

COLORADO DEPARTMENT OF TRANSPORTATION

## HOW TO IMPROVE CONDITIONS FOR PEDESTRIANS:

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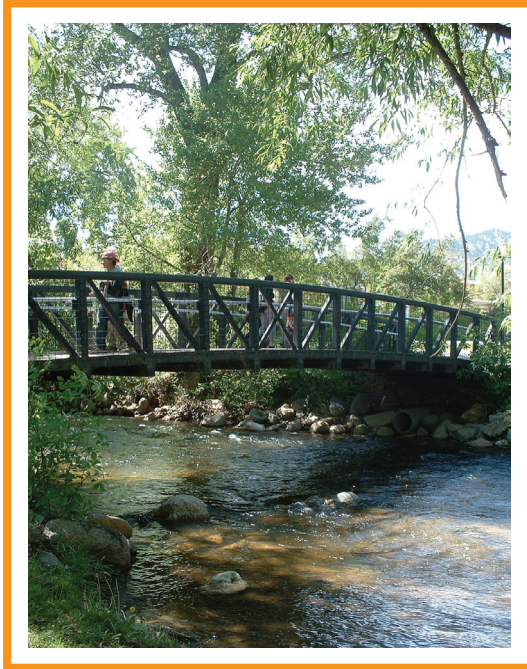


# A **HANDBOOK** FOR

## COLORADO TRANSPORTATION MANAGEMENT ASSOCIATIONS

DEVELOPED IN COOPERATION WITH URBANTRANS CONSULTANTS, INC.





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Colorado Department of Transportation  
How to Improve Conditions for Pedestrians: A Handbook for Colorado Transportation Management Associations  
Developed in cooperation with UrbanTrans Consultants, Inc. 2004

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## Introduction

***The civilized man has built a coach, but has lost the use of his feet.***  
~Ralph Waldo Emerson, "Self-Reliance," 1841

A comprehensive pedestrian system is a key element in establishing a transportation network that successfully supports public transportation and other transportation demand management (TDM) strategies. In addition, walkability is a critical consideration in the development of a successful, vibrant activity center. Employment and retail centers are affected by the quality of their pedestrian environment, both in the urban, suburban and resort community environment. In recognition of these factors, improving conditions for pedestrians is a necessary goal for Transportation Management Associations (TMAs) and other related transportation management districts and programs.

This handbook is designed to assist TMAs in addressing pedestrian issues within their service area. With many areas suffering from traffic congestion, walking increasingly becomes a viable substitute for a commute vehicle trip for those who live near work or school or for short vehicle trips, such as errands and lunch. Furthermore, the pedestrian connection serves as a critical link in a person's transit trip as transit riders need safe and convenient routes to get to and from their bus or train. Pedestrian access also assists in meeting the needs of those who choose not to use or do not have access to automobiles.



Community benefits of walking include:

- Increased accessibility for all users
- Enhanced community interaction
- Improved health
- Efficient land use
- More eyes on the street, increasing safety
- Encouragement for economic development
- Energy efficiency and improved air quality through reduced vehicle usage

Nationally, transportation legislation has continued to provide the funding, planning and policy tools to help government agencies create walkable communities, including the requirement that each State fund bicycle and pedestrian coordinator positions at the Department of Transportation. Colorado Department of Transportation (CDOT) has one full time staff person dedicated to bicycle and pedestrian issues and has incorporated bicycle and walking into the statewide transportation plan. However, regional and local governments and organizations also need to be involved in providing incentives for walking, education and awareness training for both pedestrians and drivers, and in developing the facilities needed to create a pedestrian friendly area.

This guide provides a variety of strategies to implement the following three simple steps that TMAs can use to improve conditions for pedestrians:

- Assess Pedestrian Conditions
- Identify Solutions
- Implement Results

**More than half of the American public (55%) says they would like to walk more throughout the day either for exercise or to get to specific places. Four in ten (41%) Americans would choose driving over walking for wherever they need to go.**

*(Source: Surface Transportation Policy Project; [http://www.transact.org/library/reports\\_html/pedpoll/pedpoll.asp](http://www.transact.org/library/reports_html/pedpoll/pedpoll.asp))*

### Colorado Pedestrian Facts:

- Percentage of commutes done on foot: 3.0% (*United States Census, 2000*)
- Percentage of federal transportation funds spent on pedestrian/bicycle facilities: 1.0% (*Federal Highway Administration and Federal Transit Administration Databases, FY 1998 – 2001*)
- Percentage of adult population considered obese: 15% (*Centers for Disease Control & Prevention, Behavioral Risk Factor Surveillance System 2002*)
- Percentage of all trips under a half mile that are made in a vehicle: 47% (*US Department of Transportation, National Household Travel Survey 2001*)
- Average amount of time spent in a car per day: 71 min (*US Department of Transportation, National Household Travel Survey 2001*)

*(Source: Facts compiled in: Walking in Colorado; Surface Transportation Policy Project, 2003)*  
<http://www.transact.org/library/reportspdfs/pedpoll/co.pdf>

## Step One: Assess Pedestrian Conditions

The first step in improving pedestrian conditions is to identify, assess and document the existing pedestrian conditions in the TMA's service area. The following are tasks that can be accomplished locally by volunteers and TMA staff.

### Colorado Pedestrian Organizations

- **Colorado Department of Transportation Bicycle/Pedestrian Program Manager**

Contact: Betsy Jacobsen at (303) 757-9982 or at [betsy.jacobsen@dot.state.co.us](mailto:betsy.jacobsen@dot.state.co.us)

- **Colorado Walks: [www.coloradowalks.org](http://www.coloradowalks.org)**

Contact: Gay Page at (303) 549-5081 or at [gpage@coloradowalks.org](mailto:gpage@coloradowalks.org).

- **Feet First**

Contact: Jessica Sherwood at (720) 480-1944 or at [jessica@feetfirstinfo.org](mailto:jessica@feetfirstinfo.org)

- **Walk Boulder**

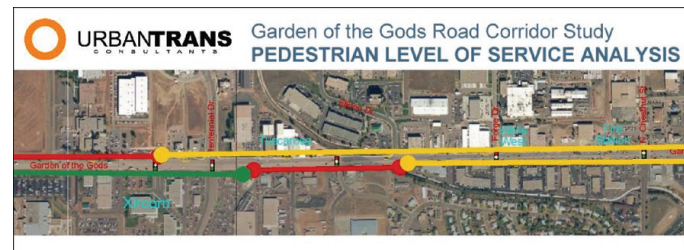
Contact: Charlotte Soreson at (303) 440-6955 or at [chaco@boulder.com](mailto:chaco@boulder.com)

- **Colorado Department of Public Health and Environment: Walk to School**

Contact: Charlotte Rachel Oys at (303) 692-2606 or at [rachel.oys@state.co.us](mailto:rachel.oys@state.co.us)

### A. Survey Your Community's Walkability

Inventory the presence and condition of pedestrian facilities, the ease of street crossing, the behavior of drivers and the general walking environment. Request volunteer assistance to go out and survey several locations in your district. A sample walkability checklist, adapted from the US Department of Transportation and Partnership for Walkable America, is included in Appendix A. The checklist will help identify the problems, both at specific areas and communitywide.



Many local communities attempt to assess the quality of their sidewalks and trails by conducting a "Pedestrian Level of Service" analysis. This effort identifies a combination of connectivity, directness, safety, and capacity measures, resulting in a composite analysis of the level of service (akin to the roadway level of service).

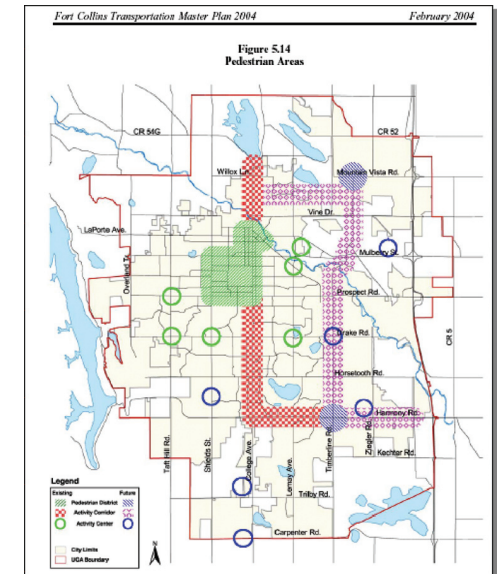
*(Sample of Pedestrian Level of Service Analysis)*

### Conduct On-Line Pedestrian Survey

A pedestrian survey can further assist in identifying problem areas as well as providing valuable information on commuter's origins and destinations. TMAs can host an on-going survey on their website to gather input continuously or can conduct a survey during a specific period of time and provide incentives to encourage participation. The survey can be advertised at local events, lunch and learns and community meetings. Contact employer liaisons to market the survey to employees during lunch breaks, at a monthly staff meeting or set up a table in the break room.

### B. Map Problem Areas

Mapping specific problem areas is one of the most effective ways of communicating specific problem areas to public agency staff planners, engineers and elected officials. Mapping can be done both in conjunction with the walkability checklist, using symbols to denote different types of problems, or as a stand alone project.



*(Sample Pedestrian Map)*



## C. Gather Existing Data

Once the TMA has identified problem areas, they should research existing planned projects to make sure the TMA district is 1) included in future plans and 2) the problem areas (and corresponding projects) are represented correctly. The local government may be aware of the need for pedestrian improvements, but may not have the funding programmed for the improvement for several years. For example, as part of the Pedestrian Master Plan, the City and County of Denver recently inventoried sidewalk gaps. This exercise, along with a variety of other information gathering efforts, resulted in prioritization of city sidewalk projects.

Pedestrian projects and/or policies can often be found in plans and programs at several government levels, including:

- a. Local government
  - Capital Improvement Program
  - Transportation Plans and Programs
  - Land Use Plans
  - Zoning and Development Regulations
- b. Regional government/Metropolitan Planning Organization (MPO)
  - Regional Transportation Plan
  - Transportation Improvement Program
  - Bicycle/Pedestrian Plan
- c. CDOT
  - Construction Work Program
  - Statewide Plan

Additional existing data, including traffic counts and origin/destination information can help when developing a plan for pedestrian improvements in your area. Most local and/or regional governments have this information available upon request.

## D. Identify Potential Partners

Respected community leaders, government officials, school groups and pedestrian organizations may offer needed assistance and be willing to partner with the TMA in planning and project development.

At a minimum, community leaders should be interviewed to gather critical information, ranging from the pedestrian needs of elementary school children to senior citizens in the area. Local government planning partners can assist the TMA in finding needed information and directing them to committees or relevant meetings they should be attending (discussed further in the next section).

### National Pedestrian Resources

- **America Walks:** National coalition of local advocacy groups dedicated to promoting walkable communities. <http://www.americawalks.com/>
- **National Center for Biking and Walking:** The National Center for Biking and Walking's mission is to create bicycle-friendly and walkable communities. <http://www.bikewalk.org/index.htm>
- **The Pedestrian and Bicycle Information Center:** A clearinghouse about safety, health, advocacy, engineering, education, enforcement and access and mobility. <http://www.walkinginfo.org/>
- **Partnership for Walkable America:** National coalition working to improve national conditions for walking and to increase the number of Americans who walk to work. <http://www.walkableamerica.org>

## Step Two: Identify Solutions

### What is a walkable community?

- People of all ages and abilities have easy access to their community “on foot” and automobile is not needed for every trip.
- People walk more and the community and neighborhoods are safer, healthier, and friendlier places.
- Parents feel comfortable about their children being outside in their neighborhoods; they don’t worry about the threat of motor vehicles.

Once the TMA has assessed pedestrian conditions in their service area, documented specific pedestrian issues and problem areas and identified possible partners, the second step is to identify solutions. When identifying solutions, it is important to consider how the TMA can participate in local governmental pedestrian improvement decision making processes. Identifying appropriate infrastructure improvements and outlining the need for safety and education programs will assist the TMA in achieving their overall pedestrian goals.

### A. Coordinate with Local and Regional Government

There are several ways a TMA can initiate government assistance and support for specific pedestrian issues. TMA’s can benefit from participating in public meetings and transportation committees or invite local and regional representatives to their events and meetings.

#### Attend Relevant Committee and Public Meetings

Government agencies have periodic public meetings to discuss transportation needs and have committees relating to either bicycle and pedestrian issues or multi-modal issues, depending on the size of the community. Some meetings are open to the general public and others are for appointed committee members. Both types of meetings are relevant to the TMA.

The first step is to identify local planning partners and staff contacts. See Appendix B for information on local government contacts in Colorado.

#### Ask a Government Official to Speak (and Listen) at a Board Meeting

Government officials are often looking for opportunities to meet and speak with local businesses and major employers. The TMA Board meeting is a great opportunity to invite a government official to discuss local government policy on pedestrian issues, and at the same time share the TMA’s concerns. This visit can be followed up with a letter to the official, copying relevant planning and engineering staff.

### B. Identify Appropriate Infrastructure Improvements

The following describes the variety of infrastructure improvements that may improve pedestrian conditions in your community. Use the information gathered in Step One to identify the types of improvements that are warranted.

The Pedestrian and Bicycle Information Center hosted at [www.walkinginfo.com](http://www.walkinginfo.com) provided much of the information and costs estimated included here. Reference the site for additional information as well as a variety of other pedestrian resources.

## Providing Street Crossings

### Crosswalks

In Colorado, legal, pedestrian-accessible crosswalks can be either marked or unmarked. A variety of crosswalk marking materials exists, from white lines to in-pavement lighting that alerts motorists to the presence of pedestrians. Crosswalks are most effective when planned in conjunction with curb extensions. As with other pedestrian solutions, the jurisdiction of the affected crosswalk will have policies and procedures that must be followed prior to installing crosswalk improvements.

Improvements to existing crosswalks could include:

1. **Crosswalk Marking.** Highly reflective, non-slippery crosswalk marking material is best, such as inlay tape. Inlay tape is more costly than paint, but results in a safer, longer-lasting crosswalk marking.
2. **Crosswalk Timing.** Pedestrians are often unable to safely cross an intersection within the signalized time allotted or become frustrated by waiting for the signal to change. Working with the appropriate transportation department, TMAs can explore the possibility of increasing the signalized walk time, installing count-down signals or installing illuminated push-button devices. Count down signals display the amount of time remaining to cross an intersection. Illuminated push-button devices provide immediate notification of a pedestrian's presence. Upon pushing the button, the traffic signal changes to allow the pedestrian to cross.
3. **Reflective Lighting.** In-pavement reflective lighting alerts motorists to the presence of pedestrians. The reflective, flashing lights are triggered through either an automated device that senses the pedestrian or through the push of a button by a pedestrian.

CDOT developed an informational brochure for communities considering crosswalks across state highways, available at: [www.dot.state.co.us/Traffic\\_Manuals\\_Guidelines/Informational\\_Brochures/Pedestrian\\_Crosswalks\\_Brochure.pdf](http://www.dot.state.co.us/Traffic_Manuals_Guidelines/Informational_Brochures/Pedestrian_Crosswalks_Brochure.pdf)

Cost: Approximately, \$100 for a regular striped crosswalk, \$300 for a ladder crosswalk and \$3,000 for a patterned concrete crosswalk. Ladder crosswalks are a series of bars painted across the roadway. These bars improve motorist recognition and visibility of the crosswalk. Patterned concrete crosswalks, or pavers, are decorative concrete layouts placed within a short range of the crosswalk. These assist in warning motorists to expect pedestrians and add a more aesthetically pleasing feature to the walkway.

### Intersection Design and Signals

Most pedestrian-vehicle accidents occur in intersections. Intersection design and signalization can greatly prevent these types of dangerous accidents. A few solutions follow:

- **Roundabouts.** Round concrete structures built in the middle of the intersection, force drivers to slow down as they proceed through the intersection. Pedestrian crossing signs (either painted or posted) provide walkers directional

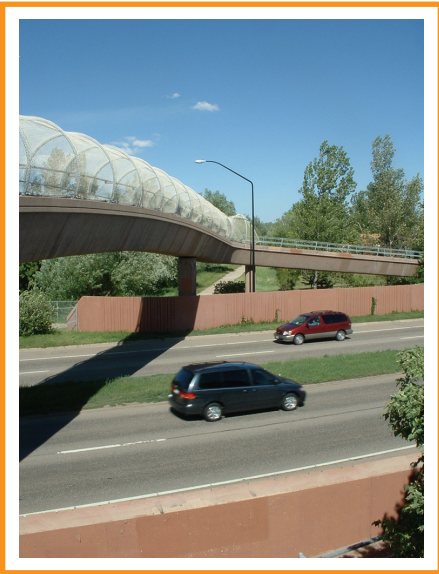
### What is a walkable community?

- Children spend more time outside with each other and are more active, physically fit, and healthy.
- Streets and highways are designed or reconstructed to provide safe and comfortable facilities for pedestrians, and are safe and easy to cross for people of all ages and abilities.
- Pedestrians are given priority in neighborhood, work, school, and shopping areas. Motor vehicle speeds are reduced (and, in some places, motor vehicles have been eliminated entirely) to ensure compatibility with pedestrian traffic.



assistance. The roundabout itself provides added pedestrian shelter as they proceed across the intersection. Note: costs for intersection design and signals vary widely depending upon the current state of the roadway network, existing signals, and a variety of geographical factors. Costs provided are rough estimates and true costs could be much higher.

Cost: The cost for a roundabout greatly depends on the type and size of the intersection. A roundabout in a neighborhood intersection can cost from \$45,000 to \$150,000 and up to \$250,000 for arterial street intersections.



- *Pedestrian Signs.* Signs can provide education and information to both drivers and pedestrians. Signs such as “Yield to Pedestrians”, “State Law: Pedestrians Have the Right of Way”, or the traditional yellow pedestrian sign featuring two people walking can be placed strategically to allow for increased safety.

Cost: Signs range from \$50-\$200. Installation cost varies.

- *Signal Timing.* Adjusting the signal timing can greatly increase walkability and safety for pedestrians in intersections. One example of signal timing, called the leading pedestrian interval allows for a longer crossing sign than a green light for traffic. This results in an organized delay for vehicles turning into the crossing path of the pedestrian. A second signal timing idea is to convert an intersection to an “all-ways-walk” crossing zone. All lanes of vehicle traffic receive red lights and are stopped while pedestrians are free to walk straight across or diagonally from corner to corner.

Cost: Signal timing solutions must be implemented in partnership with the jurisdictions engineering department. Costs range from \$5,000 and higher, depending on the type of technology employed.

- Also see “Crosswalk Timing” in the Crosswalks section.

### **Pedestrian Bridges, Overpass or Underpass**

Crossing wide, heavily used intersections is often the most challenging and dangerous type of pedestrian crossing. One solution is to construct a pedestrian bridge to avoid extremely unsafe intersections or mid-block crossings. These bridges can provide safe crossings when designed to provide easy access and direct linkages to other walkways. Many bridges/overpasses/underpasses are built wide enough to accommodate both pedestrians and cyclists.

Cost: Costs vary for this solution. A bridge in Decatur, Alabama cost \$430,000 while a bridge in Baltimore ran over \$3 million. Durango, Colorado received approximately \$700,000 funding to build two pedestrian bridges over the Animas River while Aspen, Colorado’s Maroon Creek Bridge cost over \$2 million to build. Geographic and roadway features, as well materials and size affect total cost. An estimated \$500,000 to \$4 million price tag is predicted, depending upon site characteristics.



## Providing (Pleasant) Places to Walk

### Sidewalks (both development of and making existing ones more accessible)

Sidewalks are a critical component of the pedestrian system in any jurisdiction yet sidewalks are often not completed and missing sections or gaps inhibit accessibility. Poorly maintained sidewalks can also cause disruption in a pedestrian's path. Sidewalks with exposed roots, overgrown trees, uneven pavement and large cracks result in unsafe and inaccessible pathways. Upkeep and maintenance of the sidewalks varies by jurisdiction. Within some communities the responsibility falls on the home or business owner directly adjacent to the sidewalk.

Sidewalks can be constructed from concrete, asphalt, stones or a variety of other materials.

Cost: The cost for concrete curbs and sidewalks is approximately \$49/linear meter (\$15/linear foot) for curbing and \$118/square meter (\$11/square foot) for walkways. Asphalt curbs and walkways are less costly, but require more maintenance, and are somewhat more difficult to walk and roll on for pedestrians with mobility impairments.

### Streetscaping/Landscaping

Enhancing pedestrian areas with trees, plants, benches and other welcoming furniture or landscaping improvements encourages walkability. Local ordinances and regulations must be taken into consideration prior to implementing these ideas.

Cost: Costs for these items vary depending upon the types of trees, plants and furniture desired.

### Parking Lot Pedestrian Pathways and Interparcel Access

Private businesses have the opportunity to provide pedestrian connections both within and between individual parcels by allowing employees to walk through parking lots to access lunch facilities or business and commercial areas.

Ensuring sidewalks or painted pedestrian walkways are integrated into parking lot design is one way to increase safety and accessibility in parking lots. Such additions should be designed to provide clear and direct connections between buildings, parking spaces and the street. Careful attention to high volume intersections should be made by utilizing pedestrian crossing signs or other visible announcements of pedestrian presence.

Cost: Varies on the type of pathway desired and when the ideas are integrated into the overall parking lot design. Integrating such design elements during the planning phase may have a minimum cost. When adding new design elements to an existing parking surface, the costs may be higher.

## Reducing Driver Speeds

### Traffic Calming

A variety of traffic calming techniques are available. Traffic calming strategies are activities that result in slower vehicle speeds in a designated area. Such strategies improve the safety, walkability and livability of a community. As speeds are reduced, walking becomes a more reasonable and enjoyable alternative to driving. The following briefly describes a few of the more popular and effective traffic calming strategies for pedestrian safety:

### What is a walkable community?

- Motor vehicle operating speeds are carefully controlled to ensure compatibility with adjacent land uses and the routine presence of pedestrians.
- Drivers of motor vehicles operate them in a prudent, responsible fashion, knowing that they will be held strictly accountable for any threat, injury, or death caused by their lack of due care or violation of the vehicle code.
- The air and water quality is good.

*(Source: Adapted from Campaign to Make America Walkable, A Vision of a Walkable Community (Washington, DC, 1997)).*





- *Curb Extensions.* Appropriate at intersections where an on-street parking lane exists, curb extensions extend the curb along a crosswalk farther into the intersection. This results in a shorter crossing distance for the pedestrian.

Cost: Vary depending upon drainage needs, materials and presence of other infrastructure (i.e. telephone pole).

- *Crossing Islands.* These raised concrete islands are placed in the middle of a large intersection allowing a safe place for pedestrians to pause or wait for the crosswalk signal to change. Additional safety occurs as traffic slows down when such islands are in place.

Cost: Range from \$4,000 to \$40,000

- *Speed Humps or Speed Tables.* Speed humps, sometimes called speed tables, “are paved (usually asphalt) and approximately 76 to 102 mm (3 to 4 in) high at their center, and extend the full width of the street with height tapering near the drain gutter to allow unimpeded bicycle travel”. Speed humps force drivers to slow down when driving over them and enhance the pedestrian usability of the area.

Cost: Approximately \$1,000 per speed hump

### **Additional Ideas for Reducing Driver Speeds**

- Increase Police Enforcement
- Provide Funding for Crossing Guards
- Neighborhood Speed Watch Programs
- Signage Requesting Drivers to Slow Down



### **Enhancing Multi-Modal Connections**

#### **Transit Shelters**

Accessible, safe and well-designed bus or rail stops encourage and support transit usage in communities. Transit shelters featuring safe, warm and dry areas that complement the walkability of the area are most appealing.

Cost: Cost for transit shelters vary depending upon the type of shelter or seat/bench. Some communities integrate local art (by artists, school children or community members) into the structure. Others off-set costs by selling panels to companies for advertisements. Roughly, the cost for any improvement around a bus stop could range from \$100-\$2,000.

#### **Front Entrances on Properties**

In order to reduce building setbacks and provide direct connection to building entrances for pedestrians, 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.

## Step Three: Implement Results

The final step in improving pedestrian conditions is to implement the identified solutions. This will require coordinating with area governments, influencing local property owners to make pedestrian improvements, and implementing programs and incentives to encourage walking.

### A. Coordinate with Area Governments

The TMA will need to coordinate with and assist the appropriate organization or agency (i.e. regional or local government, transit, developers, schools) on infrastructure improvements and enforcement needs. Assistance can range from simply providing the information gathered in steps one and two, to providing funding for planning and implementation.

#### Provide Plan Funding Assistance

If pedestrian issues are not getting the proper attention in your community, you may need to fund or assist with funding a comprehensive plan to develop safe walking routes in the community. This should be reviewed with the local jurisdiction first to discuss possible avenues of funding and appropriate plan formats.

#### Submit Projects for Consideration

Before submitting projects for consideration, the TMA should talk with local planning partners about the process for doing so. If governments are short-staffed TMA staff assistance or assistance with hiring consultants to develop grant applications may be useful. Other governments will just require a listing of the TMA's needs, resulting from the needs assessment and planning process. See Appendix C for federal funding opportunities.

### B. Coordinate with Employers and Property Owners

Provide area employers and property owners with a listing of solutions they can implement on their property (and, if necessary, the incentives to do so).

### C. Hold/Sponsor Pedestrian Workshops

Hold or sponsor pedestrian workshops in your area. Two types of workshops could be useful, depending on your communities needs:

#### Facility Design

Convince your local planners and engineers that creating opportunities for people to walk is critically linked to the development of sustainable communities and local economies. Facility design workshops can include training on new practices and innovations in promoting walking, safer pedestrian facilities and new technologies in developing pedestrian networks, including removing some of the barriers that are often overlooked. Several national experts are available to conduct both informative and entertaining workshops that will result in a fresh look at pedestrian design.



### **Safety/Education**

Your community will require a tailored safety and education workshop depending on your specific needs. Whether you require a seminar on raising awareness on the benefits of walking for children, a workshop on the health, social, economic and environmental benefits of a pedestrian oriented community, or a walking tour to raise community awareness of the pedestrian environment for all users (including the disabled and elderly) the TMA can either co-sponsor or host the community event.



### **D. Conduct an Education and Promotional Campaign**

A pedestrian education and promotional campaign can be as simple as stating, “Walk There!” Messaging can be integrated into:

- TMA promotional items, including website, brochures, give aways and other TMA marketing pieces
- Pedestrian safety brochures, outlining pedestrian rights and responsibilities (see Appendix D for an index of Colorado Pedestrian Statutes)
- Walking maps for residents, workers and visitors that display sites, attractions and shopping destinations within easy walking distance.

The Federal Highway Administration offers a free Pedestrian Safety Campaign Planner, which includes media outreach materials and is designed for use by local non-profits. The threefold purpose of the campaign is to (1) sensitize drivers to the fact that pedestrians are legitimate road users and should always be expected on or near the roadway, (2) educate pedestrians about minimizing risks to their safety, and (3) develop program materials to explain or enhance the operation of pedestrian facilities, such as crosswalks and pedestrian signals.

### **E. Provide Incentives/Encouragement to Walk**

Provide incentives to walk to work or to run errands. Nationally, several TMAs are employing Walk There Challenges, which reward those employees who can walk the most during a certain period of time. Generally the programs include materials to assist in tracking miles walked. Each month or period that walkers enter information, they are eligible to win prizes as well as a grand prize. This may be combined with training programs and educational events.

### **F. Build on Existing Successes**

Work with other area non-profits, schools and government agencies including pedestrian groups to implement solutions. By uniting with a common message and pooling resources, more can be accomplished within the larger community.

Participate and sponsor existing community events, including Walk to School Colorado Toolkits (available from CDOT at <http://www.dot.state.co.us>), National Walk to Lunch Day, and other local events in your area.



## Role of Colorado TMAs

As discussed in the previous sections, the role of Colorado TMA's in improving pedestrian conditions in their community can include one or all of the following:

- An advocate for change
- Acting as a community leader in discussing pedestrian issues and implementing solutions
- Fostering public/private partnerships
- A “check point” during transportation infrastructure planning phases

The following highlights several Colorado TMAs existing pedestrian activities.

### Transportation Solutions Cherry Creek, Denver

In coordination with the National Walk to School Day, Transportation Solutions organizes and implements a successful “Walk to School Day” program at a local elementary school. Using TMA staff time and funds from the local Safe Kids Coalition, Transportation Solutions markets the event to parents through parent notices. The program was started when the TMA Director noticed that there was a lack of Denver School participation in this national event. The TMA contacted nearby Bromwell Elementary School and got them on board. Success from the first year of the program propelled into an annual TMA program event and continuous promotion of walking to school.

Additionally, the TMA implemented a pedestrian assessment of parts of the TMA service area, funded through partnerships with Metro Denver Safe Kids Coalition and Feet First. Through funding set aside by the Safe Kids Coalition Metro Denver, the TMA applied for funds to support small projects identified through the pedestrian assessment, including a median and crossing improvements.

The TMA Director is also involved in the City Wide Pedestrian Plan where she testified on issues and solutions to the planning board.

Resources:

1. <http://www.walktoschool-usa.org/>
2. <http://www.tchden.org/public/education/safekids/> (SAFE KIDS Coalition Metro Denver)

### Downtown Denver Partnership Downtown Denver

Given the presence of the pedestrian-only 16th Street Mall and density of offices, retail and growth in residential density, the Downtown Denver TMO is located in an existing pedestrian friendly environment where the City and County of Denver has been very responsive to pedestrian infrastructure needs and services.



The TMO has taken on an advocacy role with regards to major transportation plans and studies that affect or include downtown Denver. Currently, the TMO is very involved in the Denver Multimodal Access Plan which will develop preferred mobility routes and services in the summer of 2004. The TMO has taken a pro-pedestrian, pro-transit stance throughout DMAP planning.

The Downtown Denver TMO is interested in pursuing funding to improve the physical infrastructure for pedestrians, such as the purchase of trees, planters or bus benches. Additionally, the TMO would like to secure funds for special crossing projects such as walking signals for the visually impaired, timed walking signals and other pilot projects.



### **Stapleton Area TMA Stapleton, Denver**

Given the combined residential and employee markets of the Stapleton Area TMA, the TMA has focused on both pedestrian programs and advocacy.

The TMA hosted a successful pedestrian promotion in May, 2004, called the 30 on 30 Active Living Challenge. The Stapleton Foundation (which houses the TMA) challenged the Denver Mayor's office to select 30 employees to compete with 30 Foundation employees in a walk-off. Each participant was provided a pedometer and a tracking system was developed for participants to log the miles they walked. The TMA provided a Conversion Chart that showed how other activities converted to steps. Thus, if a participant swims or rides a bike, they convert that effort to steps and log those steps. The competition lasted approximately 20 days. Prizes included \$1,000 for the winning team to donate to any Denver Public School that promotes active living. Funding was provided by an Active Living Partnership Stapleton grant, Colorado Walks and Stapleton Foundation and included in-kind TMA staff support.

The results: The Stapleton Foundation team out-walked the Mayor's team and provided a \$1,000 prize to Smiley Middle School. Total steps for each team were:

- Mayor's Team: 5,681,344 steps
- Stapleton Foundation: 7,264,455 steps

The walk-off idea is not a new one for the Stapleton Area TMA. A year ago the Stapleton Foundation challenged Forest City (the Stapleton Developer) to a walk-off. The winning team members each received a \$50.00 gift certificate for a Stapleton retailer of choice. Forest City won and donated their gift certificates to a local classroom for tennis shoes for low-income children.

In addition, Stapleton has become involved in local infrastructure solutions. As Stapleton develops, new retail shops and services are emerging east of Quebec Street along 29th Avenue NE. Neighbors west of Quebec Street have naturally started crossing Quebec to access these new retailers. However, driver speeds and short crossing times have led to unsafe conditions. The TMA hosted a brainstorming event at their Board meeting and followed up with a letter to City Council prioritizing their preferred solutions. A variety of solutions have been implemented, or are under consideration including:

- Denver Police installed a portable speed indicator along Quebec Street to inform drivers of their speed and encourage reduced speeds. Quebec Street intersects with I-70 resulting in drivers continuing highway speeds as they move along Quebec. The speed indicator worked to remind drivers of the 30 MPH speed limit and improve conditions for pedestrians.
- With assistance from their councilmember, the City and County of Denver is reviewing a request for adding count-down timers to major Quebec crossings. These timers would assist pedestrians in determining when to begin crossing the large intersection.

**US 36 Transportation Mobility Organization (TMO)  
Broomfield, Colorado**

The US 36 TMO’s mission is “To enhance public accessibility and mobility in the US 36 Corridor through the implementation of joint public-private transportation management efforts.” Promoting commute alternatives and multi-modal approaches to planning, the TMOs primary constituents are employers along the US 36 corridors. Promoting transit, carpool and vanpool as well as providing an active, respected link to a major Environmental Impact Study (EIS) and other studies has been the focus of the TMO. Given the large geographic area the TMO serves as well as the presence of low-density commercial land use, creating and supporting pedestrian programs are not of high priority to the TMO. Instead, the TMO provides local and regional governments expertise in pedestrian planning. When a local or regional government requests assistance, the TMO reviews and edits transportation infrastructure plans to ensure pedestrian projects are included. In this way, the TMO is able to impact the presence of pedestrian systems proactively.

**SE I-25 Urban Corridor TMA  
Denver Tech Center, Centennial**

The newly formed/newly reinvigorated TMA is currently focusing on pedestrian issues as they relate to the upcoming opening of a light rail station in South Denver area. The station will open in 2006 and once open, users will be able to take a short walk to a local mall. Yet that short walk is currently a very inconvenient and unattractive walk. The TMA is working with RTD and CDOT to construct a pedestrian bridge from the light rail station to the mall. Despite improving accessibility to the mall, the walk will be longer than most rail users are willing to walk. Thus, education, outreach and marketing of the light rail and its proximate location to the mall will be critical. Additionally, the TMA is working to ensure signage to and from new light rail stations and feeder buses are installed.



COLORADO DEPARTMENT OF TRANSPORTATION

## HOW TO IMPROVE CONDITIONS FOR PEDESTRIANS:

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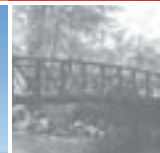
4



# A **HANDBOOK** FOR

## COLORADO TRANSPORTATION MANAGEMENT ASSOCIATIONS

DEVELOPED IN COOPERATION WITH URBANTRANS CONSULTANTS, INC.



## APPENDIX



## Appendix A: Walkability Checklist

This checklist is designed to be filled out for each major street, intersection or business park in the TMA service area.

Location of Walk: \_\_\_\_\_

### 1. Did you have a place or room to walk?

- Sidewalks were in good condition
- Sidewalks were not continuous
- Sidewalks were severely broken or cracked
- Sidewalks were blocked with poles, signs, landscaping, etc.
- There were no sidewalks, paths or shoulders
- Other \_\_\_\_\_

### 3. Did drivers behave well?

- There were no problems
- Drivers did not yield to pedestrians crossing street
- Drivers turned right into pedestrian traffic crossing street
- Drove too fast
- Other \_\_\_\_\_

### 2. Was it easy to cross streets?

- There were no problems
- Road was too wide to get across
- There were no crosswalks
- There were no pedestrian indicator on traffic signal
- View of traffic was blocked
- Other \_\_\_\_\_

### 4. Was your walk pleasant? Try to answer this question both during the day and the night.

- Yes
- Needs more landscaping
- There was suspicious activity/feeling of unsafe
- Not well lit
- Dirty, lots of litter or trash
- No transit shelters
- Construction or other impediment
- Other \_\_\_\_\_

What is your overall rating for this area? \_\_\_\_\_

- 1 = A great area for walking
- 2 = A good area for walking
- 3 = Needs improvement
- 4 = Needs a lot of work
- 5 = Very unsafe/unpleasant

## Appendix B: List of Relevant Local Government Agencies

A variety of contacts and resources exist at each of the Colorado Transportation Planning Regions including CDOT district representatives and regional and local planning commissioners and decision makers. Access all contact information through CDOT's Transportation Planning Regions at a Glance Document:

[http://www.dot.state.co.us/StateWidePlanning/PlansStudies/originals/TPR\\_At\\_A\\_Glance.pdf](http://www.dot.state.co.us/StateWidePlanning/PlansStudies/originals/TPR_At_A_Glance.pdf)

### CDOT Transportation Planning Regions

- Pikes Peak
- Denver Metro
- North Front Range
- Pueblo Area
- Grand Valley
- Eastern
- Southeast
- San Luis Valley
- Gunnison Valley
- Southwest
- Intermountain
- Northwest
- Upper Front Range
- Central Front Range
- South Central
- Southern Ute Indian Tribe
- Ute Mountain Ute Indian Tribe

### Colorado Metropolitan Planning Organizations (MPO): Pedestrian Contacts:

| <b>MPO</b>  | <b>Contact Name</b> | <b>Contact Information</b> |
|---|---------------------|----------------------------|
| Denver Regional Council of Governments                            | Janelle Shaw        | 303-480-6775               |
| Mesa County   | Millie Fowler       | 970-255-7188               |
| North Front Range Transportation and Air Quality Planning Council | John Daggett        | 970-224-6190               |
| Pikes Peak Area Council of Governments                            | General Number      | 729-471-7080               |
| Pueblo Area Council of Governments                                | Kim Headly          | 719-583-6100               |

## Appendix C: Federal Funding Opportunities

The following outlines general information about federal funding for pedestrian infrastructure and enhancement projects. Additional opportunities may be available through local grant programs, local general funds and other discretionary funding sources.

Pedestrian projects are eligible for funding from most of the federal highway, transit, safety and other programs. Most federal funding is allocated statewide by the Colorado Department of Transportation or at the MPO level.

**National Highway System Fund:** Provides funding for roads on the congressionally approved National Highway System (NHS). This system includes roads deemed most important to interstate travel and national defense, roads connecting to other modes of transportation, or roads essential for international commerce. NHS funds can also be used, within NHS corridors, for activities such as transit, park and ride lots and bicycle and pedestrian facilities.

**Surface Transportation Program (STP) Funds:** Provides funding for a wide variety of projects including highways, transit and other modes, such as bicycle and pedestrian facilities. STP funds may be used for either construction or for nonconstruction projects, such as maps, brochures, public service announcements, or for other similar projects.

**Transportation Enhancement STP Set-aside Fund:** Ten percent of the Surface Transportation Program funds are set aside for transportation enhancement activities. Funding is available for a broad range of enhancement related activities. Examples include providing facilities for pedestrians and bicycles, landscaping, historic preservation and several other enhancement activities.

**Safety Construction STP Set-aside Funds:** Provides funding safety construction activities as follows (including pedestrian consideration in):

- Additional Safety and Hazard Elimination,
- Railroad Crossing Protective Device Installation,
- Railroad/Highway Hazard Elimination,
- Public Roadway Hazard Elimination.

**Bridge Funds:** Provides funding for any public bridge replacement or rehabilitation. Pedestrian improvements are included with bridge replacements or rehabilitations.

**High Priority Projects Fund:** Provides funding for high priority projects identified in the federal transportation legislation. These are specifically designated by Congress.

## Appendix C: Federal Funding Opportunities (continued)

**Congestion Mitigation and Air Quality Improvement Fund:** Provides funding for projects contributing to attainment of national ambient air quality standards. Types of projects eligible for Congestion Mitigation and Air Quality Improvement (CMAQ) funds include: transit improvements, shared-ride services, traffic flow improvements, transportation demand management strategies, pedestrian and bicycle facilities and programs and alternative fuel programs. Both construction and non-construction activities are eligible.



**National Recreational Trails Fund:** This federal program administered by the Department of Natural Resources supports for the acquisition and/or development grants for motorized and non-motorized recreational trails including new trail construction, and maintenance/rehabilitation of existing trails.

Federal transit funding may also be used to improve pedestrian access to transit facilities and the Transportation Equity Act for the 21st Century (TEA-21) included a Transit Enhancement Activity fund that set aside one percent of Urbanized Area Formula Grant funds for pedestrian enhancements.

TEA-21 expired on September 30, 2003. TEA-21 was enacted on June 9, 1998, and authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 6-year period from 1998-2003. The new transportation bill is under development.



## Appendix D: Colorado Pedestrian Statutes Index:

| <b>Topic Area</b>   | <b>Statute Number</b> |
|---|-----------------------|
| <b>Part 8 Pedestrians</b>   |                       |
| Pedestrian obedience to traffic control devices and traffic regulations                           | 42-4-801              |
| Pedestrians' right-of-way in crosswalks   | 42-4-802              |
| Crossing at other than crosswalks   | 42-4-803              |
| Pedestrian to use right half of crosswalk. (Repealed)   | 42-4-804              |
| Pedestrians walking or traveling in a wheelchair on highways                                      | 42-4-805              |
| Driving through safety zone prohibited  | 42-4-806              |
| Drivers to exercise due care.   | 42-4-807              |
| Drivers and pedestrians, other than persons in wheelchairs, to yield to persons with disabilities | 42-4-808              |
| <b>Part 7 Rights-of-Way</b>   |                       |
| Obedience to railroad signal  | 42-4-706              |
| Emerging from or entering alley, driveway or building   | 42-4-710              |

**BACK COVER**  
**END OF DOCUMENT**