DRAFT REPORT
City of Hopkins
Pedestrian and Bicycle Plan

A community where walking and biking are safe, comfortable, convenient and fun everyday activities.

Adopted by the Hopkins City Council on June 4, 2013
Acknowledgements

We are grateful for the participation and support of Hopkins residents, elected officials and staff, and from their partners at Hennepin County and other agencies who made the work described in this report possible, including:

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Table of Contents

This report includes the following sections:

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1: Background</td>
<td>3</td>
</tr>
<tr>
<td>Section 2: Planning Process and Community Engagement</td>
<td>24</td>
</tr>
<tr>
<td>Section 3: Recommendations</td>
<td>39</td>
</tr>
<tr>
<td>Section 4: Implementation and Funding</td>
<td>112</td>
</tr>
<tr>
<td>Section 5: Appendix</td>
<td>120</td>
</tr>
</tbody>
</table>

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Foreword

The City of Hopkins is conveniently located within the Twin Cities metropolitan area, and is connected to the region by a network of world-class pedestrian and bicycle trails, by streets and highways, and, by 2018, through the Metropolitan Council's Southwest Light Rail Transit (SW LRT) line. People visit the city to go to historic Mainstreet, work in one of its many employment centers, or ride through on one of its trails. The City itself - not wider than two and a half miles at its widest point - is of a size that would allow a person on a bike, traveling at an easy pace of ten miles per hour, to traverse the entire city in approximately fifteen minutes.

Cities around the country are working to address concerns about quality of life, mobility, economic development, sustainability and prosperity by improving livability and access to non-motorized transportation as part of their citizen's daily lives. Developing walking and biking infrastructure and programs that respond to the needs of their residents is a foundational step for realizing these improvements.

With the soon-to-be-realized SW LRT line - and three stations planned within the city - Hopkins has an ideal opportunity to build on its assets, expand transportation choices, and create convenient city connections that allow residents to comfortably and conveniently incorporate active living and economical, sustainable transportation into their daily routines. A network of interconnected bikeways and walkways, tightly integrated with access to and from the new SW LRT stations, will help Hopkins meet its goals of becoming a more vibrant, connected and prosperous city.

Walking and bicycling are good for individuals and families, and for local businesses and cities. This Plan will help Hopkins make the improvements that are needed to realize those benefits.
1

Background

This section provides an overview of existing conditions in Hopkins, and summarizes reasons to address and improve the city’s walking and bicycling infrastructure.

In this section
1.1 - Vision and purpose
1.2 - Local and regional context
1.3 - Summary of previous and ongoing studies
1.4 - Urban form and development patterns
1.5 - Demographics and population characteristics
1.6 - Policy basis
1.7 - Importance of walking and cycling
1.8 - Trip origins and destinations
1.9 - Existing roadway network
1.1 Vision and purpose

Improving conditions for walking and biking in Hopkins has long been an important priority for the City’s residents and community leaders. This Pedestrian and Bicycle Plan presents recommendations for gradual, implementable improvements that achieve a vision of a more walking- and bicycling-friendly city.

Approach

This Plan is based on an Active Living approach that seeks to create conditions that invite more Hopkins residents to more often choose to walk or bike to their destinations, to use transit, and to easily include physical activity as part of their daily routines.

Vision

“The City of Hopkins will be a community where walking and biking are safe, comfortable, inviting and convenient everyday activities and where people choose to walk or bike to nearby destinations and to access the new SW LRT line.”

Purpose of this Plan

The purpose of the Plan is to serve as a tool to guide the efforts of Hopkins residents, elected officials and City staff as they work together to improve walking and bicycling conditions. It recommends pedestrian and bicycle routes and connections, offers specific treatments and approaches to improve connectivity and circulation, and prioritizes short-, medium- and long-term recommendations for improving the City’s walking and bicycling mobility network.

What is Active Living?

Active living is a way of life that encourages and includes moderate physical activity - such as walking or biking - as part of a person’s daily routine.

Active living is important because it improves physical and mental health, reduces household expenses, improves air quality, builds strong and safe communities, and can help reduce the burden of common chronic conditions like diabetes, asthma, and heart disease.

Policy and design choices can result in built environments that encourage active living. The likelihood of walking to the grocery store, riding a bike to school, or meeting friends in the park depends on the environment in which they are attempted.
1.2 Local and regional context

The City of Hopkins first developed as an independent city and is now considered a fully-developed second ring suburb. It is located west of Minneapolis in Hennepin County, with a land area of approximately four square miles and a population of 17,591 people.

The City is located within close proximity to Minneapolis, and is adjacent to the cities of Minnetonka (west), St. Louis Park (to the north and east) and Edina (south).

The historic downtown area remains a vital part of the City’s daily life, with a mix of commercial uses, governmental services and recreational opportunities. Hopkins hosts a large number of jobs for a community of its size, with employment opportunities across all sectors.

Hopkins is well connected to the regional automobile transportation network: both U.S. Highway 169 (running north-south) and Minnesota State Highway 7 (running east-west) run through the City of Hopkins. Additionally, Excelsior Boulevard is a major corridor running directly through the City.

Notably, Hopkins is the site of trailheads for four major pedestrian and bicycle trails: the North Cedar Lake Regional Trail, the Cedar Lake LRT Regional Trail, the Minnesota River Bluffs LRT Regional Trail and the Lake Minnetonka LRT Regional Trail.

Planning has begun for the proposed SW LRT Green Line Extension. The SW LRT extends our region’s growing LRT system, and will connect the western suburbs of Eden Prairie, Minnetonka, St. Louis Park and Hopkins to downtown Minneapolis, the University of Minnesota and downtown St. Paul.

Hopkins is the proposed site for three SW LRT stations: Blake Road, Downtown Hopkins and Shady Oak Road.
1.3 Summary of previous and ongoing studies

**Comprehensive Plan (updated 2009)**

The Comprehensive Plan states the City’s vision and current policy positions on land use, housing, transportation, parks, utilities and related issues. It describes how Hopkins is likely to change and helps guide recommendations made by Hopkins boards and commissions to the City Council. Additionally, it is used by property owners and developers when considering the future use of property.

The Hopkins Comprehensive Plan acknowledges the city’s inherent walkability and its convenient location at the crossroads of several regional trails. In addition, it establishes goals for enhancing the overall pedestrian experience in the city, and recommends building a network of safe, accessible, and inviting pedestrian and bicycle routes through strategic improvements to city roadways and by completing off-road multi-use trail connections.

**Blake Road Corridor Small Area Plan (2009)**

Hennepin County, in partnership with the City of Hopkins and several community stakeholders, initiated a planning study in May 2008 to create a Small Area Plan for the segment of County Road 20 (Blake Road) extending from the SW LRT Corridor to the Hopkins City Boundary just south of Highway 7.

This study offers a vision for the future of the area and recommends land use, urban design characteristics, and streetscape improvements in support of this vision. Suggested short-term street improvements for the Blake Road corridor include continuous sidewalks along both sides of the street corridor, and the addition of other streetscape improvements as funding becomes available. Additional recommendations include the placement of crosswalks, as well as the re-stripping and reconfiguration of motor vehicle travel lanes to accommodate bicycle lanes.

**Southwest Transitway Station Area Strategic Planning (2010)**

The Hennepin County Regional Railroad Authority (HCRRA), in partnership with the City of Minneapolis, undertook this strategic planning process in order to examine the opportunities and issues introduced by LRT service in Minneapolis. The project’s sponsors intentionally envisioned the process as a strategic planning opportunity, emphasizing the need to capitalize on transit investment to create neighborhood value, community enhancement and economic development. The strategic recommendations that came out of this process have been used by Metro Transit to inform LRT Preliminary Engineering; by the City of Minneapolis to inform land use changes; and by Hennepin County to inform SW LRT Community Works efforts. Recommendations for providing bicycle and pedestrian access and connections to the three planned Hopkins LRT stations were included as part of project results.

**Southwest LRT Preliminary Engineering (ongoing)**

SW LRT Preliminary Engineering will fully investigate and resolve outstanding engineering and alignment-related issues, establish final alignments and station locations, and provide a set of engineering plans that are completed to a 30% level so that municipal consent can be obtained in late 2013 and final design and construction activities can proceed.
Final alignment and station location will have important implications for pedestrian and bicycle connections to and from the station platforms. For example, the decision to choose one station location over another from an LRT engineering perspective may have significant affects on bicycle and pedestrian access from the surrounding neighborhood, based on existing street crossings and signals.

**Southwest LRT Transitional Station Area Action Plans (ongoing)**

Hennepin County, working with the five partner cities along the SW LRT / Green Line route, launched the Transitional Station Area Action Planning (TSAAP) process for the 17 proposed stations along the SW LRT line. The TSAAPs are intended to bridge the gap between current conditions and future needs by recommending key infrastructure investments that maximize access and support the LRT line’s success from its first day of operation in 2018. A key aspect of this effort is determining and establishing safe access and circulation for pedestrians and bicyclists to and from the station platforms. The TSAAP process will lead to recommendations of strategic improvements to existing infrastructure to provide safe access for pedestrians and bicyclists from the start of LRT operation.

The TSAAPs will maximize LRT system investments by identifying and prioritizing infrastructure improvements that enhance existing businesses, support a full range of housing opportunities, and encourage development. The TSAAPs will facilitate the evolution of station areas into Transit-Oriented Developments (TOD), with a focus on a unique sense of place that relates positively to the corridor as a whole.
1.4 Urban form and development patterns

The village of West Minneapolis - later to be known as Hopkins - was first incorporated in 1893 by the Hennepin County Board of Commissioners. It wasn’t until 1947 that it formally became the City of Hopkins.

Present Land Uses

**Residential Land Uses:** 37.9% of the total land area in Hopkins is comprised of residential land uses:
- **Low density residential,** 672.8 acres (25.7% of total land area). Single-family homes make up the largest percentage of residential land use.
- **Medium Density Residential,** 175.0 acres (6.7% of total land area).
- **High Density Residential,** 142.5 acres (5.5% land area).

**Commercial Uses:** About 3.4% of Hopkins’ land area is dedicated to retail and other commercial uses. Important commercial areas in the City include Mainstreet, Excelsior Boulevard, Blake Road and Shady Oak Road.

**Industrial Uses:** About 6% of Hopkins land is used for industrial purposes. Most of this industrial space is located south of Excelsior Boulevard near the rail corridors. Industrial uses in Hopkins include manufacturing, warehousing and distribution centers.

**Mixed Use:** Mixed use accounts for approximately 97 acres or 4% of Hopkins’ land area.

**Business Park:** Approximately 4% of Hopkins land is designated business park. This category accommodates stand-alone office and office service uses.

**Public / Institutional Uses:** About 4% of Hopkins’ land is dedicated to public institutions, including schools, libraries, hospitals, the art center and government institutions.
**Parks and Recreation:** Almost 32% of Hopkins’ land is dedicated to parks and recreational uses, including golf courses, trails and wetlands.

**Other Uses:** Other uses in Hopkins include open space (45.6 acres, 2% of land), railroad (23.5 acres, 1% of land) and right-of-way (477.9 acres, 18% of land).

**Connectivity**

Both U.S. Highway 169 (running north-south) and Minnesota State Highway 7 (running east-west) traverse the City of Hopkins. Although the freeways provide convenient automobile access in and out of Hopkins - connecting to Minneapolis and the surrounding western suburbs - they create discontinuities within the Hopkins community. Excelsior Boulevard (running east-west) is an important artery for automobile traffic through the City; however, it is also a significant physical barrier for pedestrians needing to cross the road. Similarly, Highway 7 creates a significant physical separation in the northern part of the City.

**Future Land Use**

The City of Hopkins 2008 Comprehensive Plan includes a mixed land-use category. The Mixed Land Use category is included to address the need for redevelopment initiatives that will accompany future development with the proposed LRT stations. This future land use will have a minimum of 30 units per acre - 60% of this being residential and the remaining 40% occupied by commercial uses. Major areas of potential change include areas surrounding the future LRT stations: Hopkins Downtown Station Area, Blake Station Area, and the Shady Oak Station Area. It is foreseen that the phasing of development, and the density and uses of the three locations, will vary.
1.5 Demographics and population characteristics

Located west of Minneapolis in Hennepin County, the City of Hopkins has a total area of 4.1 square miles.

The 2010 US Census counted 17,591 people residing in Hopkins, in a total of 7,989 households. Of those, 3,998 are family households.

Population Density
Hopkins’ 2010 population density is 4,311 people per square mile, about twice the population density for Hennepin County overall (which is 2,082 people per square mile). There are 8,987 units of housing, yielding an average density of 15 dwelling units per acre.

Households
Of the 7,989 households living in Hopkins in 2010:
- 21% included children under the age of 18
- About 50% (3,991 households) are non-family households (including individuals living alone)
- About 40% of all households are made up of individuals living alone

By comparison, of the 475,737 households in Hennepin County in 2010:
- 28% included children under the age of 18
- 42% are non-family households (including individuals living alone)
- About 33% of all households are made up of individuals living alone

Hopkins’ 2010 average persons per household is 2.16 and the average family size is 3.02 persons. This compares to Hennepin County’s average persons per household of 2.36 and average family size of 3.04.
**Age Distribution**

Approximately one fifth of Hopkins’ population (21.9%, or 3,711 persons) are children under the age of 18. Of those, 2,533 children are between the ages of 5 and 18. Another eighth of Hopkins’ population (12.6% or 2,216 persons) are senior adults 65 years of age or older. The median age for the City is 34 years.

In Hennepin County, 22.6% (260,448 people) of the population are children under the age of 18. Of those, 184,388 are children between the ages of 5 and 18. About an eighth of the population of Hennepin County are senior adults 65 years of age and older (11.5% or 132,529 people). The median age for the County is 36 years.

**Commute to Work**

The 2010 census does not specifically report a category for bicycle commuting in Hopkins (including it under “other means” of travel to work). The national average of bicycle commuting is 0.5% (American Community Survey, 2010), while the Minneapolis figure for workers who ride their bike to work is 3.5%.

**How do Hopkins residents get to work?**

This is how Hopkins’ workers arrive to work according to the 2010 US census:

<table>
<thead>
<tr>
<th>Means of Travel</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive Alone</td>
<td>73.5%</td>
</tr>
<tr>
<td>Carpool</td>
<td>13.0%</td>
</tr>
<tr>
<td>Transit</td>
<td>5.5%</td>
</tr>
<tr>
<td>Walk</td>
<td>3.5%</td>
</tr>
<tr>
<td>Other (estimated)</td>
<td>0.7%</td>
</tr>
<tr>
<td>Work at Home</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

**Top ten workplaces of people who live in Hopkins**

<table>
<thead>
<tr>
<th>Workplace</th>
<th>Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minneapolis</td>
<td>1,736</td>
</tr>
<tr>
<td>Minnetonka</td>
<td>783</td>
</tr>
<tr>
<td>St. Louis Park</td>
<td>671</td>
</tr>
<tr>
<td>Hopkins</td>
<td>614</td>
</tr>
<tr>
<td>Edina</td>
<td>528</td>
</tr>
<tr>
<td>Eden Prairie</td>
<td>478</td>
</tr>
<tr>
<td>Bloomington</td>
<td>452</td>
</tr>
<tr>
<td>St. Paul</td>
<td>421</td>
</tr>
<tr>
<td>Plymouth</td>
<td>298</td>
</tr>
<tr>
<td>Golden Valley</td>
<td>283</td>
</tr>
<tr>
<td>Other</td>
<td>2,036</td>
</tr>
</tbody>
</table>

**Top ten residences of people who work in Hopkins**

<table>
<thead>
<tr>
<th>Residence</th>
<th>Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minneapolis</td>
<td>907</td>
</tr>
<tr>
<td>Minnetonka</td>
<td>732</td>
</tr>
<tr>
<td>Hopkins</td>
<td>614</td>
</tr>
<tr>
<td>St. Louis Park</td>
<td>392</td>
</tr>
<tr>
<td>Eden Prairie</td>
<td>325</td>
</tr>
<tr>
<td>Plymouth</td>
<td>314</td>
</tr>
<tr>
<td>Wright County</td>
<td>306</td>
</tr>
<tr>
<td>Brooklyn Park</td>
<td>303</td>
</tr>
<tr>
<td>St. Paul</td>
<td>277</td>
</tr>
<tr>
<td>Bloomington</td>
<td>267</td>
</tr>
<tr>
<td>Other</td>
<td>5,742</td>
</tr>
</tbody>
</table>
**Income Levels**

Median household income in the city is $48,533 (2007-2011). Per capita income for Hopkins residents is $29,498. About 11.9% of persons living in Hopkins have incomes below the poverty line. By contrast, the countywide median household income is $62,966, with a per capita income of $36,858 and a countywide poverty rate of 12.3%.

**Population and Employment Trends**

The population of Hopkins has grown slightly over the last ten years, going from 17,145 persons in 1980 to an estimated 17,591 persons in 2010 (an increase of 2.6%). The Metropolitan Council estimates a 2020 population of 18,600 persons living in 8,800 households.

The Metropolitan Council estimates a total of 13,600 jobs in Hopkins in 2010, 14,800 in 2020 and forecasts an additional 1,500 jobs in the city by 2030.

**Current Bicycle Use and Walking Data**

Bicycle counts and other data about the number of people using bicycles for transportation in Hopkins is generally not available (as is the case in most other Minnesota communities outside of Minneapolis and St. Paul). Walking counts have not been performed in Hopkins (the only data available is estimated from the 2010 Census, referenced on the previous page).
1.6 Policy basis

Current local, state and federal policies offer strong support for making improvements that benefit pedestrian and bicycle mobility throughout the Twin Cities metropolitan region.

Improving Hopkins’ pedestrian and bicycle facilities and network is consistent with these policies and positions, including:

**Regional policies**

**Hennepin County**

Hopkins is located within Hennepin County, which was the first county in Minnesota to adopt a Complete Streets Policy. Adopted in July 2009, the purpose of the policy is to ensure that streets under the county's jurisdiction are designed and operated to assure safety and accessibility for all roadway users - including pedestrians, bicyclists, transit riders and motorists.

**Metropolitan Council**

The Metropolitan Council explicitly supports improvement and provision of bicycle facilities as part of transportation investments in cities within its jurisdiction. The Council understands that walking and bicycling are part of the total transportation picture and work well for shorter, non-recreational trips. The Council provides planning guidance on land use issues related to bikeways and walkways, and with its Transportation Advisory Board, allocates federal funds to bicycle and pedestrian projects. The Metropolitan Council intends to continue to support and coordinate efforts to strengthen access to non-motorized modes.

The 2030 Transportation Policy Plan (TPP) was adopted by the Metropolitan Council on November 10, 2010; Chapter 9 specifically pertains to pedestrians and bicyclists and can be found by following this link >.
Minnesota laws and policies

Minnesota Complete Streets Law

On May 15, 2010, Governor Tim Pawlenty signed the Minnesota transportation policy bill, which made Complete Streets part of Minnesota law. As defined under Minnesota Statute 175.74, Complete Streets is the “planning, scoping, design, implementation, operation, and maintenance of roads in order to reasonably address the safety and accessibility needs of users of all ages and abilities.” Complete streets laws and policies direct state transportation agencies to design and operate Minnesota roads to enable safe access for all users, including pedestrians, bicyclists and motorists.

Minnesota Department of Transportation (MnDOT) policies

The Minnesota Department of Transportation (MnDOT) is a national leader in Context-Sensitive Solutions (CSS) and is recognized for policies that strongly advocate for the provision of adequate facilities for pedestrians and bicyclists.

MnDOT’s official vision for the role of bicycle transportation in the state’s overall transportation network states:

“Minnesota is a place where bicycling is a safe and attractive option in every community. Bicycling is accommodated both for daily transportation and for experiencing the natural resources of the state.”

MnDOT’s role in making this vision reality is included in its mission statement regarding bicycle transportation:

“MnDOT will safely and effectively accommodate and encourage bicycling on its projects in Minnesota communities, plus in other areas where conditions warrant.

Lowering speed limits in Minnesota cities

Minnesota statutes currently allow cities and other jurisdictions to lower speed limits to 25 miles per hour without need of any additional engineering or traffic study if a bicycle lane is provided.

According to Minnesota Statute 160.263, Bicycle lanes and ways, Subdivision 4, Speed on street with bicycle lane:

“Notwithstanding section 169.14, subdivision 5, the governing body of any political subdivision, by resolution or ordinance and without an engineering or traffic investigation, may designate a safe speed for any street or highway under its authority upon which it has established a bicycle lane; provided that such safe speed shall not be lower than 25 miles per hour. The ordinance or resolution designating a safe speed is effective when appropriate signs designating the speed are erected along the street or highway, as provided by the governing body.”

MnDOT will exercise leadership with its partners to achieve similar results on their projects.”

Since 2008, MnDOT has required that all new construction projects over which they have jurisdiction include “safe and effective” bicycle accommodations. Only highway construction projects are excepted from this requirement.

MnDOT is committed to ensuring that transportation options are accessible to all users, including pedestrians. MnDOT’s Americans with Disabilities Act Transition Plan was adopted in April, 2010 and revised in July, 2011. It serves as a guide to further MnDOT’s vision, mission and core values by outlining key actions for making the state transportation system more accessible. The plan states:
“The success of making our transportation system fully accessible depends on the coordinated efforts of all levels of government, the public, and the policies and strategies outlined in this plan. MnDOT will continue to look for opportunities to involve citizens, stakeholders and partners in the implementation of this plan, future updates to the plan, and in policy decisions affecting accessibility. Together, we can realize a shared vision of an accessible, safe, efficient, and sustainable transportation system.”

Federal policies
AASHTO guidance
The American Association of State Highway and Transportation Officials (AASHTO) is a standards-setting body that publishes specifications and policies guiding highway design and construction practices throughout the United States. Its policies strongly support accommodation of bicyclists and recommend the provision of adequate bicycle facilities:

All highways, except those where bicyclists are legally prohibited, should be designed and constructed under the assumption they will be used by cyclists. Therefore, bicycles should be considered in all phases of transportation planning, new roadway design, roadway construction and capacity improvement projects, and transit projects.

In 2012, AASHTO released a new bicycle planning guide (Guide for the Development of Bicycle Facilities, 4th Edition). Developed with guidance obtained through the NCHRP (National Cooperative Highway Research Program), it supplements other guides such as:

- 2009 Manual on Uniform Traffic Control Devices
- 2011 Green Book (AASHTO)
- PROWAG (a formal set of proposed guidelines for accessible rights-of-way)
- 2010 Highway Capacity Manual

The new AASHTO guide covers paths and on-road bikeways and features bikeway level of service (LOS) considerations for roadway design. The guide:

- Authorizes the narrowing of motor-vehicle lanes - down to and including 10 ft and 11 ft widths - in order to better accommodate pedestrian and bicycle needs
- Provides nuanced guidance on bike lane design
- Is consistent with all applicable Federal / FHWA guidance, so that all projects designed in accordance with the 2012 AASHTO Bicycle Guide should be acceptable for and eligible for receiving federal funding
- Provides greater flexibility in the design process in order to better accommodate bicycling in urban contexts

Federal agencies
The Bicycle & Pedestrian Program of the Federal Highway Administration's (FHWA) Office of Human Environment promotes bicycle and pedestrian transportation use, safety, and accessibility.

FHWA also sponsors resources such as the Pedestrian and Bicycle Information Center to provide information on a wide variety of engineering, encouragement, education, and enforcement topics. The Center was established with funding from the US DOT and is operated by the University of North Carolina Highway Safety Research Center.

The FHWA Bicycle & Pedestrian Program issues guidance and is responsible for overseeing that requirements in legislation are understood and met by the States and other implementing agencies. The FHWA also grants Interim Approval of new traffic control devices, a revision to the application or manner of use of an existing...
traffic control device, or a provision not specifically described in the MUTCD. Of recent significance is the FHWA’s Interim Approval of the optional use of green colored pavement in marked bicycle lanes and in extensions of bicycle lanes through intersections and other traffic conflict areas (see Interim Approval document IA-14).

**Federal law**

MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), was signed into law by President Barack Obama on July 6, 2012. Funding surface transportation programs at over $105 billion for fiscal years 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005. Although the law reduces direct Federal funding for biking and walking projects, it presents a mechanism for funding these projects through state and local governments to fully utilize available funds to make biking and walking safer and more convenient.
1.7 Importance of walking and cycling

Walking and cycling are important modes of transportation with many benefits including sustainability, health, and economic gains. They are also often the only available mode of transportation for certain populations, including young people and children, the elderly, and low income populations. Walking and cycling can also lead to a stronger sense of community connection as a result of increased interpersonal contact between residents, and to improved feelings of safety through the addition of more “eyes on the street.”

Walking as the foundation of a city

Most persons are, at least for a portion of their travel, pedestrians. This includes people walking, wheelchair users, joggers, and skaters. The beginning and end of most trips is made as a pedestrian, and thus the pedestrian realm holds a special and universal significance. Some people make entire trips as pedestrians, something which is made easier by a dense and pedestrian-friendly environment. There is broad consensus that an efficient, walkable city is one where most people live within 1/4 mile of public transportation and household needs (like a grocery store, for example). Unfortunately, this is often not the case and thus many people rely on automobiles to make their day-to-day trips and errands. When these conditions do exist, however, the result is a livelier neighborhood which enjoys the benefits of having more eyes on the street, more local patrons, a more resilient economy, and a greater number of social interactions which build community ownership and social capital. In this way, the pedestrian realm is one of the foundations of human culture worldwide.

Walking and cycling for health and for efficient transportation

Walking is a healthy option and an important component of living an active life. Those who walk every day have been shown to have a reduced rate of heart disease, adult-onset diabetes, and obesity among other conditions.
Cycling is an extremely efficient mode of travel, in fact it is the most efficient form of travel known. The simple chain and gear mechanism combined with the relative lightness of the bicycle give it an energy efficiency that is equivalent of up to 1,500 mpg (statistics vary depending on the source, but provide consistently high numbers).

In urban areas, cycling often presents advantages over driving because the density of streets and destinations allows users to move around quickly without worrying about congestion or about finding parking or gasoline. Ridership in urban areas has been shown to correlate with the quality of facilities provided. When appropriate facilities exist, people on bikes are often able to traverse urban areas with greater ease and speed than motorists. Cycling as recreation or for touring are also popular and can provide a boost to local economies through increases in bicycle tourism and related activities. In Minnesota, the Pedal MN campaign aims to encourage this type of cycling. Cycling, like walking, provides important health benefits. This means that a community with good cycling facilities will likely experience an improvement in public health.

For improved safety and decreased automobile dependence

Legally, bicycles are considered vehicles and must be treated as such by other road users. However, cyclists vary in size and ability, and are sometimes less predictable than motorists. Additionally, cyclists, like pedestrians, are exposed and are more vulnerable in crashes, and therefore require infrastructure that supports their safe travel.

About 1/3 of the U.S. population does not drive and relies on transit, carpooling and non-motorized transportation. By 2050, the percentage of people 65 and older will increase by 12 to 20% - and about 90% of them will want to remain in their communities. Currently, about half of the people in this age group who don’t drive do not currently leave home because of lack of transportation options.

An increase in walking and biking cycling means a decrease in automobile dependence, and reduced congestion, pollution and noise. It also increases the potential for more intergenerational social interaction, increased economic vitality, and a strengthened sense of community.
1.8 Trip origins and destinations

The following are important locations in Hopkins for trip origins and destination:

- SW LRT transit stops: 8th Avenue / Downtown Hopkins, Blake Road, and Shady Oak
- Park and trail facilities, including Hilltop Park, Maetzold Field, Central Park and Burnes Park, as well as the Cedar Lake Trail, Minnesota River Bluffs Trail and Lake Minnetonka LRT Regional Trail
- Schools, including Eisenhower Elementary, The Blake School, Alice Smith Elementary and Ubah Medical Academy
- Mainstreet, including shops, restaurants and civic institutions, including Hopkins Art Center
- Employment centers, including businesses along Excelsior Boulevard, Shady Oak Road and Blake Road
- Other nearby commercial districts, including Knollwood Mall (located in Saint Louis Park)

Identifying safe and comfortable routes to each of these primary areas by walking or biking is a primary objective of this Plan.

A summary of origins and destinations identified as being priorities within Hopkins is provided on the following page.
Trip Origins and Destinations Map
1.9 Existing roadway network

Roadway jurisdiction

Several entities have jurisdiction or control over the roads and streets in Hopkins. Addressing walking and biking improvements along and across these roads will require the participation and support of these entities.
Traffic volumes

Traffic volume refers to the average number of motor-vehicles that travel on a given road each day, and is typically expressed as ADT or AADT (Annual Average Daily Traffic). Traffic volume is a direct measure of how busy a road may be, and has implications for walking and biking connections across and along a road. For example, higher volume roads may be more difficult to cross because fewer gaps exist in the traffic stream, and may require traffic control signals to improve safety and comfort for those movements, especially for children and seniors. High volumes of traffic also affect movement along a road, and typically necessitate greater separation between traffic and people on foot or bike in order to provide comfortable and safe travel for them.
Planning Process and Community Engagement

The recommendations in this Plan respond to questions and ideas received from Hopkins residents and their representatives. This section includes an overview and summary of information received at public meetings.

In this section
2.1 - Community Engagement for this Plan
2.2 - Workshop at Hopkins Farmers Market
2.3 - Workshop at the Depot Coffeehouse
2.4 - Blake Road Corridor Collaborative
2.5 - Survey results
2.1 Community Engagement for this Plan

Community engagement and public participation are the foundation for any plan that seeks to respond to the needs and issues of a community and its residents.

As part of the work of this Plan, several opportunities to receive information directly from Hopkins residents have been coordinated and implemented. These include:

- A booth, with map and survey activities, at the Hopkins Farmers market,
- A booth, with map and survey activities, at the Depot Coffeehouse,
- A meeting with members of the Blake Road Corridor Collaborative,
- A public survey, available for responses from members of the public, starting in early fall of 2012.

A project website (http://www.hopkins-pedbikeplan.info/) was used to publicize workshop events, and to share information about the Plan.

In addition, several social media and web news outlet contacts were completed, including dissemination of workshop information and Plan purpose through the Depot Coffeehouse Facebook page, and publication of a news article providing an overview of the Hopkins Pedestrian and Bicycle Plan through the Hopkins Patch news site: http://hopkins.patch.com/articles/help-hopkins-build-better-walking-biking-paths
2.2 Workshop at Hopkins Farmers Market

Summary

The first Hopkins Pedestrian and Bicycle Plan workshop took place at the Hopkins Farmers Market on Saturday, October 13th from 7:30 am to 12:00 pm. Approximately 40 people stopped by the Pedestrian and Bicycle Plan booth to share their ideas and recommendations and learn about the issues being addressed by the plan. A wide variety of visitors stopped by, most of whom were Hopkins residents, but some from neighboring municipalities as well.

Tools and activities

Activities available at this workshop included:

- A board activity, with questions about likes, dislikes, and opportunities for improvement for walking and biking in Hopkins,
- A mapping activity, where participants could draw or mark:
  - Destinations in and around Hopkins that they would like to reach by foot or bike,
  - Problem intersections, or barriers to pedestrian and/or bicycle travel, that they would like improved, and
  - Location of walking or biking assets in and around the city
- A survey with questions related to respondents’ experiences related to walking and bicycling in Hopkins

Notes were also taken as part of conversation with participants. A brief summary of the information received through these activities is available over the next two pages.
Workshop: Hopkins Farmers Market
Walk / Bike Destinations, Assets and Liabilities

Please note: Description of points is provided in this report’s Appendix.
Map activity

Participants identified several walking and biking assets in the city, as well as several barriers or impediments to the safe and comfortable movement of pedestrians and cyclists. Notable barriers identified include lack of sidewalks along Shady Oak Road, and difficulty crossing Blake Road, Highway 7, and portions of Excelsior Boulevard.

Board activity - Likes, dislikes and opportunities for improvement

What Do You Like about Walking and Biking in Hopkins?

- Trail riding
- Getting all my shopping done without a car
- Biking is great in Hopkins, ALL trails lead to Hopkins!
- Trail system, east and west
- Trails w/trees, feels like the woods!
- Soft trails for running, easy on the joints

What Do You Not Like About Walking and Biking in Hopkins?

- Enforcement (bikes and cars)
- Etiquette for riders!
- Lack of drinking fountains/sources of water
- Lighting is needed generally

How Can We Make it Better?

- Develop and share a narrative of what it feels like to be a pedestrian/cyclist driver and interact with other modes - to build empathy and understanding
- Holding motorists accountable
- Need a sidewalk on 3rd St N
- Pedestrian bridge over Excelsior Blvd would be great
- Lighting and emergency call box for Lake Minnetonka LRT
- Shady Oak Rd needs lighting
- Talk to Parks and Rec department
- Improve crossings etc.
2.3 Workshop at the Depot Coffeehouse

Summary
The second Hopkins Pedestrian and Bicycle Plan workshop took place at The Depot Coffeehouse on Sunday, October 14th from 10:30 am to 1:30 pm. Approximately 20 people stopped by the booth to give their input and/or learn about the issues being addressed by the plan. Although the majority of those who stopped by were cyclists traveling through the city and who resided outside of the city, a number of Hopkins cyclists and pedestrians also stopped to visit and provide ideas and recommendations.

Tools and activities
Activities available at this workshop included:
- A board activity, with questions about likes, dislikes, and opportunities for improvement for walking and biking in Hopkins,
- A mapping activity, where participants could draw or mark:
  - Destinations in and around Hopkins that they would like to reach by foot or bike,
  - Problem intersections, or barriers to pedestrian and/or bicycle travel, that they would like improved, and
  - Location of walking or biking assets in and around the city
- A survey with questions related to participant experiences related to walking and bicycling in the city

Notes were also taken as part of conversation with participants. A brief summary of the information received through these activities is available over the next pages.
Workshop: Depot Coffeehouse
Walk / Bike Destinations, Assets and Liabilities

**Walk / Bike Conditions**
As described by workshop participants

- **Destinations**
- **Strengths or assets**
- **Weaknesses or problem locations**

**Other:**
- Planned SW LRT Station location
- Hennepin County roadway

**Please note:** Description of points is provided in this report’s Appendix.
Map activity

Participants identified several walking and biking assets in the city, as well as several barriers or impediments to the safe and comfortable movement of pedestrians and cyclists. Notable barriers identified include lack of sidewalks along Shady Oak Road, and difficulty crossing Blake Road, Highway 7, and portions of Excelsior Boulevard.

Board activity - Likes, dislikes and opportunities for improvement

What Do You Not Like About Walking and Biking in Hopkins?
- Need more wayfinding!
- Unpaved LRT trails
- Getting into Minnetonka
- Lack of public restroom facilities

How Can We Make it Better?
- Route through Downtown Hopkins (North/South)
2.4 Blake Road Corridor Collaborative

Summary

The third Hopkins Pedestrian and Bicycle Plan workshop took place with members of the Blake Road Corridor Collaborative at the Dairy Queen located on Blake Road on Wednesday, November 14th from 4:30 pm to 5:30 pm. Approximately 10 members of the Collaborative participated in the meeting and provided their impressions and recommendations for walking and biking in the city, with special emphasis on their experiences and aspirations for Blake Road. Most of the participants live in close proximity to Blake Road, and travel on foot to connect to transit and to local shopping.

Tools and activities

Activities available at this workshop included:

- A facilitated discussion about likes, dislikes, and opportunities for improvement for walking and biking in Hopkins,
- A mapping activity, where participants could draw or mark:
  - Destinations in and around Hopkins that they would like to reach by foot or bike,
  - Problem intersections, or barriers to pedestrian and/or bicycle travel, that they would like improved, and
  - Location of walking or biking assets in and around the city

Because of time limitations (the meeting was held as part of the Collaborative’s regular meeting) a survey was not provided at the meeting, but cards with the URL for the survey were distributed, and participants were encouraged to visit the online survey and provide additional comments through that tool.

In addition, notes were taken as part of conversation with participants. A brief summary of the information received through these activities is available over the next two pages.
Walk / Bike Conditions
As described by workshop participants

- Destinations
- Strengths or assets
- Weaknesses or problem locations

Other:
- Planned SW LRT Station location
- Hennepin County roadway

Please note: Description of points is provided in this report’s Appendix.
Map activity

Participants identified several walking and biking assets in the city, as well as several barriers or impediments to the safe and comfortable movement of pedestrians and cyclists.

Assets named by participants included the city’s extensive trail facilities, and favorable conditions near the city’s downtown and several schools.

Notable barriers identified included the difficulty of crossing Blake Road through most of its length, and crossing Highway 7, especially to access Knollwood Mall, where many of the workshop participants shop.
2.5 Survey results

A copy of the administered survey, as well as the complete responses, can be found in the Appendix.

A total of 16 people responded to the survey.

Q1-1: During the summer months - how often do you walk to a destination in or around Hopkins?

A total of 11 people answered the question. A summary of responses is shown below:

- Everyday or almost everyday: 36%
- More than twice a week: 9%
- Once or twice a week: 27%
- Never or almost never: 27%

Q1-2: Which destinations?

A total of 10 people answered the question and chose up to three destinations.

Destinations include:
- Mainstreet businesses (shopping, dining, theater and coffee)
- Library
- Various parks
- Alice Smith Elementary School
- Pizza Luce
- Driskill's Grocery
- VFW, Elks and Legion
- Excelsior bus stop / Blake Road
- Lund’s (on Highway 7)
- Cargill
- St. John’s Catholic School/Church

Q1-3: What would help you walk more often?

A total of 9 people answered the question and chose one to three destinations.

Ideas include:
- Living in closer proximity to Mainstreet
- Safety between Blake Road North and 2nd Street
- Better connection and access to regional trails
- Better path from east Hopkins to downtown
- A safe walking path from Oak Ridge Road to get to the sidewalks across Hwy 7
- Better neighborhood lighting at night
- More shade and a pedestrian buffer on Blake Road
Q1-4: Which destinations in or around Hopkins do you wish you could walk to more easily?

A total of 5 people answered the question and chose up to three destinations. Destinations include:

- The Depot
- Downtown
- Library
- Burnes Park
- Blake Road
- Dunn Bros. Coffee
- Pizza Luce
- Knollwood Mall
- Highway 7 to Minneapolis

Q2-1: During the summer months - how often do you ride your bicycle to a destination in or around Hopkins?

A total of 11 people answered the question. A summary of responses is shown below:

- Everyday or almost everyday: 18%
- More than twice a week: 18%
- Once or twice a week: 36%
- Never or almost never: 27%

Q2-2: Which destinations?

A total of 8 people answered the question and chose up to three destinations.

Destinations include:

- Lake Calhoun/Lake Harriet; Chain of Lakes
- General Recreation Rides (Lakes, Twins Stadium, Miss. River)
- Downtown / Main St (Dining, shopping, entertainment)
- MPLS Loop
- Library
- Cold Stone Ice Cream
- Burnes Park and other neighborhood parks
- Target
- Destinations out of Hopkins (Minneapolis, Eden Prairie, etc.)
- C-store
- Post office
- Bike trails
- Lake Calhoun area
- Knollwood Mall
- Carlson Towers in Minnetonka
- Cargill
- Driskill’s Market
- VFW, Legion
- Midnite Market
Q2-3: What would help you ride your bicycle more often?

A total of 6 people answered the question and chose one to three destinations.

Ideas include:
- Dedicated bike lanes on Oak Ridge Road
- Dedicated bike infrastructure for children to ride to Eisenhower
- Better traffic crossings, including Excelsior, Highway 7 and Shady Oak
- Bike paths on Excelsior and Blake (similar to downtown Minneapolis)
- Roundabouts at busy intersections
- More options for bike lock-up (i.e. bike racks) in front of business, destinations, parks, etc.

Q2-4: Which destinations in or around Hopkins do you wish you could ride a bicycle to more easily?

A total of 4 people answered the question and chose up to three destinations.

Destinations include:
- Eisenhower/Xin Xing Elementary
- Anything crossing Excelsior (Harley, Depot, etc.)
- Anything crossing Highway 7 (Eisenhower Community Center)
- Country Village Strip Mall (Lunds, Great Clips, etc.)
- South Hopkins Area (along 11th Ave South)
- Connecting cities, such as Eden Prairie and Minneapolis
Recommendations

This section includes recommendations for addressing the various systems that can help improve conditions for walking and cycling in Hopkins and bring the vision guiding this work closer to reality.

In this section
- 3.1 - Introduction and framework
- 3.2 - General recommendations
- 3.3 - The Organizing Idea for this Plan
- 3.4 - Pedestrian and bicycle infrastructure
- 3.5 - Toolbox of treatments
- 3.6 - Project and corridor-specific recommendations
- 3.7 - Integration with transit
- 3.8 - Bike parking
- 3.9 - Maintenance
- 3.10 - Education and encouragement
3.1 Introduction and framework - SW LRT++

Introduction

This Pedestrian and Bicycle Plan can help the City of Hopkins increase biking and walking opportunities for its residents. With SW LRT entering preliminary engineering, and three stations within the boundaries of Hopkins, non-motorized mobility can become an even greater asset to the city. Transit riders’ choice to walk or bike to city destinations will be directly influenced by the comfort, convenience and safety that the streets and built environment of Hopkins offer them.

Framework for recommendations

A framework for developing and prioritizing recommendations can help turn general goals to specific recommendations for locations in Hopkins. One useful framework for effective planning of walkways and bikeways in the city follows these four principles:

1) Provision of facilities on major roads;
2) Provision of additional facilities to develop a comprehensive network;
3) Maintenance of the entire pedestrian and bicycle environment; and,
4) Solving issues created by barriers within the built and natural environment.

Facilities on major roads

Provision of facilities for pedestrians and cyclists on arterial and major roads is essential because these facilities provide access to and from the vast majority of destinations within a city. They also allow for a network to provide effective and comprehensive connections to, from, and in between the different neighborhoods and business nodes within an area, as well as regional trails that link to other municipalities. If major bicycle and pedestrian routes are only provided on side streets and residential streets, people walking and cycling will not be able to conveniently access the important destinations in a city, and will be cut off from destinations because of their transportation mode choice. The concept of considering the needs of all users on all streets is called “Complete Streets” (see more discussion of Complete Streets under Section 3.2).
Complete Streets that in addition consider economic development, placemaking, human interaction and enhanced livability are called “Living Streets.”

Automobile drivers, even on major roads, adjust and respond to the street environment they encounter. Street reconfigurations that decrease the width or number of motor-vehicle travel lanes can improve safety without hindering performance for drivers and open up dedicated space for walking and biking. Numerous studies have demonstrated that lane narrowing (reducing lane widths to ten or eleven feet) provide no decrease in performance, safety or capacity for city roadway environments. Additionally, four-to-three lane conversions (called road diets or “right-sizing”) can help free up space to accommodate dedicated space for walking and biking through widened sidewalks and/or bicycle lanes. Three lane “dieted” roads can easily handle volumes of 20,000 vehicles per day while reducing crashes and moderating motor-vehicle speeds.

Hopkins has a good structure for pedestrian and bicycle mobility, with many short blocks and two-lane roads. Within the city, roads to consider for improved pedestrian and bicycle facilities include Mainstreet, 8th Avenue, Shady Oak Road, 11th Avenue, 17th Avenue / Hopkins Crossroad, Blake Road, and Oakridge Road. Emphasis should be given to the roads that directly connect into the planned SW LRT stations: 8th Avenue, Blake Road, and Shady Oak and the 17th Avenue extension south of Excelsior Boulevard.

**Developing a network**

Lanes, trails, walkways and support facilities must be provided in order to create a network that is effective and attractive to users. For bikeways this means providing additional links, and including amenities such as bike racks and other end of trip facilities, wayfinding signage, and appropriate pavement markings. For walkways, this means adequate lighting, amenities such as planted strips for aesthetics and comfort, safe and comfortable access to existing and planned public transit, and additional crossing facilities. For both walking and biking, adequate facilities should be provided that connect to schools, local parks, and other important destinations. The areas around Hopkins’ schools should be prioritized. Additionally, routes linking regional trails...
within Hopkins should provide clear and concise wayfinding facilities. The coming SW LRT in Hopkins should be a priority consideration in the design of pedestrian and bicycle facilities, as well as any existing or future bus routes.

**Maintenance of pedestrian and bicycle environment**

Proper maintenance is a crucial component for the usefulness and safety of bikeways and walkways. Maintenance considerations include ensuring that debris and snow are cleared, as well as maintaining the quality of the path and roadway surfaces where cyclists and pedestrians travel, including making sure the surfaces are free of potholes or other surface irregularities. Markings on roadway surfaces require regular maintenance and repair due to frequent wear from motor vehicle use. Inlaid thermoplastic application is recommended for increased durability (see more discussion about maintenance in Section 3.9).

**Addressing barriers**

Barriers for cyclists and pedestrians come in many forms and require a variety of solutions. Although Hopkins has a relatively flat topography and does not have any major bodies of water, several barriers exist within its built environment in the form of intersections, wide roads and highways, and right-of-way features such as storm sewer grates and railroad crossings. Other barriers for pedestrians and cyclists include an incomplete pedestrian and bicycle network, inconsistent sidewalk and bicycle facilities, and missing or confusing wayfinding for regional trail users. Solutions for addressing these barriers vary on a case to case basis, but can be found in the best practices for pedestrian and bicycle design included as part of this report.

Intersections with significant barriers within Hopkins include Excelsior Boulevard and 8th Avenue, Shady Oak Road and Blake Road, as well as crossing points along Highway 7 and portions of Mainstreet.
3.2 General recommendations

These recommendations should be kept in mind when considering potential policy changes to better address the needs of pedestrians and cyclists in Hopkins:

**Adopt a “Complete Streets” policy**
“Complete Streets” is a design philosophy that considers the needs of all present and potential users of a community’s transportation network.

Complete Streets laws and policies ensure that a community’s roads and streets are routinely designed and operated to provide safe space and access for all users, including pedestrians, bicyclists, motorists and transit riders, and to ensure that they work for people of all ages and abilities, including older people, children, and people with disabilities.

Adopting a Complete Streets design policy will help ensure that all street construction and street improvement projects in Hopkins anticipate and address the needs of pedestrians, cyclists and other users. Over the long run, embedding this Complete Streets approach into the City’s normal operating procedures may do more for pedestrians and cyclists and than any one specific plan could.

**Decrease the width of automobile lanes**
Decreasing the width of automobile travel lanes can help calm traffic while freeing up valuable road space for pedestrian shoulders or bicycle lanes. The Institute of Transportation Engineers (ITE), in Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities, a study sponsored by the Federal Highway Administration (FHWA), recommends using a roadway's target (or desired) speed as guidance for the width of travel lanes provided. In general (and consistent with AASHTO guidance), the study finds that ten-foot travel lanes are suitable for local and collector streets with operating speeds to 30 mph, while lane widths from ten to...
eleven feet are suitable for use in arterials with operating speeds to 35 mph (and as safe as twelve-foot lanes up to 45 mph).

**Decrease automobile travel speeds**

One of the factors that most heavily influences pedestrians' and cyclists' perceptions of the relative safety of a street is the speed at which automobiles travel. Streets with high speed limits are less welcoming to pedestrians and cyclists. Several streets which could serve as important pedestrian and bicycle routes in Hopkins are made less inviting by high speed limits currently in place. Typically, 35 mph is considered the upper limit for safely and comfortably accommodating pedestrians and cyclists along roads; lower speeds create much more hospitable conditions for their travel.

Minnesota statutes currently allow cities and other jurisdictions to lower speed limits to 25 miles per hour without need of any additional engineering or traffic study if a bicycle lane is provided. According to Minnesota Statute 160.263 Bicycle lanes and ways, Subdivision 4: "Speed on street with bicycle lane"

"Notwithstanding section 169.14, subdivision 5, the governing body of any political subdivision, by resolution or ordinance and without an engineering or traffic investigation, may designate a safe speed for any street or highway under its authority upon which it has established a bicycle lane; provided that such safe speed shall not be lower than 25 miles per hour. The ordinance or resolution designating a safe speed is effective when appropriate signs designating the speed are erected along the street or highway, as provided by the governing body."

At present, there are statewide efforts to reduce speed limits to 25 mph for local and collector streets. In the meantime, motor-vehicle speed limits for all the routes identified in this Plan can be lowered to 25 mph as allowed by the Minnesota Statute cited above. For streets not under Hopkins’ jurisdiction, work should be initiated with Hennepin County to lower speed limits in order to decrease barriers and create more favorable conditions for pedestrians and cyclists. Traffic calming and other measures can be deployed to reduce motor-vehicle speeds to 18-25 mph along bicycle boulevards and other residential streets.

**Recommendations**

- **Probability of survival for pedestrians involved in a motor vehicle crash**

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>Survival Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>95%</td>
</tr>
<tr>
<td>30</td>
<td>60%</td>
</tr>
<tr>
<td>40</td>
<td>15%</td>
</tr>
</tbody>
</table>

*Speed is a determinant factor in the severity of injuries from crashes. Survival rate is shown in green. Source: Durkin & Pheby; Traffic Management and Road Safety, London, 1992.*

**Resources**

**Complete Streets**
- Minnesota Complete Streets Coalition
- National Complete Streets Coalition

**Decreasing speeds**
- 20's Plenty Campaign - Pilot project in NYC residential areas
- Minnesota Statute 160.263 Bicycle Lanes and Ways
3.3 The Organizing Idea for this Plan

With the upcoming construction of the SW LRT, Hopkins has a once-in-a-lifetime opportunity to leverage this significant regional investment and set the stage for improved non-motorized connectivity, inviting and human-scaled residential and commercial development, and prosperity.

When future LRT-riders detrain, they will immediately become pedestrians and will rely on walking or biking to reach destinations in the city if they feel comfortable and are invited to do so. Hopkins residents will be able to walk or bike from their homes to LRT stations that conveniently connect them to destinations across our region.

As shown on the map to the right, the three LRT stops in Hopkins can serve as primary nodes, around which a series of connections to schools, parks and areas of commerce and residence are developed. For scale, the inner concentric circle represents a quarter-mile radius; the outer concentric circle represents a half-mile radius from each LRT station - a ten minute walk or three minutes on a bike.
3.4 Pedestrian and bicycle network

The map to the right shows the existing trail and sidewalk network in Hopkins. Existing assets in include the regional trail system, as well as a network of sidewalks and shared-use paths that connect a significant portion of the city.

Addressing gaps in the sidewalk and trail system will help offer safe and inviting access from residential locations to the SW LRT stations, and will increase use of walking and biking as transportation options in the city.

Improvements for the Hopkins pedestrian and bicycle network are presented over the next pages. Pedestrian improvements are presented in three phases:

- **Short Term** - Focus on priority corridors to enhance connections to the planned SW LRT stations;
- **Medium Term** - Complete sidewalk gaps; also, develop additional walking infrastructure in tandem with planned bicycle infrastructure; and,
- **Future** - Maximize pedestrian connections by extending sidewalks into additional neighborhoods.
3.4.1 Map of Recommended Pedestrian Improvements (Short Term)

A map showing the recommended corridors for improving pedestrian access in the short term is provided below. The highlighted corridors enhance connections to the planned SW LRT stations and build from already existing sidewalk infrastructure:

Legend
- Pedestrian Priority Corridor
- Future LRT Route
- Future LRT Stations
3.4.2 Map of Recommended Pedestrian Improvements (Medium Term)

Medium-term pedestrian improvements are shown below. These improvements build from previous map, and aim to complete sidewalk gaps and develop additional walking infrastructure in tandem with planned bicycle infrastructure:
### 3.4.3 Map of Future Pedestrian Improvements

Longer-term potential future pedestrian improvement areas are shown below. The map builds from recommended improvements from the previous two maps. Future sidewalks should be considered in the polygonal areas depicted in the map below:

**Legend**
- Pedestrian Priority Corridor
- Sidewalk
- Shared-use Path
- Combined Shoulder
- Future Sidewalk Areas
- Future LRT Route
- Future LRT Stations
3.4.4 Map of Existing and Future Pedestrian Infrastructure

A map showing the existing pedestrian infrastructure combined with the two phases of recommended improvements, as well as possible future sidewalk areas, is provided below:
3.4.5 Map of Recommended Bicycle Treatments

A map showing a recommended bicycle network, with specific treatments, is provided below:

Legend
- Bike Lane
- Cycletrack
- Bike Boulevard
- Shared-use Path
- Combined Shoulder
- Existing Trail
- Existing Bike Lane
- Existing Shared-use Path
- Future Cycletrack
- Future LRT Route
- Future LRT Stations
3.5 Toolbox of treatments

A variety of tools and treatments will be useful to address and improve conditions for pedestrians and cyclists in Hopkins. A brief overview of several options that are recommended for application in Hopkins is provided here. Additional measures and information are provided in the Appendix.

3.5.1 For Hopkins’ walking network

Sidewalks

Sidewalks designate space for the exclusive use of pedestrians, and are a foundational element for a system of pedestrian mobility. They are also a vital component of healthy commercial districts, providing access to businesses, space for street furniture and plantings, and for the casual interactions that support community interpersonal connections. Well-designed sidewalks provide four distinct “zones” that allow them to function in different contexts, with dimensions that respond to the land uses and locations they serve. The four zones are:

1) **The pedestrian zone** is the zone where people walk. This zone should accommodate people with varying mobility and allow them to navigate the city or district safely and comfortably. Width for Mainstreet / commercial district should be between 6 to 8 feet. Width for a residential district should be at least 5 feet.

2) **The frontage zone** is the portion of the sidewalk that provides access to businesses or other uses adjacent to the sidewalk. It is also the space that can be used for outdoor seating for cafés or restaurants in commercial districts. A minimum of 2.5 feet is recommended for store access, with greater widths to accommodate seating.

3) **The furniture zone** is the portion of the sidewalk where trees, newspaper stands, benches, signs and trash receptacles are placed. Part of its usefulness is that these important elements are placed where they don’t obstruct the mobility of people walking or in wheelchairs. In addition, this zone increases the distance between the...
There are many areas in Hopkins where sidewalks once existed. Completing the sidewalk network would support increased rates of walking in the city.

pedestrian zone and moving motor-vehicles, increasing the comfort and the sense of safety for people on foot.

4) The curb zone is the outermost edge of the pedestrian realm and is generally raised above the motor-vehicle travelway to create a defined and safe separation between automobiles and pedestrians. Curbs should be of the vertical type (not mountable) to discourage automobiles from entering the pedestrian space.

**Application in Hopkins**

- An existing asset: many of Hopkins’ streets already have sidewalks.
- Sidewalks are recommended to complete gaps in Hopkins’ existing residential sidewalk network, as well as to connect business areas, schools and parks to residential neighborhoods.
- Commercial zones and redevelopment districts should provide sidewalk infrastructure configured to include the four zones described above.

**Curb ramps**

Curb ramps allow wheelchair users, people with sight or mobility impairments, and parents using strollers to easily enter and exit sidewalks and pedestrian crossings. They also make walking generally more comfortable and safer for all pedestrians. They should be used at all locations where pedestrians are expected to cross. The recommended practice is to provide two perpendicular ramps (rather than a single one at a corner) to better place wheelchair users and reduce conflicts with motor-vehicle traffic.

**Application in Hopkins**

- An existing asset: many curb ramps exist in Hopkins. However, several appear to not meet ADA standards.
- ADA accessible sidewalks must have curb ramps at street intersections. ADA curb ramps should be installed at all intersections where sidewalks currently exist, as well as when new sidewalks are constructed.
Marked crossings

Marked crosswalks are a visual indication of locations where pedestrian crossings can legally and safely occur. They help create a continuous, legible network for pedestrians, and improve safety by alerting motorists to the potential presence of a pedestrian at a crossing. They should be used at all traffic-light controlled intersections, as well as at stop-sign controlled intersections in primary commercial districts. When placed at locations with more than one lane of travel per direction (including turn lanes), they should be combined with Advanced Stop Bars in order to minimize risk of “hidden threat” crashes.

Application in Hopkins

- An existing asset: many Hopkins intersections already include marked crosswalks.
- All crosswalks should be high contrast with longitudinal (“ladder” or “zebra” type) markings. Colored and stamped crosswalks should only be used at controlled locations. Please note that decorative crosswalk treatments made of distinctive materials can fade unevenly and become physically uneven over time.
- Community destinations and assets, including schools, parks and transit stations, should include marked crosswalks.

Median Crossing Islands

Crossing islands simplify pedestrian crossings and improve safety by dividing the crossing movement into two stages so that pedestrians only cross one direction of traffic at a time. They make crossing high-volume roads safer and easier, and allow slower walkers, including children and seniors, to cross wider roads without worrying about getting stranded in the middle of the crossing.

Application in Hopkins

- At intersections along high-traffic streets such as Highway 7, Excelsior Boulevard, Blake Road and Shady Oak Road.
**Curb extensions**

Curb extensions extend the sidewalk and curb into the motor-vehicle parking lanes at intersection locations. These features (also known as bump-outs) improve safety and convenience by shortening the distance a pedestrian must walk to cross a street, by increasing the visibility of pedestrians to motorists, and by slowing down right-turning motorists. They also decrease the amount of time a pedestrian is sharing space with vehicle traffic. Curb extensions work especially well on busy collector streets, on minor arterials where on-street parking is allowed, and in commercial / downtown districts.

**Application in Hopkins**

- An existing asset: Many street intersections in the city already feature bump-outs.
- Additional intersections throughout the Hopkins Downtown District, including Mainstreet, 1st Street and 8th Avenue should also include these elements.
- Can be implemented on truck routes by using mountable curb extensions (trucks with long loads can still go over, if necessary).
- Curb radius for bump-out corners is typically no greater than fifteen feet.

**Pedestrian Hybrid Beacon (HAWK)**

The pedestrian hybrid beacon (HAWK) is a pedestrian-activated red-indication signal designed for locations where current engineering practices make providing a standard traffic signal difficult. The HAWK gives pedestrians the ability to comfortably cross busy roads at intersection or midblock locations, and to do so protected by a red-indication signal for motorists.

The HAWK is dark until a pedestrian activates it by pressing the crossing button. It responds immediately, with a flashing yellow pattern that changes to a solid red light providing unequivocal “Stop” guidance to motorists. Studies show that they are as effective as traditional stop lights in providing protection for pedestrian crossings. HAWKs are included in the MN-MUTCD; installed cost for a typical crossing ranges between $75,000 to $150,000.
Application in Hopkins
- Blake Road: Cedar Lake Trail crossing and at Lake Street (Cottageville Park).
- Excelsior Boulevard at 15th Avenue to access Central Park.
- Mid-block crossings on Excelsior Boulevard and Shady Oak Road.

Rectangular Rapid Flash Beacon (RRFB)
A Rectangular Rapid Flashing Beacon, or RRFB, is a pedestrian-activated signal that uses an irregular “stutter” flash pattern with very bright amber lights (similar to those on emergency vehicles) to alert drivers to yield to the pedestrians who wish to cross a road. It offers a higher level of driver compliance than other flashing yellow beacons, but lower than the HAWK. The RRFB is suitable for installation on two- to four-lane roads; it is not compatible with a three-lane approach. Installed cost for a typical crossing is between $10,000 to $15,000 (for two units, one on either side of a street).

Application in Hopkins
- Near schools, such as along Minnetonka Mills Road near Alice Smith Elementary.
- At crossings near parks, such as Burnes Park.
- At potential mid-block crossings throughout the Hopkins Downtown District, including on Mainstreet, 1st Street and 8th Avenue.

Motorist compliance with RRFB vs. HAWK

* RRFB compliance ranges typically from 40-80% per installation, depending partially on how long the signal has been installed.
Countdown Timers

This device consists of a standard pedestrian crossing signal which works in conjunction with a timer that counts down during the period in which the “red hand” symbol would normally be blinking. The timer indicates exactly how much time is left until the light changes, thereby reducing the number of pedestrians stranded in the crosswalk when the signal changes. This tool is relatively well-understood and inexpensive to implement.

Application in Hopkins

- Build off the existing installations in Hopkins for all signal-controlled intersections.

Leading Pedestrian Interval (LPI)

LPI refers to a method wherein the traffic signal is programmed so that the pedestrian walk sign occurs several seconds before the ‘green light’ at the parallel street. This gives pedestrians a head start into the intersection so that they are more easily seen when cars begin to move forward. The LPI is typically three to five seconds.

Application in Hopkins

- Throughout Hopkins’ downtown area, including the intersection of Mainstreet and 8th Avenue.
3.5.2 For Hopkins’ biking network

Conventional Bike Lanes

Bike lanes designate a portion of the roadway for preferential use by bicyclists. Lanes are defined by striping, pavement markings and signage. Bike lanes allow cyclists to travel at their own speed in a space separate from motor vehicle traffic. A thick (eight-inch) stripe for the bike lane is recommended if the lane is not buffered. Width of the bike lane is measured from paint centerline to the edge of the longitudinal joint (if along curb and gutter).

Application in Hopkins

• An existing asset: bike lanes can be found in Hopkins on portions of South Blake Road and North Tyler Avenue.
• Bike lanes are recommended for 1st Street N, Mainstreet, 17th Avenue, 5th Avenue, as well as portions of 2nd Street N, 7th Street S, 11th Avenue, Minnetonka Mills Road.
• Bike lanes - or a shared bike and pedestrian shoulder - should be considered for Hopkins Crossroad and Oak Ridge Road.

Buffered Bike Lanes

Buffered bike lanes provide cyclists with all of the benefits of a conventional bike lane, but with additional space between the bike lane and moving traffic, thereby increasing their comfort. Buffers can provide cyclists with adequate room to pass each other without having to merge into automobile traffic.

Application in Hopkins

• Buffered bike lanes should be considered first, before conventional bike lanes, when space allows and higher motor vehicle speeds are present. A minimum buffered bike lane should have a two-foot buffer zone and a five-foot bicycle travel lane.
Advisory Bike Lanes

An advisory bike lane is a treatment applied to narrow residential streets. Advisory lanes allow for two-way traffic in one middle lane of the street while still allowing room for two bike lanes. In the instance that two cars meet going opposite directions in the middle lane, a car is allowed to merge into the bike lane with caution. The bike lane is marked with dashed lines to indicate that cars and bikes will sometimes mix in that zone.

Application in Hopkins

• Advisory bike lanes should be considered on streets where bike lanes are recommended, but the street is too narrow to accommodate a dedicated five-foot bicycle lane in each direction.
• Installation of advisory bike lanes requires education of Hopkins motorists and cyclists to ensure that all road users understand how to use the shared space.

Cycletracks

A cycletrack is an exclusive lane for cyclists separated from motor-vehicle traffic by a physical barrier and distinct from the sidewalk. Different forms of cycletracks include one-way protected cycletracks, raised cycletracks and two-way cycletracks. Cycletracks significantly increase ridership from all ages and experience levels because the significant separation from motorized vehicles greatly increases rider comfort.

Application in Hopkins

• Cycletracks should be considered for streets such as 8th Avenue, Blake Road and the future 17th Avenue extension to the Shady Oak Road station - these streets are vital connections to transit and downtown.
• Over the longer-term, cycletracks may also be considered for Highway 7 and Shady Oak Road, where greater separation from motor-vehicles traveling at high speeds can improve sense of comfort for cyclists.
**Bike Boulevards**

A Bike Boulevard (also sometimes known as a Neighborhood Greenway or Neighborhood Slow Street) is a neighborhood residential street modified to calm automobile traffic, discourage cut-through traffic, and make walking and bicycling in those streets more comfortable. Certain treatments at intersections are sometimes applied to give further priority to cyclists. A speed of eighteen to twenty miles per hour should be the target motor-vehicle maximum speed on bike boulevards.

**Application in Hopkins**

- Bike boulevards should be considered for streets throughout Hopkins’ central residential area. Applications include portions of 11th Avenue, 12th Avenue, 4th Street N, 2nd Street NW, and portions of Minnetonka Mills Road.
- Additional streets for bike boulevard consideration include 3rd Street S / 2nd Street S and Goodrich Street.

**Bike Boxes**

A bike box is a designated area for cyclists at the head of an intersection. Pavement markings signal to motorists to stop a greater distance before an intersection, allowing cyclists to move forward and stop in the bike box, increasing their visibility and decreasing the possibility of “right hook” crashes. This treatment also gives cyclists greater priority over motorists by allowing them to be the first to begin movement when a traffic signal turns from red to green (ideally installed with a leading bicycle signal).

**Application in Hopkins**

- Bike boxes should be considered for all bicycle lane treatments at intersections. Areas would include all signalized intersections along Mainstreet and 1st Street N, as well as along 17th Avenue and 5th Avenue.
**Median Crossing Island**

A median crossing island is a traffic median of full (6 inch) curb height providing a protected space in the center of the street that allows pedestrians and bicyclists to divide their crossing movement and stop - separated from traffic - while crossing the street. This tool is useful especially on multi-lane or high-volume streets where the length of the full street crossing is relatively long. The crossing island should include a designated area for cyclists.

**Application in Hopkins**

- See application suggestions for Median Crossing Island for pedestrians, and combine if walk/bike facilities align. Additional consideration should be given to where trails cross busy roads, such as at Cedar Lake Trail and Blake Road.

**Forward Stop Bar**

A forward stop bar is a stop bar just for cyclists located closer to the intersection than the stop bar for motorists. By providing a space for cyclists to stop ahead of motorists, forward stop bars provide bicyclists with better visibility of approaching cross-street traffic, as well as giving cross-street traffic a better sightline to see approaching cyclists.

**Application in Hopkins**

- A forward stop bar is a tool that may be used in lieu of a bike box to increase visibility of cyclists and may be considered at locations recommended for bike boxes. However, a forward stop bar is limited in its capacity to accommodate more than one cyclist at a red light cycle (unlike a bike box).

**Combined Bike Lane/Right Turn Lane**

A combined bike lane/right turn lane positions an advisory bike lane within a portion of the motor vehicle right turn lane. The right edge of the bike lane is marked with dashed lines to indicate that cars and bikes will sometimes mix in that zone. This tool maintains bicycle position and priority when approaching intersections, reducing the risk of right hook collisions at intersections.
Application in Hopkins

- A combined bike lane/right turn lane can be created when bike lanes are being installed on a street that has existing right turn lanes, such as Hopkins Crossroad. The combined lane maintains the integrity of the bike lane by not ending or interrupting it.

Colored Bike Facilities

Bike lanes, intersection treatments and other on-street facilities are made more visible by the use of colored pavement. By applying color, the bicycle travel areas are distinguished from the rest of the street, making cyclists more visible to motorists. Federal guidance permits their use in marked bicycle lanes and in extensions of bicycle lanes through intersections and other traffic conflict areas (see FHWA guidance >).

Application in Hopkins

- Colored bike facilities should first be considered for sections of bike lanes that intersect other streets or driveways. The sections that are colored draw attention to the potential automobile/bicycle conflict zones.
- Ideally, high-use bike lanes would receive a continuous color treatment to make it clear to all road users to expect to see cyclists in this space.
- Colored “sharrows” (see below) may be used on bike boulevards.

Shared Lane Markings

Shared lane markings (often called “sharrows”) are pavement markings used to communicate cyclists’ right to use roadway space for their travel - to both drivers and cyclists. Sharrows help bicyclists position themselves safely in travel lanes too narrow for a motor vehicle and a bicycle to comfortably travel side by side. If ADT is 3,000 or greater, bike lanes should be used instead of sharrows.

Application in Hopkins

- Shared lane markings should be used as a treatment for streets identified as bike boulevards.
• Shared lane markings should not be used in place of a bike lane.

**Traffic Signals for Bicycles**

Traffic signals for bicycles are electrically powered traffic control devices that regulate bicycle movement at intersections. These traffic signals give priority to bicyclists, increase the comfort of bicyclists by reducing stress associated with delays at intersections, and discourage illegal and unsafe crossing maneuvers. See Best Practices in Section 5 for information about loop detectors for bicycles.

**Application in Hopkins**

• At Excelsior where the North Cedar Lake Regional Trail, the Cedar Lake LRT Regional Trail, and the Minnesota River Bluffs LRT Regional Trail intersect.

**Bicycle Route Wayfinding Signage**

A bicycle wayfinding system is a comprehensive network of signing and pavement markings indicating information about destinations along preferred bicycle routes. Wayfinding signage encourages cycling by identifying useful information such as direction of destination, as well as time and distance to destination.

**Application in Hopkins**

• Wayfinding signage should be used to direct people from all three planned SW LRT stations to points of interest in Hopkins.
• Wayfinding signage should be used to help people connect from the Cedar Lake Trail to the Minnesota River Bluffs Trail, as well as from the Minnesota River Bluffs Trail to the Lake Minnetonka LRT Regional Trail.
• Wayfinding signage should be optimized to draw visitors through downtown on their way through Hopkins.
• Wayfinding signage in Hopkins should be intuitive so that a cyclist using the trails for the first time will have an easy time navigating the city.
3.6 Project and corridor-specific recommendations

With the upcoming construction of SW LRT, Hopkins has a fantastic opportunity to greatly improve non-motorized mobility, make walking and biking a more welcoming activity, and make significant strides in its efforts to become a more livable, vibrant and convivial city. An organizing idea behind this Plan is to treat access to and from the LRT stations as a foundational element for developing a north-south framework that seamlessly connects the stations into the city’s fabric and from which logical east-west walking and biking connections can develop.

Specific recommendations for corridors, crossings and locations in Hopkins are provided in this section. Recommendations are organized under five broad themes:
1) Connections to and from SW LRT Station Areas;
2) Connections to Downtown Hopkins;
3) Connections to Additional City Destinations;
4) Regional Connections; and,
5) Addressing Major Transportation Corridors.
3.6.1 Connections to and from SW LRT Station Areas

Planning is well underway for the proposed SW LRT line connecting Eden Prairie, Minnetonka, St. Louis Park and Hopkins to downtown Minneapolis, the University of Minnesota and downtown St. Paul.

Three transit stations are planned in Hopkins: Downtown Hopkins, Blake Road, and Shady Oak Road. Priority is given to creating high-quality pedestrian and bicycle connections to all three planned LRT stations to facilitate multi-modal trips and increase access and mobility for Hopkins residents, employees and visitors.
**Downtown Hopkins**

**Vision**

Downtown is the center and the “100%” location in Hopkins. 8th Avenue connects it with SW LRT. 8th Avenue is a destination itself, and is full of art, energy, and walking and biking. The LRT station is very close to downtown - actually, it feels like you are already there once you leave the train. This ARTery is complete with ephemeral public art that invites passersby to enjoy their experience traveling to or from the station. A Nice Ride station at the LRT platform offers quick and easy access to a bike to ride down to Mainstreet and enjoy shopping, dining and sightseeing. Crossing Excelsior is easy on foot or on bike. Residents and visitors are drawn to travel into Hopkins, and are invited to slow down and linger, enjoying their surroundings and their commute.

*A cycletrack and ample sidewalks along 8th Avenue seamlessly connect people with Downtown Hopkins.*
**Background / Current Condition**

8th Avenue is the primary connection between the Downtown Hopkins SW LRT station and Hopkins’ historic Mainstreet. Improved bicycle and pedestrian facilities will need to be prioritized so that people choose to use non-motorized transportation to travel the quarter mile between the station and Mainstreet. Additionally, 8th Avenue connects two regional trails: the Minnesota River Bluffs LRT Regional Trail and the Lake Minnetonka LRT Regional Trail.

**General Recommended Treatments**

- Highly-visible and comfortable bicycle facility
- Enhanced pedestrian areas with wide sidewalks and room for street furniture
- Wayfinding directing visitors to Mainstreet and the Regional Trails
- Bike Station and Nice Ride / public bikeshare at LRT station
8th Avenue recommended street improvement (Scenario A)

Green bike lanes

Six-foot green bike lanes are added between the parking and the travel lane. The speed along this corridor should be no higher than 25 mph, warranting ten-foot travel lanes. The green bike lanes should be continuous all the way from Excelsior to the Lake Minnetonka LRT Regional Trail. The crossing at Excelsior should include a crossing island with crossbike treatment along either side of the crosswalks. Easy-to-access wayfinding should be present to help guide walkers and bikers unfamiliar with the Hopkins landscape from and to the SW LRT station and the Regional Trails.

8th Avenue has 66 feet of available right-of-way, allowing for various configurations under Scenario A. Two ten-foot travel lanes plus two six-foot bike lanes allows 34 feet to be used for on-street parking and/or sidewalks.

A vision for 8th Avenue: Narrower travel lanes allow for other road uses such as bike lanes, on-street parking, street trees and enhanced sidewalk space.

Highly-visible green bike lanes, on-street parking and the current two lanes of motor-vehicle traffic can fit within the existing roadway space. A high-quality sidewalk environment will increase walkability.
8th Avenue recommended street improvement (Scenario B)

Cycletrack

Like Scenario A, the speed along this corridor should be no higher than 25 mph, warranting ten-foot travel lanes. A vegetated boulevard separates the travel lanes from the cycletrack and sidewalk area on each side of the street. The cycletrack treatment should continue all the way from Excelsior to the Lake Minnetonka LRT Regional Trail, north of Mainstreet. Like Scenario A, the crossing at Excelsior should include a crossing island with crossbike treatment along either side of the crosswalks. Easy-to-access wayfinding should be present to help guide walkers and bikers unfamiliar with the Hopkins landscape from and to the SW LRT station and the Regional Trails.

A separated cycletrack along 8th Avenue will increase the comfort of road users and create a direct connection from the proposed SW LRT station to other destinations in Hopkins.

Cross-section of the cycletrack configuration for 8th Avenue.
Crossing detail of Excelsior at 8th Avenue

Birds-eye view

Intersection improvements include a crossing island on Excelsior, high-visibility crosswalks, “crossbikes” (crosswalks for bikes), and curb ramp transitions between the crossings and the potential cycletrack treatment on 8th Avenue.
In addition to curb ramps and high-visibility crosswalk and crossbike markings, pedestrians and cyclists are invited to cross Excelsior by way of bicycle and walk signals with push-button activation.
A Vision for 8th Avenue

8th Avenue is a destination full of art, energy, walking and biking. The planned SW LRT station is very close to downtown - actually, it feels like you are already there once you leave the train. This ARTery is complete with ephemeral public art that invites passersby to enjoy their experience traveling to or from the station. Residents and visitors are invited to slow down and linger, enjoying their surroundings and their commute.
### 3.6.1.1 Blake Road Station

**Background / Current Condition**

Blake Road is currently a busy four-lane street. The Cedar Lake Trail crosses Blake Road at the location of the future SW LRT station. The corridor is an important north-south connection for residents, students, business-owners and visitors on the east side of Hopkins. There are currently areas of limited sidewalk access, and the at-grade trail crossing has limited visibility.

Blake Road in this area has about 12-16,000 ADT - well below the need for a four lane road. A road diet or right-sizing (four- to three-lane conversion) should be considered to reduce speeding and crashes and increase space for uses other than car movement.

**General Recommended Treatments**

- Four- to three-lane conversion
- Crossing enhancements, including RRFB or HAWK at Cedar Lake Trail Crossing
- Access management - consolidate driveways for access to businesses to minimize sidewalk disruption
Blake Road recommended street improvement (Scenario A)

Right-sizing with Green Bike Lanes

After reducing the number of car travel lanes from four to three, highly-visible, six-foot green bike lanes are added against the curbline. The speed along this corridor should be no higher than 30 mph, warranting ten or eleven foot travel lanes and a ten foot center lane. Because most conflicts between road users occur at intersections and driveways, the number of driveways should be limited creating discreet entrance and exit locations from businesses.
Blake Road recommended street improvement (Scenario B)

Right-sizing with Cycletracks

Like Scenario A, the speed along this corridor should be no higher than 30 mph, warranting ten- or eleven-foot travel lanes and a ten-foot center lane. A vegetated boulevard separates the travel lanes from the cycletrack and sidewalk area on each side of the street. Crossings, such as the Cedar Lake Trail, are highly-visible using longitudinal crosswalk markings and should include a “crossbike” (crosswalk for bikes) treatment along the crosswalk. Furthermore, the crossings should be enhanced by an RRFB or, preferably, a HAWK signal. The crosswalk should remain at the same grade as the trail; the approaching Blake Road travel lanes ramp up gradually to a speed table that includes the railroad crossing and crosswalk.
Blake Road, with the addition of the SW LRT, has the potential to become one of the most livable and desirable corridors in the Twin Cities region. The recommendations presented in this Plan can be realistically accomplished by the time the SW LRT is anticipated to open in 2018, providing a short-term path to transforming this important corridor into a vibrant place that encourages active transportation and supports community connection and conviviality.
3.6.1.3 Shady Oak Road Station

Background / Current Condition

The Shady Oak Road Station will utilize a planned extension of 17th Avenue, a continuous north-south connection in western Hopkins from Excelsior Boulevard all the way to Highway 7. The street continues north as Hopkins Crossroad.

Recommended Treatments

- Use the existing wide right-of-way on 17th Avenue to accommodate bike lanes on each side of the street from Excelsior to Highway 7 and down to the planned station location.
- The new section of 17th Avenue should be a greenway-type treatment, prioritizing separated bicycle (cycletracks) and pedestrian space and low-speed traffic access, if necessary.
- Work closely with the redevelopment of the area south of Excelsior to prioritize safe and accommodating biking and walking access to the proposed station, both from north of Excelsior and along 5th Street S to 11th Ave S.
3.6.1.4 Continuing coordination with SW LRT planning

It will be important to continue to coordinate between SW LRT planning and design activities this Plan. Images from recent SW LRT TSAAP (Transitional Station Area Action Plans) charrettes for the three Hopkins stations are below:
3.6.2 Connections to Downtown

Several important connections will help to create a vital grid of routes to connect city destinations with each other, as well as the SW LRT stations. Please note that the recommendations discussed in this section provide additional detail for the map of recommended treatments presented in Section 3.4.

3.6.2.1 Mainstreet and Downtown (central and eastern connections)

Background / Current Condition

Mainstreet is the backbone of Hopkins’ historic downtown area. Lined with shops and community institutions, Mainstreet has many existing walking assets including curb extensions, sidewalks and pedestrian signals. 1st Street continues from the west as a residential street and parallels Mainstreet until it reaches 5th Avenue. Mainstreet extends to the east as Washington Ave and connects with 1st Street, creating an important connection to eastern portions of Hopkins (on the other side of Highway 169). Mainstreet and 1st Street N connect with many north-south streets including 11th Avenue, 8th Avenue and 5th Avenue.

Recommended Treatments

Mainstreet and 1st St N
- Develop bike lanes on each side of 1st Street N
- Develop colored bike lanes on each side of Mainstreet
- Create a continuous sidewalk network on 1st Street N
- Install Leading Pedestrian Intervals for all signalized intersections on Mainstreet
- Install bike boxes at all signalized intersections
• Continue bike lanes onto Washington Ave to connect to Minnetonka Mills Road

11th Avenue, 8th Avenue and 5th Avenue
• Right-size / reduce the number of car lanes south of Mainstreet and provide a bicycle boulevard on 11th Avenue
• Provide a bicycle boulevard on 8th Avenue north of 1st Street N
• Provide a cycletrack on 8th Avenue south of 1st Street N (see discussion under 3.6.1)
• Provide bike lanes on 5th Avenue

Minnetonka Mills Road, 2nd Street N and 1st Street S
• Provide bike lanes on Minnetonka Mills Road from 7th Avenue to the Cedar Lake Trail
• Develop a bicycle boulevard on 2nd Street N from the Lake Minnetonka LRT Trail to Burnes Park (Park Lane)
• Provide bike lanes on 1st Street S to connect the 8th Avenue cycletrack to Central Park; this also provides access to Downtown Park, City Hall and the Post Office
3.6.2.2 1st Street N and Mainstreet (west connections)

Background / Current Condition

1st Street N is an important east-west connection through central Hopkins. There are currently no bicycle accommodations and limited sections of sidewalk. Mainstreet has shops and civic institutions and many existing pedestrian assets including curb extensions, sidewalks and crossing signals. Both 1st Street N and Mainstreet are the primary connectors to Shady Oak Road. 17th Avenue is an important north-south connection that intersects both 1st Street N and Mainstreet

Recommended Treatments

- Develop bike lanes on each side of 1st Street N
- Develop colored bike lanes on each side of Mainstreet
- Create a continuous sidewalk network on 1st Street N
- Install Leading Pedestrian Intervals for all signalized intersections on Mainstreet
- Install bike boxes at all signalized intersections
- Develop bike lanes on 17th Avenue from Excelsior to the Lake Minnetonka LRT Trail
3.6.3 Connections to Other City Destinations

This section addresses connections that extend from downtown and the LRT station areas. **Recommendations discussed in this section provide additional detail for the map of recommended treatments presented in Section 3.4.**

3.6.3.1 Hopkins Public School Area

**Background / Current Condition**

The connection from central Hopkins to the Eisenhower Elementary campus on the north side of Highway 7 is challenging for pedestrians and cyclists. 4th Street, near Alice Smith Elementary, is a quiet neighborhood street.

**Recommended Treatments**

- Develop enhanced crossings with median crossing islands where 12th Avenue crosses Highway 7, including high-visibility crosswalk markings, a “crossbike,” and reduced wait times
- Create a bicycle boulevard treatment along 4th Street N from 17th Avenue to Minnetonka Mills Road
- Create a bicycle boulevard treatment on Minnetonka Mills Road near Alice Smith Elementary from Highway 7 to 7th Ave (transition to bike lanes on Minnetonka Mills Road - see 3.6.2)
- Create enhanced pedestrian connection between Minnetonka Mills Road and Highway 7 / 12th Avenue intersection
- Develop a bicycle boulevard on 12th Avenue from Highway 7 to the Lake Minnetonka LRT Trail
- Develop a bicycle boulevard on 11th Avenue, continuing from downtown to Minnetonka Mills Rd
- Continue bike boulevard on 8th Avenue from the south
3.6.3.2 Southern Hopkins

Background / Current Condition

Portions of 11th Avenue South of Excelsior carry over 17,000 cars per day. With current accommodations, cyclists must mingle with automobiles on this busy multi-lane north-south connector in south-central Hopkins. 11th Avenue South is the primary link for workers and residents in southern Hopkins; primary residential areas include Westbrooke Patio Homes, Meadow Creek Condominiums, as well as homes off of 7th Street S. 11th Avenue South is the only access point across the heavy freight rail line just south of 5th Street S.

Recommended Treatments

- Right-sizing would reduce the number of motor vehicle lanes from four to three, providing space to provide bicycle facilities on 11th Avenue in the form of cycletracks or buffered bike lanes
- Provide a continuous sidewalk network throughout the neighborhoods
- Develop buffered bike lanes on 7th Street S
- Create an inviting crossing and connection to 5th Street S, which will be the point of connection to the Shady Oak LRT station
3.6.3.3 Shady Oak Road (CSAH 61)

Background / Current Condition

Shady Oak Road is an important business corridor along the western edge of Hopkins. Bicycle and pedestrian accommodations north of Excelsior are limited and make non-motorized transportation very difficult.

There is a current County project underway for CSAH 61 (Project Number 9112) that includes road widening recommendations as well as sidewalk and trail improvements.

Recommended Treatments

- Coordinate closely with CSAH 61 planned improvements
- Separated bike/walk paths on each side of Shady Oak
- Enhanced street crossings with median refuge islands and high-visibility markings
- Curb extensions with appropriately-sized curb radii
- Wayfinding to Shady Oak Lake beach from Minnesota River Bluffs Trail and Excelsior Boulevard
3.6.3.4 North Hopkins

Background / Current Condition

Connections to North Hopkins are made on either Hopkins Crossroad or Oak Ridge Road. Both streets have sections of shoulder on each side. The streets connect to County Road 5 (Minnetonka Boulevard), where an existing shared-use path is present on the south side of the street.

Recommended Treatments

• Develop a shared bike/walk dedicated space on each side of Hopkins Crossroad and Oak Ridge Road
• Use combined right turn/bike lane, or eliminate large sections of right-turn lanes
• Consider dedicated sidewalks to connect to public transit stops
• Mark existing south sidepath driveway intersections with green paint
• Complete existing sidepath connections on Highway 7 to connect Hopkins Crossroad to Oak Ridge Road via Eisenhower Elementary School
3.6.3.5 Blake Road Area / Eastern Hopkins

Background / Current Condition

Blake Road is an important residential and commercial corridor in Hopkins. With the addition of the SW LRT station on Blake Road, enhanced pedestrian and bicycle connections will be necessary (see discussion of the Blake Road station area in Section 3.6.1).

2nd Street NE is a vital connector to the downtown area and is currently lacking comfortable pedestrian and bicycle treatments. Blake Road south of Excelsior transitions to a two-lane road with bike lanes and connects to Blake School and residential areas. The Blake School property is bounded on the south by an existing trail that connects to 2nd Street South to the west.

General Recommended Treatments

- Create an enhanced crossing of Excelsior Boulevard on each side of Blake Road with crossing islands, high-visibility crosswalk and crossbike markings, and bike and pedestrian signals
- Extend suggested road right-sizing and cycletrack treatment south of Excelsior until Blake becomes two lanes; transition cycletrack to existing bike lanes
- Create a comfortable and legible connection to downtown and Cargill
  - Develop buffered bike lanes on both sides of 2nd Street NE
  - Complete sidewalk gaps on 2nd Street NE
  - Develop a bicycle boulevard on Goodrich Street
  - Develop a continuous bicycle boulevard on 3rd Street S and 2nd Street S; connect to existing shared-use path west of Highway 169 and existing trail south of Blake School
3.6.4 Regional Connections

The City of Hopkins is conveniently located near the City of Minneapolis and adjacent to the western suburbs of Minnetonka (west), St. Louis Park (to the north and east) and Edina (south). Four major regional trails connect with the City: North Cedar Lake Regional Trail, Cedar Lake LRT Regional Trail, Minnesota River Bluffs LRT Regional Trail and Lake Minnetonka LRT Regional trail. Developing safe and convenient pedestrian and bicycle connections to the trails and to the adjacent communities is a priority of this Plan. This section focus on the regional trail assets that exist in Hopkins and how they can be better leveraged as tools for connecting people with places via non-motorized transportation.

3.6.4.1 Lake Minnetonka LRT Regional Trail: Way-finding

Background / Current Condition

Hopkins is fortunate to be well-connected to many regional trails. However, someone unfamiliar with the geography of Hopkins would have difficulty navigating from one trail to the other, or from trails to city amenities such as Mainstreet, schools and other civic institutions. For example, the Lake Minnetonka LRT Regional Trail cuts directly through central Hopkins and is an asset for non-motorized transportation, but it is currently unclear how to use it to connect to the Minnesota Bluffs Regional LRT Trail.

Recommended Treatments

- A comprehensive wayfinding system to direct people from the Minnesota Bluffs Regional LRT Trail to the Lake Minnetonka LRT Regional Trail, and vice versa
• The wayfinding system should be anchored on the 8th Avenue ARTery and be incorporated into public art along the corridor
• Wayfinding should be located on the trails, 8th Avenue, as well as on intersecting streets (both of 8th Avenue and the trails in Hopkins) to help create a network of non-motorized mobility
• Wayfinding should be extended to a block off of the trails to direct people from the street grid to the trails
• Wayfinding should include both distances and times to destinations

3.6.4.2 Cedar Lake Trail Crossing / Connection to Minnesota River Bluffs Trail

Background / Current Condition
Excelsior Boulevard is a significant barrier to pedestrian and bicycle movement in Hopkins. Safe and convenient non-motorized movement across Excelsior will be a high priority to enable connection with the three SW LRT stations. Additionally, the area along Excelsior near the North Cedar Lake Regional Trail, the Cedar Lake LRT Regional Trail, as well as the Minnesota River Bluffs LRT Regional Trail, is a confusing at-grade intersection.

Recommended Treatments
• Create a simple and comprehensive wayfinding system to direct trail users with information about distances and times to important regional destinations
• In the short term, direct trail users to cross Excelsior at-grade at the crossing nearest to The Depot Coffeehouse to transition from the North Cedar Lake Trail to the Minnesota River Bluffs Trail, instead of having users cross the railroad tracks on an angle, twice
• Develop a high-visibility at-grade crossing of Excelsior near the existing crossing at The Depot Coffeehouse at the US 169 access ramps
• Continue the seamless at-grade transition from the Minnesota River Bluffs Trail to the Cedar Lake Trail with high-visibility crossing markings, as well as bicycle traffic signals that activate quickly - this should be applied for the crossing of Excelsior as well as where the Cedar Lake Trail crosses Jackson Ave N
• In the long term, this development of this area should be closely coordinated with the engineering of the SW LRT - there is an opportunity to combine extensions of the Minnesota River Bluffs Trail and the Cedar Lake Trail as part of an elevated passageway to connect the trails with each other, as well as the existing shared-use path on the south side of Excelsior Boulevard

The area where the two legs of the Cedar Lake Trail come together with the Minnesota River Bluffs Trail.

The Excelsior Avenue intersection of North Cedar Lake Regional Trail, the Cedar Lake LRT Regional Trail, and the Minnesota River Bluffs LRT Regional Trail.

Crossing a major street, such as Excelsior, should be done at grade and with a reactive crossing activation, and with highly-visible crosswalk markings and a median crossing island.
3.6.5 Crossing major corridors

There are several major streets in Hopkins that act as barriers to pedestrian and bicycle movement. Without crossing provisions, it is difficult for people to reach their destinations. Where intersections exist, legal crossings also exist in the form of marked or unmarked crosswalks, but sometimes it is unclear to road users who has the right of way. The Toolbox of Treatments (Section 3.5) has solutions for addressing crossing along roads like Excelsior Boulevard, Blake Road and Shady Oak Road at mid-block locations or at intersections. Effective solutions include the Rectangular Rapid Flash Beacon (RRFB) and the Pedestrian Hybrid Beacon (PHB, also known as a HAWK).
3.7 Integration with transit

This section provides discussion into the importance of integrating pedestrian and bicycle networks into current and future transit networks for the creation of a more effective network overall.

3.7.1 Integrating biking with transit

Improving bicycle connections to transit can play an important role in making these modes a part of daily life in Hopkins. Easy and convenient linkages to transit help increase the potential number of trips made by bike by increasing the number of destinations available, and by alleviating concerns about lengthy trips, riding at night, and adverse weather. Effective linkages to transit allow pedestrians and cyclists to reach more distant destinations while increasing transit ridership.

Connecting bicycles with transit

There are four main components of bicycle-transit integration:

- Allowing bicycles on transit
- Offering bicycle parking at transit locations
- Improving bikeways to transit
- Encouraging usage of bicycle and transit programs

Bikes on transit

Allowing bikes on transit helps extend the distance that a cyclist may comfortably reach. Metro Transit has greatly strengthened the interconnection between cycling and transit in the Twin Cities region by providing space for bikes on all of its buses and trains. On buses, this takes the from of a pull-down rack on the front of the bus. On the Metro Transit LRT trains, each train car has designated space for several bikes.

Bike parking at transit

Providing safe, long-term bicycle parking at transit stations helps reassure bike commuters that their bikes will still be there when they return from a work, and will
encourage bike commuting to transit. Typically, an appropriate mix of short-term and long-term bicycle parking is provided at transit centers.

**Bicycling to transit**

Local and national surveys consistently show that the biggest barrier to more frequent cycling is the lack of safe and comfortable routes to destinations, specifically bikeways. Given that transit centers have not traditionally been viewed as major destinations for cyclists, few safe and convenient bikeways from neighborhoods to transit centers have been established. Such bikeways, along with the other necessary components for convenient bike commuting, are an important part of the solution for attracting additional commuters to transit.

**Encouraging biking and transit**

Educating people about existing bike and transit facilities is one of the best ways to encourage and increase their use. Sharing information on the practical benefits of combining cycling and transit (greater radius of reachable distance, convenient connection to destinations, health benefits from physical activity, and potential time and cost savings over driving an automobile) will encourage potential cyclists to combine their trip with transit.

Incentive programs which offer transit discounts to people who arrive at a destination by bus or bike can help to increase the number of bicycle and transit users. Programs like MetroTransit’s “Guaranteed Ride Home” for cyclists who ride their bikes to work three times a week or more can also help reduce reluctance to traveling without an automobile.

**Bicycle “Park and Rides”**

Many transit agencies in the US have built automobile “Park and Rides” as an alternative (or to supplement) feeder bus service. Recently, growing concerns about congestion, air quality and facility costs have prompted a reexamination of the “Park and Ride” concept - especially when considering that many of the automobile trips to these facilities are less than two miles, which is an easy cycling distance. Cycling to
transit ("Ride to Ride") can benefit communities by reducing demand for land and lowering taxpayer costs, energy consumption, traffic congestion and air pollution.

**Bike Stations at transit centers**

“Bike stations,” which provide cyclists with robust facilities for storage and maintenance of bicycles, and are generally located near transit hubs or other major destinations, are increasingly common in a number of cities across the US and Canada. Cyclists who ride their bikes to transit can leave their bikes to be stored and serviced as needed while they continue their commute via transit. Bike stations often act as an important way-point, and provide amenities such as long-term bike parking and shower and locker facilities.

The McDonald's Bike Center in Chicago is a great example of a comprehensive bike facility which provides amenities such as bike parking, maintenance, showers/lockers, retail, and acts in general as a hub of bicycle activity.

**Nice Ride**

A bike share program such as Nice Ride Minnesota can be a great way to increase the reach and effectiveness of a transit center. By siting rental kiosks at LRT stations in Hopkins and at locations within the city, commuters are given the option for hassle-free bike access to the transit system, and to the larger bike share system within the Twin Cities.
3.7.2 Pedestrian and transit integration

Several Metro Transit bus routes operate in Hopkins, providing connections around the city and between Hopkins and surrounding communities. Three Express Routes link Hopkins with downtown Minneapolis: Express Routes 664, 665, and 670. Route 615 travels through Hopkins linking the Ridgedale Center along Interstate 394 in Minnetonka with St. Louis Park. Route 12 services Hopkins and Minnetonka to the west, linking these areas with Uptown and downtown Minneapolis. Regularly scheduled transit service in Hopkins includes the following routes:

<table>
<thead>
<tr>
<th>Route</th>
<th>Service Description</th>
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<tbody>
<tr>
<td>12</td>
<td>Local bus route, connecting Opus office park in Minnetonka, downtown Hopkins, St. Louis Park, Uptown and downtown Minneapolis. Travels on Excelsior Boulevard and Main Street in Hopkins. Operates about every 15 minutes in peak rush hours, and every 30 minutes during midday hours with limited stops.</td>
</tr>
<tr>
<td>615</td>
<td>Local bus route, connecting Ridgedale Center in Minnetonka, Hopkins, and St. Louis Park. Travels on Hopkins Crossroad, 12th Avenue North, Highway 7, Main Street, 5th Avenue North, and Minnetonka Mills Road in Hopkins. Limited service operating once per hour throughout the day.</td>
</tr>
<tr>
<td>664</td>
<td>Express bus route, connecting Eden Prairie, Minnetonka, Hopkins, St. Louis Park, and downtown Minneapolis. Travels on Main Street and Excelsior Boulevard in Hopkins. Limited service operating 4 buses eastbound during morning weekday rush hours and 5 buses westbound during weekday afternoon rush hours.</td>
</tr>
<tr>
<td>665</td>
<td>Express bus route, connecting Opportunity Partners in Minnetonka with Hopkins and downtown Minneapolis. Travels on 11th Avenue South, Excelsior Boulevard, and U.S. Highway 169 in Hopkins. Limited service operating 3 buses eastbound during weekday morning rush hours and 3 buses westbound during weekday evening rush hours.</td>
</tr>
<tr>
<td>670</td>
<td>Express bus route, connecting Orono, Tonka Bay, Excelsior, Minnetonka, and Hopkins with downtown Minneapolis. Travels on Excelsior Boulevard and Minnesota Highway 7 in Hopkins. Limited service operating 3 buses eastbound during weekday morning rush hours and 3 buses westbound during weekday evening rush hours.</td>
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</table>
Changes are being finalized to modify bus transit service through Hopkins and other west metro suburbs, as part of Metro Transit’s West Suburban Service Changes Project. The proposed changes are designed to increased access and connectivity for the communities of Hopkins, Minnetonka, St. Louis Park, Deephaven, Greenwood, Excelsior, Shorewood and Tonka Bay.

The Recommended Plan for changes to bus service affecting Hopkins includes increasing the span of weekday service hours for Route 615, eliminating Route 665, and rerouting Routes 664 and 670 to maintain coverage for the eliminated Route 665. Detailed recommended changes are available here: http://metrotransit.org/Data/Sites/1/media/pdfs/west_metro/summary.pdf. Recommended Plan changes were recently approved by the full Metropolitan Council and will begin implementation on August 24, 2013.
3.8 Bicycle parking

Bicycle parking is an end of trip facility that makes it more convenient and inviting for people to arrive by bicycle to a destination.

Provision of adequate bicycle parking cannot be overlooked: if bicycle parking spots are inadequate or if finding them is enough of an inconvenience, cyclists will next time choose a different mode for arriving or may choose another destination altogether, even if the provided bicycle routes are perfectly safe and convenient.

End of trip facilities for Hopkins

The type of end-of-trip facility most needed throughout Hopkins is bicycle parking. Where it exists, it has sometimes been placed in a way that conflicts with pedestrian circulation, or is in other cases of a substandard type or is inconveniently placed, in a location that may not be visible or obvious.

Given that easily accessible, secure and convenient bicycle parking is an essential and inexpensive tool to support people’s choice to travel by bicycle, the provision of ample, convenient and accessible bike parking is one of the first priorities recommended by this Plan.

Types of bicycle parking

Bicycle parking is commonly grouped into two types:

- **Short-term bicycle parking** accommodates visitors, customers, messengers and others who arrive at a destination and are expected to depart within a couple of hours. A standard “inverted U” rack, appropriate location and placement, and weather protection is recommended. This type of parking is recommended for Hopkins’ downtown and shopping districts, and for city parks.

- **Long-term bicycle parking** accommodates employees, students, residents, commuters, and others expected to leave their bikes unattended for more than two hours. This type of parking should be secure, weather-protected and in a visible location.
and convenient location. It may be provided by using standard “inverted U” racks in a visible, supervised or a monitored location, by bicycle lockers, or by offering a locked room with standard racks and access limited to cyclists only (See Bike Stations in Section 3.7). Long-term bicycle parking should be provided at Hopkins schools, office and employment sites.

**Recommendations**

- Develop comprehensive bicycle parking options at the three SW LRT station locations (see discussion in Section 3.7)
- Improve bicycle parking at Hopkins parks and community centers
- Improve provision of bicycle parking in Downtown and at shopping destinations
- Improve provision of bicycle parking at employment centers and at multi-family housing units

**Guidelines for the design of bicycle parking facilities**

Easily accessible, secure and convenient bicycle parking is a critical component of inviting people to make the choice to travel by bicycle.

Providing functional, visible and secure bicycle parking inexpensively and efficiently increases a building’s parking capacity, serves those who use bicycles as a mode of transportation, and supports and encourages bicycle use. Choosing appropriate components and layout for a bicycle parking facility will improving the conditions for biking there.

**Bike parking components**

Functional and convenient bike parking results from the proper design and combination of the following three elements:

- The design of the bike rack itself, which supports the bicycle
- The rack area, which may include several individual bike racks
- The location of the rack area, and its relationship to the building entrance it serves and the cyclists’ approach to that entrance
The bike rack

The rack should support the bicycle upright by its frame in two places, enabling the frame and one or both wheels to be secured while preventing the bicycle from tipping over. Additionally, it should not require a cyclist to lift their bike to be able to lock it securely - a useful rack design should allow a cyclist to roll-in or back-in their bicycle to lock it.

The rack area

The rack area is the “bike parking lot” that the racks and the circulation needed to move in and out of the racks define. To be functional and useful, certain minimum clearances and access rules should be observed:

- Individual racks should be located no closer than 30 inches to each other in order to allow sufficient space for easy entry and removal of bicycles on either side
- No rack element should be closer than 24 inches to a wall or other obstruction in order to allow full usability and easy access to perimeter racks
- Large rack areas, or rack areas with high turnover, should provide more than one entrance to ease circulation of cyclists and pedestrians
- Rack areas should preferably offer protection from rain and snow in order to ease loading and unloading of bikes and to keep bike saddles dry
- When multiple rows of bike racks are provided, the circulation space provided from the wheel of a bike on one row to the closest wheel of a bike on the next row should be a minimum of 48 inches

Location of the rack area

One of the most important considerations in providing useful and functional bicycle parking is the location of the rack area in relation to the building it serves. Some guidelines for locating the rack area include:

- The recommended location for a bicycle parking area is immediately adjacent to the entrance it serves, preferably within 50 feet. It should be located as close as possible without blocking the entrance or hindering pedestrian movement to or from the building

Recommendations
• The rack area should be clearly visible from the entrance it serves and from the building’s approach line
• Bike rack areas should be as close or closer than the nearest car parking space
• Buildings with multiple active entrances should include bike rack areas at each entrance
• Racks that are hard to find, are far from principal entrances or perceived to be unsafe will not be used by cyclists

**Hopkins locations for bicycle parking facilities**
Locations where parking and other end of trip facilities should be prioritized include:

**At SW LRT stations (see Transit Integration, Section 3.7)**
- Blake Road
- 8th Avenue / Downtown Hopkins
- Shady Oak

**At retail and community destinations**
- Excelsior Boulevard
- Mainstreet
- Shady Oak Road
- Hopkins Center for the Arts
- Depot Coffee House
- Hopkins Activity Center
- Hopkins Pavilion
- City Hall
- Post Office
- Library

**At Hopkins schools and community centers**
- Alice Smith Elementary
- Eisenhower Elementary
- The Blake School
- John Ireland Elementary
- Main Street School of the Performing Arts
- Ubah Medical Academy

**At Hopkins area parks and recreational facilities**
- Burnes Park
- Central Park
- Cottageville Park
- Downtown Park
- Elmo Park
- Harley Hopkins Park
- Hiawatha Oaks Preserve
- Hilltop Park
- Interlachen Park
- Maetzold Field
- Minnehaha Creek Preserve
- Oakes Park
- Overpass Skate Park
- Park Valley Playground
- Shady Oak Beach
- Shady Oak Nature Area
- Valley Park
3.9 Maintenance

This chapter provides an overview of maintenance recommendations for sidewalks and bikeways in Hopkins. For additional guidance and information please consult Chapter 9 (Maintenance) of the Minnesota Department of Transportation Bikeway Facility Design Manual, which is incorporated into this Plan by reference.

Walking and biking facilities should receive adequate maintenance to protect the investments made by Hopkins and its partners and to ensure that they continue to provide safe, comfortable and inviting facilities for residents and visitors well into the future.

User needs

Pedestrians

Pedestrians or wheelchair users depend on having a level, slip-resistant surface for their travel. Walking surfaces that are free from unexpected bumps, holes or cracks, and free from ice or other slippery materials, are paramount for their safety and comfort. Pedestrians also depend on the ability of motorists to anticipate and respond to their presence while crossing streets or when otherwise exposed to motor-vehicle traffic; therefore, signs, signals and markings should be maintained and kept in good working condition.

Bicyclists

A cyclist rides on two very narrow, high-pressure tires. What may be an adequate roadway surface for automobiles (which have suspension and shock-absorbing systems and travel on four wide, low-pressure tires) can be treacherous for cyclists: small rocks can deflect a bicycle wheel; a crack in the pavement or a poorly-placed drainage grate can trap a wheel; wet leaves, ice, and the gravel that gets blown off the travel lane are slippery and can cause a fall.

Winter walking, running and biking are increasingly popular activities. Encouraging year-round Active Living requires year-round maintenance.

An incorrectly-placed grate can trap a cyclist’s wheel and cause a serious fall. This grate, on a bicycle lane in Minneapolis, was reported and correctly repositioned the same day.
Addressing user needs
Although walkways and bikeways will always be subject to debris accumulation and surface deterioration, a proactive and pedestrian- and cyclist-conscious approach to roadway maintenance and operations will go a long way towards ensuring safe and efficient utilization of Hopkins’ non-motorized network assets.

General considerations

Maintenance budget
Preventive maintenance reduces hazards and future repair costs. Maintenance costs and responsibility for maintenance should be assigned when projects are planned and budgets developed; typical annual maintenance costs range from 3 to 5 percent of infrastructure replacement costs - for example, a $100,000 facility should include a $5,000 annual maintenance budget. Life-cycle cost analysis is recommended to determine the net value of using longer-lasting, higher-quality materials during construction if they reduce yearly maintenance expenditures.

Management plans
A management plan is a tool to identify maintenance needs and responsible parties. A management plan that includes the maintenance component for a proposed facility should be in place before construction. Additionally, a management plan should include a means for users of the system to report maintenance and related issues and to promptly address them.

A facility’s management plan answers basic operational and staffing questions such as: How frequently are preventive maintenance tasks performed? Who fills potholes? Who removes downed or dangerous trees? Responds to vandalism and trespassing? Removes litter? Replaces stolen or damaged signs? Waters and weeds landscaping? Acts as the main contact? Does the work? Pays the bills?

User-initiated maintenance requests
The users of Hopkins’ pedestrian and bicycle network will likely be the first parties to notice hazards, maintenance issues, or opportunities to bring improvement to the system. Establishing a formal mechanism for receiving requests for maintenance can help focus and prioritize investments, avert deterioration of the city’s infrastructure investments, provide effective management, and reinforce citizen-ownership of Hopkins’ non-motorized network assets.

Maintenance Request Program
One simple, low-cost way of establishing this program would be through the addition of a “Pedestrian / Bicycle Facility Maintenance Request” button on the city’s existing website which would take visitors to a web form where they would be prompted to identify the location and nature of the issue they are reporting. Potential issues that might be reported include small-scale, low-cost improvements, such as sweeping, repairing surface problems, trimming vegetation blocking signs or obstructing routes, and replacing unsafe gratings.
Routine maintenance

Snow and ice removal

Snow removal is a critical component of pedestrian and bicycle safety. The presence of snow or ice on sidewalks, curb ramps, or bikeways will deter pedestrian and cyclist use of those facilities to a much higher degree than cold temperature alone.

Seniors and other vulnerable adults will avoid walking in locations where ice or snow accumulation creates slippery conditions that may cause a fall. Curb ramps that are blocked by ice or snow effectively sever access to pedestrian facilities for wheelchair users and seniors. Additionally, inadequately maintained facilities may force pedestrians and bicyclists onto facilities that may not offer safe or adequate accommodations, or that require them to take a route that is a longer distance.

When the surface of a road is covered by snow, the pavement markings that guide and warn motorists, pedestrians and bicyclists may be difficult to see. Care should be taken to clear roads so that pavement markings are identifiable. Snow should be cleared from a roadway’s entire surface to allow pedestrians or bicyclists to travel as far as possible to the right side of the road or shoulder.

Prioritizing snow clearing operations

A useful approach for maximizing the efficiency of maintenance investments is to identify locations where accumulation of snow or ice would significantly impede pedestrian and bicycling access and safety so that these locations are prioritized for clearing by maintenance immediately after a storm event.

A year-round approach

Snow and ice removal must be planned with the expectation that walking and bicycle facilities will continue to be used during winter months. Care should be taken to place snow and ice well out of the portion of sidewalks, bike lanes and shoulders that pedestrians and bicyclists use. Bike trails and paths should also be swept with regularity.
Sidewalks, bikeways, gutters and curb ramps should not be used as snow storage areas for snow removed from streets; city policies should address the clearance of snow from walkways, bikeways and road shoulders as being of equal importance as clearance of snow from the automobile travel lanes in streets.

**Sweeping**
Loose sand and debris on the surface of bicycle lanes, paved shoulders, and paved sections of shared use paths should be removed at least once a year, normally in the spring. Sand and debris will tend to accumulate on bicycle lanes because automobile traffic will sweep these materials from the automobile portions of the roadway. This is especially true for bicycle lanes that are located directly adjacent to a curb, where debris collects already.

**Surface repairs**
Pedestrians and bicyclists are more sensitive and more vulnerable to problems in the roadway surface than motor vehicles. A smooth surface, free of potholes and other major surface irregularities, should be provided and maintained. Care should be taken to eliminate other physical problems. Requests for surface improvements could be made through the Pedestrian / Bicycle Facility Maintenance Request Program described above.

**Resurfacing / pavement overlays**
Street resurfacing projects provide ideal opportunities to greatly improve conditions for pedestrians and cyclists - by narrowing automobile travel lanes, widening shoulders, or adding bicycle lanes, for example. However, if not done correctly (by, for example, leaving a ridge or a joint in a shoulder or bicycle lane), some conditions may worsen.

**Recommendations**
Items to consider on resurfacing projects that will help improve conditions for pedestrians and cyclists include:
- Gravel driveways and alleys should be paved back 5 to 10 feet from the edge of pavement or right-of-way to prevent gravel from spilling onto the shoulders or bike lanes
- Using chip seals to surface or resurface shoulders should be avoided, as they will render the shoulder area unusable to most bicyclists
- Avoid leaving a ridge in the area where cyclists ride, which occurs where an overlay extends only part-way into a shoulder or bike lane. If possible, the overlay should be extended over the entire surface of the roadway to avoid leaving an abrupt edge.

**Signs and pavement markings**
Signs and pavement markings are important features of walkways, bikeways and roadways, and help ensure continued safe and convenient use of these facilities. It is critical that bikeway signs, striping, and legends be kept in a readable condition.

Some recommendations to address these infrastructure elements include:
- Regular inspection of bikeway signs and legends, including an inventory of signs to account for missing or damaged signs
- Replacement of defective or obsolete signs as soon as possible
- Regular inspection of striping, and prompt reapplication as needed
- Depending on wear, bike lanes may need to be repainted on an annual basis. Bike lane stripes may wear out less often on lower traffic volume streets than on higher volume streets
- Durable cold plastic should be used for skip-striping bike lanes across right turn lanes.
Vegetation

Vegetation encroaching into and under a walkway or a bikeway creates a nuisance and a hazard for pedestrians (especially for those with sight or mobility impairments) and for bicycle riders. The management of vegetation is generally considered the responsibility of city maintenance staff. To provide long-term control of vegetation, its management should be considered during design and construction. Vegetation management helps to maintain smooth pavement surface, as well as clear zones, sightlines, and sight corners to promote pedestrian and cyclist safety.

Vegetation management issues identified by users (e.g. tree roots causing heaving of sidewalk surfaces) may be reported through the Pedestrian / Bicycle Facility Maintenance Request Program described above.

Drainage issues

Drainage facilities may change grades and deteriorate over time. Ensuring that bicycle-safe drainage grates are located at the proper height greatly improves cyclist safety; it may sometimes be necessary to adjust or replace catch basins to ensure continued safe operations and improve drainage. The small asphalt dams that are sometimes constructed on roadway shoulders to divert storm water into catch basins are a hazard to cyclists and their use should be avoided.

Event-related drainage issues (e.g. backed-up grates) and long-term drainage hazards (unsafe grates) can be reported and addressed through the Pedestrian / Bicycle Facility Maintenance Request Program, and should be proactively addressed whenever street improvements are made.

Other maintenance activities

Patching activities

Loose asphalt materials from patching operations often end up on the shoulder, where the larger particles adhere to the existing surfacing, creating a very rough surface for pedestrians and cyclists. Fresh loose materials should be swept off the road before they have a chance to adhere to the pavement.

Utility cuts

Utility cuts can leave a rough surface for cyclists if not back-filled with care. Cuts should be backfilled and compacted so that the cut will be flush with the existing surface when completed. Extra care should be used when cuts are made parallel to bicycle traffic to avoid a ridge or groove in the bicycle wheel track.
3.10 Education and encouragement

Developing walking and bicycle infrastructure is only the first part of increasing walking and biking in a community, as even the best-planned walking or bicycle network will fail to live up to its full promise if potential users are unaware of its existence, or if it’s difficult to figure out how to get from one destination to another. In addition, walkers, cyclists and motorists will each do better if they learn how to consistently and courteously share road space with each other and to coexist within Hopkins’ transportation and recreation infrastructure.

This chapter presents some ideas that may help Hopkins invite its residents, businesses and visitors to safely and effectively use the route network that develops from this plan. It is titled “education and encouragement” to acknowledge that both of these activities build on each other, and that learning about safe riding and disseminating information about the city’s walking and bikeway networks will lead to more people using them part of their transportation and recreational activities.

Inviting users to routes and facilities

Network maps

People won’t use a walking or biking network if they are unaware of its existence, or if they don’t know how it may help them reach their routine destinations. Printing and distributing bikeway maps is a high-benefit, low cost project that can help cyclists locate bikeways, walkers identify better route choices for their trip, and the city promote its local businesses and festivals. Map inserts can provide information covering such topics as Rules of the Road, bicycle safety and maintenance, and connecting with mass transit. Another low-cost and potentially helpful tool is the addition of existing web-based trip planner services to the Hopkins website (like Cyclopath or Google Maps) where pedestrians and cyclists type in their destination and receive one (or several) recommended routes.
Special community events

Special events offer an opportunity to bring attention to practical, fun, and healthy aspects of walking and cycling as tools for getting places and for recreation. Because these events are community-wide and of limited duration, people are more open to participating without feeling like they have to commit to making a long-term change in their travel or recreation habits - they are just skating, walking or biking in their city once, not everyday. But sometimes that’s all that is needed to open the door to adopting new travel behaviors over the long term.

Some events and programs that can encourage participation include:
- Monthly group rides with the City Council or the Mayor or other important local personalities can help promote cycling in Hopkins. Similar events, including Open Streets / Ciclovia events close a road or two to auto traffic once a month and make it a bike and pedestrian-only event.
- Parks and recreation programs can work with non-profit or cycling advocacy groups to sponsor cycling events and activities, especially on trails and regional cycling routes.
- Special bicycle commuter events can help raise the profile and potential for bicycle commuting. Bike to Work Week events, which typically include special publicity, route guidance to first-time bicycle commuters, and group breakfasts, offer an opportunity to try cycling in a safe, relaxed and fun environment. Bike to Work Week events have been held in many Minnesota communities over the last several years.

Visitor programs

Tourist promotion materials can highlight walking and bicycling as great ways to circulate within and experience Hopkins’ natural and recreational assets. Several communities in Minnesota boast of their cycling orientation as part of their identity and as a draw for potential visitors. Completing safe and comfortable connections to the regional trails could help bring in additional visitors and customers to Hopkins’ Downtown.
Student programs / SRTS

Encouraging student walking and cycling to school helps instill life-long habits of health and activity, and provides proof to students that cycling is a serious and valid transportation option. Some strategies and programs that could be implemented in Hopkins to encourage student cycling include:

- Working with local schools to encourage students and staff to ride to school
- Working to integrate cycling education into physical education classes
- Establishing awards and incentives programs for completion of bicycle classes, or for riding to school so many times per week, etc.
- Discounts to area bicycle shops as prizes for outstanding students

Rider incentive and TDM programs

Increased use of walking and biking can help achieve Transportation Demand Management (TDM) objectives for workplaces and communities while improving community health and supporting local economic development. Several types of incentive programs are in use in communities throughout the United States. Among the most popular are:

- Business associations provide discounts to shoppers who arrive by bike
- Employers offer parking cash-out benefits, which give commuters who don’t drive the cash equivalent of the parking subsidies provided to drivers

These programs help address issues of lack of parking and increasing congestion that often sometimes hinder successful commercial areas. Hopkins businesses could offer discounts for customers who arrive on foot or by bike.

Learning to ride safely

Walking and cycling are health-promoting and safe activities that can become even safer with improved education. Motorists, cyclists, and pedestrians each have much to contribute to making walking and cycling (and other modes of travel) safer and more effective: one of the leading causes of crashes is the unexpected behavior of at least one of the parties involved. Cyclist, motorist, and pedestrian safety programs can help
reduce the risk of crashes and injuries while giving new cyclists the confidence needed to ride more regularly. In fact, safety training has been shown to be an effective and cost-efficient way of reducing collisions and encouraging cycling.

Three main components of safety training are addressed under this section. They center on:
• Developing safe cycling skills in children;
• Teaching adult cyclists their rights and responsibilities; and,
• Increasing motorists’ awareness of bicyclists’ rights on the road, and teaching them how to safely share the road with bicycles.

For children and young people
It is important to share information on safe walking and bicycling with young people from early on. This will help them be safe and will also reinforce the message that walking and cycling are useful and mainstream means of transport. While it is not uncommon for schools in the US to provide automobile driver education for children 16 or older, it is rare to find similar provision of cycling education, even though most children seven and older are able to ride a bicycle and (because of generally poor provision of separated trails) routinely ride in streets that are also used by automobiles.

In European countries where cycling serves a much larger portion of all trips it is a given that schools provide formal training in safe cycling for children starting in elementary school. In the Netherlands, for example, children undergo a three week training on cycling rules and maneuvers each year. It is easy to imagine that Hopkins students could receive similar training, perhaps as a component within physical education classes (and one which could help promote a lifetime of safe and enjoyable physical activity). It is also a given that schools, parks and other places where young people congregate need to provide a physical infrastructure that supports children’s cycling by making sure that adequate bike parking, and well-marked trails or lanes, are available (covered elsewhere in this Plan).

Some approaches
School children are most effectively reached when an action-oriented teaching approach and a repetitive practice process are coupled with awards and incentives. Awards and incentives can consist of certificates of completion or bicycle/pedestrian licenses, free or reduced-cost bicycle helmets and other accessories, or discount coupons for area bicycle shops.

Messages
The following messages should be consistently taught:
• Wear a helmet. In the event of a bicycle crash, wearing a helmet can reduce the risk of serious head injury by up to 85%.
• Obey all traffic laws. Bicyclists have the same rights, and consequently the same responsibilities, as motorists.
• Look both ways before crossing streets.
• Always ride with the flow of traffic.
• Be predictable and always signal your intentions.
• Be visible; wear light-colored clothing and bright or reflective clothing and always use a front light and rear reflectors at night.
• In addition, very young children (seven or less) should ride with supervision.

For adult cyclists
Adult cyclists range in skills and confidence. Some adults are comfortable riding on busy streets and mixing with traffic while others prefer quieter streets or off-street paths. There are adults who ride a bicycle only a few times a year and those who ride often but
primarily for recreation. Each type of cyclist has his or her own concerns and philosophy about how bicycles fit into the transportation system - education efforts must recognize this and tailor messages to each group.

**Messages**

The following messages should be consistently taught:

- **Be alert.** Watch for other users and sudden behavior changes. Pay careful attention to potential road hazards, such as potholes and gravel. Adjust speed to maintain control of the bicycle.
- **Obey all traffic laws; bicyclists have the same rights, and consequently the same responsibilities, as motorists. Disobeying traffic laws makes it more difficult for motorists to know what to expect from cyclists and is potentially dangerous.**
- **Always ride with the flow of traffic.** Ride where motorists and others expect cyclists, and never against traffic.
- **Avoid riding on sidewalks.** It is illegal in commercial districts in Minnesota, and puts pedestrians at risk. It also makes it more difficult for motorists to see cyclists - research demonstrates that sidewalk riding is much more dangerous than riding on the street, even in places where no bicycle facilities are provided.
- **Be predictable.** Signal your turns and do not weave in and out of traffic.
- **Be visible.** Wear light-colored, bright or reflective clothing and use front lights and rear reflectors or lights at night.
- **Wear a helmet.**

**For motorists**

The goal in educating motorists is to foster a broad and general public awareness and respect for bicycling. Many motorists are already occasional or regular cyclists, and may begin riding more often if they see and feel the emphasis on providing safe conditions for all road users. Bicycle route signs and markings are also helpful for motorists because they remind them of the presence of cyclists and of the need to share space with other users of the road. Information on the rights of cyclists should be included as part of training for all automobile drivers.

**Messages**

- **Share the road.** Cyclists have the right to travel on all roads and streets except limited access freeways.
- **Give room.** Follow and pass at a safe distance. Never get closer than three feet to a cyclist under any circumstance. It is dangerous and illegal under Minnesota law.
- **Be alert.** Watch for cyclists and other users and for sudden behavior changes. Pay attention especially at intersections.
- **Obey all traffic laws.** What would amount to a minor fender bender between two motor vehicles could be a serious injury for a cyclist in a bicycle-motor vehicle crash. Driving the speed limit and coming to a full stop at red lights creates a safer environment for all.
- **Be predictable.** Signal turns well before an intersection.
- **Cyclists have the right to take full possession of a travel lane in several situations, including when avoiding fixed or moving objects on the road (like vehicles, pedestrians or road surface hazards) and when the provided road space is too narrow to allow a motor vehicle to safely pass with three feet of clearance of the cyclist.**
- **Be patient and courteous with cyclists and other users.** Passing bicyclists just before a stop light or sign creates an atmosphere of unnecessary hostility.
- **Do not honk unless absolutely necessary.** Cyclists can hear and see motor vehicles; honking simply jars their nerves.
Becoming designated as a Bicycle Friendly Community

The Bicycle Friendly Community (BFC) Program is a program to which communities can apply based on their commitment to the five E’s of bike planning:

- Education
- Encouragement
- Engineering
- Enforcement
- Evaluation & Planning

Becoming a BFC has important benefits for a community like Hopkins, including recognition, promotion of community amenities, technical assistance, benchmarking, and inspiration for further improvements for cycling. Hopkins can also partner with local businesses as a part of the Bicycle Friendly Business program.

Currently, Minnesota is ranked as the #2 Bike Friendly State in the US, and #1 in the Midwest Region with 5 Bicycle Friendly Communities, 35 Bicycle Friendly Businesses, and 1 Bicycle Friendly University.

The next review cycle deadline is July 16, 2013. There are two application deadlines per year, one in February and one in July. More information is available at: www.bikeleague.org/programs/bicyclefriendlyamerica/communities/
Implementation and Funding

This section provides resources and guidance for funding and implementing this Plan.

In this section
  4.1 - Benchmarks, tasks and timelines
  4.2 - Potential funding sources
  4.3 - Estimating implementation costs
4.1 Benchmarks, tasks and timelines

There are a number of ways to identify and track whether progress is being made to improve the walking and bicycling environment in Hopkins.

Some potential benchmarks include:
- Walking (measured by counts) goes up
- Biking (measured by counts) goes up
- Speeding goes down
- Crashes go down
- Use of on-street parking in commercial districts goes up
- Noise goes down
- Neighborhoods and businesses are satisfied (based on a before and after improvement project questionnaire)

Any number of these criteria should be selected before embarking on an individual improvement project based on the goals and objectives of the specific improvement project.

Improvements related to SW LRT

Implementation benchmarks for this Plan should be organized around the upcoming planning and installation of the SW LRT. Improvements along Blake Road, 8th Avenue and 17th Avenue should be prioritized and be tied closely to the detailed station area planning and preliminary engineering being done this year. Improvements to these corridors should be made concurrently with the construction of the three SW LRT stations in Hopkins to create one, complete and deeply-rooted network that is centered along the SW LRT alignment.
Ongoing improvements should be made on a separate schedule and should include the following:

- Complete sidewalk gaps in residential areas to complete pedestrian network. Goal is to complete 20% of gaps per year.
- Develop bicycle boulevards on all recommended streets within five years.
- Create safer crossings with median crossing islands on streets not part of the SW LRT improvements, such as Highway 7, within three years.
- Create improvements in North Hopkins along Hopkins Crossroad and Oak Ridge Road within three years.
- Improve east-west connections along Mainstreet, 1st Street N and Minnetonka Mills Rd concurrently with SW LRT improvements, to ensure a complete network develops to bring people to and from the station areas.
- Create improvements along 11th Avenue south of Excelsior to connect to points south within three years. Include improvements along 7th Street S and connections to existing paths along Westbrooke Way.
- Create improvements along Shady Oak Road that mirror improvements done to Blake Road during the SW LRT improvements. Best practices from Blake Road should be applied to Shady Oak Road, including bicycling and walking facilities and safe, comfortable crossings. Coordinate closely with CSAH 61 planned improvements.
- Increase bicycle parking along Mainstreet, 8th Avenue, Blake Road, Shady Oak Road, and other areas including schools, parks and businesses.
### 4.2 Potential funding sources

A variety of funding sources and programs are available to partially or wholly support the improvement of pedestrian and/or bicycle facilities in Hopkins. This section presents a compilation that may serve as a starting point for future efforts.

<table>
<thead>
<tr>
<th>Grant or Program name</th>
<th>Organization</th>
<th>Walk? / Bike? / Both?</th>
<th>Program description</th>
<th>Additional information</th>
<th>Potential project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livable Communities Development Account</td>
<td>Metropolitan Council</td>
<td>Both</td>
<td>Intended to link housing, jobs, and other amenities through comprehensive, well-designed networks. Projects can occur on both local and regional scales.</td>
<td><a href="http://www.metrocouncil.org/services/livcomm/LCAresources.htm">http://www.metrocouncil.org/services/livcomm/LCAresources.htm</a></td>
<td>Bike lanes and bicycle boulevards downtown and linking to downtown locations.</td>
</tr>
<tr>
<td>Hennepin County Transit Oriented Development Grant</td>
<td>Hennepin County</td>
<td>Both</td>
<td>To be used with multi-jurisdictional projects in order to connect people with transit. This includes the provision of pedestrian and bicycle facilities.</td>
<td><a href="http://hennepin.us/portal/site/HennepinUS/menuitem.b1ab75471750e40fa01db47cc106498/?vgnextoid=665fb42321ff5210VgnVCM20000048114689RCRD">http://hennepin.us/portal/site/HennepinUS/menuitem.b1ab75471750e40fa01db47cc106498/?vgnextoid=665fb42321ff5210VgnVCM20000048114689RCRD</a></td>
<td>Cycletracks or bike lanes linking the three planned SW LRT stations to other portions of the city.</td>
</tr>
<tr>
<td>Hazard Elimination and Railway-Highway Crossing Programs</td>
<td>Federal Highway Administration (FHWA)</td>
<td>Both</td>
<td>Uses funds from Highway Safety Improvement Program (HSIP) to eliminate hazards at railroad crossings and to provide safe crossing facilities.</td>
<td><a href="http://safety.fhwa.dot.gov/safetealu/fact_sheets/fsht1401d.cfm">http://safety.fhwa.dot.gov/safetealu/fact_sheets/fsht1401d.cfm</a></td>
<td>Crossing of the railroad on Blake Road near the location of the planned SW LRT station.</td>
</tr>
<tr>
<td>National Highway System (NHS)</td>
<td>Federal Highway Administration (FHWA)</td>
<td>Both</td>
<td>The NHS provides a number of different grants, including some that pertain to pedestrian and bicycle safety and facilities.</td>
<td><a href="http://www.fhwa.dot.gov/planning/national_highway_system/">http://www.fhwa.dot.gov/planning/national_highway_system/</a></td>
<td></td>
</tr>
<tr>
<td>Surface Transportation Program (STP)</td>
<td>Federal Highway Administration (FHWA)</td>
<td>Both</td>
<td>Can be used for pedestrian or bicycle facilities, or the creation of non-construction projects such as maps or education.</td>
<td><a href="http://www.fs.fed.us/eng/pubs/pdf/07771814.pdf">www.fs.fed.us/eng/pubs/pdf/07771814.pdf</a></td>
<td></td>
</tr>
<tr>
<td>Grant or Program name</td>
<td>Organization</td>
<td>Walk? / Bike? / Both?</td>
<td>Program description</td>
<td>Additional information</td>
<td>Potential project</td>
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<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Congestion Mitigation and Air Quality Act (CMAQ)</td>
<td>Federal Highway Administration (FHWA)</td>
<td>Both</td>
<td>Intended to reduce air pollution and congestion by encouraging cycling and walking through provision of facilities or other resources such as maps and education.</td>
<td><a href="http://www.fhwa.dot.gov/environment/air_quality/cmaq/">http://www.fhwa.dot.gov/environment/air_quality/cmaq/</a></td>
<td>Improvements related to the Lake Minnetonka Regional LRT Trail, the Minnesota Bluffs Regional LRT Trail, and the Cedar Lake Trail.</td>
</tr>
<tr>
<td>National Scenic Byways Program (NSBP)</td>
<td>Federal Highway Administration (FHWA)</td>
<td>Pedestrian</td>
<td>This grant is used for construction of pedestrian walkways along scenic byways. It requires 20% local contribution.</td>
<td><a href="http://www.bywaysonline.org/grants/">http://www.bywaysonline.org/grants/</a></td>
<td></td>
</tr>
<tr>
<td>Recreational Trails Program</td>
<td>Federal Highway Administration (FHWA)</td>
<td>Both</td>
<td>Can be used for construction and/or maintenance of recreational trails for motorized or non-motorized transport. At least a 5% local contribution is required.</td>
<td><a href="http://www.fhwa.dot.gov/environment/recreational_trails/">http://www.fhwa.dot.gov/environment/recreational_trails/</a></td>
<td>Sidewalk gaps throughout the city; cycletrack and bike lane projects.</td>
</tr>
<tr>
<td>Highway Safety Improvement Program (HSIP)</td>
<td>Federal Highway Administration (FHWA)</td>
<td>Both</td>
<td>Intended to increase safety and reduce fatalities on the National Highway System. This includes pedestrian and bicycle facilities. A 10% local contribution is required.</td>
<td><a href="http://safety.fhwa.dot.gov/hsip/">http://safety.fhwa.dot.gov/hsip/</a></td>
<td></td>
</tr>
<tr>
<td>Transportation Enhancements (TE)</td>
<td>Federal Highway Administration (FHWA)</td>
<td>Both</td>
<td>Intended to provide transportation enhancements including rail-to-trail programs, ‘main street’ projects, and streetscape improvements among others.</td>
<td><a href="http://www.fhwa.dot.gov/environment/transportation_enhancements/">http://www.fhwa.dot.gov/environment/transportation_enhancements/</a></td>
<td>Crossing improvements on Highway 7; bike lane and bike boulevard improvements near Alice Smith Elementary.</td>
</tr>
<tr>
<td>Safe Routes To School (SRTS)</td>
<td>National Center for Safe Routes to School</td>
<td>Both</td>
<td>This grant is provides funding for pedestrian and bicycle facilities along school routes.</td>
<td><a href="http://www.saferoutesinfo.org/">http://www.saferoutesinfo.org/</a></td>
<td></td>
</tr>
<tr>
<td>Active Living Research</td>
<td>Active Living Research</td>
<td>Both</td>
<td>Supports studies which promote active living through policy, particularly in regards to childhood obesity.</td>
<td><a href="http://www.activelivingresearch.org/grantsearch/grantopportunities">http://www.activelivingresearch.org/grantsearch/grantopportunities</a></td>
<td></td>
</tr>
<tr>
<td>Grant or Program name</td>
<td>Organization</td>
<td>Walk? / Bike? / Both?</td>
<td>Program description</td>
<td>Additional information</td>
<td>Potential project</td>
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<td>--------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Safe Kids Walk This Way</td>
<td>Safe Kids USA</td>
<td>Pedestrian</td>
<td>Intended to create a safer pedestrian environment by educating motorists and children. This goal is achieved through community engagement practices.</td>
<td><a href="http://www.safekids.org/in-your-area/coalitions/minnesota-state.html">http://www.safekids.org/in-your-area/coalitions/minnesota-state.html</a></td>
<td></td>
</tr>
<tr>
<td>Job Access and Reverse Commute Grants</td>
<td>Federal Transit Administration (FTA)</td>
<td>Both</td>
<td>This program aims to connect low-income residents and welfare recipients to work places via transit access and pedestrians and bicycle facilities.</td>
<td><a href="http://fta.dot.gov/grants/13093_3550.html">http://fta.dot.gov/grants/13093_3550.html</a></td>
<td></td>
</tr>
<tr>
<td>Land and Water Conservation Fund (LWCF)</td>
<td>Department of Natural Resources (DNR)</td>
<td>Both</td>
<td>Intended to protect local land and water resources in a number of ways including trails which promote the enjoyment and protection of resources via non-motorized transportation.</td>
<td><a href="http://www.dnr.state.mn.us/grants/recreation/parkroads.html">http://www.dnr.state.mn.us/grants/recreation/parkroads.html</a></td>
<td></td>
</tr>
<tr>
<td>Rivers, Trails, and Conservation Assistance Program</td>
<td>National Park Service (NPS)</td>
<td>Both</td>
<td>Provides guidance to communities for the preservation of land and water as well as the development of recreational trails and greenways.</td>
<td><a href="http://www.nps.gov/ncrc/programs/rtca/contactus/cu_apply.html">http://www.nps.gov/ncrc/programs/rtca/contactus/cu_apply.html</a></td>
<td></td>
</tr>
</tbody>
</table>
### 4.3 Estimating implementation costs

The following tables are provided as a guide - a first step toward estimating probable costs for implementation projects. Contingency, engineering/design, construction and administration costs are not included. See additional information at [www.bicyclinginfo.org/bikecost/](http://www.bicyclinginfo.org/bikecost/).

#### Striping

<table>
<thead>
<tr>
<th>Treatment description</th>
<th>Unit</th>
<th>Unit cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot; Dashed</td>
<td>LF</td>
<td>$0.75</td>
</tr>
<tr>
<td>6&quot; Dashed</td>
<td>LF</td>
<td>$1.00</td>
</tr>
<tr>
<td>8&quot; Dashed</td>
<td>LF</td>
<td>$1.25</td>
</tr>
<tr>
<td>4&quot; Solid</td>
<td>LF</td>
<td>$1.00</td>
</tr>
<tr>
<td>6&quot; Solid</td>
<td>LF</td>
<td>$1.50</td>
</tr>
<tr>
<td>8&quot; Solid</td>
<td>LF</td>
<td>$2.00</td>
</tr>
<tr>
<td>“Zebra” striped crosswalk (thermoplastic)</td>
<td>LF</td>
<td>$120.00</td>
</tr>
</tbody>
</table>

#### Pavement markings

<table>
<thead>
<tr>
<th>Treatment description</th>
<th>Unit</th>
<th>Unit cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike lane symbol (paint)</td>
<td>EA</td>
<td>$75.00</td>
</tr>
<tr>
<td>Bike lane symbol (thermoplastic)</td>
<td>EA</td>
<td>$200.00</td>
</tr>
<tr>
<td>Shared lane marking (thermoplastic)</td>
<td>EA</td>
<td>$275.00</td>
</tr>
<tr>
<td>Green bike lane (paint)</td>
<td>LF</td>
<td>$19.00</td>
</tr>
<tr>
<td>Colored pavement (thermoplastic)</td>
<td>SF</td>
<td>$10.00</td>
</tr>
</tbody>
</table>

#### Signs, Signals and Wayfinding

<table>
<thead>
<tr>
<th>Treatment description</th>
<th>Unit</th>
<th>Unit cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayfinding sign (including post and base)</td>
<td>EA</td>
<td>$400.00</td>
</tr>
<tr>
<td>Regulatory/warning sign (including post and base)</td>
<td>EA</td>
<td>$300.00</td>
</tr>
<tr>
<td>Pedestrian hybrid beacon (RRFB)</td>
<td>LS</td>
<td>$15,000.00</td>
</tr>
<tr>
<td>HAWK signal system</td>
<td>LS</td>
<td>$100,000.00</td>
</tr>
<tr>
<td>Bicycle signal</td>
<td>EA</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>Loop detector</td>
<td>EA</td>
<td>$1,500.00</td>
</tr>
</tbody>
</table>

#### Intersection treatments / traffic calming

<table>
<thead>
<tr>
<th>Treatment description</th>
<th>Unit</th>
<th>Unit cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median extension for pedestrian refuge (6 ft x 8 ft)</td>
<td>EA</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>Pedestrian refuge island, small (1100 sf)</td>
<td>EA</td>
<td>$12,000.00</td>
</tr>
<tr>
<td>Pedestrian refuge island, large (2300 sf)</td>
<td>EA</td>
<td>$25,000.00</td>
</tr>
<tr>
<td>Speed hump (raised crossing)</td>
<td>EA</td>
<td>$2,500.00</td>
</tr>
</tbody>
</table>

#### Other

<table>
<thead>
<tr>
<th>Treatment description</th>
<th>Unit</th>
<th>Unit cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle parking (inverted U)</td>
<td>EA</td>
<td>$190.00</td>
</tr>
<tr>
<td>Street lights</td>
<td>EA</td>
<td>$3,700.00</td>
</tr>
<tr>
<td>Bollard</td>
<td>EA</td>
<td>$150.00</td>
</tr>
<tr>
<td>Underpass</td>
<td>LF</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>ADA Curb ramp</td>
<td>EA</td>
<td>$1,500.00</td>
</tr>
<tr>
<td>Concrete Sidewalk</td>
<td>SF</td>
<td>$8.00</td>
</tr>
</tbody>
</table>
Appendix

This section provides additional resources and information related to the work of this Plan.

In this section
A.1 - Online survey
A.2 - Rules of the road for Minnesota cyclists
A.3 - Best Practices
A.1 Online survey

Survey: City of Hopkins Pedestrian and Bicycle Plan

This survey is part of a project to develop a Pedestrian and Bicycle Plan for the City of Hopkins. Your answers will help us understand your ideas and concerns about walking and bicycling in the city. Your responses will be kept confidential.

Part 1: Walking in Hopkins

During the summer months - how often do you walk to a destination in or around Hopkins?
- Never, or almost never
- Once or twice a week
- More than a couple of times a week, but not everyday
- Everyday, or almost everyday

Which destinations? (Please list up to your top 3 destinations)
- Destination 1
- Destination 2
- Destination 3

What would help you walk more often?

Part 2: Bicycling in Hopkins

During the summer months - how often do you ride your bicycle to a destination in or around Hopkins?
- Never, or almost never
- Once or twice a week
- More than a couple of times a week, but not everyday
- Everyday, or almost everyday

Which destinations? (Please list up to your top 3 destinations)
- Destination 1
- Destination 2
- Destination 3

What would help you ride your bicycle more often?
Which destinations in or around Hopkins do you wish you could ride a bicycle more easily? (Please list up to three)

Destination 1

Destination 2

Destination 3

**Part 3: Additional comments**

Please provide any additional information or ideas that you think could help improve conditions for walking or bicycling in Hopkins:

**OPTIONAL**

I want to continue to be involved in this process. You can reach me at:

Name / Daytime phone / Email

(Optional) My residential address is:
A.2 Rules of the road for Minnesota cyclists

This is a summary of Minnesota laws describing cyclists’ rights and responsibilities (from M.S. 169.222, and M.S. 169.18). Sharing this information as part of education campaigns for children, seniors and other adults will help improve safety on Hopkins’ roads and trails.

1) Ride on the right with traffic; obey all traffic signs & signals; bicyclists have all the rights and duties of any other vehicle driver. (subd. 1)
2) Legal lights and reflectors are required at night. (subd. 6a)
3) Arm signals required during last 100’ prior to turning (unless arm is needed for control) and while stopped waiting to turn. (subd. 8)
4) Cyclists may ride two abreast on roadways as long as it does not impede normal and reasonable movement of traffic. (subd. 4c)
5) When passing a bicycle or pedestrian, motor vehicles shall leave at least 3 feet clearance until safely past the bicycle or pedestrian (169.18 subd. 3)
6) Ride as close as practicable to the right hand curb or edge of roadway except;
   a) When overtaking a vehicle
   b) When preparing for a left turn
   c) When necessary to avoid conditions that make it unsafe, e.g. fixed or moving objects, such as hazards, or narrow-width lanes. (subd. 4a)
7) Yield to pedestrians on sidewalks and in crosswalks; give audible signal when necessary before overtaking. (subd. 4d)
8) Riding on sidewalks within business districts is prohibited unless locally permitted. (subd. 4d)
9) It is illegal to hitch rides on other vehicles. (subd. 3)
10) Only one person on a bike unless it’s equipped for more, or a legal baby seat is used. (subd. 2)
11) It is illegal to carry anything that prevents keeping one hand on handlebars or proper operation of brakes. (subd. 5)
12) Bicycle size must allow safe operation. Also, handlebars must not be above shoulder level. (subd. 6c & 6d)
13) Unless locally restricted, parking on the sidewalk is legal as long as it does not impede normal movement of pedestrian or other traffic. (subd. 9a)
14) Legal parking on a roadway, that does not obstruct legally parked motor vehicles, is allowed. (subd. 9b)
A.3 Best Practices

The City of Hopkins Pedestrian and Bicycle Plan
Survey of Best Practices

INTRODUCTION

PUBLIC HEALTH BENEFITS

PEDESTRIAN FACILITIES

BICYCLE FACILITIES

ADDITIONAL RESOURCES AND REFERENCES
CREATING A ROBUST AND EFFECTIVE NETWORK

A carefully thought out, well-designed and consistently-maintained pedestrian and bicycle network, that connects community destinations and provides comfortable conditions for its users will encourage walking and bicycling for transportation and recreation and improve safety, accessibility and convenience for all users.

A good network also encourages safety. A network with gaps along desired routes will increase the probability that pedestrians and cyclists may act in ways that endanger themselves or others on the street. An interrupted or unsafe network also discourages use, especially among novice cyclists and pedestrians with special needs or disabilities.

To develop and achieve a good and effective network, appropriate facilities for travel, safety, and wayfinding must be employed such that there are no significant gaps in the infrastructure that might create barriers or obstacles for pedestrians and cyclists. This applies to both mid-trip and post-trip facilities, especially in regards to cyclists. The following document is a series of best practice recommendations with design guidelines and applications to the specific context of Hopkins.
The City of Hopkins Pedestrian and Bicycle Plan
Survey of Best Practices - Public Health Benefits

PROMOTING ACTIVE LIFESTYLES THROUGH THE BUILT ENVIRONMENT

The built environment impacts our daily decisions about how we get to the places we are going. By providing infrastructure that invites the use of active modes of transport such as biking and walking, we can potentially reduce the incidence of chronic diseases linked to inactivity such as diabetes, asthma, heart disease, hypertension, stroke, colon cancer, osteoporosis, depression, and breast cancer, and can also reduce the prevalence of risk factors like overweight and obesity.

A lack of physical activity especially impacts young people, who as a population are showing drastic increases in rates of obesity and diabetes. Increased opportunities for walking and cycling not only address these conditions, but also help to instill life-long habits of healthy and routine physical activity.

By providing safe and comfortable routes to schools and other popular destinations within Hopkins, residents can easily participate in meaningful and regular exercise by walking or biking. Other beneficial health effects include a reduction of air pollution, reduced incidents of injuries caused by car crashes, and an increased feeling of independence and empowerment.
The City of Hopkins Pedestrian and Bicycle Plan
Survey of Best Practices - Pedestrian Facilities

Sidewalks
Sidewalks - General
Sidewalk Frontage Zone
Sidewalk Pedestrian Zone
Sidewalk Furniture Zone
Sidewalk Curb Zone
Curb Ramps

Intersections
Marked Crossings
Median Crossing Islands
Curb Extensions

Signals
Pedestrian Hybrid Beacon (HAWK)
Rectangular Rapid Flash Beacon (RRFB)
Countdown Timers
Leading Pedestrian Interval (LPI)
Description
Curb ramps allow for people with disabilities or limited mobility to easily enter and exit pedestrian crossings. They also make walking generally more comfortable and safe for all pedestrians.

Design guidance
• Preferred design is to provide two perpendicular ramps rather than one on the corner in order to better place wheelchair users and reduce conflicts with traffic
• The slope of a ramp should be no greater than 8.3%
• Ramp width is a minimum of 48”, with a corresponding landing of equal width
• Detectable warnings must be included for people with vision impairments

Advantages and Constraints
• Properly designed curb ramps make the pedestrian realm accessible to people of all ages and abilities
• Properly designed curb ramps encourage safe and easy crossing of streets
• Improperly designed or positioned curb ramps can encourage pedestrian/automotive conflict

General Application
• Curb ramps should be employed at all locations where pedestrians are expected to cross

Perpendicular curb ramps.
Best Practices Marked Crossings

**DESCRIPTION**

Marked crossings are a visual indication of where pedestrian crossing can legally and safely occur.

**Design guidance**

- Should be combined with Advanced Stop Bars in order to minimize risk of “Hidden Threat” crashes
- High visibility crossings are longitudinally marked and are easier for motorists to see
- Crossings marked with pavers or decorative treatments are discouraged as they can be difficult for those with mobility impairments
- Longitudinal high-visibility marked crossings are preferred
- Minimum markings consist of solid white lines between 6-24” in width (MUTCD)

**ADVANTAGES AND CONSTRAINTS**

- Alert motorists to potential pedestrian presence in an intersection or at a crossing
- Create a safe crossing environment for pedestrians
- Low cost

**GENERAL APPLICATION**

- Should be used at all controlled intersections (stop signs or traffic lights)
- Should be used at uncontrolled crossings only when speeds do not exceed 40 mph to discourage unsafe crossings
- Trail or school routes should have marked crossings
- At least every 1/8 mile

*Examples of high visibility marked crossings: Continental, Ladder, Staggered Continental. Image courtesy of Michele Weisbart, Model Design Manual for Living Streets.*
Best Practices Median Crossing Island

DESCRIPTION
Crossing islands make pedestrian crossings safer and easier by dividing them into two stages so that pedestrians only have to worry about crossing traffic one direction at a time.

Design guidance
• Trees and low ground cover increase visibility beyond signage to alert drivers to the presence of the median island.
• Minimum width of 6’
• Adequate lighting must be provided
• Pedestrian path in the median should be angled so the pedestrian faces traffic before crossing (MUTCD)

ADVANTAGES AND CONSTRAINTS
• Make crossing of high volume roads safer and easier
• They allow for slower walkers such as children and the elderly to cross wider roads without worrying about getting caught in the middle
• Requires additional space for the provision of a median in the center of the road

GENERAL APPLICATION
• Wide roads
• Roads where speeds are high or there are high volumes of traffic
• Schools, transit hubs, trails, shopping centers and work centers

Median crossing island (Bainbridge Island, WA, pictured above). Image courtesy of FHWA.
**Best Practices Curb Extensions**

**Description**

Curb extensions are the extension of the sidewalk and curb into the travelway at corners.

**Design Guidance**

- Curb extensions are not to interrupt travel lanes, including bike lanes.

**Advantages and Constraints**

- Increased pedestrian visibility
- Shorter crossing distances
- Increased waiting space on corners; additional room for perpendicular curb ramps
- Additional room for street furnishings
- Reduced speed of turning vehicles
- Might complicate turning for larger vehicles
- Compatible with snow plowing operations, but should be communicated to maintenance crews

**General Application**

- Curb extensions should only be applied where street parking is present
- Should never extend into travel lanes, including those designated for cyclists
Best Practices Pedestrian Hybrid Beacons (HAWK Signals)

**Description**

The pedestrian hybrid beacon is a pedestrian-activated red-indication signal designed for locations where a standard traffic light is not justified by warrants.

**Design Guidance**

- An advanced stop bar should be installed in front of the crosswalk.
- When used, signs and crosswalks should be used in conjunction with the beacon.

**Advantages and Constraints**

- Gives pedestrians the ability to cross a uncontrolled intersections that may be relatively busy
- Can be applied to less busy pedestrian routes than standard traffic signals
- Less expensive than a standard traffic light
- New treatment; many engineers and agencies are unfamiliar with it
- More expensive than some options

**General Application**

- Where no traffic signal is present
- Where a crosswalk exists
- Where 20 or more pedestrians per hour cross a given location

**Example Cities**

- Vancouver, British Columbia
- Lawrence, KS
- Tucson, AZ
Best Practices Rectangular Rapid Flash Beacon (RRFB)

**Description**

The Rectangular Rapid Flash Beacon (RRFB) is a flashing LED that is placed ahead of a crosswalk. It helps alert drivers to the presence of the crosswalk.

**Design Guidance**

- Employing RRFB’s only at crossing problem areas, school routes, or other high volume routes in order to prevent a decrease in compliance
- A beacon should be placed between the pedestrian crossing sign and the attached arrow plaque

**Advantages and Constraints**

- Relatively inexpensive
- High levels of driver compliance
- Ubiquity of RRFB’s could reduce their tendency to be noticed by drivers

**General Application**

- RRFB’s can be used at crosswalks where no traffic signal is present.

**Example Cities**

- St. Petersburg, FL
- Calgary, Alberta
- Tucson, AZ

*Solar-powered RRFB installation. Image courtesy of ELTEC Corporation.*
Best Practices  
**Countdown Timers**

**Description**

This device consists of a standard pedestrian crossing signal which works in conjunction with a timer that counts down during the period in which the ‘red hand’ symbol would normally be blinking. The timer indicates exactly how much time is left until the light changes.

**Design Guidance**

- Can be used to replace existing standard pedestrian crossing signals at intersections with high traffic volumes or pedestrian populations with need for greater protection such as elderly citizens and school children.
- Costs range from $300-$800 per installation, generally.

**Advantages and Constraints**

- Relatively low-cost
- Well understood
- Reduces the number of pedestrians in the crosswalk at the time of the light change
- Easy installation

**General Application**

- Wide crossings
- Crossings with high pedestrian or vehicle traffic volumes
- School crossings
- Crossings where elderly citizens are expected

*Pedestrian countdown timer at a pedestrian crossing at an intersection. Image courtesy of Bike Walk Lincoln Park.*
**Best Practices** Leading Pedestrian Interval (LPI)

**Description**
LPI refers to a method wherein the traffic signal is programmed so that the pedestrian walk sign occurs several seconds before the ‘green light’ at the parallel street. This gives pedestrians a head start into the intersection so that they are more easily seen when cars begin to move forward.

**Design Guidance**
- A LPI of 3 seconds has been shown to provide an adequate lead for pedestrians without reducing the green light time significantly

**Advantages and Constraints**
- Requires only reprogramming, not additional equipment, and is therefore inexpensive
- Gives pedestrians a longer, safer crossing period
- Increases visibility, reducing collisions
- LPI’s have received positive feedback from pedestrians and drivers alike in that they reduce conflicts

**General Application**
- Particularly useful for school crossings
- Also useful for crossings where elderly citizens are expected
- Any intersection where high volumes of pedestrian traffic are expected

**Example Cities**
- St. Petersburg, FL
- Orlando, FL
- New York City, NY
- Minneapolis, MN

*The Leading Pedestrian Interval allows pedestrians to proceed before motorized vehicles. Image courtesy of FHWA.*
The City of Hopkins Pedestrian and Bicycle Plan
Survey of Best Practices - Bicycle Facilities

Urban Bikeways
- Conventional Bike Lanes
- Buffered Bike Lanes
- Contraflow Bike Lanes
- Advisory Bike Lanes
- Cycletracks
- Bike Boulevards

Intersections
- Bike Boxes
- Median Refuge Island
- Forward Stop Bar
- Combined Bike Lane/Right Turn Lane

Signing and Marking
- Colored Bike Facilities
- Shared Lane Markings

Signals and Wayfinding
- Traffic Signals for Bicycles
- Loop Detector for Bicycles
- Bicycle Route Wayfinding Signage
**Best Practices Conventional Bike Lanes**

**Description**

Bike lanes designate a portion of the roadway for preferential use by bicyclists. Lanes are defined by striping, pavement markings and signage.

**Design Guidance**

- Lane Width
- “Dooring Zone” clearance when bike lanes are located adjacent to parked vehicles
- Frequency of paved markings indicating bike lane
- Place pavement markings out of the turning vehicles path to minimize wear
- Minimum width recommendation for implementation of on-street bike lanes is 5 ft wide

**Advantages and Constraints**

- Create separation between cyclists and motor vehicles
- Allow for cyclists to travel at their preferred speed
- Increases cyclist visibility to motorists
- Space availability can be a constraint

**General Application**

- Bike lanes are recommended for streets with \( \geq 3,000 \) motor vehicle average daily traffic
- Bike lanes should be provided on all streets where traffic speeds exceed 25 mph

*Bike Lane on the right side of a one-way street (San Francisco, pictured above).*
Best Practices Buffered Bike Lanes

**Description**
Buffered bike lanes provide cyclists with extra space between the bike lane and moving traffic, increasing their comfort. Buffers can provide cyclists with adequate room to pass without having to merge into automobile traffic.

**Design Guidance**
- Bicycle pavement markings indicating the lane to all road users that the space is designated for cyclists
- Color may be used at the beginning of each block to clearly indicate to motorists that the space is a buffered bike lane
- Buffer shall be marked with 2 solid white lines with diagonal hatching of 3’
- Buffered bike Lane: 3’ buffer and 4’ bike lane next to curb may be considered a 7’ bike lane

**Advantages and Constraints**
- Provides greater distance between motor vehicles and bicyclists
- Improves cyclist comfort
- Provides bicyclists space to pass another bicyclist without merging into motor vehicle lane
- Buffered bike lanes may require more maintenance (painting / maintenance of markings) than a traditional bicycle lane

**General Application**
- Anywhere a bike lane is proposed
- On streets with high travel speeds and/or high travel volumes
- On streets with extra lane width

**Example Cities**
- Minneapolis, MN
- Austin, TX
- New York, NY
- Portland, OR
- San Francisco, CA

A buffered bike lane. This example has a buffer on the left for separation from moving vehicles and a buffer on the right for separation from parked cars (Park Avenue, Minneapolis, pictured above).
Best Practices Contraflow Bike Lanes

**DESCRIPTION**
Contraflow bike lanes are bike lanes designed for a one way motor vehicle street which allow for a bike-only lane traveling in the opposite direction. Contraflow bike lanes improve bicycle access to destinations.

**DESIGN GUIDANCE**
- Accompanying signage: Bicycle lane symbol should be used to define the bike lane and direction. A “ONE WAY” sign with “EXCEPT BIKES” should be posted along the facility and at intersections to inform motorists of contraflow treatment.
- Separation of contra-flow lanes from motor vehicle lane should be shown with a solid double yellow line.
- Contraflow lane width: 5.0' minimum

**ADVANTAGES AND CONSTRAINTS**
- Provides greater connectivity
- Cyclists do not have to make detours as a result of one-way streets, reducing trip distances
- Decreases sidewalk riding

**GENERAL APPLICATION**
- One-way streets
- Narrow streets
- On corridors where alternative routes require cyclists to make detours
- Low speed, low volume streets

**EXAMPLE CITIES**
- Minneapolis, MN
- Madison, WI
- Cambridge, MA
- San Francisco, CA
- Portland, OR

*A contraflow bike lane in Madison, WI.*
**Best Practices Advisory Bike Lanes**

**Description**
An advisory bike lane is a treatment applied to narrow residential streets. Advisory lanes allow for two way traffic while still allowing room for two bike lanes. In the instance that two cars meet going opposite directions, a car is allowed to merge into the bike lane with caution.

**Design Guidance**
- Advisory bike lane width: 5’-6’
- 2-way motor vehicle lane: 12’-18’
- Curb to Curb: 23’-28’
- Colored pavement on the edges of the roadway to indicate to drivers that space is designed for bicycles

**Advantages and Constraints**
- Allows for bicycles to have priority on a roadway that would otherwise be too narrow to allow for bike lanes
- Motorists generally travel with more caution due to the tight space and the oncoming of other vehicles
- Motor vehicles often are forced to merge into bike lane to avoid other vehicles
- Less protection for cyclists than an exclusive lane designated for bicycles

**General Application**
- Corridors with low motor vehicle traffic volumes and speeds
- Narrow two way streets
- No centerline separating traffic lanes

**Example Cities**
- Minneapolis, MN
- Edina, MN
DESCRIPTION
A cycletrack is an exclusive lane for cyclists separated from motor traffic by a physical barrier and distinct from the sidewalk.

Different forms of cycletracks include:
- One-way protected cycletracks
- Raised cycletracks
- Two-way cycletracks

DESIGN GUIDANCE
- Include consideration of:
  - Cycletrack width
  - Separation
  - Crossing driveways
  - Signalized intersections
- Colored pavement may be used to further define the bicycle space
- Cycletrack width: 6 to 12 ft, depending on bicycle traffic intensity
- Cycletrack widths should be larger in locations where the gutter seam extends more than 12” from the curb

ADVANTAGES AND CONSTRAINTS
- Improves safety by providing significant separation between bicyclists and automobile traffic
- Reduces incidence of ‘dooring’ accidents
- Invites use by bicyclists of all ages, experience and comfort levels
- Space availability
- Cost required for additional infrastructure
- Difficult to implement where there are many cross streets

GENERAL APPLICATION
- Adjacent to roadways with few cross streets and longer blocks
- Major roadways with high motor vehicle speeds and traffic volume
- Streets with parking lanes

EXAMPLE CITIES
- Boston, MA
- Portland, OR
- New York, NY
- Chicago, IL
- Multiple cities across Europe
**Description**
A Neighborhood Slow Street (also sometimes known as a Neighborhood Greenway or Bicycle Boulevard) is a neighborhood residential street modified to calm automobile traffic, discourage cut-through traffic, and make walking and bicycling in those streets more comfortable.

**Design guidance**
- Stop signs should face cross streets as to reduce the amount of stops for cyclists
- Traffic calming devices will reduce motor vehicle speeds and create a safer environment for cyclists and pedestrians
- Wayfinding markers should be employed to assist cyclists and to warn motorists of the presence of cyclists
- Signals, roundabouts, and/or median refuges should be used at major intersections when necessary

**Advantages and Constraints**
- Calms traffic and reduces conflicts between cyclists and motorists
- Gives priority to cyclists traveling through intersections
- Slower automobile speeds create a safer pedestrian environment as well
- Does not work well on non-grid streets

**General Application**
- Residential streets where traffic calming is desired
- Residential streets a block or two away from a major thoroughfare with high traffic volumes

**Example Cities**
- Minneapolis, MN
- Portland, OR
**Best Practices Bike Boxes**

**Description**
A bike box is a designated area for cyclists at the head of an intersection. Pavement markings signal to motorists to stop a greater distance before crosswalk, allowing cyclists to stop in the box. This treatment gives cyclists greater priority over motorists, while making cyclists more visible.

**Design Guidance**
- Box may be ineffective if it is not properly marked with surface color
- The box may be disregarded by motorists if it is not commonly filled by bicyclists.
- Box depth: 10’-16’ (NACTO)
- Ingress bike lane should be used to define bicycle space and allow bicycles to bypass stopped motor vehicles
- Pavement markings and colored pavement surfacing
- “WAIT HERE” marking should be used to guide motorists to stop before the box

**Advantages and Constraints**
- Increase visibility of bicyclists
- Gives bicyclists priority
- Helps reduce right-hook collisions
- Groups bicyclists together to cross and intersection more quickly
- Prevents right turns on red
- Maintenance cost for pavement coloring
- Bike boxes are a fairly new pavement treatment - there is potential for drivers to be confused by the bicycle box

**General Application**
- Signalized intersections with high volumes of bicycles and/or motor vehicles, especially those with frequent bicyclist left-turns and/or motorist right-turns. (NACTO)

**Example Cities**
- Minneapolis, MN
- Boston, MA
- Madison, WI
- Portland, OR
- Vancouver, BC

Illustration: A bike box.
**Best Practices Median Refuge Island**

**Description**
A median of full curb height providing a protected space in the center of the street that allows pedestrians and bicyclists to divide their crossing movement and take refuge from traffic while crossing the street.

**Design Guidance**
- Adequate width of 10’ or greater to provide bicyclist with a trailer to be protected from both travel lanes
- Reflective pavement markings should be used on the approach to the refuge island to enhance visibility
- The refuge area should be wide enough to accommodate two way bike traffic
- Median width: minimum width 6’-10’ is preferred (NACTO)
- Height of the island should be curb level, 6” high

**Advantages and Constraints**
- Allows pedestrians and bicyclists to cross multi lane or high-volume streets more comfortably
- Reduces the length of each crossing movement
- Allows bicyclists to focus on one direction of traffic at a time while crossing
- Calms traffic via narrowing
- May restrict left-turns to be made by automobiles
- Additional cost

**General Application**
- Where bikeway crosses a moderate to high volume or high speed street (NACTO)
- Wide multi-lane roadways
- At intersections
- Along streets with heavy pedestrian and bicycle traffic

*A median refuge island in Hopkins.*
**Best Practices** Forward Stop Bar

**Description**
A forward stop bar is a second stop bar located closer to intersection than stop bar designated for motorists. Forward stop bars provide bicyclists with better visibility of cross-street traffic.

**Design Guidance**
- Adequate space should be provided for pedestrians to cross the street
- Stop bar should be marked by thermoplastic due to heavy traffic of space
- Forward stop bars should only be implemented on streets with low volume of right-turning motorists
- Stop bar should be thermoplastic for durability

**Advantages and Constraints**
- Bicyclists have better visibility of cross-street traffic
- Bicyclists are more visible to motorists
- Bicyclists are permitted to bypass queuing automobiles
- Crossing distance intersection is shortened
- Potential right-turn conflicts

**General Application**
- Along roadways with bike lanes
- Low-volume, stop controlled intersections

**Example Cities**
- Portland, OR

Illustration: A forward stop bar for bicyclists.
**Best Practices** Combined Bike Lane/Right Turn Lane

**DESCRIPTION**
A combined bicycle lane/right turn lane positions a suggested bike lane within the inside portion of the roadway dedicated for motor vehicle turn lane.

**DESIGN GUIDANCE**
- Advance warning to alert bicyclists and motorists of approaching shared lane
- A combined bike lane / turn lane is not an appropriate treatment at intersections with high automobile turn demand
- The combined lane width should be a minimum of 9’, and a maximum of 13’
- Shared lane marking in the lane to show through bicycle movement
- A dotted 4” line and bicycle lane marking should be used to clarify bicycle positioning within the shared lane

**ADVANTAGES AND CONSTRAINTS**
- Maintains bicyclists comfort and priority in the absence of a dedicated bicycle through lane
- Reduces the risk of dangerous right hook collisions at intersections
- Allows dual use of lane where the bicycle lane would otherwise be cut off before the intersection
- Bicyclists traveling through may block right-turning motorists

**GENERAL APPLICATION**
- On streets where a bike lane approaches an intersection with a lane for right turn lanes of vehicles
- On streets where there is a right turn lane but not enough space to maintain an exclusive lane for bicyclists

**EXAMPLE CITIES**
- Austin, TX
- Eugene, OR
- New York, NY
- San Francisco, CA
- Vancouver, WA

Illustration: A combined bike lane/right turn lane.
Best Practices Colored Bike Facilities

**DESCRIPTION**

Bike lanes are made more visible by colored pavement. This treatment distinguishes the lane from the rest of the roadway, making cyclists more visible.

- Recommend high-friction surfacing over standard paint:
  - more slip resistant
  - don’t have to reapply as often - standard paint has to get reapplied annually or twice a year

**DESIGN GUIDANCE**

- Provide appropriate signage to accompany pavement markings
- Use green thermoplastic rather than paint
- Consistency in coloring bike facilities is important
- Color can be provide in conflict areas alone, or throughout the facility
- Green color is standard in US applications
- White border lines should be provided along the edges of the colored lane to maintain consistency with other bike facilities

**ADVANTAGES AND CONSTRAINTS**

- Increases comfort of bicyclists through a clearly delineated space
- Enhanced visibility of bike lane
- Reinforces priority of bicyclists in conflict areas
- Discourages illegal parking in bike lane
- Maintenance requirements

**GENERAL APPLICATION**

- Within bike lanes and cycletracks
- Corridors with heavy auto and bicycle traffic
- At busy intersections
- Driveways
- Areas where illegal parking in the bike lane is common

**EXAMPLE CITIES**

- New York, NY
- Portland, OR
- San Francisco, CA
- Minneapolis, MN

**COLOR RECOMMENDATION**

- PMS 375
**Best Practices**  
**Shared Lane Markings (Sharrows)**

**Description**

Pavement markings used to indicate to drivers and cyclists that roadway is a shared lane environment.

**Design Guidance**

- Frequency of paved markings indicating shared lane
- Place pavement markings out of the turning vehicles path to minimize wear
- Frequent pavement markings indicating shared lane environment
- Markings should be placed in the center of lane to minimize wear from automobile treads
- Bike-and-chevron symbol dimensions 9’3” by 3’3”
- Shared lanes are not a substitute for exclusive bike lanes

**Advantages and Constraints**

- Helps bicyclists position themselves safely in lanes too narrow for a motor vehicle and a bicycle to comfortably travel side by side with the same traffic lane (NACTO)
- Advertises the presence of cyclists to all road users
- Directs cyclists out of the “dooring zone”
- Encourages safe passing by motorists

**General Application**

- Streets with low to moderate motor vehicle traffic volume
- Streets with a designed speed of < 25 mph
- Clarify bicyclist movement and positioning in challenging environments: intersections, combined turn/bike lane

**Example Cities**

- New York, NY
- Portland, OR
- San Francisco, CA
- Montreal, Quebec
- Minneapolis, MN

**Color Recommendation**

- PMS 375

*Example image: A green “sharrow” marking (San Francisco, CA, pictured above).*
DESCRIPTION
Traffic signals for bicycles are electrically powered traffic control devices used to provide guidance to bicyclists at intersections.

Traffic signals for bicyclist include:
• Bicycle Signal Heads
• Signal Detection and Actuation
• Active Warning Beacon
• Hybrid Signal for Bike Route Crossing of Major Street

DESIGN GUIDANCE
• Identify which signal treatment is appropriate by analyzing the factors involved: speed limit, average daily traffic, anticipated bicycle crossing traffic
• Determine a clearance interval appropriate for the specific intersection
• The bicycle clearance interval should be sufficient to accommodate 85% of bicyclists at their normal travel speed (NACTO)
• 14’ per second or 9.5 miles per hour is standard in the absence of local bicycle traffic counts

ADVANTAGES AND CONSTRAINTS
• Gives priority to bicyclists at intersection
• Increases the comfort of bicyclists by reducing stress and delays at intersection
• Discourages illegal and unsafe crossing maneuvers
• Potential motor-vehicle delay at intersections due to additional green time allowed for bicyclists

GENERAL APPLICATION
• Intersections with high volumes of bicyclists
• Intersections where cyclists travel at high speeds
• Intersections where bicyclists have different needs from other road users (i.e. bicycle only movements and leading bicycle intervals)

EXAMPLE CITIES
• Davis, CA
• San Francisco, CA
• Portland, OR
• New York, NY
• Minneapolis, MN
Best Practices Loop Detector for Bicycles

**DESCRIPTION**

Loop detectors detect the presence of bikes on the roadway. Detectors should be installed to cover areas of the road where cyclists are likely to ride, including the right edge of travel lanes and the center of bicycle lanes. Pavement markings can be used to direct cyclists to the proper spot where the signal device may detect their presence. These markings also alert motorists that bicycles will be present in various locations at signalized intersections.

**DESIGN GUIDANCE**

- The best standard design for detecting the presence of bikes is a Type D Loop, also known as a diagonal quadrupole pattern. This loop design is sensitive over its entire width with a quick drop off in sensitivity outside its perimeter, which helps avoid detection of vehicles in adjoining lanes.
- Engineers should test and adjust the sensitivity setting for the loop amplifier to ensure that the detector is activated by using only a bicycle wheel.

**ADVANTAGES AND CONSTRAINTS**

- Allows cyclists to activate traffic control devices without having to press a button
- A bicycle’s wheels have to cross a sensor in the pavement so the traffic signal can detect the vehicle’s presence
- Riders may not know exactly where they need to place their vehicles to be detected

**GENERAL APPLICATION**

- Busy intersections with traffic control
- Crossings with traffic signals for bicycles

![Diagonal quadrupole pattern. Image courtesy of California DOT.](image-url)
Best Practices Bicycle Route Way-finding Signage

**DESCRIPTION**
A bicycle way-finding system is a comprehensive network of signing and pavement markings indicating destinations along preferred bicycle routes.

**DESIGN GUIDANCE**
- Should provide information on destination, direction and distance (in miles and in minutes, calculated at speed of 10 mph)
- Decision signage indicating the intersection of two or more bikeways should be placed well in advance of all decision points
- Consistent font such as Clearview Hwy font is recommended for maintaining consistency with other road signs
- Follow MUTCD standards, for mounting height and recommended distance from path or roadway
- The frequency of way-finding signs are important. Confirmation signs should be placed every 1/4 to 1/2 mile along of street bike routes and every 2 to 3 blocks along on street routes. (NACTO)

**ADVANTAGES AND CONSTRAINTS**
- Identifies preferred bicycle routes
- Identifies destinations
- Signage makes bicycles more visible to motorists
- Encourages riders by familiarizing them with the bicycle network
- Can create sign clutter

**EXAMPLE CITIES**
- Minneapolis, MN
- Portland, OR
- San Francisco, CA
- New York, NY
- Chicago, IL

Bicycle wayfinding signage should include both distances and times. Image courtesy of Bike Michiana.
Los Angeles County,
Model for Living Streets Design Manual:
http://www.modelstreetdesignmanual.com/index.html

National Association of City Transportation Officials,
Urban Bikeway Design Guide:
http://nacto.org/cities-for-cycling/design-guide/

Pedestrian and Bicycle Information Center:
http://www.walkinginfo.org/
http://www.bicyclinginfo.org/

Federal Highway Administration,
Manual on Uniform Traffic Control Devices (MUTCD):
http://mutcd.fhwa.dot.gov/

Center for Disease Control.
“Physical Activity and Health”:
http://www.cdc.gov/nccdphp/sgr/atavlan.htm
Delivering sustainable, people-centered solutions to mobility and place.