.

Contact: http://www.tmautah.org/main2.html

TDMtoolkit

SECTION EIGHT: **OTHER RESOURCES**

OTHER RESOURCES

A variety of local, state and national resources are available to assist you in developing and implementing a TDM plan.

Colorado State Department of Transportation (CDOT)
http://www.dot.state.co.us/

For more information from CDOT on TDM programs and assistance, contact:

> Deborah Sakaguchi
> Statewide TDM Coordinator
> Modal Planning Section, CDOT
> 303-757-9088
> deborah.sakaguchi@dot.state.co.us

Association for Commuter Transportation (ACT)
http://www.actweb.org

ACT serves as a TDM information resource, provides advocacy on transportation issues involving commute alternatives and offers networking and professional development opportunities to its members.

Commuter Choice Website
http://www.commuterchoice.com

Commuter Choice is a nationwide partnership designed to help employers create customized solutions to their employees' commuting challenges. The Commuter Choice website, developed and maintained by the Association for Commuter Transportation, is a centralized resource for information on Commuter Choice and a searchable database of Commuter Choice providers around the country. The website is a resource for employers, commuters, and providers/partners.

Commuter Choice Leadership Initiative:
http://www.commuterchoice.gov/

This initiative of the U.S. Environmental Protection Agency and the U.S. Department of Transportation has established a voluntary National Standard of Excellence for employer-provided commuter benefits. Through this initiative, organizations implementing Commuter Choice programs which meet the National Standard of Excellence receive public recognition for being commuter-friendly and environmentally responsible. For more information, call the Commuter Choice Leadership Initiative hotline: (888) 856-3131

AMA Training: How to Develop and Implement a Commuter Choice Program

The American Management Association offers a one-day Commuter Choice training course targeted toward an organization's benefits administrator, human resources professional or community relations manager. This course provides information on creating an effective Commuter Choice program and integrating the program into a total benefits package. For more information or to register, call (800) 262-9699.

National TDM & Telework Clearinghouse
http://www.nctr.usf.edu/clearinghouse/

Rural Transportation Tool Box
http://ntl.bts.gov/ruraltransport/toolbox/

Community Transportation Association
http://www.ctaa.org/ntrc/atj/

Telework Colorado
http://www.teleworkcolorado.org/