Overview / Summary

Bicycle and pedestrian travel serve an important mobility role in the transportation system, serving both utilitarian and recreational needs on a stand-alone basis as well as being a key component of many multi-modal trips by serving as the link between a primary vehicular or transit trip and the origin or final destination of a trip. Serving bicycle and pedestrian travel is in large measure a question of accommodation; while a certain amount of non-motorized travel occurs on trails that are developed in corridors separate from a roadway, most non-motorized travel occurs on facilities that are either parallel or share a roadway with vehicular and transit vehicles.

The plan identifies a set of common problems that face pedestrians and bicyclists, including poor surface conditions, high volumes of traffic, impacts from on-street parking, intersection safety issues, bridges or overpasses lacking non-motorized accommodations and interrupted route continuity. The plan discusses an array of policies to address these issues, which include not only infrastructure or engineering solutions but also education, enforcement and encouragement measures.

The Plan also includes recommended network development plans for both bicycle and pedestrian travel. In the case of bicycle facilities, the network plan is intended to identify the physical location of corridors where identifiable accommodations should be provided for bicyclists. The Urban Walkway Plan identifies areas or corridors where issues of accommodation, accessibility, crossing safety and vehicle conflict should be addressed in the future through joint efforts of ROCOG, local jurisdictions and adjacent landowners. The Plan recognizes that funding new pedestrian improvements in developed areas can be a controversial issue that is best addressed as part of a larger road improvement project or through other multi-purpose projects.

Downtown Rochester is a critical area where quality pedestrian facilities are needed and where additional efforts need to be made to accommodate bicyclists. Recent studies including the 2012 Rochester Downtown Master Plan, the 2009 ROCOG Downtown Bikeway Study and the 2004 Rochester Downtown Plan all include recommendations for improving the environment for non-motorized travel in downtown Rochester and are recognized as part of this Plan.

Chapter 7 also provides a discussion of regional trials, which largely serve a recreational and economic/tourism purpose in the southeast Minnesota area. The Plan endorses the development of these facilities with local trail committees taking the lead in early public discussion and landowner contact. Once a vision has been developed, resource agencies such as the Department of Natural Resources can supplement the groundwork laid by the trail committee in order to complete the subsequent project development steps needed to secure funding for a project.
The following graphic highlights the key system development concepts and priorities that are identified in the Plan for non-motorized travel.
Chapter 7  Non-Motorized Transportation Planning

Introduction

- Bicycling and walking are fundamental travel modes and integral components of an efficient transportation network. To varying extents, bicyclists and pedestrians will be present on all highway and transportation corridors except where not permitted (such as on freeways) and all new or improved road corridors should be planned, designed and constructed with this in mind.

- This plan addresses a range of on and off road non-motorized facilities. Off road facilities include Trails (facilities designed for a range of uses that are not within a road right of way), Sidewalks (facilities within a right of way parallel to a road primarily for use by pedestrians) and Paths (facilities within a right of way for use by a wide range of non-motorized uses). While primarily planned by others, this chapter also includes summary information on the downtown Rochester skyway and subway network. On-road facilities including bike lanes, shared lane facilities and bike routes are discussed as well as other enhancements such as bike parking and signage.

- Trails, sidewalks and paths should be designed to accommodate a range of users and should provide access, connectivity and independent mobility regardless of age, physical constraints, or income. Such facilities also need to provide accommodations for users with special needs, including children and the elderly, and the needs of the disabled need to be met consistent with the requirements of the Americans with Disabilities (ADA) Act.

- There are a wide range of skills exhibited by different users, particularly bicyclists, that must be reflected in the types of facilities provided. Typically new urban development and roadway projects will incorporate sidewalk or path facilities in order to insure a safe facility for pedestrians and less skilled bicyclists. In older areas, and generally in suburban and rural areas, non-motorized travel must share the roadway with vehicular travel and the condition and width of shoulders takes on major importance. The feasibility and ability to accommodate on-road bicycle travel should be evaluated in all roadway improvement or renovation projects in urban areas.

- Developing an adequate non-motorized transportation system requires coordination between planning, design and financing efforts, land use and open space planning, and the land development approval process. Many elements of the non-motorized network are developed as part of private projects, including sidewalks and paths. The public typically takes a leading role in off-road trail development, which may occur as either a free standing project or as part of a recreation or open space project. Public advocacy is important for infill projects, where sections of paths or sidewalks not constructed at the time of development are now needed to complete the system.

- ROCOG established a Bicycle-Pedestrian Advisory Committee (BPAC) in 2006 drawn from the public at large who have an interest in bicycling, pedestrian and other non-motorized issues. The committee is tasked with assisting the ROCOG Policy Board on the
implementation of bicycle, pedestrian and other non-motorized recommendations included in this chapter. Its activities include policy review and development, project and capital improvement program review, sponsorship of promotion and education activities, liaison with local law enforcement agencies on non-motorized issues, and providing support and assistance in Active Living efforts.

- The illustrations on the following pages highlight existing non-motorized infrastructure throughout the planning area
  
  - Figures 7-1 through 7-4 beginning on page 7-6 highlight existing infrastructure that is in place to serve non-motorized travel. Illustrated in Figure 7-1 is more than 100 miles of paved paths and trails, 22 miles of on-street bicycle facility, 31 bridge structures and 19 underpasses exclusively for bicycle and pedestrian use in the Rochester urban area. Trails are considered part of the Rochester Park System and managed by the Rochester Parks and Recreation Department. Many of these trails were conceived and built as part of the Rochester Flood Control Project, the earliest parts of which date back to the late 1970’s. Path facilities are managed by the Rochester Public Works Department.

  - Figure 7-2 highlights the existing regional trail facilities in Olmsted County and the regional highway corridors with striped, paved shoulders that are adequate for bicycle use. These trails are part of a larger regional system highlighted in Figure 7-3 that are primarily investments in recreation and economic development, providing opportunities for local residents and a tourism draw for communities and businesses connected to the system. The Douglas Trail and the Root River Trail are the oldest elements of the system, but many smaller communities, including Eyota, Dover, Stewartville, Byron, Chatfield and Pine Island have committees working on trail development. The system is managed by the Minnesota Department of Natural Resources, and most of the funding for trails has to be secured through legislative appropriations or grants.

  - Figure 7-4 highlights the existing sidewalk system in the City of Rochester. Sidewalks are part of the standard site improvements that developers are required to construct. Based on the most recent available information, there are over 600 miles of sidewalk and pedestrian paths in Rochester. Routine maintenance is the responsibility of property owners, while replacement, when needed, is a shared cost between the city and property owner. Many of the areas that lack sidewalks are either commercial/industrial areas developed prior to the requirement for installing sidewalks in non-residential areas, older neighborhoods originally developed outside of the city which have been annexed, or major state highway corridors where sidewalks where not installed at the time of initial construction.

  - The highest concentration of pedestrian traffic in the urban area is found in the Rochester Central Business District and Mayo Medical Campus to the west of the CBD. An extensive system of subways and skyways shown in Figure 7-5 provides for grade-separated and weather-protected pedestrian travel throughout much of the CBD and medical campus area. Figure 7-5 also highlights public bicycle parking locations, another key piece of non-motorized infrastructure in the CBD. Bicycle parking is provided by the City of Rochester in most of its parking ramps, and a number of public and private sector employees provided outdoor bike parking in the form of bike racks as noted on this graphic.
Figure 7-1: Existing Paths and Trails in Rochester Urban Area
Figure 7-2: Existing Regional Bikeway Facilities
Figure 7-3: SOUTHEAST MINNESOTA PLANNED STATE TRAIL SYSTEM
Figure 7-4: Rochester Urban Area Sidewalk Facilities

Legend
- Existing Sidewalk
- Missing Sidewalk Facility
Figure 7-5: Subway and Skyway System in Downtown Rochester

All parking ramps are equipped with bike racks

Bike Rack Location
Non-Motorized Issues and Needs

*Common Infrastructure Problems faced by Pedestrians and Bicyclists*

One of the best ways to encourage bicycle and pedestrian travel is to eliminate infrastructure conditions that can discourage its use as a mode of transportation and recreation. Among the first things to look for are common conditions which may exist on a random basis throughout the network. Solutions for these problems may range from high cost construction improvements to low cost actions that can be done as part of a normal maintenance program. Among the common issues and problems include:

**Surface Conditions:** Surface conditions include poor surface quality, such as cracked pavement, or unsuitable surface material such as gravel. Storm grates with slots parallel to the street present hazards to cyclists, as do accumulations of debris and dirt. Street and utility construction and maintenance operations may create unexpected hazards or rough pavement conditions.

**High Volume Roads / Crossing Width:** High volume roads discourage walkers and bicyclists from using certain streets if sidewalks or paths are absent or inadequate due to minimal setback or surface width, creating potentially unsafe conditions. Wide roads can be difficult for pedestrians to cross in a timely manner or the time allotted in a signal cycle, and if medians or refuge areas are not available there is a significant risk of being trapped on the roadway during the crossing maneuver.

**Access and Continuity:** In addition to the barriers created by high volume and limited access roads, barriers to desired destinations can include topographic and geographic conditions, such as major streams or creeks, slopes in excess of seven to ten percent grade, and the development of large auto oriented land use areas such as shopping centers where access is restricted or highly congested. Continuity issues can arise, for example, where there is a lack of bicycle and pedestrian connections between nearby areas of origin and destination, such as a residential neighborhood area and nearby schools or shopping areas.

**On-Street Parking Utilization:** Most new and existing collector streets within the urban area are constructed to accommodate parking on both sides of the street. However, in many developments where off-street parking is plentiful, very little parking occurs on the street. This typically leaves a street with intermittent parking and higher speed vehicular travel, which can create inadvertent areas of conflict as the bicyclist moves between the parking lane and the driving lane and interacts with traffic traveling above the posted travel speed. Conversely, in higher density areas, where a street is consistently used for parking, there may not be enough space to provide suitable bicycle lanes and thus the cyclist faces issues such as an inadvertent car door opening or pedestrians darting out between cars.

**Bridges and Overpasses:** Older existing bridges and overpasses often create a hazardous condition for bicyclists or pedestrians as a result of deficient designs which lack adequate width travel lanes.
for shared use or space outside the vehicular travel lane for non-motorized users. When bridge replacement occurs these deficiencies should be corrected; where a structure has many years of structural life remaining but are located in areas of high pedestrian or bicycle traffic, consideration may be given to a bridge extension that can provide a safe space for non-motorized travelers.

**Intersection Safety:** Intersections pose problems for cyclists and pedestrians, with left-turning cyclists encountering conflicts with through traffic and right-turning cars conflicting with both cyclists and pedestrians. Where free right turn lanes are part of an intersection design, the free-flowing nature of the right turn vehicular traffic can also present hazards to non-motorized users.

**Using Sidewalks for Cycling,** particularly in areas of high pedestrian concentrations such as in the downtown area, is an undesirable situation for the following reasons:

- Sidewalks are generally not designed for cycling speeds. Cyclists must either reduce their speed or they end up traveling too fast for conditions where a mix of users is present.
- There is generally insufficient width for shared bicycle and pedestrian travel, particularly due to obstacles such as utility poles, signs, and street furniture that narrows the effective width of the sidewalk.
- Bicyclists face conflicts with motor vehicles at driveways and intersections. Motorists are generally not expecting a cyclist to cross their path on the sidewalk, and may not be looking for them.
- Traffic rules, such as obligations to yield, are unclear when cyclists ride on sidewalks, creating confusion and risk between pedestrians, cyclists, and motorists.

Sidewalk cycling may be safe for supervised children riding at walking speeds in less crowded areas such as a residential neighborhood, but becomes increasingly hazardous as speed is increased and as crossing traffic increases at driveways and intersections.

**Roadways with no Shoulders:** In rural and suburban areas, many roads have been built with either no shoulders or shoulders of limited width. This will force bicyclists or pedestrians to utilize a portion of the vehicular travel lane when traveling on such corridors, which can create a safety hazard for the non-motorized traveler. In addition to insufficient width, in many cases shoulders will be in poor condition, creating further hazard for users.
Public Input on Bicycle and Pedestrian Issues

Community input issues and needs related to bicycle and pedestrian travel was considered in development of the plan. Multiple venues were utilized for gathering input, including focus groups and open houses conducted in conjunction with development of this plan and both the 2012 Rochester Area Bicycle Master Plan and the 2009 Downtown Bicycle Study. The ROCOG Bicycle — Pedestrian Advisory Committee (BPAC) also provided guidance and support in identifying/refining the issues and needs. The following discussion summarizes issues and needs identified.

Downtown Bicycling

The Rochester downtown, similar to many downtown areas, presents significant barriers to bicycling both as a means to reach downtown destinations and for travel passing through the downtown area. While facilities for pedestrians have been developed and planned for, and a gridded network of streets adequately serves vehicular traffic, there is no corresponding network of bikeways to accommodate cycle travel. Because of concerns with the many conflicts that can occur when bicycling is permitted on highly used sidewalks, the city of Rochester does not permit cycling on sidewalks in its Central Business District. Table 7-1 lists locations of concern and issues identified during development of the 2012 Rochester Area Bicycle Master Plan related to downtown bicycling.

TABLE 7-1: Issues related to Bicycling in Downtown Rochester

<table>
<thead>
<tr>
<th>Unsafe Crossings</th>
<th>Streetscape</th>
<th>Bike Parking</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 9th St SE @ Broadway Ave</td>
<td>• Add greenery to 9th St SE from Broadway to Slatterly Park</td>
<td>• Colonial Inn / cars back into bike racks</td>
<td>• Allow two way bike traffic on 3rd St SW mini-mall</td>
</tr>
<tr>
<td>• 14th St NE @ Broadway Ave</td>
<td></td>
<td>• Add bike rack at 3rd St ramp</td>
<td>• Use diagonal back-in parking on 1st Ave SW to improve safety</td>
</tr>
<tr>
<td>• add underpass or bridge</td>
<td></td>
<td>• Need additional bike racks throughout downtown</td>
<td>• Adjust signal time at East Center and Civic Center Dr</td>
</tr>
<tr>
<td>• Convert all downtown signals to include bike/ped scramble crossing phase</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>On-Street Facilities</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Provide bike lane on 2nd St south from TH 52/ St Mary’s to Government Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Provide bike facility on Civic Center Dr thru 4th Ave NW (1st Ave NW)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Bike lane on 4th Ave NW from 14th St south</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Develop an “Adopt-a-Trail” program</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Clear debris after winter on paths (2nd St SW cited)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Crack sealing on Zumbro River Trail (south)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Winter plowing on Zumbro Trail</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Major Corridor Gaps

A second major issue identified is the presence of gaps in the path and trail network that effectively create barriers for cross-town travel along or parallel to major highways. People’s perception of travel routes is influenced greatly by the major street network, and discussions with the Bicycle-Pedestrian Advisory Committee (BPAC) have led to the conclusion that efforts should be made to create connected “cross-town” bikeway corridors along the Circle Drive system and other major routes that would approximate the accessibility for cross-town travel afforded vehicular travel. Table 7-2 list corridors that have been mentioned frequently in public forums:

**TABLE 7-2: Identified Bicycle System Gaps**

<table>
<thead>
<tr>
<th>Trail Connections</th>
<th>Northwest</th>
<th>Southwest</th>
<th>Downtown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trail under 16th Ave NW to TH 52 along Cascade Creek</td>
<td>Elton Hills Drive</td>
<td>South Broadway</td>
<td>Civic Center Drive</td>
</tr>
<tr>
<td>Access to Willow Creek area including Maine Street Shopping Center; Gamehaven Camp and Willow Creek flood control reservoir</td>
<td>37th St NW</td>
<td>Salem Road / “separate bikes from fast vehicles”</td>
<td>3rd and 4th Ave SW/NW</td>
</tr>
<tr>
<td>Rochester / Chester Woods Trail connection</td>
<td>7th St NW</td>
<td>TH 14 Bridge at Zumbro River</td>
<td>Access to St Mary’s Hospital from Cascade Creek Trail</td>
</tr>
<tr>
<td></td>
<td>14th St NW</td>
<td>18th Ave SW south of Mayowood Road</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18th Ave NW</td>
<td>Better access to Apache Mall</td>
<td></td>
</tr>
<tr>
<td></td>
<td>55th St in vicinity of Northwest Plaza</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Regional Bicycle Travel Routes

A third major network development issue that has been identified is the need to provide a minimum level of connectivity between communities and from communities to major regional destinations such as County and State parks. Where off – road trails can be developed to accomplish this goal it is the preferred solution, but the BPAC and others recognize that an important element of addressing this need is to develop a connected system of roadways with paved shoulders of adequate width to provide for a minimum level of regional accessibility. Among the comments received about regional trail connections in public forums are:

- “Consider a trail from Fugle Mill County Park north to Willow Creek”
- “Oronoco should have access to Douglas Trail including access across TH 52”
Chapter 7  Non-Motorized Transportation Planning

- “Look at Rochester to Stewartville and Stewartville to Chatfield trail connections. Stewartville stands out as a "dead end" in the current network of existing and planned regional trails”

Other Issues and Comments related to Bicycle and Pedestrian Travel

In addition to the more specific infrastructure issues listed above additional comments and suggestions were received during the course of public input sessions regarding ways to improve conditions for bicycle and pedestrian travel in the ROCOG area. Among the items identified included:

**Maintenance Needs**
- Inadequate street cleaning and potholes are the most frequently encountered factors that discourage bicycle use for day to day trips.
- There should be a means of reporting maintenance issues such as potholes, cracks in the pavement or glass/sand on trails and paths.
- Consider setting up an endowment for trail maintenance and/or make greater use of volunteers to do basic maintenance on facilities

**Infrastructure Needs (Facilities)**
- Having paths alternate between opposite sides of the road, such as on 55th ST NW, discourages bike use
- Bicycle Boulevards should be considered to enhance the existing network
- Would like to see more use of traffic signals that can detect cyclists

**Infrastructure Needs (Support)**
- Provide more bike parking and different types of bike parking (racks, lockers, corrals, valet, etc)
- There is a need for more wayfinding signage along the bikeway network including route names, distances and destination/directional indicators

- There should be a bike share program in the city in key areas like around the medical campus

**Education**
- Need to educate citizens about the operation of new facilities such as bike lanes, particularly related to intersection operation, and how to share usage of right turn lanes
- Information should be distributed as broadly as possible using websites, utility bills, tax bills, as part of driver’s training, etc.

**Information Needs**
- Route Planning information would be useful to have available
- Up-to-date bike maps accessible through various means (paper maps, on-line) should be readily available
- Would like to see use of the bicycle for everyday travel promoted more broadly; consider partnerships with the media to publicize a bike route each week as well as new projects or safety messages on a regular basis.
- Make better use of billboards as well as the ability mount messages on buses to share information with the public.
**Encouragement**

- Would like to see more events promoting bicycling similar to Mayor’s Ride such as neighborhood bike events, Bike Races, Summer Streets events.
- Should pursue development of incentive programs such as coupons from local retailers that can be earned based on riding a certain number of miles;
- More should be done to get people to consider the financial, environmental and health benefits of bicycling.
- Establish some type of Bike Ambassador program that would provide speakers who could give informational presentations at workplaces, organizations, schools, etc regarding the benefits of riding and what is needed to get started
- Set up a Smart Trips program that offers existing or new residents a package of information about alternative travel in Rochester

**School and Commuter Travel**

- Do more in regards to school travel to encourage children to walk or ride to school; better bike parking at schools is needed.
- Establish bike buddy or bike mentorship program at workplaces to help interested people overcome issues related to biking to work
- Encourage businesses to provide workplace accommodations like showers, lockers and changing rooms for people who wish to bike to work.

**Enforcement**

- Support the deployment of bicycle mounted police and would like to see them have higher visibility in the community, particularly at critical traffic crossings.
Bicycle and Pedestrian Crashes

While the number of reported crashes involving bicyclists and pedestrians is fairly low and distributed randomly throughout much of the urban area, the downtown area of Rochester is an area of special concern due to the relative concentration of crashes in this area and the high level of pedestrian traffic present. Figures 7-6 and 7-7 highlight bicycle and pedestrian crash locations in downtown Rochester from 2003-2013.

For the entire ROCOG area, there were total of 214 crashes involving bicyclists over the ten year period (2003-13). Using Minnesota Department of Transportation Crash Mapping Analysis Tool, it was found that 44% of bicycle crashes occurred in downtown Rochester. Similarly, the data indicates there were total of 218 crashes involving pedestrians in Rochester area over the ten year period, with 48% of (104 crashes) of pedestrian crashes occurring in downtown Rochester.

Figure 7-6 and 7-7 highlights that the corridors with the highest number of crash locations are 2nd Street SW and Broadway Avenue. The highest individual crash locations were the intersection of 2nd Street South and Broadway Ave and 4th Street South and Broadway Avenue. All other locations had only one or two reported crashes during the ten year period between 2003 and 2013.

Figure 7-8 summarizes some of the characteristics of bicycle crashes in downtown Rochester. The analysis shows that the number of annual crashes has been declining since 2008. Analysis of severity indicated that most crashes also involved minor or possible injury to one or more persons, but no bicycle fatalities were reported during the period. The majority of incidents involved a right angle crash, with time of the day analysis indicating most crashes occurred at noon time and the late afternoon.

Figure 7-8 highlights some of the characteristics of pedestrian crashes in downtown Rochester. The analysis shows that pedestrian crashes are generally declining in downtown after reaching a peak in 2010. Pedestrian crash severity analysis shows that the majority of crashes involved minor to non-incapacitating injury, with two fatalities and fourteen incapacitating injuries in the highlighted area. The majority of incidents involved either right angle or left turning traffic, with time of the day analysis reflecting that most crashes occurred during morning and afternoon peak hours.
Figure 7-6: Downtown Bicycle Crash Locations 2003-13

Figure 7-6: Downtown Rochester Pedestrian Crash Locations 2003-13
Figure 7-7: Summary of Downtown Bicycle Crash Analysis 2003-13

- **Bike Crashes in Downtown Rochester Crash Severity 2003-13**
  - Property Damage: 1
  - Possibly Injuy: 42
  - Injuy: 11
  - Incjuting Injury: 1

- **Bike Crashes in Downtown Rochester Crash Diagram 2003-13**
  - Unknown: 1
  - Other: 62
  - Sidewalk Bicicling: 5
  - Pedestrians: 1
  - Run Off Road - Right Side: 1
  - Right Turn Into Traffic: 5
  - Right Angle: 61
  - Left Turn Into Traffic: 5
  - Sideimpact Passing: 5

- **Bike Crashes in Downtown Rochester 2003-13**

- **Bike Crashes in Downtown Rochester Time of Day 2003-13**

- **Bike Crashes in Downtown Rochester Relationship to Intersection 2003-13**

- **Bike Crashes in Downtown Rochester Road Design 2003-13**
Figure 7-8: Summary of Downtown Pedestrian Crash Analysis 2003-13

Pedestrian Crashes in Downtown Rochester
Crash Severity 2003-13

Pedestrian Crashes in Downtown Rochester
Crash Diagram 2003-13

Pedestrian Crashes in Downtown Rochester
2003-13

Pedestrian Crashes in Downtown Rochester
Time of Day 2003-13

Pedestrian Crashes in Downtown Rochester
Relationship to Intersection 2003-13

Pedestrian Crashes in Downtown Rochester
Road Design 2003-13
Implementation Directions & Strategies

Implementation directions or strategies identify policy steps or actions that are important for achieving the recommendations of the Long Range Plan. Success in implementation will require involvement from not only the public sector (State agencies, Olmsted County, local municipalities), but also facility users, neighborhoods groups, business interests and the development community, all of which have varying roles and responsibilities in regards to achieving the goals of the plan.

Implementation requires that the plan’s elements be incorporated into the daily routines and practices of jurisdictions and agencies and for those actions to be supported by local citizens and their elected officials. Along these lines, implementation of a plan needs to:

- Ensure that jurisdictions and agencies consider plan elements in capital programming and development review procedures;
- Ensure that roadway agency and developer design activities address accommodation of non-motorized users;
- Ensure that jurisdictions and agencies continue efforts to seek funds for non-motorized facility development and work with private or non-profit partners as opportunities arise to implement various actions or strategies;
- Ensure that ROCOG has procedures in place to permit timely review of amendments to the plan to reflect changing conditions.

As a general rule, infrastructure systems such as trail and path networks should be planned prior to development. Attempting to assemble route networks in piece-meal fashion after development has occurred will generally result in a fractured and poorly planned trail or path network.

The following discussion of Implementation Directions/Strategies are grouped into series of categories. These include the areas of Infrastructure, Safety, Planning, Education/Encouragement and Promotion, and Enforcement.

Infrastructure

SYSTEM DEVELOPMENT STRATEGIES

The bicycle and/or pedestrian transportation system should allow users of varying ability to safely travel between various origins and destinations on a interconnected network of facilities. In considering system development, factors to account for include providing access to desired destinations, route continuity, route attractiveness, minimization of conflict with vehicular traffic, ease of implementation and cost. The types of land uses that should be connected include neighborhoods, schools, parks, youth centers, employment and commercial centers, transit hubs, existing public trails, and natural areas. Key directions and strategies include:
1. Require the provision of bikeways and walkways consistent with the ROCOG Long Range Transportation Plan in the following cases:
   - In all new highway construction projects;
   - When reconstructing or improving existing bridges and roads;
   - Public park or open space development projects;
   - As part of the site improvements for public and private sector development projects
   - All transportation projects in downtown Rochester should be assessed for consistency with or as an opportunity to implement recommendations included in the Downtown Master Plan's Bicycle and Pedestrian Action Plans

2. Local units of government should adopt policies and regulations that require the inclusion of adequate bicycle and pedestrian access in any development and establish standards or guidelines for the dedication or acquisition of easements and rights-of-way for bikeways and walkways in conjunction with development approval.

3. Municipal parkland dedication requirements should be considered not only for neighborhood park development but the creation of linear park facilities where it would facilitate path or sidewalk development that would enhance overall system connectivity.

4. Transportation agencies, utility agencies and jurisdictions should coordinate the development of trail or path links along utility corridors, railway corridors, and stormwater management corridors.

5. Consider development of non-motorized crossings in urban areas over waterways or freeways where existing crossings are spaced more than a mile apart.

6. The primary improvement strategy for bicycle and pedestrian traffic in rural and suburban areas will be the development of paved shoulders. Priority should be given to investing in paved shoulders on main corridors connecting cities with other towns and other major destinations such as regional parks. Long term, paved shoulder areas should be considered on all roads whenever traffic volumes are expected to exceed 750 vehicles per day.

7. Other enhancements in a suburban environments needed to make shoulders or roadways more conducive to bicycling and walking include:
   - Controlling the amount of private access onto arterials and other major roads;
   - Providing safe crossing locations of high speed roads;
   - Providing paths to connecting adjacent cul-de-sac or dead-end street areas to provide local circulation options for bicyclists and pedestrians.

System Development in Rural and Suburban Areas

In rural or suburban areas, networks non-motorized networks will be limited, focused primarily on connections between communities, to regional trail systems and to major destinations such as regional parks. Pedestrian network development is not a high priority, though specific issues such as safety of school bus stops should be addressed on an as-needed basis.
Accommodation on Low Volume Roads

Low volume roads in both urban and rural areas provide the ability to accommodate multiple modes of travel within a basic design framework as long as travel speed is adequately managed.

8. Shared use of the low volume local urban roads is considered appropriate for bicyclists, as low traffic speeds and volumes allow bicyclists and motorists to safely share the road. Facilities such as bike lanes typically need to be considered only when higher vehicle speeds (above 30 MPH) and/or higher traffic volumes (ADT over 5000) exist, which typically will not occur on local roads.

9. In rural areas, separate bikeway accommodations including paved shoulders generally are not warranted on local roads because the low volume of vehicle travel allows motorists to safely pass bicyclists with a low likelihood of encountering on-coming traffic. Adding minimal-width shoulders or wider travel lanes can improve conditions with moderate traffic volumes where there are no visibility concerns. Extra pavement width should be a consideration on roads with volumes at or projected above 750 vehicles per day.

Bikeway Design

Consistency in design helps to foster understanding between different users and improve safety as all users can better anticipate the actions of other users in a shared roadway environment.

10. To insure the safe and functional design of bikeways, the most current versions of the bikeway design manuals noted below should serve as the official policy guide for planning, design, construction and maintenance of bikeways in the ROCOG Planning Area:

- The MNDOT Bicycle Modal Plan, Minnesota Department of Transportation (current version January 2005)
- Minnesota Department of Transportation Bikeway Facility Design Manual (current version)
- Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials
- National Association of City Transportation Officials (NACTO), NACTO Urban Bikeway Design Guide will be used as supplement to other guidance documents

Pedestrian Facilities

Pedestrian facilities both encourage people to walk and improve pedestrian safety. Creating pedestrian-friendly communities that are well-planned, designed, and maintained encourage walking and promote higher levels of pedestrian travel. Addressing pedestrians’ needs as part of every planning effort and project is encouraged. The character and setting of the area, nearby land use densities, origins, and destinations influence the level of pedestrian use, and increases in use may occur as a result of new pedestrian facilities or pedestrian generating improvements (such as transit).

Walkway facilities in urban areas can include sidewalks, shared-use paths, pedestrian malls, bridges and skyways. Intersections or mid-block crossings are an important focus as well, as managing the interface with vehicular traffic is typically the most important concern in
pedestrian planning. To insure accommodation, new facilities shall be designed to ADA standards to provide full accessibility for all users.

### Urban Area Considerations for Pedestrians

11. *On urban roadways where path facilities are not specifically identified on the ROCOG Non-Motorized Plan, sidewalks should be provided on both sides, unless there are physical limitations and land use characteristics that render a sidewalk unsuitable on one side. In these situations, safe and convenient crossing opportunities must be provided to allow pedestrians to proceed to the side with sidewalks.*

12. *A Working Group should be established to deal with the issue of sidewalk gaps in Rochester. The group should identify priorities for filling in sidewalk system gaps, and recommend strategies to build sidewalks where they are missing in the Rochester urban area.*

### Rural and Suburban Area Considerations

13. *In sparsely populated rural areas, gravel shoulders usually are adequate to accommodate the low level of pedestrian activity characteristic of these areas. In higher use areas, a wider roadway including striping of the roadway to delineate a protected area for pedestrians should be considered.*

14. *Paved shoulder areas should be considered whenever traffic volumes on a local township or county roads are expected to exceed 750 vehicles per day.*

### Maintenance

In order to provide safe facilities and year round usability reasonable maintenance standards and practices need to be considered.

15. *All Modes: Jurisdictions should establish a timely and regular maintenance and repair program for all bicycle and pedestrian facilities, which may include enforcement of the responsibility for path and sidewalk maintenance by adjacent property owners or the local jurisdiction assuming the responsibility for sidewalk maintenance. The level of maintenance can be determined on a corridor-by-corridor basis or can be established on a system-wide basis, but should be documented in terms of a maintenance policy. Ongoing maintenance costs should be routinely considered when preparing budgets and capital improvement programs, and reflect growth in the system as it occurs.*

16. *Bikeways: Roadways designated as bicycle routes or which have bike lanes should be given priority in year round maintenance in order to enhance the safety of these routes for bicycle users.*
SAFETY

To insure safety for bicycle and pedestrian travel ongoing efforts should be made to assess and evaluate safety needs and reduce conflict between non-motorized and vehicular traffic created by features such as narrow bridges, wide streets or high volume, high speed traffic corridors.

### Safety Planning

| 17. | Data on crashes between bicyclists or pedestrians and vehicles should be monitored on a routine basis to determine where needs may exist for better signing, lighting or traffic control, for education initiatives targeted to users of the area, or for new facilities to reduce the risks to bicyclists and pedestrians. |
| 18. | An on-going study program involving completion of Road Safety Audits or Intersection Safety Audits should be considered to provide the level of detailed study needed to evaluate the significance of risks at high crash locations. Initial efforts should be focused on downtown Rochester due to the high incidence of crashes involving pedestrians and bicyclists in the core area. |
| 19. | All new and reconstructed bridges and freeway underpasses and overpasses should be designed to provide adequate space for pedestrians and cyclists to safely use these facilities. |

### Road Design Features

| 20. | TRAFFIC CALMING: “Traffic calming” has grown in popularity as a way to slow motorists, reduce cut-through traffic, reduce the impact of collisions and improve the roadway corridor environment for bicyclists and pedestrians in residential areas. Consideration of the need for traffic calming improvements in new development should be considered in the development review process, and retrofitting areas to add features should be evaluated through a neighborhood traffic management plan (NTMP) process. |
| 21. | ACCESS MANAGEMENT: Access management addresses the coordination of roadway design in a manner that reflects the safety and traffic management needs of roadway users while recognizing the need for reasonable access to facilitate land development. Frequency, placement and design of driveways and side street intersections is considered when looking at access requests. Since access management tends to reduce the number and width of driveways and access roads connecting to highways and arterials, it provides benefit to cyclists and pedestrians by reducing points of conflict and making vehicle traffic more predictable. |
| 22. | ACCESS MANAGEMENT: ROCOG should work with local jurisdictions to develop a consistent set of access management regulations to manage the number, placement and design of connection points to major streets and highways. |
Pedestrian Safety

23. PEDESTRIAN CROSSINGS: Highway crossings are one of the most challenging aspects of pedestrian travel and the location where nearly all pedestrian - motorist collisions occur. Particularly in areas of high pedestrian activity methods to improve crossing safety should be considered including:

- shortening the crossing distance such as with pedestrian refuge islands, curb extensions or by reducing curb return radii;
- alerting or warning motorists of the potential presence of pedestrians through use of measures such as enhanced signage, crosswalk markings, actuated signals, and lights;
- removing sight obstructions, such as parked cars, trees, and signs in the immediate vicinity of an intersection crossing to improve visibility of pedestrians and vehicles;
- Adjust traffic signal timing at locations where a higher proportion of persons with mobility impairments or the elderly are present to provided additional crossing time.

24. USE OF INNOVATIVE SAFETY MEASURES: Communities should experiment with innovative ways to increase pedestrian safety. New strategies may be tried on a small scale and may work only under specific circumstances. Examples of potential projects are:

- Innovative technologies such as “In-Pavement Warning Lights” and “HAWK” signals that aim to alert motorist to the presence of pedestrians by providing an enhanced level of awareness.
- Using signage such as day-glow green pedestrian warning signs to improve the visibility of signs, and moving signs around a neighborhood so that they continue to attract motorists’ attention may also be of benefit.

Safe Routes

Programs such as Safe Routes to Schools, Safe Routes to Transit or Safe Routes for Seniors typically focus on identifying and improving the entire pedestrian travel experience from origin to destination by combining measures drawn from the “5 E’s” toolbox of engineering, education, enforcement, encouragement and evaluation. Not only do the goals of such programs overlap, but in many instances improvements will improve conditions for all targeted user groups (students, transit patrons, seniors).

25. Member agencies of the ROCOG Transportation Technical Advisory Committee should coordinate with school district facility planners to support a Safe Routes to School (SR2S) program and to identify improvements that can enhance safety and pedestrian access to schools.

26. Adequate pathways should be provided within the service area of all bus route corridors to facilitate bicycle and pedestrian access to bus stops, park & ride lots or transit hubs. Bus stops should provide a pleasant environment for waiting passengers, with shelters, landscaping, and adequate buffering from the road and lighting. Facilities should meet ADA requirements to encourage transit use by those with physical limitations. Bus stop design should minimize conflicts with other non-motorized users, such as bicyclists on bike lanes or pedestrians walking past passengers waiting to board, and bike parking should be considered.
PLANNING / PLAN COORDINATION

In order for communities and agencies to be successful in developing a safe and effective network of non-motorized facilities it is important that the needs and issues of bicyclists and pedestrians are considered not only at the project level but in community planning efforts. This is particularly important since partnerships will be needed to achieve the goals of this plan in an era of limited resources and to insure that available resources are used most efficiently. Along with early planning, measuring and communicating progress is important to help build ongoing support for future improvements.

27. ALL MODES: ROCOG should insure that bicycle and pedestrian needs are considered in any Subarea Land Use or Transportation study, Highway Corridor studies, or the development review process.

28. ALL MODES: ROCOG should work with local jurisdictions to identify needs and opportunities to preserve corridor right-of-ways for bicyclists, pedestrians, and other complementary transportation purposes.

29. ALL MODES: ROCOG staff should monitor petitions to vacate existing right-of-way to consider the appropriateness of maintaining the corridor as public right-of-way for pathway purposes.

30. ROCOG should continue to support the work of the following planning committees:

- Inter-Agency Bicycle Planning Committee: The Inter-Agency Bicycle Planning Committee includes Rochester and Olmsted County Parks and Recreation, Rochester and Olmsted County Public Works, MnDOT, the Rochester-Olmsted Planning Department, and the Minnesota Department of Natural Resources. These agencies meet periodically to discuss infrastructure projects and identify opportunities for sharing resources in an effort to maximize what can be accomplished.

- Bicycle-Pedestrian Advisory Committee (BPAC): BPAC serves ROCOG in an advisory capacity, providing project review and critique, leadership for programs in policy areas such as Education, Enforcement and Encouragement and outreach to neighborhood groups, bicycle clubs, youth organizations, and major employers on non-motorized transportation issues.

- Southeast Minnesota Association of Regional Trails (SMART): SMART fosters joint planning on a regional basis, to ensure that state, county and local transportation plans are coordinated across jurisdictional boundaries and that local needs recognized in state plans.

- Local trail development groups typically spearhead the development of regional trail corridors. The organizational template for such efforts is the Dover/Eyota/Chester Woods Trail Committee, who developed a process driven by grassroots community support and participation.

31. EVALUATION: Local agencies should develop measures for assessing progress towards improving bicycle and pedestrian travel conditions to assist in evaluating past success and set future directions.

32. EVALUATION: ROCOG should work with its partners to develop a schedule for gathering the data needed to assess progress and growth in bicycle and pedestrian travel.
SUPPORTING NON-INFRASTRUCTURE MEASURES

While good planning and design are important factors in incorporating bicycle and pedestrian travel in the ROCOG area transportation system, planning and design can’t be expected to solve all pedestrian or bicycle related problems. Effective education, enforcement and encouragement programs are important tools to heighten awareness and create conditions where all users are familiar with and follow traffic rules and laws in order to create an effective, efficient and safe travel environment for all users. Efforts are needed to encourage a culture of respect and shared use among motorists and pedestrians alike.

EDUCATION

33. Education efforts should focus on building awareness through measures such as safety campaigns in the media, curriculum content within schools and driver education classes, and making information available through venues such as websites or public access television. Strategies and actions that could be considered include:

- Working with state officials to create a coordinated “Share the Road” public education campaign to encourage lawful, responsible behavior among motorists, pedestrians and bicyclists.
- Work with cities and law enforcement agencies to create a crosswalk awareness campaign
- Create a “Ride safely” marketing campaign targeting bicycle riders.
- Continue school-based and community-based programs that teach bicycle safety to children and consider programs targeting adult bicyclists.
- Motivate decision makers at all levels to adopt policies that promote safe bicycling and walking practices.
- Participate with state and federal agencies on initiatives such as “Towards Zero Deaths” to improve the overall level of transportation safety.

34. New facilities, bicycle safety and education workshops, and other activities related to implementation of the Bikeway Plan should be publicized more widely to make residents aware of system expansion efforts and opportunities to learn more about non-motorized transportation choices.

35. Decisions to implement such strategies should be based on discussions involving BPAC, local public health agencies, the Rochester Active Living Coordinator, local law enforcement and public works agencies, and policy makers. Opportunities to leverage funding or to utilize programs developed by state and federal agencies for general use should be a priority

36. The Bicycle System Map should be updated on a periodic basis and staff should work with BPAC and local Bicycle Clubs to insure content is current and relevant

37. Way finding signage should be provided at temporary trail endings to direct users to nearest routes.

ENCOURAGEMENT

Encouraging cycling and walking can help mitigate traffic congestion, promote healthier lifestyles and create more livable communities. Residents, visitors and tourists often prefer walking and cycling as part of their activities and appreciate bicycle and pedestrian-friendly towns. Actions to encourage more widespread use of non-motorized travel include:
38. Work with employers to provide showers, lockers, and secure and convenient bike parking facilities at key destinations, particularly at places of employment, to encourage bicycling and walking.

39. Promote utilitarian use of non-motorized transportation modes through special events or programs and offer key target audiences detailed information and tips on non-motorized travel.

40. ROCOG and BPAC should work with interested parties in development and dissemination of information regarding the benefits of non-motorized travel through public-service announcements, special-events promotion, and news releases.

41. ROCOG should continue to work with jurisdictions and agencies in annual events such as the MNDOT Non-Motorized Transportation Committee (MNTC), Bus or Pool (BBOP) program in May of each year to promote bicycling and walking in the community and highlight the way it benefits the community.

42. New facilities, bicycle safety and education workshops, and other activities related to implementation of the Bikeway Plan should be publicized more widely to make residents aware of system expansion efforts and opportunities to learn more about non-motorized transportation choices.

43. Improved Bicycle parking opportunities should be provided in downtown Rochester. The City and ROCOG should work with local jurisdictions to set an example by providing well-designed, well-located bicycle parking at public facilities.

44. The City of Rochester was designated as a Bronze level Bicycle Friendly Community and Walk Friendly Community in 2010. The designation process has helped the community identify additional actions and activities needed to develop a comprehensive vision for improving conditions for cycling and walking in the community. ROCOG staff should assist the City of Rochester in its effort to enhance these designations in advance of the next application cycle.

45. Each locality, in conjunction with its law enforcement agencies, should decide to what extent cyclist and pedestrian rights and responsibilities should be enforced. Because of the variation of resources within each enforcement agency and the extent to which violations are a problem in each jurisdiction, the level of enforcement may vary.

46. Local law enforcement agencies should implement or continue to use non-motorized modes to help accomplish law enforcement goals, such as implementing bicycle patrols in appropriate areas.
LIVABLE COMMUNITIES AND ACTIVE LIVING

There has been growing interest in efforts to identify strategies or actions that will enhance the quality of life in the community and provide greater opportunity to increase the amount of physical activity persons are able to incorporate into their daily routines. Providing transportation opportunities for convenient travel by bicycle or on foot is one element of these initiatives, which when joined with efforts at “getting the land use right” can ensure that homes, shops, schools, workplaces, and other destinations are located close enough to one another and oriented in ways so as not to discourage non-motorized travel. Creating “human-scale” streetscapes and developing other components of pedestrian- and bicycle-friendly development are important measures that can be implemented to achieve these goals.

Evidence suggests that there exists a strong relationship among health, physical activity, and the way we plan and design our communities. Land use and infrastructure policies are acknowledged as having contributed towards increasing travel distances between residences, workplaces and other destinations, resulting in vehicular travel being prioritized over other modes, resulting in safety, accessibility, comfort and travel time conditions that discourage use of alternative travel modes.

Among the measures that can be used to promote livability and active transportation include:

- Street systems featuring a grid-like network, with a dense structure of connected streets, providing many possible routes between origins and destinations;
- Relatively narrow streets, short block lengths and features such as small curb radii to encourage lower vehicular speeds;
- Incorporation of pedestrian and bicycle safety measures through use of traffic calming strategies or complete streets principles when designing streets;
- Improve access to and awareness of bicycling and the quality and availability of bicycle routes.
- Promote mixed land use policies to encourage the development of neighborhood services, retail needs and employment spaces within walking or cycling distances of homes.

For ROCOG, potential implementation directions and strategies that should be supported to improve the design of our communities and provide opportunity for greater physical activity include:

47. ROCOG and local jurisdictions should explore with the local development community the feasibility of adopting policies and regulations that would encourage incorporation of livable community features and streamline the process for incorporating these features into new development.

48. ROCOG should assist the City of Rochester in its efforts to implement the Complete Streets Policy adopted in 2009 to ensure that the transportation project development process includes early consideration of the land use and transportation context of the project, identification of gaps or deficiencies for various users that could be addressed by the project, what enhancements could be provided to address pedestrian, bicycle or transit deficiencies, and an assessment of the tradeoffs to balance the needs of all users.
Chapter 7  Non-Motorized Transportation Planning

Facility Plans

Four facility plans to guide non-motorized infrastructure development are adopted as part of the Long Range Transportation Plan. These are:

1. The Urban Area Bikeway Plan
2. The Regional Bikeway Plan
3. The Downtown Rochester Bicycle/Pedestrian Plan
4. The Urban Area Walkway Plan

**Urban Area Bikeway Plan**

The Urban Area Bikeway Network is classified through the use of two maps that were developed as part of the *2012 Rochester Area Bikeway Master Plan* and summarized herein. These are:

- The **Bikeway Network Classification Map**, which describes the role various bikeway facilities are envisioned to serve in the network in terms of connectivity and continuity as well as the primary types of trips different facilities are intended to serve. The classification system also serves to help prioritize investments.

- The **Bikeway Network Design Map**, which includes preliminary recommendations regarding the type of design that should be considered for the various corridors identified in the Bikeway Network Classification Map.

**Bikeway Network Classification Map**

Not all corridors serve the same travel purposes in a network; for example, some corridors will be more important to regional or longer distance intra-urban travel while others will serve primarily local subarea travel. Identifying those corridors serving higher order functions will identify where greater attention to design and safety and greater investment may be needed in order to handle more users and provide for uninterrupted continuity in travel. Classification of corridors was based on consideration of the following questions:

- What type of travel function does or will the corridor provide for bicyclists?
  - *Does the route primarily serve to provide access to bicycle trip generator(s) or mobility within the network between different areas of the city?*
  - *Is the route is integral to longer-distance bike travel serving more than an isolated neighborhood or activity center area?*
Is the segment important to complete a gap in the existing off-road network in order to provide a seamless bicycle travel corridor?

Does the route offers advantages in circumventing barriers such as waterways, major highways, inaccessible bridges, railroads, or large institutional campus areas?

Does the route primarily provides neighborhood connectivity to the bicycle network?

Does the provide connectivity to regional trails outside the urban area?

- Can the corridor accommodate bicycle travel in a safe manner?

  Can the bicycle improvement (bicycle lane, shared lane street improvements or cycle track) be incorporated into an existing roadway relatively easily or is there sufficient right of way width present for the improvement?

  Does the corridor provide directness and connectivity will having relatively low traffic volumes and speeds that will generally be comfortable for bicycling without major improvements?

- How significant or limited are barriers to bike travel in the corridor?

  Is topography such as steep terrain present that may limit the functionality of a route?

  Is there a significant level of truck traffic present that may create safety concerns?

  Are there difficult-to-navigate / difficult-to-modify intersections along the route?

  Are there viable alternative routes that could serve the same destination(s)?

It is important to note that except for highways where bicycle use is specifically prohibited, all streets under Minnesota law are legally available for use by bicyclists, and all streets legally open to cyclists should be managed in such a way that they can be used safely for bicycle travel. Designation of corridors on the bikeway network identifies routes where non-neighborhood travel is anticipated or encouraged with enhancements provided to safely accommodate higher levels of bicycle traffic.

Figures 7-9 and 7-10 illustrate the Bikeway Network Classification Map. On the map, corridors are classified according to the following hierarchy:

**Regional Bikeway**: Corridors important to serve through travel across the Rochester area as well as access to the major destinations within the Rochester area including the CBD and major regional parks, including corridors which serve as the major conduits of intra-city travel for all types of bicycle users

**Major City Bikeway**: Corridors that serve important cross-city travel movements, providing for continuous travel across multiple neighborhoods or non-residential districts, or which provide a direct connection of the local bikeway network to a regional trail or route serving
regional destinations outside the urban area. The Major Route Network should be intuitively understandable for users seeking to travel to key destinations in the community due to directness of travel and limited route interruption.

Local Area Bikeway: Corridors that work in concert with Major City Bikeways to establish a finer-grained network of facilities, which are most useful as a means for travel between adjacent neighborhoods or districts or to reach Major City Bikeway routes a short distance away. In many cases, Local Area Bikeways will travel through residential neighborhoods and extend the reach of the Bikeway Network to ensure maximum system usability and access.

Express Routes: Corridors that parallel nearby regional or major city bikeway corridors providing a more direct on-street alternate route for Type A or higher-skilled Type B bicyclists through an identified travel corridor area.

Study Areas: Study Areas are highlighted on the map to identify locations where multiple route options for serving a travel function exist but further evaluation is needed before a final route designation or corridor is selected.

Regional Portals: The Network Classification map also illustrates key portals for regional bicycle travel into the Rochester area, reflecting the Regional Bike Network Plan discussed in the next section of this chapter. These portals are located on corridors that are highlighted on the map as “Regional Feeder” routes, and reflect primarily state and county state aid highways with wide paved shoulders that provide safe bicycling service from the greater regional area into the urban area.
Figure 7-9: Rochester area Bikeway Network Classification Map
Figure 7-10: Central Rochester Bikeway Network Classification Map
Bikeway Network Design Map

As part of the 2012 Rochester Area Bikeway Master Plan an Urban Area Bikeway Design Map was developed that further refines planning for the corridors designated on the Bikeway Network Classification Map by identifying at a planning level recommended design types. This design assessment seeks to identify options that can provide an acceptable level of cyclist comfort and safety and yet are feasible from a planning standpoint. Suggested facilities should be considered Preliminary Improvement Recommendations, with further engineering assessment of the design conducted when funding for a project is identified. The facility recommendations in this plan serve as a starting point; in cases where higher grade facilities are feasible at little or no extra cost they should be considered for implementation; conversely, where the recommended facility ultimately proves infeasible, lower level facility options should be considered in order to provide at least a minimum level of bicycle accommodation in designated corridors.

The preliminary improvement recommendations generally fall into one of the following categories:

**Class I Facilities: Separation from Vehicle Traffic**

Class I Facilities include off-road bike **paths and trails**. The **Trail** designation is used for routes that are not adjacent to a road corridor but follow a natural feature such as a river or stream, or which are located on public lands such as parks. The **Path** designation is used for those facilities built or planned in right-of-way share with a vehicular roadway. A transition classification is also provided called **“City Path / County Shoulder”** which reflects corridors beyond the 25 Year Urban Service Area but within the 50 Year Urban Service Area. These areas are not anticipated to be subject to urban development pressure for quite a period of time, and thus the plan calls for shoulder improvements in the near term, with paths provided when these areas begin to urbanize.

**Class II Facilities: On-road Bikeways**

Class II Facilities designate corridors where shared use of the roadway pavement is recommended either through development of designated on-road bicycle space or through the shared use of roadway space. Certain categories of facilities, such as cycle tracks, straddle the line between off-road and on-road given the degree of physical separation associated with these types of improvements. Examples of on-road bikeways include the following:

**Separated On-Road Bike Facilities**
- Bike Lanes including
  - Standard Bike Lanes
  - Left Side Bicycle Lane
- Cycle Tracks

**Shared Street Space**
- Signed Bike Route
- Sharrow Route
- Advisory Bike Lane
- Bicycle Boulevard *(base level)*
Development of on-road bikeway facilities has historically been limited in the Rochester area. With adoption of a Complete Streets Policy in 2009, the city of Rochester made a commitment to consider the needs of all travel modes during the development of roadway projects. The 2012 Rochester Area Bicycle Master Plan built upon all previous and recent efforts to identify an interconnected network of on-street and off-street facilities to serve all major activity centers and neighborhoods in the community.

Class III Facilities: Shoulder Bikeways

Class III facilities include existing and future paved shoulders. This classification applies generally outside of the urban core on limited access roadways where adequate width shoulders exist or should be planned in order to enhance the overall connectivity of the roadway network for bike travel and to improve multi-modal safety in these corridors. Included in this group are “Interim Freeway Shoulders”, which include TH 14 west of Rochester and TH 63 south of Rochester. These corridors currently function as expressways, with shoulders that provide a reasonable facility for the more experienced bicyclist. However, with roadway plans calling for the upgrading of these corridors to freeways in the future, access to the shoulders may be restricted at some future date.

Class IV Facilities: Neighborhood Bike Routes

Neighborhood Bike Routes are short route corridors identified by signage and marking needed to provide for neighborhood connectivity to higher class facilities, generally as shared road space. These facilities will generally have lower traffic volumes and slower speed traffic, making them adequate to serve neighborhood bicyclists wishing to access the higher level network.

Crossing Improvements: Grade Separation, Intersection Upgrades and Mid Block Crossings

Intersections and mid-block crossings can present a challenge for bicyclists and the need for improvements are identified at a number of complex intersections or crossings where improvements may be warranted, as these locations cannot be avoided without a detour of significant inconvenience that bicyclists would be unlikely to use.

In certain situations involving high speed or high volume vehicular traffic, development of grade-separation options are likely to be the only feasible crossing alternative available. The Bikeway Design Map identifies various potential locations where grade separation is recommended. Grade separation may involve construction of a bridge structure or development of an underpass structure. Additionally, a number of locations where an existing
bridge provides substandard shoulder or path areas for bicycle are identified where future bridge reconstruction should incorporate a wider sidewalk/path to eliminate bottlenecks and enhance connectivity of existing path and trail systems.

**Study Corridors**

The Urban Area Bikeway Design Map identifies a number of corridors or locations where further study and evaluation is needed before a final determination regarding design and route location can be made. The types of studies the plan identifies include:

- **Paired Route Studies**, where parallel roads have been identified as candidate bicycle network corridors, but where further evaluation is needed to determine whether one corridor or both corridors would better function as a designated bicycle route through an area.
- **Route Feasibility Studies** are a second type of study corridor identified where questions exist regarding whether it is feasible to develop bicycle accommodations in a corridor given existing conditions related to traffic levels, on-street parking, driveway frequency or roadway width. Typically these corridors are found in the fully developed areas of the city where significant constraints exist but important destinations to serve are present.
- **Trail Studies** are identified in some instances where the potential for off-road improvements to enhance the bicycle network were identified but issues regarding construction feasibility and land use impact need to be considered in the context of a site specific study.
- **Crossing Studies**, where methods to facilitate the safe crossing of bicyclists either across existing bridge structures or high volume, higher speed at-grade locations is needed to determine the appropriate type of crossing improvement to utilize.

**URBAN AREA IMPROVEMENT SUMMARY**

*Given the level of detail in the Urban Bikeway Design Map it is recommended individuals refer to the 2012 Rochester Area Bicycle Master Plan to definitely identify network design plans for both existing and proposed bikeway facilities*

Figure 7-11 highlights proposed new or upgraded identified in the 2012 Rochester Area Plan including:

- Off-Road Bikeway Corridors
- Bridges or other grade-separated barrier crossings
- On-road Bikeway Corridors
- At-grade Intersection crossings
Figure 7-11: ROCOG 2045 Future Urban Area Bikeway Facility Map
The following table summarizes the improvements highlighted in Figure 7-11. This includes the types and miles of corridor improvement proposed including such improvements as bike lane, bike paths/trails, cycle tracks, shoulder improvements, and future bike boulevard etc. The table also summarizes number of locations where various types of crossing improvements such as grade separation, bridge enhancements, active warning signs, colored lanes, and two stage left turn are recommended.

<table>
<thead>
<tr>
<th>Corridors</th>
<th>Miles</th>
<th>Crossings</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signed Bike Route</td>
<td>29.84</td>
<td>Median Refuges</td>
<td>2</td>
</tr>
<tr>
<td>Bike Lanes</td>
<td>22.19</td>
<td>Two Stage Lefts</td>
<td>2</td>
</tr>
<tr>
<td>Sharrow Routes</td>
<td>11.02</td>
<td>Shared right Turns</td>
<td>12</td>
</tr>
<tr>
<td>Advisory Bike Lane</td>
<td>4.16</td>
<td>Intersection Markings</td>
<td>25</td>
</tr>
<tr>
<td>Bike Boulevard</td>
<td>2.97</td>
<td>Bicycle Boxes</td>
<td>2</td>
</tr>
<tr>
<td>Cycle Track</td>
<td>0.28</td>
<td>Ramp Markings</td>
<td>7</td>
</tr>
<tr>
<td>Path</td>
<td>41.79</td>
<td>HAWK</td>
<td>3</td>
</tr>
<tr>
<td>Trails</td>
<td>8.46</td>
<td>Grade Separation</td>
<td>4</td>
</tr>
</tbody>
</table>

**Regional Bikeway Plan**

Figure 7-12 highlight the Regional Area Bikeway Plan for the ROCOG area. The regional network relies on trail facilities and paved highway shoulders as the primary means to serve non-motorized travel needs. The plan identifies 176.23 miles of shoulders to be upgraded and 12.53 centerline miles of future paved shoulders to be built.

The Regional Bikeway Map also highlights three areas that are of interest in terms of identifying future regional trail corridors. These regional connectivity studies should be subject to future planning studies when resources become available.

<table>
<thead>
<tr>
<th>Study Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Connectivity Studies</td>
<td>Three study areas are highlighted on the Regional Bikeway Map, illustrating community interest in creating regional connections between existing or planned trails such as between the Root River Trail and the Chester Woods Trail. These studies are anticipated to revolve around the efforts of community trail committees organized at the grassroots level.</td>
</tr>
<tr>
<td>o Stagecoach Trail connection to Douglas Trail</td>
<td></td>
</tr>
<tr>
<td>o Stewartville connection to Rochester</td>
<td></td>
</tr>
<tr>
<td>o Chatfield / Root River trail connection to Dover / Eyota segment of Chester Woods Trail</td>
<td></td>
</tr>
</tbody>
</table>
Figure 7-12
ROCOG 2045 Regional Bikeway Plan
DOWNTOWN ROCHESTER BICYCLE AND PEDESTRIAN PLANNING

In 2009 the City of Rochester initiated a Downtown Master Plan to establish a long term development vision for downtown Rochester and determine the type of supporting infrastructure that would be needed to support the vision. As part of the Downtown Master Plan, a Downtown Mobility element was completed that focused on the transportation investment that would be needed to support the development vision. Because of concern with the potential for increased traffic congestion in the future, the plan recommended significant improvement for alternative modes including transit, bicycle and pedestrian travel as part of a package of land use and transportation measures to reduce single occupant vehicle commute mode share from 70% to 50% over a twenty year period.

As part of the adopted Downtown Master Plan a Street Classification Map was adopted that classifies streets according to priority users as shown in Figure 7-13. Specific streets classifications that will give priority to pedestrians and bicyclists include:

Main Street/Pedestrian Street — primary street function is to provide access to retail businesses, short term storage for vehicles and highest quality pedestrian environment

Bike Street / Complete Street — serve as key bicycle corridors and high quality pedestrian thoroughfares, while maintaining slow-speed auto circulation function

Transit Spine — provision of fast and reliable transit movement is a key street function, balanced with a high quality pedestrian environment allowing safe and comfortable access to transit stops

Pedestrian Zones — street level pedestrian enhancements are provided to create a sense of safety and security for all people at all times of day combined with calming traffic to create inviting environment for pedestrians and bicyclists

The Downtown Master Planning also identified short and long term action plans for the development of bicycle and pedestrian facilities consistent with the vision established in the Mobility element of the Master Plan. Table 7-3 identifies those improvements recommended as part of the Action Plan.
<table>
<thead>
<tr>
<th>Bicycle Action Plan (Figure 7-14)</th>
<th>Pedestrian Action Plan (Figure 7-15)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short Term Projects</strong></td>
<td><strong>(Within First Five Years)</strong></td>
</tr>
<tr>
<td>Designate bike routes with sharrow pavement markings along strategic low-volume streets:</td>
<td>Improve the pedestrian environment along N/S Broadway between Civic Center Drive and 6th Street SW/SE using traffic control features and pedestrian facility design</td>
</tr>
<tr>
<td>· Center Street E/W east of 6th Avenue NW and across the Zumbro River;</td>
<td>· Install more clearly defined crosswalks at all intersections</td>
</tr>
<tr>
<td>· George Gibbs Drive SW connecting to recommended bike lane on 6th Avenue SW and bike sharrow route on 7th Street SW;</td>
<td>· Add traffic signal at 3rd Street SW/SE with pedestrian pause, bulb-outs and clearly defined crosswalks and signage</td>
</tr>
<tr>
<td>· 7th Street SW between recommended bike lanes on Soldiers Field Drive and 6th Avenue SW;</td>
<td>· Install leading pedestrian intervals (LPI) for north-south crossing signals at Broadway and 2nd Street S, 2nd Street N, Center Street and 4th Street S</td>
</tr>
<tr>
<td>· 1st Street SW from TH 52 connecting to the bike lane on 6th Avenue SW;</td>
<td>· Right turn on red restrictions for northbound and southbound traffic where Broadway intersects with Center Street, 2nd Street S, and 4th Street S</td>
</tr>
<tr>
<td>· 2nd Street NW from 10th Avenue NW connecting to the bike lane on 6th Avenue NW;</td>
<td><strong>Reinforce 1st Avenue NW/SW as a Main Street pedestrian-oriented zone</strong></td>
</tr>
<tr>
<td>· 1st Avenue NW from Civic Center Drive connecting to the recommended sharrowed bike route along Center Street;</td>
<td>· Bulb-outs at 2nd Street NW, Center Street, 4th Street SW and 6th Street SW</td>
</tr>
<tr>
<td>· 4th Avenue SE between 6th Street SE and the recommended bike lane on 4th Street SE;</td>
<td>· Install clearly defined crosswalks and signage at all intersections</td>
</tr>
<tr>
<td>· 6th Street SE connecting into the future bike lane extension over the Zumbro River.</td>
<td>· Improve pedestrian realm by adding high quality pedestrian amenities, including street trees, public seating, and landscaped buffers</td>
</tr>
<tr>
<td><em>Provide designated space for bicycles by striping bike lanes</em></td>
<td>· Offer angle-in on-street parking to provide business access and reduce traffic speeds</td>
</tr>
<tr>
<td>· 2nd Avenue SW between 2nd Street SW and 7th Street SW;</td>
<td>· Eliminate driveways and curb-cuts as feasible</td>
</tr>
<tr>
<td>· Soldiers Field Drive to the bike path connection</td>
<td>· over time</td>
</tr>
<tr>
<td>· 4th Street SW/SE through downtown (perhaps extending as far west as 10th Avenue SW and as far east as 19th</td>
<td><strong>Improve pedestrian visibility and comfort on 2nd Street SW/SE between 1st Avenue SW and</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Avenue SE);
- 6th Avenue NW/SW from 8th Street NW to 11th Street SW.

**Encourage bicycle travel by providing destination amenities**

- Covered bicycle parking in the Center Street Ramp
- Expand and cover the existing bike parking in front of the Rochester Public Library
- Install covered bike parking at the Rochester Government Center

**Develop supportive programs and policies that promote bicycle travel**

- Coordinate an annual Bike to Work event in order to promote bicycling as a commute option and increase awareness through “Share the Road” campaigns;
- Offer a monthly Bicycle Commuter Fringe Benefit program for City employees that commute to work by bicycle; use a model program with expansion to other employers encouraged by a Transportation Management Association;
- Establish a city ordinance that requires minimum bicycle parking standards for residential, commercial, and mixed use developments;
- A City bicycle parking ordinance should also be explored. This ordinance would provide the necessary building standards to provide basic parking needs for downtown area cyclists.

**Civic Center Drive SE by expanding pedestrian facilities**

- Pedestrian bulb-outs at S Broadway and Civic Center Drive
- Reduce the right turn radius at the southwest corner of 2nd Street SE and Civic Center Drive in conjunction with the construction of bulb-outs to reduce north-south crossing distance
- Establish a right turn on red restriction at 2nd Street SE and Civic Center Drive
- Eliminate the entranceway to the Mayo Civic Center on Civic Center Drive
- Install clearly defined crosswalks and signage at all intersections
- Expand sidewalk as travel lane widths are reduced
### Longer Term Projects (Beyond Five Years)

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Increase bicycle safety at the 4th Street SE / 4th Avenue SE intersection**      | - Construct a bicycle and pedestrian signal at the 4th Avenue SE/4th Street SE intersection;  
  - Provide an exclusive two-stage bicycle left turn facility on the north sidewalk  
    for east- to southbound bicycle left turn movement at the 4th Avenue SE/4th Street SE intersection. |
| **Increase bicycle safety at critical intersections by implementing innovative   | - Install a northbound and southbound bike box supplemented by “No right turn on red” turn movement control signs on 4th Street at S Broadway and  
  treatments**                                                                           |  
  - Redesign the 3rd Street SE and S Broadway intersection with a colored bike lane  
  - Install a bicycle and pedestrian median refuge at the intersection of 6th Street SE and 3rd Avenue SE disallowing through traffic for automobiles;  
  - Install a bicycle and pedestrian only signal phase for two-way cycle track traffic at 3rd Street and Broadway;  
  - Construct a traffic circles at the intersections of 7th Street SW / 6th Avenue SW, 3rd Street NW / 6th Avenue NW, and 7th Street SW / 4th Avenue SW.  
  - Provide designated space for bicycles by striping bike lanes  
  - Construct a two-way cycle track on 3rd Street SE between Zumbro River and Broadway;  
  - Stripe bike lanes across a future bridge crossing / bike lane connection on 6th Street SE between Broadway. |
| **Redesign 3rd Street SW as a shared street between 3rd Avenue SW and the Zumbro    | - Create a high quality pedestrian environment that limits vehicular traffic and provides pedestrian connections to retail along the 1st Avenue SW “Main Street” corridor.  
  River**                                                                             |
| **Extend 6th Street SE pedestrian facilities across the Zumbro River between S     | - Provide high-quality pedestrian and bicycle facilities along a new 6th Street SE bridge between S Broadway and 3rd Avenue SE.  
  Broadway and 3rd Avenue SE**                                                         |  
  - P18 As a future mitigation for neighborhood cut through traffic, consider automobile diversion at 3rd Avenue SE using a mountable median in order to restrict eastbound and westbound through vehicle movement (except pedestrian and bicycle traffic).  
  - Guide skyway/subway network development sensibly in order to improve pedestrian connections, while maintaining a vibrant street-level pedestrian environment  
  - Disallow additional skyway crossings on 1st Avenue SW or 3rd Street SW/SE (beyond those approved as of 2010).  
  - Focus new skyway connections inside the current CBD “loop” and make network gap closure the central criteria for development.  
  - Consider new skyway connections only for uses that generate a high level of pedestrian activity such as hotels, large residential buildings, parking garages, civic and government uses and large office towers.  
  - Prohibit skyway connections where parallel crossings are available within two blocks and easily accessed through the current. |
and 3rd Avenue SE. **Encourage bicycle travel by providing destination amenities**
- Construct long-term covered bike parking in the vicinity of the Gonda Building, Peace Plaza, University Plaza and on 1st Avenue SW south of 2nd Street;
- Develop a partnership between the Mayo Clinic, UM Rochester and other downtown employers and businesses to create a “Bike Hub”.

**Additional considerations**
- In addition to the recommendations provided in the Rochester Downtown Master Plan, the City of Rochester should consider developing a uniform and branded bicycle wayfinding signage system.

<table>
<thead>
<tr>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Ensure that all future skyways adhere to a minimum clearance height of 18 feet to allow for future electric streetcar operations (if determined feasible)</td>
</tr>
<tr>
<td>- Consider the development of a 3rd Street SW pedestrian corridor design program that would include a unified and continuous awning design, heated sidewalks, wayfinding, and amenity program in place of an additional east-west skyway across 1st Avenue SW or Broadway south of 2nd St SW</td>
</tr>
</tbody>
</table>
Figure 7-14 Downtown Master Plan-Bicycle Action Plan

- Median treatment allows through bike movement, but autos required to turn right
- Bike box and/or no right-turn on red
- Possible bike hub / bike parking
- Bike/ped signal and left turn facility
- New traffic signal with pedestrian phase and bike box

Figure 7-15 Downtown Master Plan-Pedestrian Action Plan

- Intersection treatment
  - Traffic circle
  - Bike Parking
- Bike lane
- Future road connection with bike lanes
- Bicycle sharrow
- Cycle track
- Bike paths

Legend:
- Green: Leading Pedestrian Interval
- Orange: Pedestrian median refuge
- Red: Right turn on red restriction
- Blue: Sidewalk expansion
- Purple: Pedestrian Zone
- Black: Improvement project
Urban Area Walkway Planning

Walkway needs are primarily a legacy of commercial, industrial and residential area development that occurred at a time when development regulations did not require sidewalk installation as part of the basic package of site improvement requirements, and major roadway corridors were not developed with pedestrian facilities when properties did not directly front on a highway. As a result, there are a number of areas where sidewalk facilities are missing on a development-wide basis or along major non-local streets. Figure 7-16 illustrates streets with and without sidewalk in Rochester urban area. The City of Rochester adopted a policy in 1990 that all new development is required to install sidewalk facilities at the time of development. This has helped to minimize the further creation of areas where sidewalk is not available for future users.

Figure 7-17 is intended to serve as a starting point to identify those areas where the City of Rochester will need to work with landowners or state and county road authorities to confirm whether a need exists for sidewalks in these areas, whether a viable funding plan to install sidewalks can be identified, and whether a sidewalk facility is in fact constructible at a reasonable cost in the locations identified. Short missing segments of a block or two in length in residential areas or on non-residential local streets are not mapped, under the working assumption that vehicular volumes are generally low enough in these areas that pedestrians and cars can safely share the street. Areas where future paths or trails are identified on the Bikeway Network Map are also not mapped under the assumption that a planned path or trail will adequately serve pedestrians in addition to bicycle traffic.

In addition to addressing gaps in the sidewalk network, Rochester applied for and was designated as a Bronze Level Walk Friendly Community (WFC) for 2010-2014. The WFC is a national recognition program sponsored by FedEx and the U.S Federal Highway Administration and managed by the Pedestrian and Bicycle Information Center (PBIC). One element of the WFC designation process is to critique efforts in any community applying for designation and provide suggestions on future actions including not just infrastructure but in the areas such as education, encouragement and enforcement in order to improve the environment for pedestrians.

Table 7-4 summarizes the recommendations from the PBIC report on the city, which can serve as a guide for the future actions PBIC recommended that Rochester should develop those pedestrian facilities before the community designation is upgraded to next level.
Figure 7-16 Existing and Missing Sidewalk in Rochester
Figure 7-17 Future Urban Walkway Planning Priority Areas
<table>
<thead>
<tr>
<th>TOPIC</th>
<th>Comments /Suggested Actions</th>
</tr>
</thead>
</table>
| Planning                    | • Develop an action plan to bring focus to improvements in some areas beyond the downtown core where pedestrian safety issues may be of particular concern; this might be future development corridors or areas where increases in pedestrian activity are anticipated.  
• Placing the burden of installing new sidewalk in legacy areas on the homeowner seems likely to lead to a deficient sidewalk network. The city should examine systems for sharing this cost in order to ensure that sidewalks form a connected network. |
| Education and Encouragement | • Expand the use of wayfinding along the trail network  
• Implement Safe Routes to School strategies  
• Consider holding more open street events in the community.  
• Continue to support the Walk with the Mayor program to encourage active transportation and demonstrate the city’s commitment to walkability |
| Engineering                 | • Would recommend setting a minimum width of 5' for sidewalks, and much wider in commercial areas.  
• Consider whether it would be worthwhile to reduce the progression speed of traffic in your downtown, so that the crossings there are occurring are at lower vehicle speeds.  
• Audible pedestrian signals may be needed in some locations.  
• Continue using Rochester Traffic Calming Handbook to consider new projects. |
| Enforcement                 | • Have a traffic safety unit in the local Police, to spearhead education and enforcement efforts aimed at increasing motorist compliance with yielding and other laws related to pedestrians.  
• Consider incorporating progressive ticketing campaigns when you conduct pedestrian decoy operations. Consider such operations not necessarily where pedestrian volumes are highest but where motorist yielding is lowest.  
• Consider photo systems for red light enforcement. |
| Evaluation                  | • Rochester should begin counting pedestrians to help establish an understanding of the baseline walking rate in the city, to help "make the case" for funding pedestrian improvements, and to better understand where new pedestrian facilities will be most helpful.  
• Rochester could consider conducting evaluations of all projects. It might be a good idea to do the same thing whenever you install new crosswalks, upgrade your signals, and make any other improvements for pedestrians. |
| Coordination                | • Rochester should consider hiring or designating a full or part time pedestrian coordinator in order to devote a more significant amount of attention to walkability and pedestrian safety issues |
REGIONAL TRAIL SYSTEMS IN SOUTHEASTERN MINNESOTA

Southeast Minnesota is home to some of the most popular state trials in the state of Minnesota. The Root River Trail southeast of Olmsted County, the Douglas Trail northwest of the City of Rochester, and other facilities form the backbone of a growing network of trails that is being developed to foster recreation opportunities and economic development in the southeast part of the state. The Douglas Trail and the Root River Trail are the oldest elements of the system and provides roughly 19 miles of existing trails and planned to provide another 20 miles of regional trail in Olmsted County. Smaller communities such as Eyota, Dover, Oronoco, Stewartville, Byron, Chatfield and Pine Island are also working to develop their local trail network that would ultimately connect to the regional trail system.

In Olmsted County, there are two active trail development efforts currently underway. The Chester Woods Trail is part of the larger Whitewater Country Loop Trail system that will connect Rochester and other small cities east of Rochester to one another as well as to Whitewater State park and Chester Woods regional park. The Stagecoach Trail is a multi-county trail stretching from the Douglas Trail in Olmsted County west to Rice Lake State Park and Owatonna.

A third trail, the Bluestem Trail, is in the initial startup phase with the City of Stewartville supporting local community members who are attempting to organize a work group to move forward into early planning stages. The vision of the Bluestem Trail is to directly connect Stewartville and Rochester, which ultimately would connect the Stewartville area with the larger regional system.

Other regional trail planning initiatives underway include efforts in the city of Chatfield to develop a trail connection from Chatfield to the Root River Trail at Fountain, with a longer term goal to connect north to the Chester Woods Trail either near Dover or Eyota.

The activity of regional trails and funding comes from Department of Natural Resources. The system of trails is managed by the Minnesota Department of Natural Resources, and most of the funding for trails has to be secured through legislative appropriations or grants. The state trail system is a legislatively authorized network supported with state level funding and the hard work of local community members interested in seeing these highly attractive facilities come to fruition.

ROCOG supports the continued work of trail planning committees and the Minnesota DNR to expand the regional trail system in southeast Minnesota. Members of ROCOG’s Bicycle-Pedestrian Advisory Committee (BPAC) actively participate in the various trail planning committees, while ROCOG staff provide technical support and information resources. A brief synopsis of the active trail planning initiatives is included on the following pages.
Whitewater Country Loop Trail

A master plan has been completed for the Whitewater Country Loop Trail network. This network is projected to be approximately 50 miles in length and is divided into the following segments:

1) Chester Woods Trail: Encompasses segments from Rochester to Chester Woods Park and from the park to Eyota;
2) Eyota to Dover and Dover to St Charles;
3) St. Charles to Elba via Whitewater State Park;
4) Elba to Plainview via Carley State Park;
5) The Great River Ridge Trail including segments from Plainview to Elgin and Elgin to Eyota

Status of Whitewater Country Loop Trail Network

Most of the Great River Ridge Trail segment has been completed. Over 30 bridge structures were repaired and refitted with trail decks between Plainview and Eyota, and paving from Elgin to Olmsted County State Aid Highway 9 has been completed. Since this corridor is a rail to trail conversion project, the necessary corridor to complete the south leg from CSAH 9 to the Chester Woods trail is in place, but funding may await a decision on improvements to an existing rail underpass on TH 14 west of Eyota in order to incorporate some type of grade separated crossing for the trail across Highway 14 to be incorporated into the project.

The Chester Woods Segment 1 has secured state bonding and construction from Olmsted County CSAH 11 to Chester Woods Park will be done in 2014-15. The segment from Chester Woods Park to Eyota is under development with easement acquisition currently in progress. The route of these segments is illustrated in Figure 7-18.

The Chester Woods segment is particularly important to the long term development of the Southeast Minnesota network as it serve as the ultimate bridge between western segments of the greater Southeastern Minnesota Blufflands State Trail System, including the Douglas Trail
and Goodhue-Pioneer Trail, and the eastern segments of the network, including the Root River trail, once facilities north of Fountain to the Whitewater Country Loop are developed.

**Figure 7-18 Segments 1/2 of Whitewater Tri-County Loop Trail / Chester Woods Trail**

**Stagecoach State Trail**

The Stagecoach State Trail is a legislatively authorized state trail which will connect to the Douglas State Trail near Rochester to Rice Lake State Park, and eventually the proposed Wildflower State Trail in or near Owatonna. These links will provide an opportunity to connect local community trail systems a large area of southeast Minnesota to the larger Blufflands Trail Network. The Dodge County Trail Association has received $550,000 for planning and acquiring right of way for the Stagecoach Trail.

The Minnesota Department of Natural Resources completed the Stagecoach State Trail Master Plan in March 2012. The plan includes seven planning segments, with the next major planning activity to include determination of final alignments along each segment. Stagecoach Trail Planning Segment 1 covers the potential trail alignment options in Olmsted County west of the Douglas Trail to the Olmsted County line, as shown in Figure 7-19.
Figure 7-19 Planning Segment 1 of Stagecoach State Trail / Olmsted County
Bluestem Trail

Stewartville has initiated efforts to develop a trail to be known as the Bluestem Trail connecting Stewartville’s trail network with the Rochester trail network, with a longer term goal of developing a trail eastward to Chatfield that would link to a proposed Olmsted County Regional Park north of Highway 30. The Stewartville Trail Group is in the very early stages of planning and it may take many years before a final trail can be seen on the ground. Two study areas which are the focus of route alignment options are highlighted in Figure 7-20.

Figure 7-20 Bluestem Trail Study Area
Financial Assessment

Funding of Bikeways and Walkways

Development of non-motorized facilities, particularly paths, trails and structures, relies on a mix of federal, state, local and private funding. Paths and sidewalks that are part of the required infrastructure of new development are paid for largely with private dollars. In some cases, such as the development of paths along major road corridors, the public and private sector share in the cost of development. Roadway reconstruction projects can also supply funding for facilities, particularly on-road facilities such as paved shoulders in rural/suburban areas or paths when the need is supported by inclusion in the bikeway or walkway plan.

The most significant funding challenge facing communities is securing the necessary resources to acquire the right of way and pay for the construction of major trails, paths and trail bridge projects. There are a limited number of federal and state programs available that will provide funding for these types of improvements. These programs are competitive grant programs where an application must be filed and projects compete against other applications for funding. Criteria established by the grant agency are used to select or award grants for projects. The main grant programs available include:

Federal Transportation Alternatives Program

The Transportation Alternatives Program (TAP) authorized in the Moving Ahead for Progress in the 21st Century Act (MAP-21) replaced the federal Transportation Enhancement (TE), Recreational Trails Program (RTP) and Safe Routes to School (SRTS) programs that existed in the pre-MAP-21 era. The TAP program can be utilized to fund most of the same activities funded previously; funding for the bicycle and pedestrian infrastructure and streetscapes are still eligible activities, but funding for bicycle or pedestrian safety education is no longer eligible. The TAP program is not funded at the same level as the combined funding that was available previously through TE, SRTS and RTP; approximate funding for improvements is reduced by about 30% under MAP-21.

Other Federal Grant Programs with Eligible Bicycle and Pedestrian elements

This type of grant opportunities could be used to provide targeted support for aspects of bikeway or pedestrian projects. Examples include:

- **HIGHWAY SAFETY PROGRAMS** - This funding is 100% federal and includes components to "improve pedestrian performance and bicycle safety". Under MAP-21 funding for HSIP grew by approximately 50%.
- **FEDERAL TRANSIT** - Transit funds may be used for bicycle and pedestrian access to transit facilities, to provide shelters and parking facilities for bicycles in or around transit facilities, or to install racks or other equipment for transporting bicycles on transit vehicles.
SECTION 402 FUNDING - State and community highway safety grant programs are eligible for 100% federal funding. These are typically used for education and enforcement initiatives. Section 402 is jointly administered by FHWA and the National Highway Transportation Safety Administration (NHTSA).

Minnesota Department of Natural Resources Grant Programs

The Minnesota Department of Natural Resources administers the following programs that support the development of bike/pedestrian trails:

- FEDERAL RECREATIONAL TRAIL PROGRAM—provides funds for motorized and non-motorized trail projects; maintenance/restoration of existing recreational trails and the development/rehabilitation of recreational trail linkages, including trail sides and trail head facilities.
- LOCAL TRAIL CONNECTION PROGRAM—this program is intended for to provide limited funding to build relatively short trail connections between developed areas close by destinations. The maximum grant limit of $50,000 and it requires a 50% local match.
- REGIONAL TRAIL GRANTS PROGRAM: A state-funded program to promote the development of regionally significant trails provides up to $250,000 towards the development of major trails with a 50% cash match sponsor.

The State Legislature Funding Opportunities

- ENVIRONMENT AND NATURAL RESOURCES TRUST FUND: A permanent fund established in the Minnesota Constitution. The Trust Fund receives 40 percent of net Minnesota State Lottery proceeds. The Trust Fund provides funding for a range of environmental programs and projects. The LCCMR recommends projects to the full legislature, which in turn must pass a bill allocating the funds. Once passed, the bill may be signed or vetoed by the governor.

- LEGISLATIVE BONDING: Minnesota Statute 16A.86 prescribes the process by which local governments and political subdivisions may request state capital appropriations. The Governor and Legislature consider these funding requests typically during legislative sessions in even numbered years.

Federal Highway Administration Programs

FHWA and FTA planning and construction funds may be used for bicycle and pedestrian related activities in certain situations. These include:

1. Metropolitan Planning (23 USC 104(f)) - Bicycle and pedestrian planning may be conducted as part of the metropolitan planning process.
2. **Statewide Planning (23 USC 505)** - Bicycle and pedestrian planning may be undertaken as part of the statewide planning process.

3. **National Highway System (NHS) (23 USC 103)** - Construction of pedestrian walkways and bicycle transportation facilities on land adjacent to any NHS route.

4. **Surface Transportation Program (STP) (23 USC 133)** - Construction of pedestrian walkways and bicycle transportation facilities; non-construction projects for safe bicycle use, and the modification of public sidewalks to comply with the Americans with Disabilities Act.

5. **Interstate Maintenance (IM) (23 USC 119)** - No specific eligibility, but funds may be used to resurface, restore, rehabilitate, and reconstruct pedestrian and bicycle facilities over, under, or along Interstate routes.

6. **Highway Bridge Replacement and Rehabilitation (HBRRP) (23 USC 144)** - Pedestrian walkways and bicycle transportation facilities on highway bridges. If a highway bridge deck is replaced or rehabilitated, and bicycles are permitted at each end, then the bridge project must include safe bicycle accommodations (within reasonable cost). (23 USC 217(e)).

**Local Funding**

Locally, the public share of sidewalk or trail projects is generally provided from the property tax. Local funding commitments include:

1. The City of Rochester allocates dollars to various standing line items in its Capital Improvements Program to 1) handle normal maintenance of the trail and path system, 2) to fund the public share of the sidewalk improvement program, and 3) to provide funds that can be used for cost sharing on planned trail projects in the city. Trail and path maintenance is being funded at $35,000 per year, sidewalk improvements at $270,000 per year, ADA ramp construction at $100,000 per year and minor trail system improvements at $25,000 per year.

**Funds to match State and Federal Funds**: The city has also uses various funding sources including its Flood Control account, local government aid, sales tax revenue and reserves to provide matching funds for major trail, path and non-motorized bridge facilities. This funding may range from $300,000 to $500,000 per year depending on success in securing state and federal funds.

**Pedestrian Facilities Agreements and Real Estate Dedication**: The City of Rochester requires execution of a Pedestrian Facilities Agreement outlining the developer’s responsibility for bikeway and walkway facilities. Where a path is indicated on the ROCOG Bikeway Plan, a 10’ dedication for trail development is normally required along with participation in the construction of the trail. On all streets where paths are not constructed, sidewalks are required at full cost to the development.
2. **Olmsted County** does not program any specified amount of funding on a regular basis to support non-motorized facility development. General policies Olmsted County adheres to in the development of non-motorized facilities include:

   - The County generally does not participate in development of free-standing bikeway projects.
   - The County under state statute must assist in development of pedestrian facilities along State Aid Highways connecting schools with nearby residential areas. County participation limited to 1/3 of the cost with the school district and the jurisdiction sharing the remainder of cost.
   - The County will incorporate planned facilities into roadway reconstruction projects where the project serves a residential area connecting to school facilities or where facilities are included on the Long Range Bikeway Plan.
   - The County will incorporate a wider sidewalk/path facility on bridges to accommodate continuation of a trail facility across a bridge.
   - The County has recognized the need to participate further in trail and path development in its “20 Year Plan” of unfunded projects at a level of $280,000 per year; however, due to fiscal constraints, this has not been incorporated as policy into the County Capital Improvement Program.

3. The **Minnesota Department of Transportation** policy on participation in non-motorized facilities is:

   **Projects Planned By Mn/DOT (Highway or Bikeway Projects)**
   When developing a trunk highway improvement project, Mn/DOT will determine what is necessary to safely accommodate bicycles in that segment of roadway. Those improvements needed to accommodate bicycle use will be planned and designed into Mn/DOT highway improvement projects and funded by Mn/DOT. In addition, Mn/DOT may initiate stand-alone bikeway construction projects within trunk highway right-of-way. Such bikeway construction would be proposed on the basis of need.

   **Projects Planned By Other Agencies, Governments or Interest Groups**
   Because of the highly localized nature of most biking and walking, Mn/DOT encourages local units of government to take a major role in developing the infrastructure that will encourage the safe use of bicycles and walking for transportation as well recreation purposes. Mn/DOT will support those local efforts by striving to make trunk highway right-of-way available for bikeways and multi-use trails when necessary upon request by local agencies. Mn/DOT will negotiate such accommodation only with local governments or other public agencies, not with private groups or organizations. This is to insure that project development, funding, and maintenance issues can be coordinated by an agency familiar with these items. Private groups or organizations are welcome as part of the planning process but other governments or agencies shall be responsible for facility planning, coordination, and maintenance.

   Mn/DOT’s contribution to local bikeway projects will normally be limited to the value of the trunk highway right-of-way. If construction of a bikeway or multi-use trail facility requires...
acquisition of additional right-of-way outside that of the existing trunk highway, such additional right-of-way shall be a local responsibility.

**Summary of Reasonably Available Funding**

The lack of dedicated funding streams or regular allocations from federal or state programs makes long-term fiscal planning for non-motorized facilities difficult. As a general rule, programming needs to be “opportunity-based”, with local resources available to prepare grant applications in a timely manner and conduct planning and public involvement work. Since most grant programs provide a multi-year window of time in which to expend funds, most communities have the opportunity if they are successful in obtaining a federal or state grant to build local matching dollars into their capital budget over the course of 3 to 5 years and thus, except in the case of the largest projects, can usually accommodate the local funding share without significant budgetary issues.

Table 7-5 provides rough estimate of the level of federal and state funding that might reasonably assumed to be available for trail development over the 25 year financial horizon of the plan.

**TABLE 7-5: REASONABLY AVAILABLE GRANT FUNDING**

<table>
<thead>
<tr>
<th>Grant Program</th>
<th>Frequency of Grant Award Assumed</th>
<th>Size of Grant Award Assumed</th>
<th>Total 25 Year Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Alternatives Program (TAP)</td>
<td>One award every two funding cycles (1/4 yr)</td>
<td>$400,000</td>
<td>$2,500,000</td>
</tr>
<tr>
<td>DNR Local Trail Connection</td>
<td>One award per decade</td>
<td>$50,000</td>
<td>$125,000</td>
</tr>
<tr>
<td>DNR Regional Trail Grant Award</td>
<td>One award per decade</td>
<td>$250,000</td>
<td>$625,000</td>
</tr>
<tr>
<td>Environmental Trust Fund</td>
<td>One award per decade</td>
<td>$200,000</td>
<td>$500,000</td>
</tr>
<tr>
<td>Legislative Bonding</td>
<td>100% of State Trail Projects over lifetime of plan (20-25 years)</td>
<td>Specific to project</td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td></td>
<td><strong>$3,750,000</strong></td>
</tr>
</tbody>
</table>
**Estimated Plan Implementation Costs**

- Table 7-6 beginning on the next page summarizes estimated costs associated with the Urban and Regional Area Bikeway Plans illustrated in Figures 7-11 and Figure 7-12 found on pages 7-38 and 7-40. The table includes the following information:
  - The first section, “Existing Facilities” estimates maintenance and preservation costs over the 25 year horizon of the plan related to the existing bikeway network.
  - The second section, “New Facilities” estimates both development costs and maintenance/preservation costs for new facilities identified on the Bikeway Plans.
  - The table identifies assumed unit costs, average annual cost and the total cost over the 25 year horizon of the plan for each item included in the table.
  - Table 7-4 summarizes jurisdictional costs of the plan followed by a summary of findings.
## Chapter 7  
Non-Motorized Transportation Planning

### TABLE 7-6 NON-MOTORIZED PLAN IMPLEMENTATION COSTS

<table>
<thead>
<tr>
<th>Facility Infrastructure Type</th>
<th>Amount of Facility</th>
<th>Unit Cost</th>
<th>Average Annual Cost</th>
<th>Total Cost over 25 Years</th>
<th>Primary Source of Funding</th>
<th>Funding Source / Current Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Facilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintain Existing Trails &amp; Paths Including existing Park Trails and Paths</td>
<td>111 mi</td>
<td>$1,000</td>
<td>$111,000</td>
<td>$2,775,000</td>
<td>City of Rochester / Property Tax</td>
<td>City currently budgets ~ $25,000 per year for maintenance</td>
</tr>
<tr>
<td>Maintain Existing Regional Trails &amp; Paths.</td>
<td>17.33 mi</td>
<td>$1,000</td>
<td>$17,330</td>
<td>$433,250</td>
<td>State of Minnesota appropriations thru DNR</td>
<td>Preservation funds have required special appropriation</td>
</tr>
<tr>
<td>Restriping existing bike lanes every 5 years</td>
<td>22.6 mi</td>
<td>$10,500</td>
<td>$237,300</td>
<td>$1,186,500</td>
<td>City of Rochester Property Tax / Street Maintenance budget</td>
<td>Bike Lane maintenance part funded out of street program</td>
</tr>
<tr>
<td>Maintain Paved Shoulders Facilities / Urban &amp; rural area / County Roads</td>
<td>61.24 mi</td>
<td>$350</td>
<td>$21,434</td>
<td>$535,850</td>
<td>City and Olmsted County Road Maintenance budget</td>
<td>Shoulder repair typically part of normal road maintenance, not a separate activity</td>
</tr>
<tr>
<td>Maintain Paved Shoulder Facilities / Rural / State Highways</td>
<td>34.51 mi</td>
<td>$350</td>
<td>$12,079</td>
<td>$301,963</td>
<td>MNDOT Highway Maintenance budget</td>
<td>Shoulder repair work must compete with other highway maintenance needs for funding</td>
</tr>
<tr>
<td><strong>TOTAL FOR EXISTING FACILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$5,232,563</td>
<td></td>
</tr>
</tbody>
</table>

<p>| <strong>New Facilities</strong> | | | | | |
| Construct New Urban Multi Use Trail | 7.65 mi | $480,000 | $146,880 | $3,672,000 | Typically 60-80% sought thru grants with city/county providing 20-40% local match | Grant programs are competitive on regional or statewide basis |
| Maintain New Urban Multi Use Trail | $10,000 | $15,300 | $382,500 | City of Rochester / Property Tax / Capital Improvement Program | Requires increase in funding directed to trail maintenance over current $25,000 annual level |</p>
<table>
<thead>
<tr>
<th>Facility Infrastructure Type</th>
<th>Amount of Facility</th>
<th>Unit Cost</th>
<th>Average Annual Cost</th>
<th>Total Cost over 25 Years</th>
<th>Primary Source of Funding</th>
<th>Funding Source / Current Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct New Urban Paths</td>
<td>47.30 mi</td>
<td>$160,000</td>
<td>$302,720</td>
<td>$7,568,000</td>
<td>Shared cost between City of Rochester and developer</td>
<td>A 20% City share would require $160,000 annually; current budget at $30,000 for trail development</td>
</tr>
<tr>
<td>Maintain New Urban Paths (assume gradual phase-in over 25 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>City of Rochester / Property Tax / Capital Improvement Program</td>
<td>Requires increase in funding directed to trail maintenance over current $25,000 annual level</td>
</tr>
<tr>
<td>Construct New Urban and Rural Shoulder Bikeway in the City Limit</td>
<td>107.70 mi</td>
<td>$7,500</td>
<td>$32,310</td>
<td>$807,750</td>
<td>Typically 60-80% sought thru grants with city/county providing 20-40% local match</td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
<tr>
<td>Maintain New Urban and Rural Shoulder Bikeway in the City Limit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>City of Rochester / Property Tax / Capital Improvement Program</td>
<td>Requires increase in funding directed to trail maintenance over current $25,000 annual level</td>
</tr>
<tr>
<td>Construct New Regional Upgraded Shoulder Bikeway</td>
<td>176.23 mi</td>
<td>$7,500</td>
<td>$52,869</td>
<td>$1,321,725</td>
<td>Typically 60-80% sought thru grants with city/county providing 20-40% local match</td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
<tr>
<td>Maintain New Regional Upgraded Shoulder Bikeway in ROCOG area(assume gradual phase-in over 25 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>City of Rochester / Property Tax / Capital Improvement Program</td>
<td>Requires increase in funding directed to trail maintenance over current $25,000 annual level</td>
</tr>
<tr>
<td>Construct New Regional Trail</td>
<td>19.57 mi</td>
<td>$480,000</td>
<td>$375,744</td>
<td>$9,393,600</td>
<td>Typically 60-80% sought thru grants with city/county providing 20-40% local match</td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
<tr>
<td>Maintain New Regional Trail in ROCOG area (every five years)</td>
<td>$10,000</td>
<td>$39,140</td>
<td>$978,500</td>
<td></td>
<td>MN DNR</td>
<td>DNR has no line item funding for trail preservation</td>
</tr>
<tr>
<td>Construct New Paved Shoulders on County Roads</td>
<td>12.53 mi</td>
<td>$25,000</td>
<td>$12,530</td>
<td>$313,250</td>
<td>Olmsted County Capital Improvement Program</td>
<td>Paved shoulders standard on all new CSAH construction</td>
</tr>
<tr>
<td>Facility Infrastructure Type</td>
<td>Amount of Facility</td>
<td>Unit Cost</td>
<td>Average Annual Cost</td>
<td>Total Cost over 25 Years</td>
<td>Primary Source of Funding</td>
<td>Funding Source / Current Limitations</td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>--------------------</td>
<td>-----------</td>
<td>---------------------</td>
<td>--------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Maintain New Paved Shoulders in ROCOG area</td>
<td></td>
<td>$1000</td>
<td>$12,530</td>
<td>$313,250</td>
<td>Olmsted County Capital Improvement Program</td>
<td></td>
</tr>
<tr>
<td>Development of New Signed Bike Routes</td>
<td>31.3 mi</td>
<td>$25,000</td>
<td>$31,300</td>
<td>$782,500</td>
<td>Typically 60-80% sought thru grants with city/county providing 20-40% local match</td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
<tr>
<td>Maintain of New Signed Bike Routes (assume gradual phase-in over 25 years)</td>
<td></td>
<td>$1,000</td>
<td>$31,300</td>
<td>$782,500</td>
<td>City of Rochester / Property Tax / Capital Improvement Program</td>
<td>Requires increase in funding directed to trail maintenance over current $25,000 annual level</td>
</tr>
<tr>
<td>Develop Sharrow Routes</td>
<td>12.86 mi</td>
<td>$25,000</td>
<td>$12,860</td>
<td>$321,500</td>
<td>Typically 60-80% sought thru grants with city/county providing 20-40% local match</td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
<tr>
<td>Maintain Sharrow Routes (assume gradual phase-in over 25 years)</td>
<td></td>
<td>$1,000</td>
<td>$12,860</td>
<td>$321,500</td>
<td>City of Rochester / Property Tax / Capital Improvement Program</td>
<td>Requires increase in funding directed to trail maintenance over current $25,000 annual level</td>
</tr>
<tr>
<td>Construct New Bike Lanes and Advisory Bike Lane</td>
<td>16.27 mi</td>
<td>$130,000</td>
<td>$84,604</td>
<td>$2,115,100</td>
<td>Typically 60-80% sought thru grants with city/county providing 20-40% local match</td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
<tr>
<td>Maintain Bike lanes and Advisory Bike Lane (assume gradual phase-in over 25 years)</td>
<td></td>
<td>$10,000</td>
<td>$32,540</td>
<td>$813,500</td>
<td>City of Rochester / Property Tax / Capital Improvement Program</td>
<td>Requires increase in funding directed to trail maintenance over current $25,000 annual level</td>
</tr>
<tr>
<td>Construct Bike Boulevard</td>
<td>6.61 mi</td>
<td>$</td>
<td></td>
<td>$</td>
<td>Typically 60-80% sought thru grants with city/county providing 20-40% local match</td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
<tr>
<td>Maintain Bike Boulevard (assume gradual phase-in over 25 years)</td>
<td></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ROCOG 2045 Long Range Transportation Plan
## Construct Cycle Track

<table>
<thead>
<tr>
<th>Amount of Facility</th>
<th>Unit Cost</th>
<th>Average Annual Cost</th>
<th>Total Cost over 25 Years</th>
<th>Source of Funding</th>
<th>Funding Requires Legislative Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>.80 mi</td>
<td>$160,000</td>
<td>$128,000</td>
<td></td>
<td></td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
</tbody>
</table>

## Maintain Cycle Track (maintenance every five years)

<table>
<thead>
<tr>
<th></th>
<th>Cost</th>
<th>Match</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$10,000</td>
<td>$40,000</td>
</tr>
</tbody>
</table>

## Develop Road Diet and Neighborhood Bike Routes

<table>
<thead>
<tr>
<th>Amount of Facility</th>
<th>Unit Cost</th>
<th>Average Annual Cost</th>
<th>Total Cost over 25 Years</th>
<th>Source of Funding</th>
<th>Funding Requires Legislative Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.95 mi</td>
<td>$25,000</td>
<td>$9,950</td>
<td>$248,750</td>
<td></td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
</tbody>
</table>

## Maintain Road Diet and Neighborhood Bike Route (assume gradual phase-in over 25 years)

<table>
<thead>
<tr>
<th></th>
<th>Cost</th>
<th>Match</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1,000</td>
<td>$248,750</td>
</tr>
</tbody>
</table>

## TOTAL FOR NEW FACILITIES

<table>
<thead>
<tr>
<th></th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$38,833,425</td>
</tr>
</tbody>
</table>

## Regional Trail Improvements to Connect Rochester

<table>
<thead>
<tr>
<th>Amount of Facility</th>
<th>Unit Cost</th>
<th>Average Annual Cost</th>
<th>Total Cost over 25 Years</th>
<th>Source of Funding</th>
<th>Funding Requires Legislative Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of Chester Woods Trail (Class 1 Regional Trail)</td>
<td>15.7 mi</td>
<td>$480,000</td>
<td>$301,440</td>
<td>$7,536,000</td>
<td>State or Federal Funding</td>
</tr>
<tr>
<td>Implementation of Great River Ridge Trail</td>
<td>8.43 mi</td>
<td>$480,000</td>
<td>$161,856</td>
<td>$4,046,400</td>
<td>State or Federal Funding</td>
</tr>
<tr>
<td>Implementation of Bluestem Regional Trail. Trail alignment has yet to be decided (approximate trail length for cost estimation purposes)</td>
<td>10 mi</td>
<td>$480,000</td>
<td>$192,000</td>
<td>$4,800,000</td>
<td>State or Federal Funding</td>
</tr>
<tr>
<td>Implement Stagecoach Regional Trail from Rochester to Dodge County Line. Trail alignment has yet to be decided (approximate trail length for cost estimation purposes)</td>
<td>25 mi</td>
<td>$480,000</td>
<td>$480,000</td>
<td>$12,000,000</td>
<td>State or Federal Funding</td>
</tr>
</tbody>
</table>

## TOTAL FOR NEW FACILITIES

<table>
<thead>
<tr>
<th></th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$28,382,400</td>
</tr>
</tbody>
</table>
## Crossing Improvements Facilities (Infrastructure Improvements)

<table>
<thead>
<tr>
<th>Crossing Improvements Facilities (Infrastructure Improvements)</th>
<th>Amount of Facility</th>
<th>Unit Cost</th>
<th>Average Annual Cost</th>
<th>Total Cost over 25 Years</th>
<th>Primary Source of Funding</th>
<th>Funding Source / Current Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future Trail Bridges (2 on 60th Ave NE / 1 on 65th St NW)</td>
<td>3 Br</td>
<td>$ 500,000</td>
<td></td>
<td>$ 1,500,000</td>
<td>State or Federal Grant program with local 20-40% match</td>
<td>Grant programs are competitive on regional or statewide basis</td>
</tr>
<tr>
<td>Widen existing Highway Bridges with Bike/Ped Trail (37th St / North Broadway / CSAH 16 / 85th St)</td>
<td>4 Br</td>
<td>$ 100</td>
<td></td>
<td>$ 960,000</td>
<td>State or Federal Grant program</td>
<td>Absent grant to construct separate facility most likely to occur with normal bridge reconstruction</td>
</tr>
<tr>
<td>Major Intersections / Island &amp; Median Modifications (South Broadway @ 12th St @ 28th St / Memorial Parkway @ 12th St)</td>
<td>3 Int.</td>
<td>$ 80,000</td>
<td></td>
<td>$ 240,000</td>
<td>Joint City / State Capital Improvement Program or Highway Safety Program Grant</td>
<td>Highway Safety Program is competitive grant program; capital funding likely only as part of normal preservation project.</td>
</tr>
<tr>
<td>Median Refuges</td>
<td>2 Int.</td>
<td>$ 13,500</td>
<td></td>
<td>$ 27,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two Stage Left Turns</td>
<td>2 Int.</td>
<td>$ 1500</td>
<td></td>
<td>$ 3000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared Right Turns</td>
<td>12 Int.</td>
<td>$ 200</td>
<td></td>
<td>$ 2,400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intersection Markings</td>
<td>25 Int.</td>
<td>$1500</td>
<td></td>
<td>$37,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycle Boxes</td>
<td>2 Int.</td>
<td>$ 2000</td>
<td></td>
<td>$ 4000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ramp Markings</td>
<td>7 Int.</td>
<td>$ 1500</td>
<td></td>
<td>10,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advisory Beacons</td>
<td>8 Sites</td>
<td>$ 10,000</td>
<td></td>
<td>$ 80,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAWAK Signals</td>
<td>3 Sites</td>
<td>$ 150,000</td>
<td></td>
<td>$ 450,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade Separations</td>
<td>3 Sites</td>
<td>$ 500,000</td>
<td></td>
<td>$ 1,500,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL FOR NEW FACILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$ 4,814,400</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Summary of System Development Costs**

- Table 7-7 summarizes the impact of costs by jurisdiction or agency. A total of $-- million in costs for development and future preservation of the regional and Rochester urban area bikeway network has been identified.

- The most significant share of funding needed for existing facilities is realized by the City of Rochester for maintenance and preservation of existing trails and paths. Current budgeting levels would provide $------ of the $-- million that is estimated to be needed over the 25 year horizon of the plan for preservation of existing trails, and $------ of the $-- million needed for development of future paths and trails.

- The most significant share of funding for new facilities is realized by Olmsted County on the public side and the expected level of contribution from developer’s for future paths on the private side. The Olmsted County investment would be targeted towards shoulder upgrading and construction, and would likely occur during normal roadway reconstruction projects. To accomplish this level of paved shoulder upgrading/construction would reflect an approximate 12% increase in the road reconstruction needs for the county.

**TABLE 7-7 SUMMARY OF NON-MOTORIZED PLAN IMPLEMENTATION COSTS**

<table>
<thead>
<tr>
<th></th>
<th>Existing Facilities</th>
<th>New Facilities</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Rochester</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olmsted County</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNDOT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legislative Appropriations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal or State Grants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developer's Contribution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Summary of non-motorized plan implementation costs will be added in the final draft.
Investment Guidelines

Effective development of the Non-motorized Bikeway and Walkway Plans will require taking advantage of opportunities to expand the system of bikeways and walkways as they become available utilizing a variety of approaches. Most facility development opportunities are likely to occur in conjunction with either road development projects or private sector development projects, with only a limited number of major trail projects likely to be constructed as stand-alone projects. The three basic principles to advance non-motorized system development are:

1. **Construction as an incidental improvement to Highway Projects**

   *Every effort should be made to incorporate bikeway and walkway accommodations into larger roadway improvement projects to take advantage of the efficiencies associated with larger projects and to tap into sources of funds that normally are not targeted for non-motorized improvements.*

2. **Construction of stand-alone bikeway or walkway projects**

   *To encourage implementation of plans, State and Federal funds targeted to trails and paths should be pursued to fund major system improvements. ROCOG should assist local jurisdictions as needed to prepare grant application proposals.*

3. **Construction as part of public and private development projects**

   *Many road improvements are made by private parties, such as widening the roads immediately adjacent to new development, providing new access, reconstructing existing roadways and intersections, or constructing new roads within a development. When roads are dedicated to the city or county, they become a public right-of-way; therefore, they should be built to the same standard as public roads. They can become a financial burden and a liability if they must be retrofitted later with sidewalks or bikeways at the public’s expense. All jurisdictions should adopt ordinances requiring sidewalks on streets built by private parties, and participation in the development of paths where shown on adopted community plans.*

*Prioritization*

Generally, selecting which projects should be funded requires prioritization. Typical factors that should go into prioritization or selection of projects include:

- Facilities that provide access to trip generators that attract a higher level of trips, such as schools, employment centers, recreational facilities and multi-family housing, generally should be given a higher priority;
Improvements that eliminate barriers to travel, such as adding a path or walkway to a narrow bridge, improving crossing safety at a busy or wide intersection, or addressing the lack of facilities within a subarea such as the downtown should be considered as a priority;

Projects that improve the continuity of travel within a corridor by providing a missing link or eliminating a barrier to travel should be considered when establishing priorities;

Improvements that encourage more non-motorized utilitarian travel such as commuting may be considered to have more value to a community than improvements that are used primarily for recreational cycling and walking.

The cost and ease of improvement should be taken into account given the limited amount of funding available and the generally positive impact on perceptions that successful completion of even small projects can have on future support for additional plan improvements.

Prioritization should not be used too strictly, however, because unforeseen opportunities such as grants or other construction projects may provide an opportunity to complete projects of lower priority with the infusion of a small amount of funding. In addition, completing some lower priority projects may be worthwhile if they are inexpensive and can be funded as a way to demonstrate on-going commitment to improving non-motorized travel opportunities.

Plan Implementation Priorities

The following list of represents the highest priority strategies and projects that have been identified during development of the Long Range Transportation Plan in 2010. This list should periodically be reviewed and adjusted to reflect changing opportunities, changing priorities or funding availability.

Class I / Off-Road Facilities

Continue to insure that right of way or easements for all future facilities shown on the Bikeway Plans are secured at the time of development or when right of way acquisition for a highway improvement project is occurring by disseminating information about the Bikeway Facility plans to members of the development industry as well as all road authority agencies

City of Rochester should develop a funding strategy that will provide for gradual increases in the level of maintenance and preservation funding to support an expanding system of trails and paths throughout the urban area.
ROCOG should provide support to the Chester Woods Trail Committee as they continue to seek outside funding support for the development of the Chester Woods Trail.

The City of Rochester, ROCOG and the Inter-Agency Bicycle Planning Committee should continue to refine plans for the projects currently in the City’s Capital Improvements Program.

**Class II and III / On-Road Facilities**

- BPAC should work with Rochester City Public Works Department to implement the recommendations of the 2012 Rochester Area Bicycle Master Plan as it relates to non-motorized travel. Funding options to implement a network of bicycle lanes/routes in the downtown Rochester to improve bicycle travel from the edges of the Central Business District (CBD) to key downtown locations and across the CBD should be a priority.

- The City of Rochester should continue to apply the guidelines of its adopted Complete Streets policy to all non-local roadway improvement projects, and ROCOG should facilitate its review and applicability to county and state roadway projects in the urban area.

- ROCOG should work with Olmsted County and MNDOT to develop a Corridor Improvement Program identifying priorities for paved shoulder upgrading that reflects the combined needs of bikeway planning, seasonal weight limit upgrading and pavement preservation.

**Bikeway and Walkway Planning Studies and Funding**

- Conduct an urban area planning study to look at options for connecting the west end of the proposed Chester Woods Trail with the City of Rochester Trails system at or in the vicinity of Eastwood Park.

- ROCOG should work with the Stewartville Trail Planning Committee to complete the study options for connecting the City of Stewartville bikeway system with the City of Rochester bikeway system through a network of on or off-road facilities in the Willow Creek area.

- BPAC should facilitate discussions with the City of Oronoco and the City of Pine Island to determine the level of interest in organizing a local trail planning committee to study the options for providing connections to the Douglas Trail from Oronoco and the Elk Run development.

- ROCOG, with the assistance of local jurisdictions, the local school district and law enforcement agencies should complete a Safe Route to School plan for Rochester School District.

- ROCOG should continue to provide assistance to local jurisdictions in the preparation of grants for funding non-motorized facilities.
ENDNOTES

i Figure 7-5 courtesy of Rochester Public Works Department, Public Transportation Division
ii Figure 7-14 courtesy of Minnesota Department of Natural Resources, Whitewater Country Loop State Trail Master Plan, MnDNR Division of Trails and Waterways, February 2008, p. 19