

# DRAFT REPORT

## City of Maple Plain

### Walking and Biking Plan



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

## Acknowledgements

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

- Mayor John Sweeney, City of Maple Plain
- Councilmember Gene Couser, City of Maple Plain
- Councilmember Dave Eisinger, City of Maple Plain
- Councilmember Roger Hackbarth, City of Maple Plain
- Councilmember Jerry Young, City of Maple Plain
- Jason Ziemer, City Administrator, Maple Plain
- Maggie McCallum, Assistant to the City Administrator, Maple Plain
- Stephen Shurson, Commissioner, City of Maple Plain Planning Commission
- Officer Ray McCoy, Director of Public Safety, City of Maple Plain
- Karen Nikolai, Program Manager, Hennepin County Active Living
- Maple Plain / Orono Discovery Center
- Tom Goodrum and Benjamin Gozola, MFRA

And we offer our gratitude to the many residents and community leaders who participated in the project workshops, and shared their guidance, vision and aspirations for Maple Plain.

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## Foreword

In recent years, there has been a growing awareness of the role that moderate daily physical activity plays in improving personal and community health and well-being.

Similarly, there has been growing recognition of the importance of promoting and developing human-scaled, walkable environments that facilitate economic development, community interconnection, and prosperity. We are entering an era where “place” is more consistently valued even as our needs for mobility and connection increase.

Walking and bicycling are two healthful, affordable and convivial activities that can fulfill transportation and recreation functions while enhancing the qualities of those places where they are accommodated. Cities large and small are rethinking their approaches to mobility to better integrate walking and bicycling into their fabric, and exploring new approaches for maximizing sustainability, prosperity, and quality of life.

This Walking and Bicycling Plan, funded by Active Living Hennepin County and sponsored by the City of Maple Plain, aims to combine these approaches with current best practices and step-by-step, implementable solutions to make it easier, safer, more comfortable and more convenient for residents of Maple Plain to integrate walking and cycling into their daily lives.

This Plan has two aims:

- 1) To offer recommendations that introduce effective, low-cost measures that expand on Maple Plain’s existing assets and create tangible improvements over the short-term, and that,
- 2) Lay out a long-term vision for improvement and connectivity that expands on these assets and improves transportation and recreations options for residents, neighbors, employees, and visitors to Maple Plain.



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

## Section I

### Background

*This section provides an overview of existing conditions in Maple Plain, 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 - Urban form and development pattern
- 1.4 - Policy basis
- 1.5 - Making the case for walking and bicycling in a small town / rural context
- 1.6 - Trip origins and destinations
- 1.7 - Existing roadway network

## 1.1 Vision and purpose

Improving conditions for walking and biking in Maple Plain has long been an important priority for the city’s residents and community leaders. This Walking and Biking Plan presents recommendations for gradual, cost-effective, and implementable improvements that will help city residents, leaders and staff to realize the vision of a more walking and bicycling-friendly Maple Plain.

### Approach

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

### Vision

“The City of Maple Plain will be a community where walking and biking are safe, comfortable and convenient everyday activities and where people choose to walk or bike to nearby destinations for transportation or recreation.”

### Purpose of this Plan

This document is to serve as a tool to guide the efforts of Maple Plain 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.



***A vision for Maple Plain: a walkable, connected, active, prosperous and inviting community.***

### What is Active Living?

The roads and buildings that make up our built environment shape the opportunities we have for incorporating healthy physical activity, including walking or bicycling, into our daily lives.

Designing for Active Living means addressing and modifying our built environment so that Active Transportation (walking and biking) are safe, comfortable, convenient and inviting options for taking care of our daily travel needs - thus helping to integrate healthful physical activity into people’s lives and daily routines.

Active Living is an important approach for improving health and quality of life for children, seniors and adults in our cities and towns.

## 1.2 Local and regional context

Maple Plain is a city of approximately 1,800 residents, and is located in western Hennepin County, about 20 miles west of Minneapolis along State Highway 12.

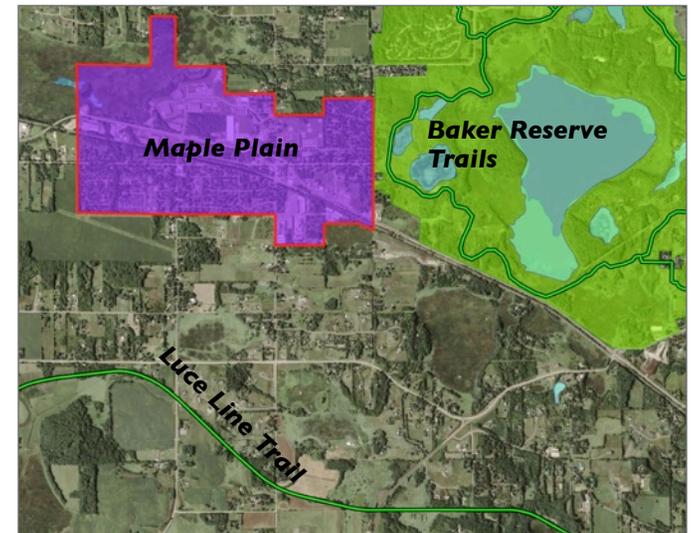
A small town located within a rural context, it has a strong historical and geographical relationship to nearby cities, and offers a rich mix of businesses, services, and employment opportunities, serving as a “downtown” for surrounding areas.

Several important regional walking and bicycling amenities are in close proximity to the City, including Baker Park Reserve (adjoining the city and providing 12 miles of paved walking and biking trails), the Luce Line Regional Trail, Pioneer Park (City of Independence), and Lake Rebecca Park Reserve. Direct links to these walking and bicycling transportation and recreational amenities are not currently provided.

Maple Plain is well connected to the regional automobile transportation network, and is served by State Highway 12 (a major east-west thoroughfare for commuters traveling in and out of the Twin Cities metropolitan area) as well as County Roads 19 and 83, which are oriented north-south.



**Baker Park hosts year-round activities. Image courtesy of Three Rivers Park District.**



**Location of Maple Plain in relation to regional trails at Baker Park Reserve and the Luce Line Regional Trail (shown in green). No direct links to these regional assets are currently provided.**

## 1.3 Urban form and development pattern

First settled in 1854, the City of Maple Plain was incorporated in 1912 and is considered a fully developed jurisdiction. As an older small city within a rural context, it has a well-defined town center that continues to serve as a focal point for economic and civic activity for the community.

### Present land uses

**Residential:** Approximately 36% of the land comprising the City is occupied by detached single-family residences. Primary residential areas are south and west of the railroad tracks on either side of County Road 83, as well as in the northeast corner of the City west of County Road 19.

**Commercial:** About 5% of Maple Plain's land is dedicated to retail and other commercial land uses. The City's central business district accounts for about half of its total commercial land.

**Industrial:** Office/industrial land, primarily located in the northwest quadrant of the City, comprises approximately 16% of the land in Maple Plain.

**Institutional:** About 5% of Maple Plain's land is dedicated to institutional uses, including schools.

**Parks:** Approximately 4% of Maple Plain's land is parks and recreational uses.

**Agriculture:** Agricultural and undeveloped land accounts for about 28% of the city's land area.



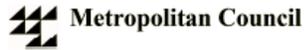
*Maple Plain single-family residence.*



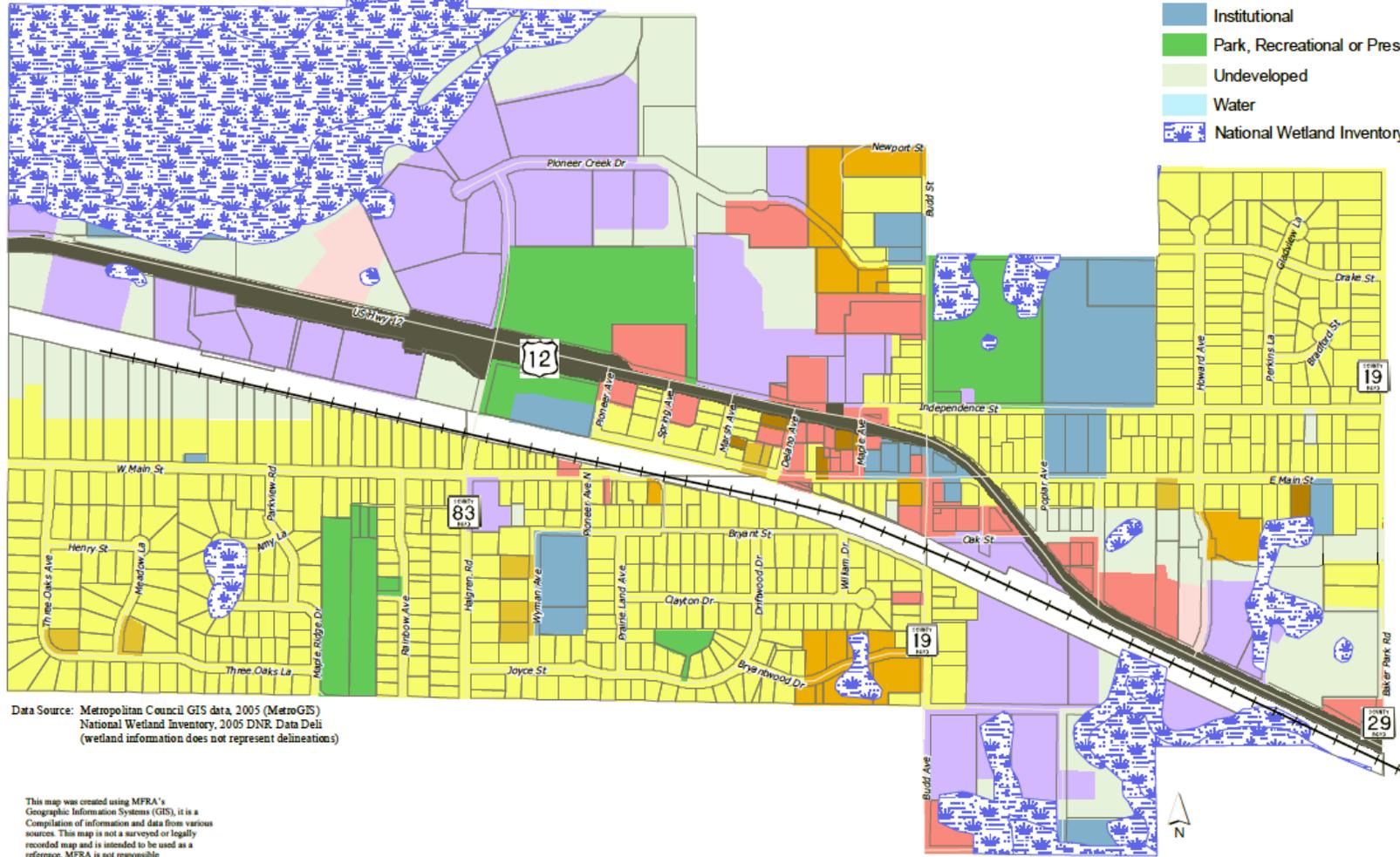
*Industrial use along Pioneer Creek Drive, east of Halgren Road and north of Highway 12.*

Figure 2-4

# City of Maple Plain Generalized Land Use



- Legend**
- Single Family Detached
  - Single Family Attached
  - Multifamily
  - Office
  - Retail and Other Commercial
  - Industrial and Utility
  - Institutional
  - Park, Recreational or Preserve
  - Undeveloped
  - Water
  - National Wetland Inventory



Data Source: Metropolitan Council GIS data, 2005 (MetroGIS)  
National Wetland Inventory, 2005 DNR Data Deli  
(wetland information does not represent delineations)

This map was created using MFRA's Geographic Information Systems (GIS). It is a compilation of information and data from various sources. This map is not a surveyed or legally recorded map and is intended to be used as a reference. MFRA is not responsible for any inaccuracies contained herein.

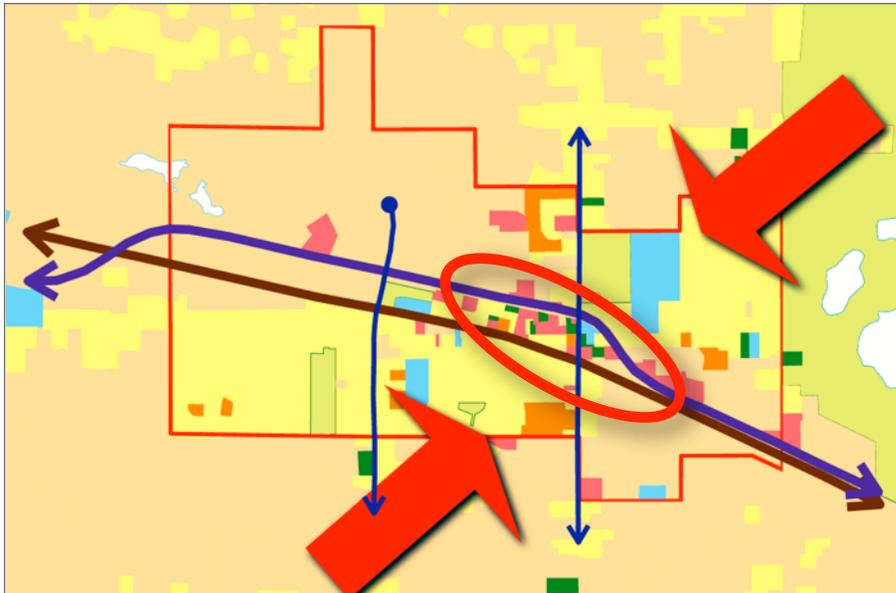
Generalized  
Land Use

Existing land uses in Maple Plain. Source: 2030 Comprehensive Plan.

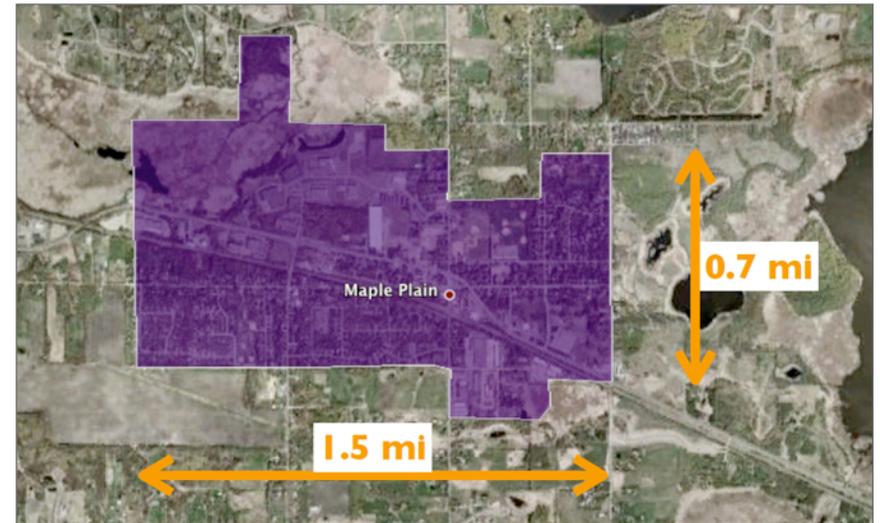
## Compactness and connectivity

Maple Plain is of a relatively compact size - about 1.5 miles east to west and 0.75 miles north to south. At an average pace, a person starting in the middle of downtown could bike to any point in the city in about 6 minutes or less (or in 20 minutes or less if traveling on foot).

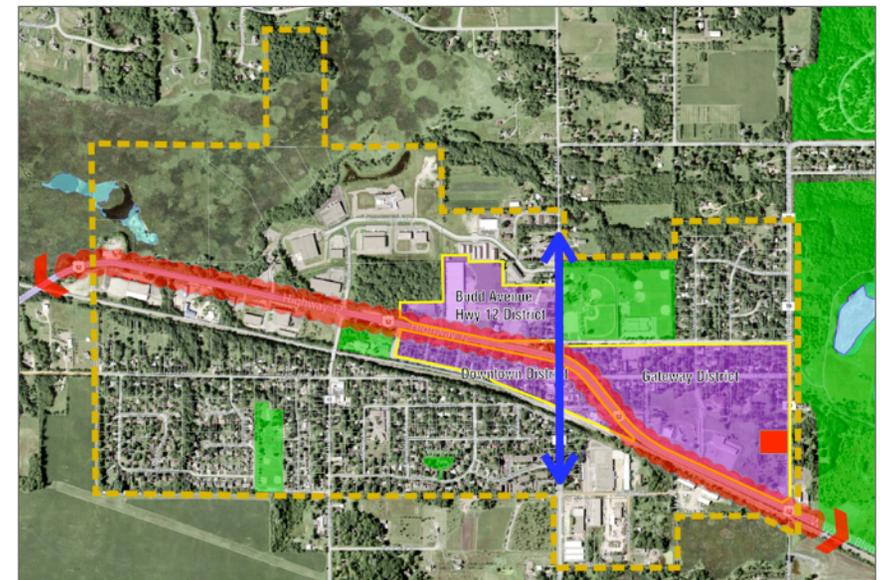
There are, however, several important barriers that impede walking and bicycling movement within and across the City, including lack of facilities for walking and bicycling and the presence of motor-vehicle and rail transportation facilities which have not been adequately contextualized to respond to the city's urban form and fabric.



**The principal desired connection in Maple Plain is for safe and comfortable movement between the city's northeast quadrant and its southwest quadrant. The city's downtown (shown in red) is located between them; numerous amenities and draws, including parks, the city's library, access to regional trails and community center also exist along this alignment. Movement along this direction is impeded by Highway 12 (shown in purple) and an active railroad mainline (in brown). Only Budd Avenue (in dark blue) provides connection at this location.**



**Most points in Maple Plain are located within convenient, short distances from each other.**



**Highway 12 (in red) is adjacent to all three Maple Plain redevelopment districts (shown in purple). Addressing the crossing at Budd Avenue (in blue) will be an important consideration for their success.**

## Future land use

Although Maple Plain is considered to be fully developed, the City, in its 2030 Comprehensive Plan has identified three “Special Area Plan Districts” where redevelopment activities are to be directed. These are:

- The Downtown District
- The Gateway District
- The Budd Avenue/Highway 12 District

To support future development, convenient connections to the redevelopment areas should be provided. Providing pedestrian and bicycle network connections for Maple Plain employees, residents, visitors and customers who travel into, out of, and through the City should also be emphasized. High quality walking and bicycling routes can help address issues of connectivity across existing barriers while also improving connections to adjacent communities.



Village at Mendota Heights



Excelsior and Grand, St. Louis Park



Town Square, Falcon Heights



Kensington Park, Richfield



Mound Marketplace



Stonebridge, Lilydale



Downtown White Bear Lake



Valley Square, Golden Valley

***Types of development sought by Maple Plain for its redevelopment districts.  
Source: Maple Plain Redevelopment Implementation Plan.***

## 1.4 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 Maple Plain's pedestrian and bicycle facilities and network is consistent with these policies and positions, including:

### Regional policies

#### Hennepin County

Maple Plain 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 users of our roads, trails and transit systems, including pedestrians, bicyclists, transit riders, motorists, commercial and emergency vehicles and for people of all ages and of all abilities.

#### 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's 2030 Regional Development Framework includes several policies that strongly recommend provision of cycling facilities. A brief excerpt is provided here; the full document can be found by following [this link >](#)

*Chapter 2, Policy 2: Plan and invest in multi-modal transportation choices, based on the full range of costs and benefits, to slow the growth of congestion and serve the region's economic needs ... In the longer term, the region also can slow the growth in congestion by encouraging development and reinvestment in urban and rural centers that combine transit, housing, offices, retail, services, open space and connected streets that support walking and bicycle use. Such*



**Complete Streets provide safe, comfortable, and convenient access for all users, regardless of mode, age or ability. Hennepin County was the first county in Minnesota to adopt a Complete Streets policy.**

### Did you know?

Hennepin County has established a new cost participation policy to support the development of Complete Streets along its road network:

- **For sidewalks:** \$200,000 annual budget, providing up to 25% of the cost of a sidewalk along a county road.
- **For bikeways:** \$300,000 annual budget, providing up to 50% of the cost of trail or on-street bikeway identified on the bike plan or bike gap system map.
- **For bikeway gaps:** \$300,000 annual budget, providing up to 50% of the cost of trail or on-street bikeway identified on the bike gap system map.

This has great and positive implications for Maple Plain, as several important walking and biking connections in the city, including portions of Budd Avenue, Baker Park Road, Halgren Road and East Main Street, are part of the county's road network.

*development enables those who wish to reduce their automobile use to meet their daily needs and makes it possible for those who are unable to drive to live more independently*

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

Starting in 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.

## 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 regarding provision of bicycle facilities strongly recommend providing 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.*

## Federal agencies

The Federal Highway Administration (FHWA)'s Non-motorized Design Guidance, governing implementation of the Transportation Equity Act for the 21st Century (TEA-21) and subsequent authorizations, states:

*Bicycle and pedestrian ways shall be established in all new construction and reconstruction projects in urbanized areas (unless prohibited by law, excessive cost, or demonstrated absence of need).*

## Federal law

The Transportation Equity Act for the 21st Century (TEA-21) authorized the Federal surface transportation programs for highways, highway safety, and transit for the 6-year period between 1998 and 2003. After temporary extensions, the act was reauthorized as SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users) in 2005 to govern transportation spending until 2010, and has since then been extended several times to 2012. It states:

*Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation projects, except where bicycle and pedestrian use are not permitted.*



**Quality pedestrian environments are good for small cities and local businesses, and are supported by Federal and State policies and guidance.**

**Image: Durham, New Hampshire (pop. 10,300), via Federal Highway Administration and Pedestrian and Bicycle Information Center (PBIC).**

## 1.5 Making the case for walking and bicycling in a small town / rural context

Much progress is being made in providing walking and biking improvements that make Active Living possible in the larger cities of our state. Innovative treatments, new designs, and improved policies and priorities are often discussed. Unfortunately, these conversations often leave out the great strides that are being made to address the needs, contexts and priorities of smaller rural or suburban communities - where the needs for safe, comfortable and accessible options for walking and cycling are the same, or in some cases even greater, than in the larger cities.

Maple Plain residents, businesses, and elected officials have made a clear case for improving conditions for walking and cycling in their city. This Plan is evidence that they and their partners view improved conditions as an important priority for Maple Plain. Here are some additional reasons why these improvements are necessary and why they make sense from an economic, environmental, and public health and welfare perspective *(some materials adapted from National Complete Streets Coalition sources)*:

### Why walking and biking are important for small towns

#### For economic development and Main Street prosperity

Streets that encourage walking and biking help town centers and Main Streets thrive by improving street connectivity and allowing everyone, whether on foot, bike, automobiles, or public transportation, to reach commercial areas and community focal points, and by making travel to and from destinations easier and more pleasant.

Well-articulated pedestrian and bicycle mobility policies and Complete Streets guidelines can help smaller communities ensure safe, accessible, and inviting streets that attract and facilitate reinvestment and economic development in the heart of their town.



**Lanesboro, Minnesota (population 750) is a thriving destination that welcomes walkers and cyclists. Image courtesy of Minnesota Tourism.**



**Northfield, Minnesota has a thriving and pedestrian-friendly downtown.**

### **To support the healthy development of children**

Children need safe streets to reach school and activities. Research has shown that children who live in rural areas are more likely to be overweight or obese than those in urban areas, and that they are at greater risk for obesity and related diseases than other children. Providing safe opportunities for walking and biking to and from school is a key strategy to keep kids active and healthy. Roads that are designed to safely accommodate children and other vulnerable users will be safer for everyone.

### **To improve accessibility and convenience**

Access to jobs, groceries, healthcare, education, and other destinations is as important in rural communities as in suburban or urban areas. Many rural households do not have access to a car. Public transportation, social service van pools, carpooling, and ridesharing services to reach healthcare, employment, and other resources can be a lifeline in rural areas, especially for older adults, people with disabilities, and low-income households. Recognition of this fact is helping to improve transit access to small towns and rural area - currently, about 60% of rural areas have public transportation service, and demand for more options is growing: rural and small urban public transportation systems experienced a 20% rise in ridership from 2002 to 2005. Maple Plain and MetroTransit have begun development of a Park-and-Ride facility for many of these same reasons. And just as in urban areas, public transportation trips usually begin and end as walking trips. Creating safe walking, bicycling, and public transportation options for Maple Plain residents will build a more livable, accessible community for people of all ages, abilities, and income levels.

### **To improve safety for everyone**

Residents of small towns are more likely to be injured or killed on the transportation system than those in urban areas. In 2006, more than half of all traffic-related fatalities (56%) occurred in rural areas - even though they are home to only about 23% of the US population.

The mixture of high speeds, poor or non-existent pedestrian and bicycle facilities, and poor policies and priorities from state and county transportation agencies have in many cases conspired to create hazardous conditions that deter rural and small-town residents from engaging in Active Transportation and that increase the chances of injury for those residents who do choose to walk or bike.

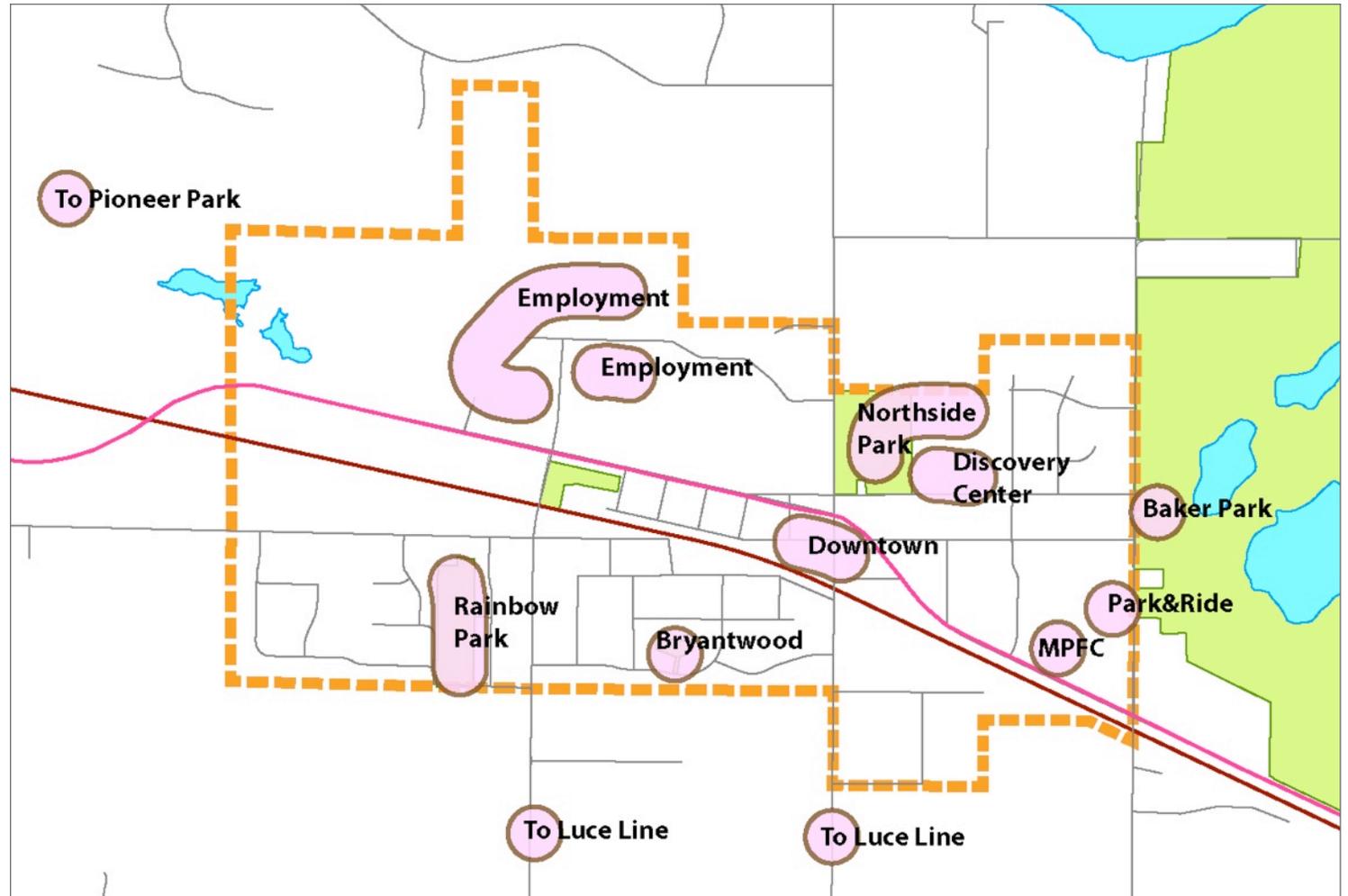
Additionally, rural communities and small towns tend to have higher concentrations of older adults and low-income citizens, two populations that are less likely to own cars or drive. Without safer roads and streets, people with limited transportation options have little choice: travel along high-speed roadways with few pedestrian accommodations or stay home. In focusing mobility efforts on automobiles alone, we have done a disservice to these citizens who are then isolated from their community's life and economy.

Fortunately, growing recognition of the importance of safe and inviting accommodations for residents of small towns is opening new directions for improvement and helping to establish initiatives like this one, that aim to remedy existing deficiencies and create connected, safe and accessible networks for mobility.

## 1.6 Trip origins and destinations

### Within town

Several trip origins and destinations for walking and biking were identified by participants at project workshops, through the project survey, and as part of the work of developing this Plan. A summary of destinations identified as being important to connect is provided below.



*Destinations in Maple Plain.*

## Work commute

Travel to and from work is an important component of daily trips. Two commute patterns are investigated:

- Workplace location for people residing within Maple Plain, and
- Residential location for people working Maple Plain.

Data is obtained from the US Census Bureau's 2010 [Local Employment Dynamics](#) (LED) data.

### Where Maple Plain residents work

	2010	
	Count	Share
All Places (Cities, CDPs, etc.)	1,005	100.0%
Minneapolis city, MN	119	11.8%
Maple Plain city, MN	76	7.6%
Plymouth city, MN	69	6.9%
Minnetonka city, MN	67	6.7%
Orono city, MN	41	4.1%
Golden Valley city, MN	39	3.9%
Medina city, MN	39	3.9%
Bloomington city, MN	37	3.7%
Independence city, MN	32	3.2%
Wayzata city, MN	31	3.1%
All Other Locations	455	45.3%

### Where Maple Plain workers reside

	2010	
	Count	Share
All Places (Cities, CDPs, etc.)	1,590	100.0%
Independence city, MN	93	5.8%
Maple Plain city, MN	76	4.8%
Mound city, MN	69	4.3%
Plymouth city, MN	67	4.2%
Delano city, MN	56	3.5%
Minneapolis city, MN	49	3.1%
Buffalo city, MN	45	2.8%
Medina city, MN	42	2.6%
Rockford city, MN	38	2.4%
Maple Grove city, MN	36	2.3%
All Other Locations	1,019	64.1%

# 1.7 Existing roadway network

## Roadway jurisdiction

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

### Who controls which roads?

Several entities have jurisdiction or control over roads in Maple Plain. Here's a brief summary:

#### MnDOT

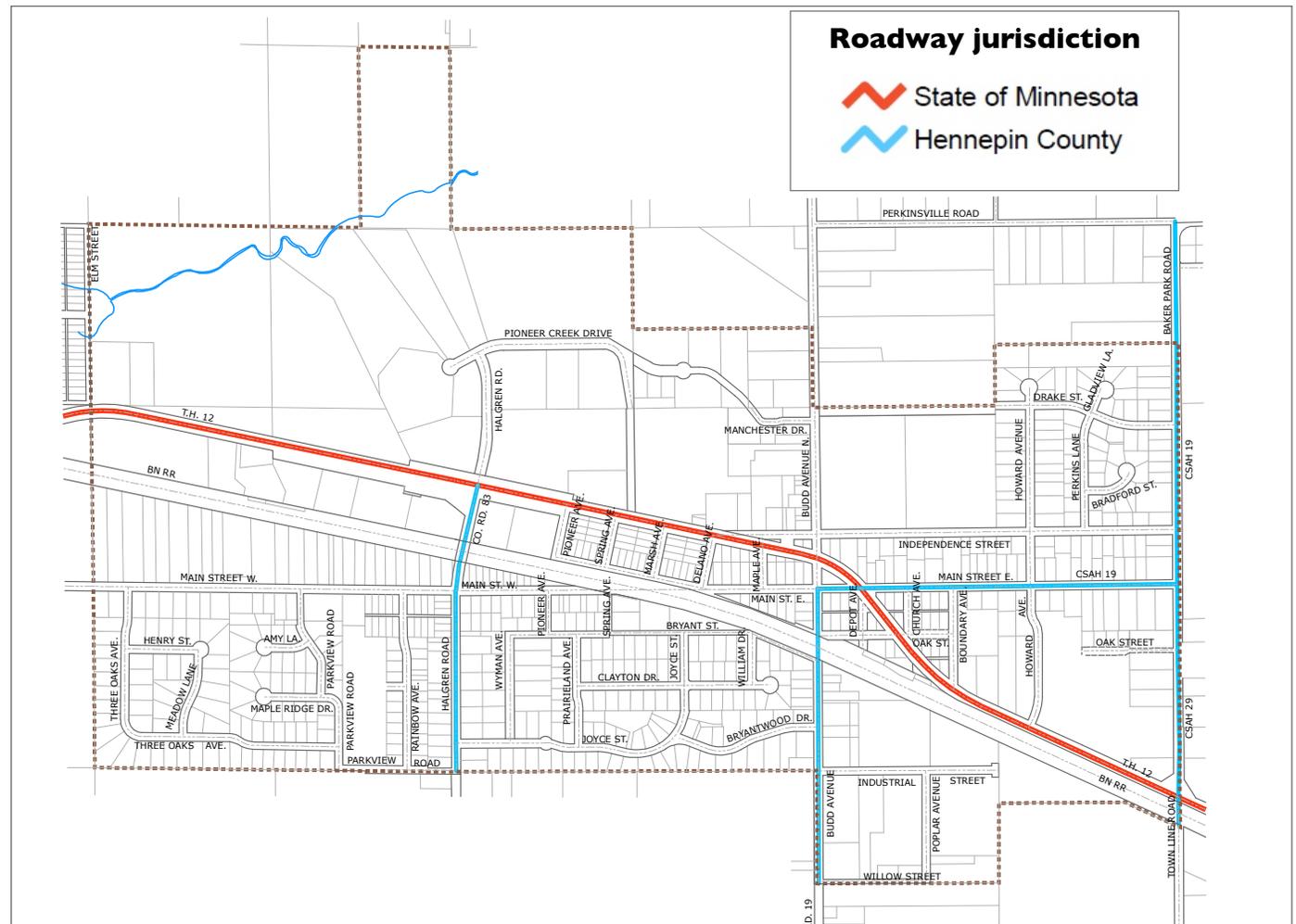
- Highway 12

#### Hennepin County

- Portions of Budd Avenue
- Baker Park Road
- Halgren Road
- East Main Street

#### City of Maple Plain

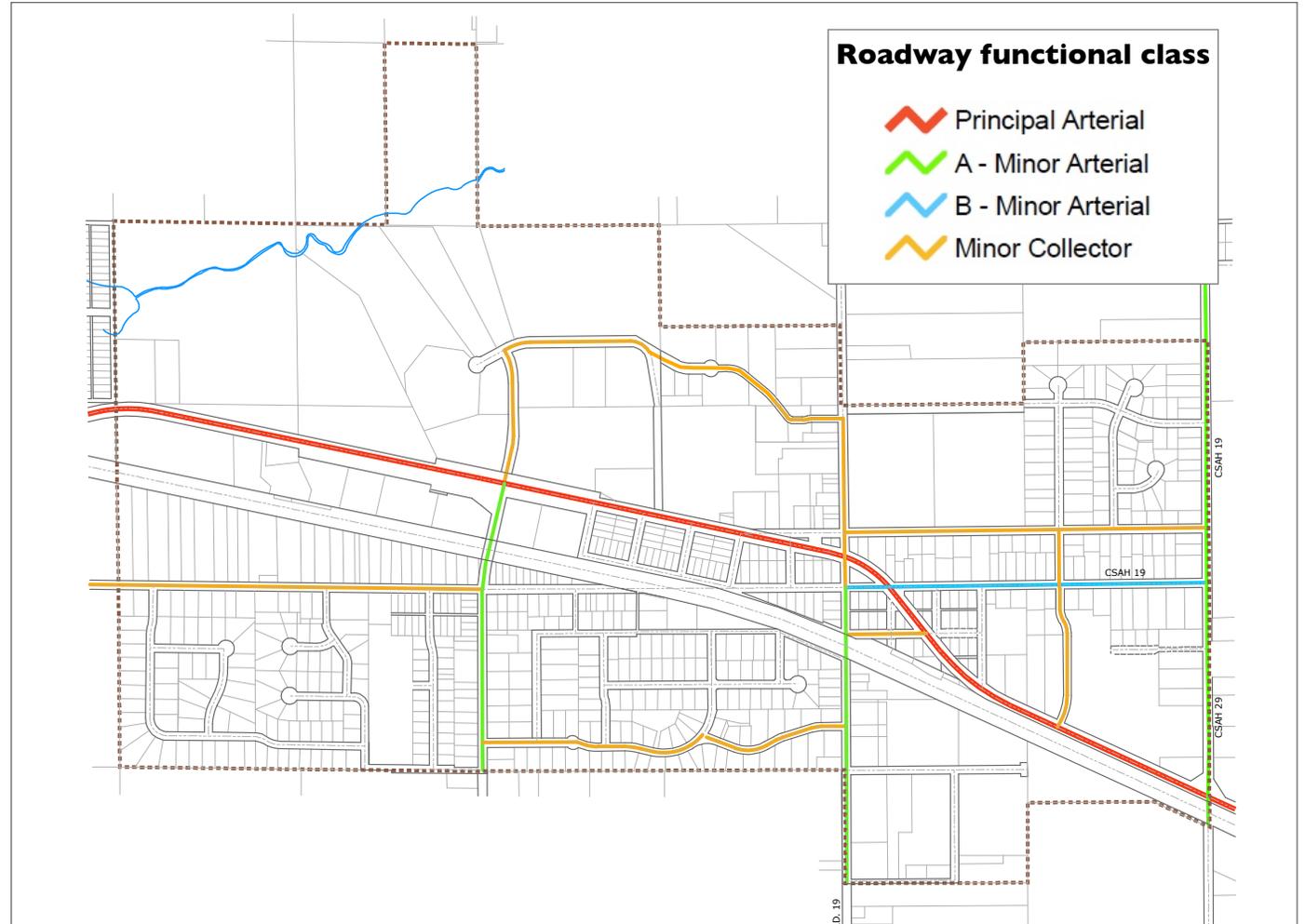
- All other roads in the city



*Roads and the entity with jurisdiction over them; remaining roads are controlled by the City of Maple Plain. Adapted from the City of Maple Plain Comprehensive Plan (2008).*

## Functional classification

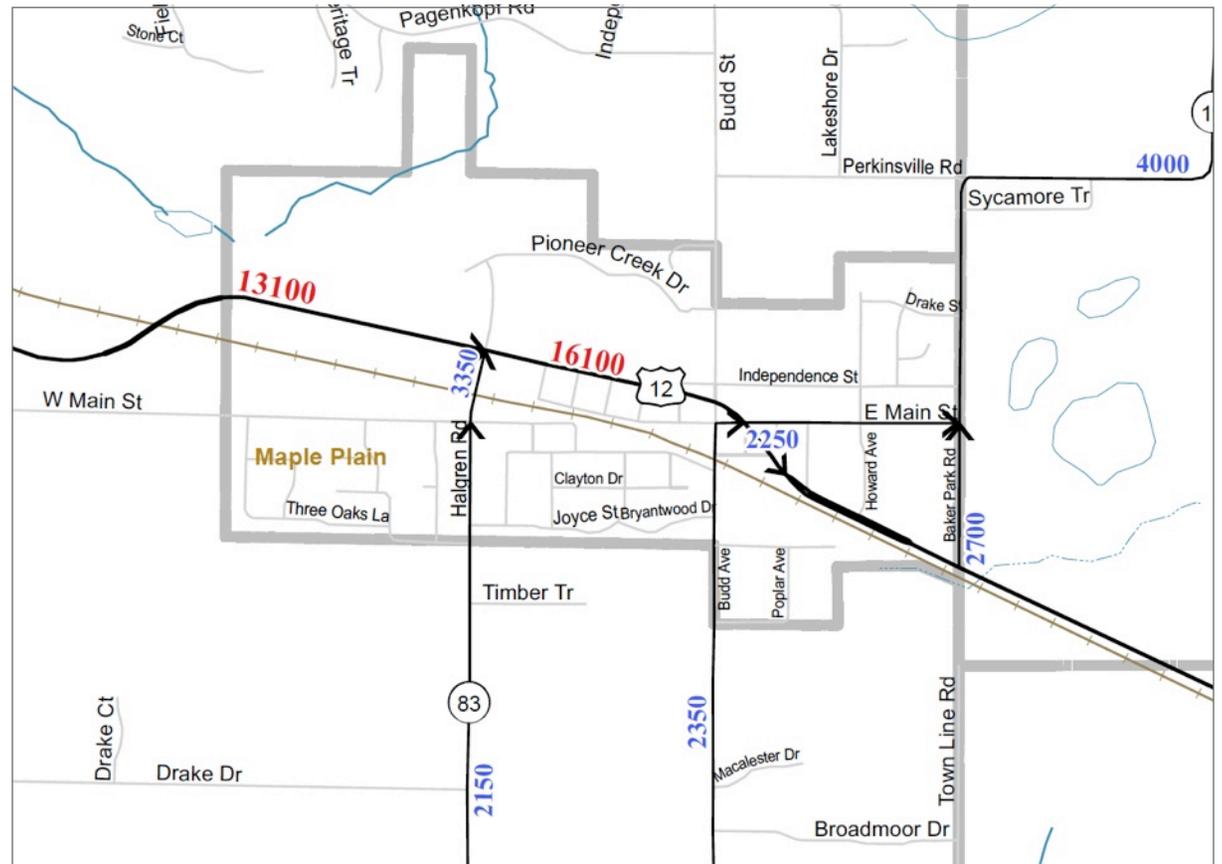
The functional classification system is a way of grouping roads according to the role or function they play in the motor-vehicle transportation system. Three main functional classes are defined in common US transportation practice: arterial, collector, and local. The classification assigned to a road responds to and, because of the way in which transportation investments are developed, shapes the speed, volume, and accessibility characteristics of a road.



*Functional classification of roads in Maple Plain.  
Adapted from the City of Maple Plain Comprehensive Plan (2008).*

## 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 how 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 requires greater separation between traffic and people on foot or bike in order to provide comfortable and safe travel for them.



**2010 traffic volumes for roads in Maple Plain.**  
**Source: Minnesota Department of Transportation.**

## Section II

### Planning Process and Community Engagement

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

#### In this section

- 2.1 - Walkability workshop
- 2.2 - Results from the project survey
- 2.3 - Other project meetings

## 2.1 Walkability workshop - Nov 13, 2011

On November 13th, the City of Maple Plain convened a Walkability Workshop to kick-off this project. The workshop was attended by Maple Plain residents as well as by the City Administrator Jason Ziemer and members of the consulting team.

Participants engaged in a group mapping activity to identify the primary destinations in Maple Plain before heading out on a walk to experience the walking environment around some of those same destinations.

During the workshop, participants were asked to answer three questions about walking in Maple Plain:

- 1) What do you like about Walking in Maple Plain?
- 2) What do you not like about walking in Maple Plain?
- 3) How could we make things better?

Participants wrote their answers on individual sticky notes that were then affixed to a large-format sheet of paper. The notes were transcribed and the results are outlined below:

### What do you like about Walking in Maple Plain?

- Most things are centralized
- Proximity to regional assets – Baker Park, Luce Line
- Everything is close
- Seeing neighbors in yards – stopping and chatting
- Quiet – not busy
- You can either walk or bike to everything
- Baker Park trail is close
- Luce Line is close
- Small town – see neighbors, know neighbors
- Many "things" (i.e. businesses) in close proximity



*Maple Plain residents discussing their ideas about walking in the city.*

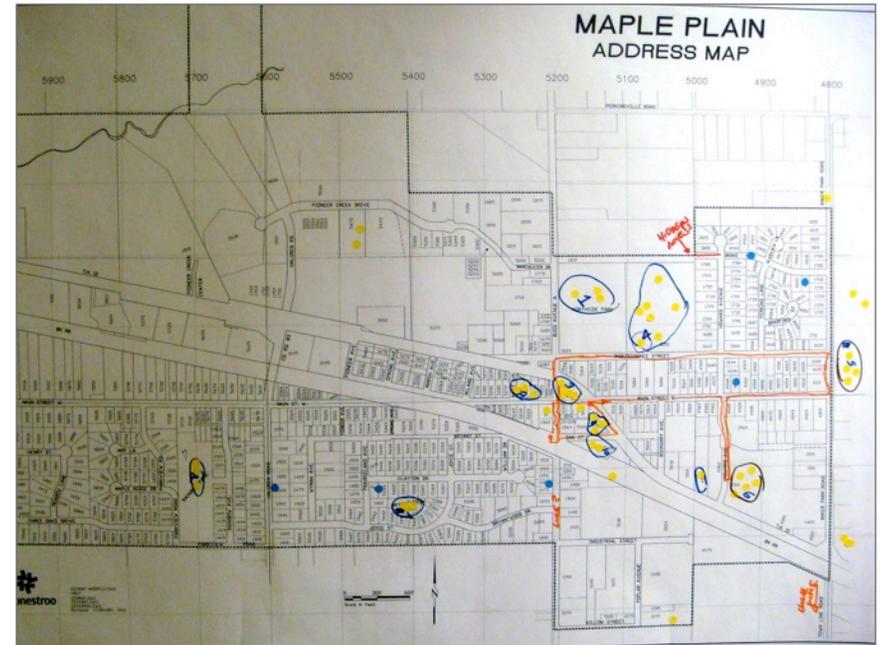


*Noting conditions for walking across Highway 12 .*

- Generally feel safe
- Destinations are close by, short distances
- Everything is close, less than 10 minute walk to shops/services
- Generally, residential streets have light, respectful traffic
- Even night walking on residential streets feels safe
- Easy to navigate routes want to walk
- Like sidewalk on Howard to MPFC
- Safe, low traffic except for Hwy 12 and Main St.

### What do you not like about walking in Maple Plain?

- The steps right in the middle of the sidewalk (on County Rd 19)
- Don't like sidewalk on Co Rd 19
  - Snow pack
  - Stairs blocking
- No walking facilities i.e. sidewalks, trails, etc.
- Cars/drivers not respectful of walkers/bikers
- Roads can be bad to walk on – holes, uneven
- City council resistance (cost)
- Sidewalk to road to shoulder (no consistency)
- Shoulders of County Roads – (19 and 83) are too narrow
- Crossing @ Budd is dangerous
- Issues of sidewalks starting and stopping making for inconsistent walking routes
- Hwy 12!!! (crossing = safety issue)
- Crossing Hwy 12 – Dangerous, even at crosswalk
- Walking on the street. Most roads do not have shoulders marked
- Walking on roads with narrow shoulders – i.e. Co Rd 19 S toward Luce Line and Budd Ave North of park
- Poor connections to major destinations
- Crossing Hwy 12 – too wide
- Drivers not always pay attention



**What are some of your primary destinations in Maple Plain?  
(Locations are marked in yellow).**

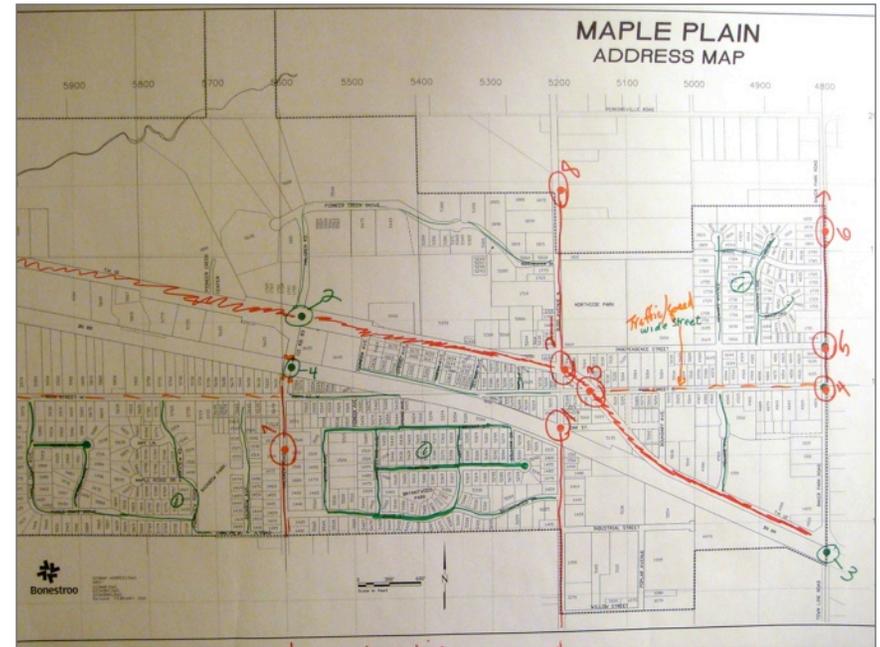


**Baker Park was often named as an important destination for both walking and cycling.**

- Some sidewalks need repair because they are cracked, while some areas don't even have sidewalks
- Crossing 12!!!!
- Gaps in sidewalks/trails
- We didn't walk at night – light concerns?

### How could we make things better?

- Stripe or in some way clearly mark crosswalks, ped or bike spaces on sides of roads
- Better sync with Hennepin County and Three Rivers Park District
- On County Roads - widen shoulders
- Signage that indicates to drivers watch for walkers, bikers
- Partner with other agencies
  - Three Rivers Park District
  - Hennepin County
  - MnDOT
  - non-profits
  - grants
- Need “connections” for bikes from Luce Line to Downtown/ Gateway
- Linking Maple Plain to area attractions (i.e. Baker Park, Luce Line)
- Safer crossing at Budd St light
- Require near developments to include trails and sidewalks
- Repair and/or install sidewalks!
- Tackle “low hanging fruit” meaning – striping or existing roadways, use available, unused [row] for trails
- Add traffic light on Hwy 12 activated by pedestrians to safely cross
- Wayfinding signage
- Complete gaps
- Do simple roadway improvements to create visuals (i.e. narrow at intersections)
  - Make better connectivity



**What do you not like about walking in Maple Plain?  
(Location of difficult conditions is shown in red).**



**Crossing Highway 12 was named as a prominent barrier to walking to destinations in the city.**

- Continuous paths vs. random starts and stops
- Develop city policies to promote a walkable city
- Define safe walking/bike areas
- Need a light at Budd to stop traffic (could be a light for walkers and bikers only?)
- Need connection for bikes from Baker Park to Downtown/Gateway
- Do simple roadway improvements to create visuals (i.e. stripe crosswalks, narrowing of intersections)
- Rebuild streets narrower – include bike/ped paths

### Additional Notes

*(Other destinations, issues and desired connections mentioned by participants at other points of the meeting)*

- Shopping/services
- Recreation
- Familiar areas
- Playgrounds, ballfields
- Baker Park trails
- Shopping at MPFC
- Hardware Store
- Library
- Post office/Blackwater
- Residents may be unaware of opportunities (i.e. routes)
- Not good idea to drive to go walk
- No clear crossing on Hwy 12
- Everything is walkable
- Visit parks – more local trails
- Small community – not a lot of traffic (except for Hwy 12)
- Like to see city a lot more walkable – not easy to get around due to lack of infrastructure
- Connect to all places in and around community
- Would like to see improved safety

<b>1. Did you have room to walk?</b>		Yes	No	<b>4. Was it easy to follow rules?</b>		Yes	No
There were sidewalks, paths or shoulders		<input type="checkbox"/>	<input type="checkbox"/>	Could you:		<input type="checkbox"/>	<input type="checkbox"/>
Sidewalks started and stopped		<input type="checkbox"/>	<input type="checkbox"/>	Cross at crosswalks		<input type="checkbox"/>	<input type="checkbox"/>
Sidewalks were broken or cracked		<input type="checkbox"/>	<input type="checkbox"/>	See both ways before crossing streets		<input type="checkbox"/>	<input type="checkbox"/>
Sidewalks were blocked with poles, signs		<input type="checkbox"/>	<input type="checkbox"/>	Walk where you could see oncoming traffic		<input type="checkbox"/>	<input type="checkbox"/>
Too much traffic		<input type="checkbox"/>	<input type="checkbox"/>	Cross with the light		<input type="checkbox"/>	<input type="checkbox"/>
Something else: _____				Something else: _____			
○ 1 — ○ 2 — ○ 3 — ○ 4 — ○ 5 — ○ 6				○ 1 — ○ 2 — ○ 3 — ○ 4 — ○ 5 — ○ 6			
<b>2. Was it easy to cross streets?</b>		Yes	No	<b>5. Was your walk pleasant?</b>		Yes	No
There were crosswalks and "walk" signs		<input type="checkbox"/>	<input type="checkbox"/>	Other people out and about		<input type="checkbox"/>	<input type="checkbox"/>
Road was too wide		<input type="checkbox"/>	<input type="checkbox"/>	Need more grass, plants		<input type="checkbox"/>	<input type="checkbox"/>
Walk signals gave me enough time to cross		<input type="checkbox"/>	<input type="checkbox"/>	Scary dogs		<input type="checkbox"/>	<input type="checkbox"/>
Parked cars blocked my view of traffic		<input type="checkbox"/>	<input type="checkbox"/>	Good lighting		<input type="checkbox"/>	<input type="checkbox"/>
There were curbs in good repair		<input type="checkbox"/>	<input type="checkbox"/>	Clean; little litter		<input type="checkbox"/>	<input type="checkbox"/>
Something else: _____				Something else: _____			
○ 1 — ○ 2 — ○ 3 — ○ 4 — ○ 5 — ○ 6				○ 1 — ○ 2 — ○ 3 — ○ 4 — ○ 5 — ○ 6			
<b>3. Did drivers behave well?</b>		Yes	No	<b>Suggestions for improvement?</b> <div style="border: 1px solid black; height: 100px; width: 100%;"></div>			
Looked before backing out		<input type="checkbox"/>	<input type="checkbox"/>				
Yielded to people crossing streets		<input type="checkbox"/>	<input type="checkbox"/>				
Turned into crosswalk with people in it		<input type="checkbox"/>	<input type="checkbox"/>				
Drove slowly		<input type="checkbox"/>	<input type="checkbox"/>				
Sped up to get through lights in time		<input type="checkbox"/>	<input type="checkbox"/>				
Something else: _____							
○ 1 — ○ 2 — ○ 3 — ○ 4 — ○ 5 — ○ 6							

**Questions from the walkability worksheet used by participants, adapted from Dakota County's "Simple Steps" program.**

## 2.2 Online survey

An online survey was developed to learn about Maple Plain residents' travel habits and attitudes toward walking and biking in the city, and to collect their ideas and recommendations for improving non-motorized mobility.

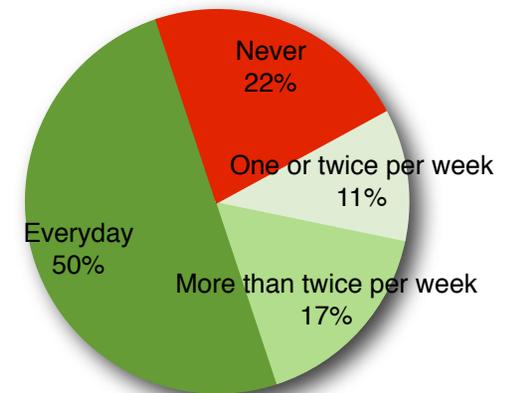
The survey, which included multiple choice and free-form questions, was widely distributed by City staff through their electronic contact lists, and was available for respondents ahead of the project's initial walkability workshop (on November 13 2011), and was closed on December 31, 2011.

A total of 21 surveys were completed by respondents. Collected responses are provided in this section. Where appropriate, additional observations are provided.

### Survey Part 1: Walking in Maple Plain

#### Q1-1. Participants' frequency of walking

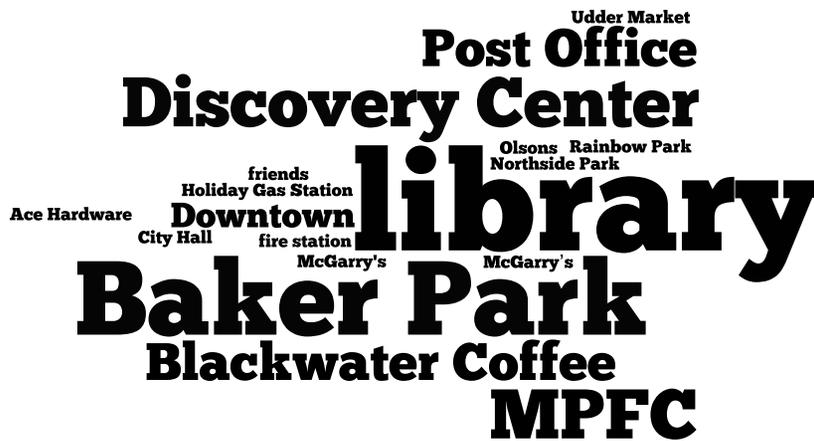
*"During the summer months - how often do you walk to a destination in or around Maple Plain?"*



- A total of 18 participants answered this question
- More than three quarters of respondents (77%) indicated they walked to a Maple Plain destination at least a couple of times per week
- Half (50%) of all participants indicated that they walked to a Maple Plain destination everyday, or almost everyday

### Q1-2. Participants' Top 3 summer walking destinations

A total of 41 answers were received, with many items repeating several times. Responses are shown as a “word cloud” - answers received more often are shown in larger size. Answers are presented as submitted by participants, with minor editing for clarity.



### Q1-3. What would help you walk more often?

*(Representative free-form text answers as submitted by participants, with minor editing for clarity)*

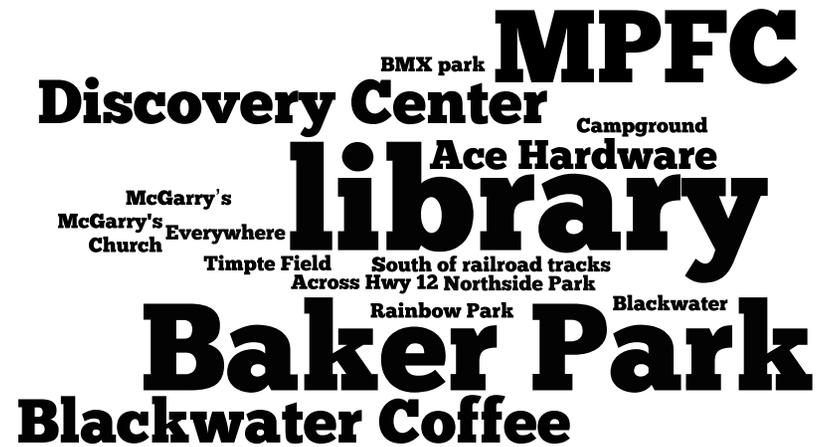
- A sidewalk along Budd Ave - it's such a dangerous road to walk along, especially during rush hour. It would also be nice to have public trash cans in more areas (parks have enough) to encourage people to pick up after themselves and their dogs. A stop light at Budd and Hwy 12 would also be nice as cars almost never stop for pedestrians in the sidewalk; I have seen many kids almost get hit.
- Seeing other people walking (socializing)
- more prizes [incentives]
- If there were sidewalks to keep my kids safe when we walk. The roads especially around the Discovery Center are busier than people realize, and I'm always worried cars won't see us when we are walking. Also, I can't let my little ones ride trike or walk on those roads either, which is annoying.
- More sidewalks, paths so I didn't have to be afraid of my kids getting hit by a car.
- Ability to SAFELY cross US12 at Budd
- Sidewalks or pedestrian lanes on Budd, Independence, Main St east of 12
- By redeveloping the city and creating more attractive businesses where I can actually eat, study, or shop, otherwise I enjoy biking.
- Being able to walk on a walk path or sidewalks rather than roads and streets and having safe, well-lit paths/trails to walk in evening or early morning.
- A safe sidewalk along Budd Avenue South. Bryantwood Avenue to Main Street.
- Less traffic. Return neighborhoods back to neighborhoods. Create a community again and raise the quality of life for the people who actually live here. Make it safe for children to play

street hockey and basketball. Instead of providing a race track for people to drive faster through our neighborhoods, turn the streets into culdesacs. Keep traffic on Hwy 12. Put a light at Bud and Hwy 12 so people can cross the street. As it is right now it's very dangerous for pedestrians and drivers. We walked to McGarry's the other evening and nearly got run over trying to cross Hwy 12. Most of the people using the Discovery Center don't live in this neighborhood but they love to whip down Independence St to pick up their kids not concerned at all about the kids who live here.

- Bridges over Hwy 12; Sidewalks on Main Street on the north side of highway 12
- Being able to safely cross highway 12. I only attempt to walk across it at times of day when the traffic isn't heavy. (When the construction work closed 12 west of town I found that I walked around town a lot more because it was easy to cross 12.)
- Also, more sidewalks would help.
- A sidewalk on 19 would make walking safe to walk and bike to Maple Plain. It's the only way into town and its very dangerous at the moment due to the lack of any shoulder on the highway and the speed of traffic.
- An easier way to cross highway 12. Either an overpass or underpass.

**Q1-4. Which destinations in or around Maple Plain do you wish you could walk to more easily?**

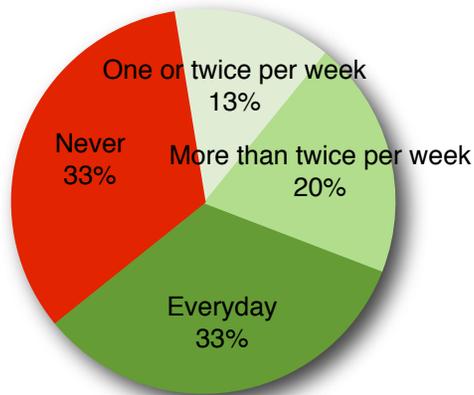
A total of 20 answers were received, with many items repeating several times. Responses are shown as a “word cloud” - answers received more often are shown in larger size. Answers are presented as submitted by participants, with minor editing for clarity.



## Survey Part 2: Bicycling in Maple Plain

### Q2-1. Participants' frequency of bicycling

*"During the summer months - how often do you bicycle to a destination in or around Maple Plain?"*



- A total of 15 participants answered this question
- Two thirds of respondents (66%) indicated they rode a bicycle to a Maple Plain destination at least a couple of times per week
- One third (33%) of all participants indicated that they rode a bicycle to a Maple Plain destination everyday, or almost everyday

### Q2-2. Participants' Top 3 summer bicycling destinations

A total of 30 answers were received, with many items repeating several times. Responses are shown as a "word cloud" - answers received more often are shown in larger size. Answers are presented as submitted by participants, with minor editing for clarity.



### Q2-3. What would help you ride your bicycle more often?

*(Representative free-form text answers as submitted by participants, with minor editing for clarity)*

- Trail or bike path connecting Maple Plain with the Luce Line.
- Means of crossing Hi-way 12 during rush hour.
- Having a place where I feel it's safe for my kids to ride (preschoolers).
- More paths
- Ability to safely cross US12 at Budd
- A bike path leading to the Luce Line Trail.
- Well-lit separate trails for biking rather than streets. Streets are in terrible condition and too dangerous to meet bike and foot traffic.
- Safe trails connecting neighborhoods to these destinations. Budd Ave south Neighborhoods to Main street and Crossing Hwy 12.
- I jog.
- Again, being able to easily and safely cross Hwy 12.
- A trail along 19 connecting Baker Park and the Luce line would be ideal.

### Q2-4. Which destinations in or around Maple Plain do you wish you could ride a bicycle to more easily?

A total of 30 answers were received, with many items repeating several times. Responses are shown as a “word cloud” - answers received more often are shown in larger size. Answers are presented as submitted by participants, with minor editing for clarity.

A word cloud of destinations in or around Maple Plain. The words are arranged in a roughly rectangular shape, with 'Baker Park' being the largest and most central word. Other prominent words include 'Luce Line Trail', 'MPFC', 'County Road 6', 'Discovery Center', 'Lake Independence', 'Subway', 'County Rd 19 South', 'Bank', 'Blackwater Coffee', 'Pagenkopf Road', and 'library'.

## Survey Part 3: Additional Comments

### Q3-1. Participants' additional information or ideas for improving conditions for walking or bicycling in Maple Plain

- I like to rollerblade at Baker Park, but have to drive the few blocks to get there, since neighborhood roads are so rough.
  - Large identified crosswalks at the 2 stop lights in town.
  - Creating a bike path on County 29 from Baker Park Trail to Stop-light at Highway 12.
  - Since Main St is wide set aside a walking/bike path on Main Street (East and West)
  - If feasible create an over or under pass of Hi-way 12 somewhere in town.
  - If Budd Avenue had a path, I would walk/bike to town more often with my kids.
  - Crossing 12 at Budd on a bike is dicey, on foot it is very dangerous. If you could improve one thing, it should be that situation.
  - I think an extra path built over the train tracks would help improve walking and bicycling conditions. I also think an extra path over HWY 12 or a stop light by the library would benefit everyone but I understand that would be a long process of waiting for the planning of the redevelopment of the city, and MnDOT, etc.
  - Sidewalks, wider streets, better lighting, paths around Northside Park baseball fields and Discovery Center, access to other trails (Luce Line), path parallel to Cty Rd 19.
  - Please consider all of the people in the Bryantwood apartments and surrounding neighborhoods that need a safe way to be connected to main street and businesses as well as the Bus transit - this includes adults and children we see walking up and down Budd Ave to each of these destinations. Please address good lighting on these trails and sidewalks as well.
- My biggest concern is that we are catering to traffic to quickly move it through Maple Plain. The people who live and play here should be our priority. We wouldn't need the expense of putting trails in neighborhoods if we didn't have to worry about traffic on our neighborhood streets.

## 2.3 Open house and other meetings

Several additional public meetings and presentations have been held a part of this project's development. These include:

- Open House: December 20, 2011
- Open House: February 21, 2012
- City Council Meeting: February 27, 2012 (cancelled)
- Planning Commission: March 8, 2012
- City Council: March 26, 2012
- City Council: July 9, 2012

In addition, a project website has been used to communicate project meetings and provide access to project documents.



**A project website has been used to share project results. The URL is [www.mapleplain-walkbikeplan.info](http://www.mapleplain-walkbikeplan.info)**

## Section III

### Recommendations

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

#### In this section

- 3.1 - Introduction, principles and framework
- 3.2 - General recommendations
- 3.3 - Map of recommended routes
- 3.4 - Toolbox of treatments
- 3.5 - Project and corridor-specific recommendations
- 3.6 - Bike parking and other end of trip facilities
- 3.7 - Operations and maintenance
- 3.8 - Education and encouragement

### 3.1 Introduction, principles and framework

#### Introduction

The purpose of this Plan is to offer short, medium and long-term recommendations to improve conditions for people walking and cycling in and around Maple Plain.

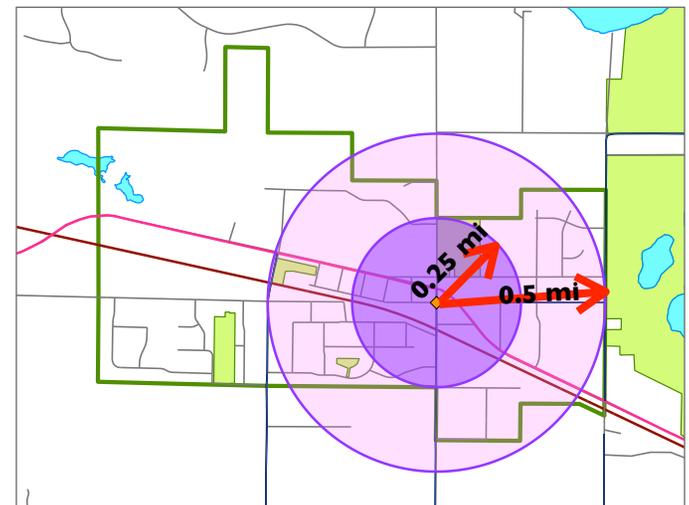
The city has several important assets that make it an ideal place to walk or bike: it is of relatively small size, it has a connected and well distributed network of relatively quiet residential streets, has a focused downtown / civic center, and has (and is in close proximity to) local and regional recreation assets.

However, it also faces significant challenges: difficult walking and cycling environments along some of the otherwise logical and convenient routes to access its assets; the presence of a busy State Highway that has not been properly contextualized to its setting and creates a significant barrier for non-motorized connection in the city; and an overall lack of infrastructure to support Active Transportation within its extent.

The recommendations in this Plan reflect effort in balancing and prioritizing the immediate needs that exist in the city with the economic and political realities that might make “ideal” solutions impossible to achieve within a reasonable timeframe. It aims to present a combination of high-yield / low-investment solutions that begin to address existing issues while also presenting broader, longer-term recommendations that address the difficult and significant barriers that currently exist, and that must be resolved in order to allow Maple Plain to reach its potential as an inviting, connected and prosperous Active Living community.



**Small towns that provide comfortable and inviting walking and biking connections benefit their residents and attract visitors and increased economic activity.**  
*Image: Northfield, Minnesota.*



**Maple Plain is of a compact and walkable size: quarter-mile and half-mile walking radii from its downtown are shown. A half-mile walk takes about 10 minutes.**

## Principles

Several principles guide the general recommendations and the specific guidance offered for routes, treatments and prioritization presented in this Plan. These principles were derived from guidance provided by members of the public and City of Maple Plain staff.

### Goals and guiding principles

- Increase safety, comfort and convenience for Maple Plain pedestrians and cyclists
- Increase opportunities for walking and bicycling as transportation and recreation options
- Use existing assets and steer strategic investments to create a network of routes that is within reasonable distance of the greatest number of Maple Plain residents
- Provide safe and convenient walking and bicycle access to major destinations within Maple Plain and in adjacent communities; provide connection to existing and proposed regional commuter and recreational walking and cycling trails
- Address existing barriers and discontinuities, especially State Highway 12
- Recommend practical, cost-efficient improvements that make use of the city's existing roadway assets to quickly and economically increase the pedestrian and bicycle-friendliness of Maple Plain's existing surface street network while articulating a vision that lays the groundwork for future improvements

### Framework for developing effective facilities

Many factors affect the usefulness and usability of a system of walking and bicycling facilities. Some of these factors are facility and network-related, and have to do with the type, location and connectivity of the facilities that are provided. Other factors are most related to the experiences and perceptions of the system's users, including their perceptions of safety and the comfort (or lack of comfort) they experience when they make use of these facilities.

### **Developing a connected, robust network for walking and biking**

Transportation infrastructure is useful only if it provides continuous connection between the places people are and those they want to reach. A connected, safe and comfortable network of routes is a basic requirement for any system that aims to improve pedestrian and cyclist mobility.

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 use of sustainable modes and improve safety and accessibility 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.

## Facility or network-related factors

Facility-related factors include:

- Number of existing routes, and connections between them;
- Proximity and access to key destinations;
- Existence of biking and walking barriers; and
- Access to natural resource amenities (like lakes, rivers and streams).

## User safety and user comfort-related factors

User safety and user comfort-related factors must be taken into account if an infrastructure investment is to be successful in enticing a greater number of people to use walking and cycling as part of their daily trips.

Pedestrians and cyclists are vulnerable users of our transportation system. Unlike motor-vehicle occupants, they are not protected by 2,000+ lbs of steel crumple zones, supplemental restraint systems, or other advanced collision mitigation features. They are also, unlike motor-vehicle occupants, in intimate awareness and immediate contact with their surrounding environment - noise, wind, road texture, vibration, and surrounding traffic. It is therefore vitally important to:

- Properly address the need for safe and adequate facilities for pedestrians and cyclists as infrastructure investment decisions that result in poorly designed facilities, or in no facilities being provided where a need exists increase the probability that injuries and fatalities will occur, and
- Account for factors such as proximity to motor vehicle traffic, traffic speed, and overall quality of accommodations as these will greatly influence pedestrians' and cyclists' sense of safety, and will directly affect the rate of utilization of the facilities provided.

Integrating pedestrians and cyclists' safety and sense of safety in the decision-making process for guiding infrastructure investments will improve conditions for pedestrians and cyclists in Maple Plain and lead to greater use of these modes in and around the city.



***Narrow roadway shoulders create an inhospitable and dangerous environment for cyclists.***

## 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 Maple Plain:

### Adopt a "Complete Streets" policy

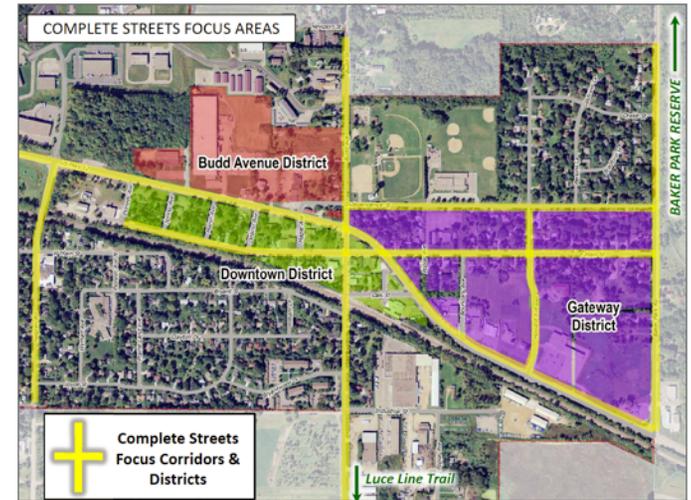
"Complete Streets" is a design philosophy that considers the needs of all present and potential users of a community's transportation network.

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 Maple Plain 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 Green Book guidance), the study finds that 10 ft travel lanes are suitable for local and collector streets with operating speeds to 30 mph, while lane widths from 10 to 11 ft are suitable for use in arterials with operating speeds to 35 mph.



**Maple Plain is currently considering a Complete Streets policy. The streets shown in yellow are "Focus Corridors and Districts" for that policy. Image courtesy of MFRA.**

### Designating automobile space

Marking the right edge of the automobile driving lane (or "fog line") can help calm traffic and designate shoulder spaces for pedestrians and cyclists. This practice will also increase safety for motorists as it will discourage automobiles from passing on the right, especially on wider roads.

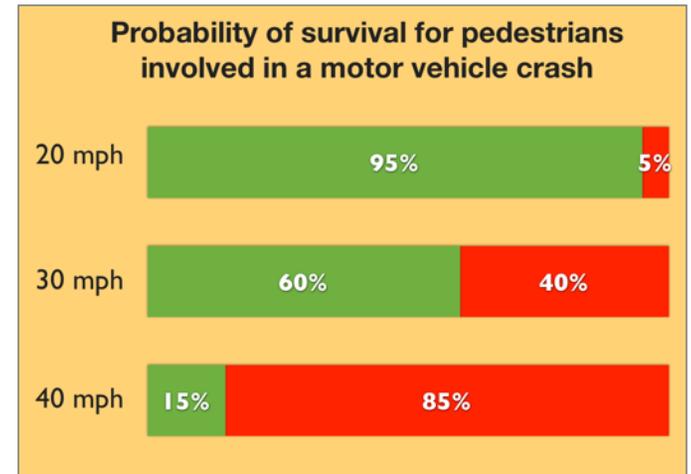
## Decrease automobile travel speeds

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 Maple Plain are made less inviting by high speed limits currently in place. Baker Road, for example, which provides access from Maple Plain to adjacent Baker Park (with its walking and bicycling trails) is currently posted as a 45 mile per hour road.

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 should be lowered to 25 mph as allowed by the Minnesota Statute cited above. For streets not under Maple Plain's jurisdiction (like Baker Road, for example), 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.



**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 Map of recommended routes

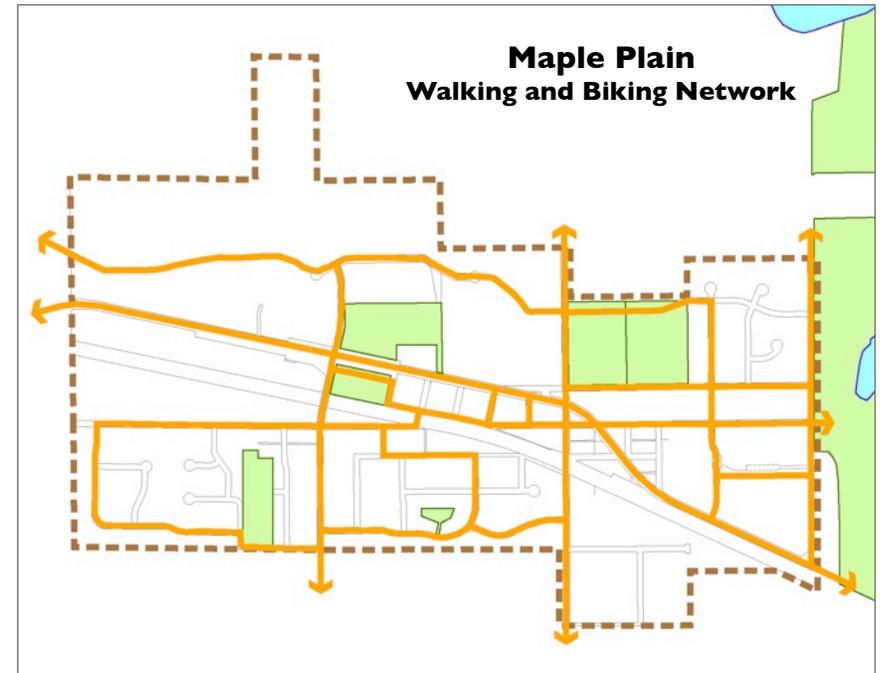
Maple Plain's existing street network varies considerably in the context and conditions for each street - from the quiet residential streets near Rainbow Park, to the busy, high speed traffic of Baker Road, to the civic core of the City's Downtown, to the impossible walking or biking landscape of Highway 12.

To address these conditions, this Plan recommends a variety of treatments for the city's walking and bicycling network. These treatments are to be phased over the short, medium and long-term. The first goal is to establish as broad and connected a network as early as possible - and to make that a reality, some temporary, low-cost solutions are proposed, which are to be upgraded over time as funding permits.

To respond to this variety while respecting each area's context and providing implementable, practical solutions, several types of routes and treatments are recommended.

In general, the recommendations in this Plan are intended for implementation over the short (6 to 24 months) and medium (one to four year) term, with a focus on providing economical, fundable solutions that build on the many assets already existing in Maple Plain.

Thus, the majority of recommendations are directed towards already-existing infrastructure, and emphasize making better use of these assets by, for example, more tightly designating automobile space on a road to free up space that allows the provision of safer and more comfortable walking and bicycling infrastructure in that same, existing infrastructure.

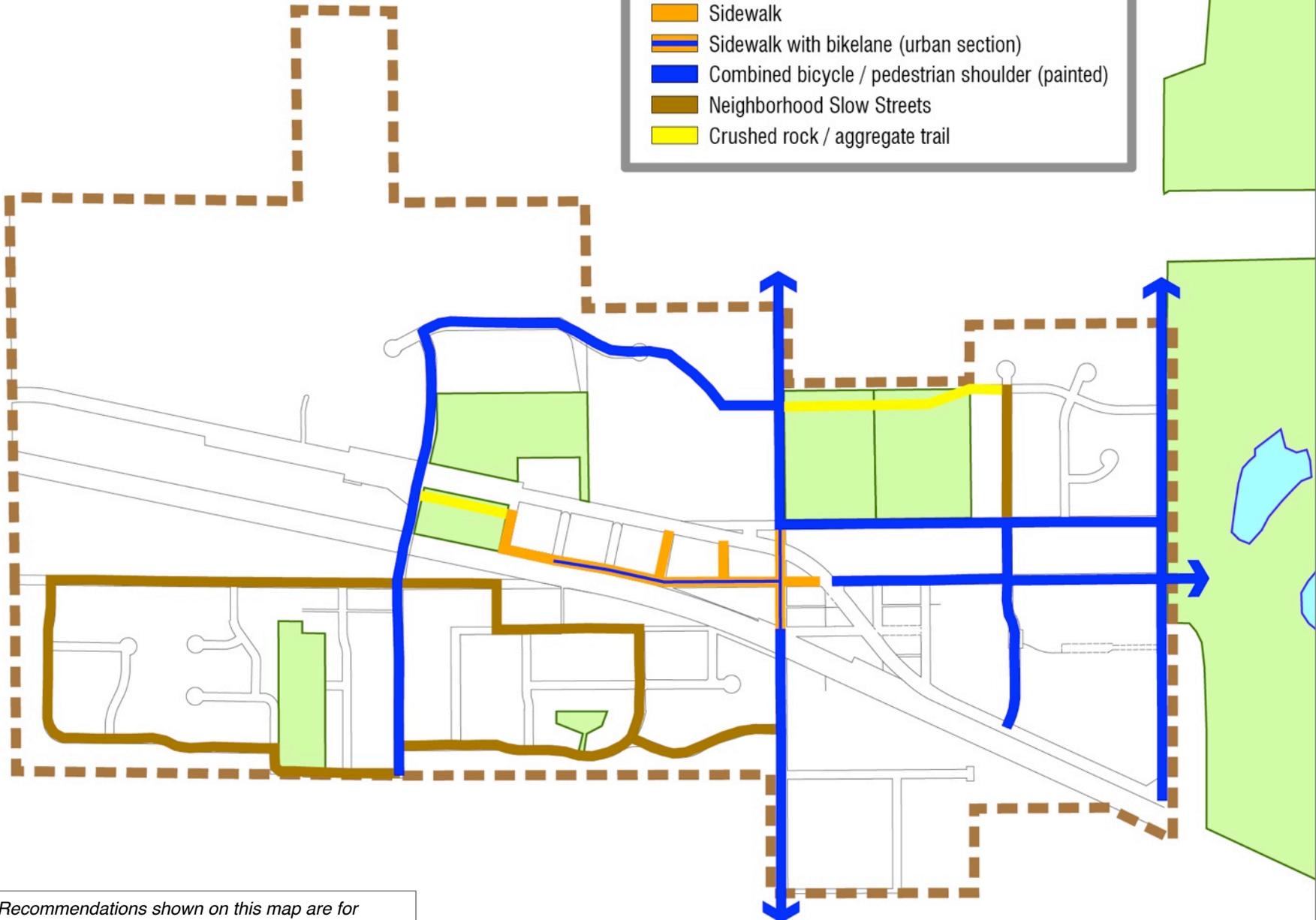


*Walking and biking routes included within this plan are shown in orange.*

## SHORT TO MEDIUM TERM Routes and Implementation

### DRAFT Route Framework Maple Plain Walking and Biking Plan

-  Sidewalk
-  Sidewalk with bikelane (urban section)
-  Combined bicycle / pedestrian shoulder (painted)
-  Neighborhood Slow Streets
-  Crushed rock / aggregate trail

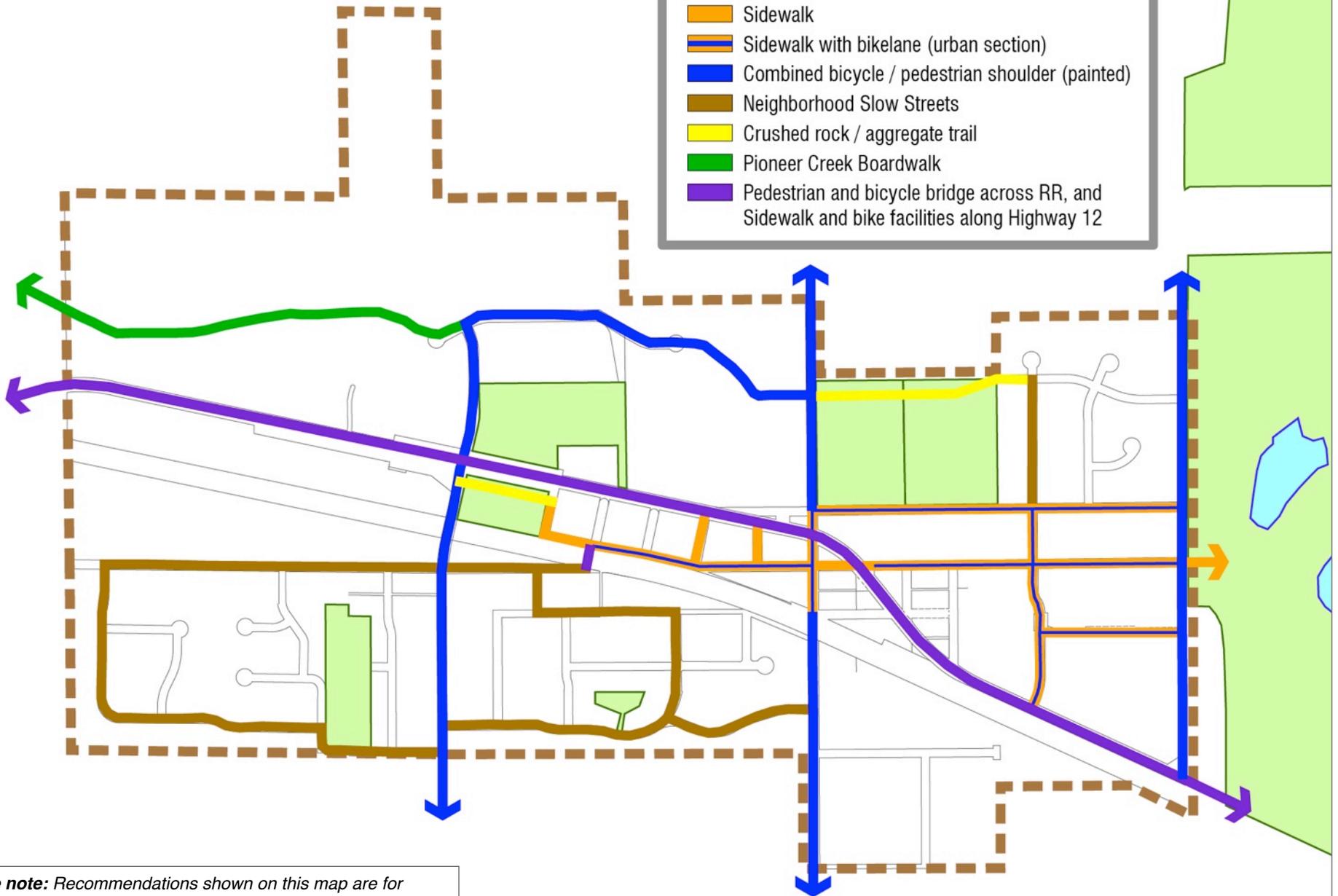


*Please note: Recommendations shown on this map are for preliminary system planning purposes only.*

## LONGER TERM Routes and Implementation

### DRAFT Route Framework Maple Plain Walking and Biking Plan

-  Sidewalk
-  Sidewalk with bikelane (urban section)
-  Combined bicycle / pedestrian shoulder (painted)
-  Neighborhood Slow Streets
-  Crushed rock / aggregate trail
-  Pioneer Creek Boardwalk
-  Pedestrian and bicycle bridge across RR, and Sidewalk and bike facilities along Highway 12



*Please note: Recommendations shown on this map are for preliminary system planning purposes only.*

## 3.4 Toolbox of treatments

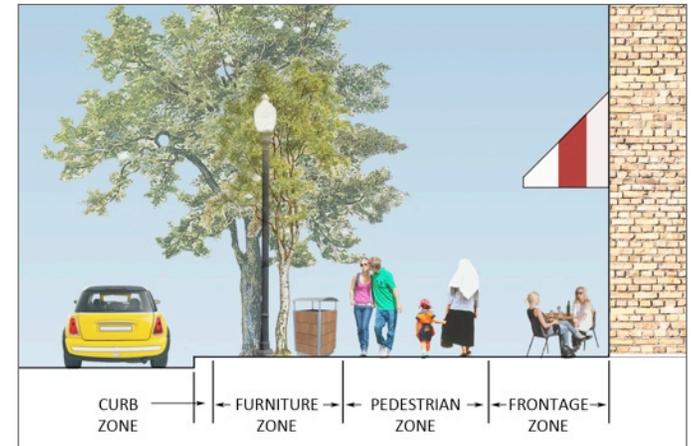
A variety of tools and treatments are recommended to address and improve conditions for pedestrians and cyclists in Maple Plain. A brief overview of several options that are recommended for application in Maple Plain is provided below. Additional corridor-specific recommendations are provided in Chapter 3.6.

### For Maple Plain's walking network

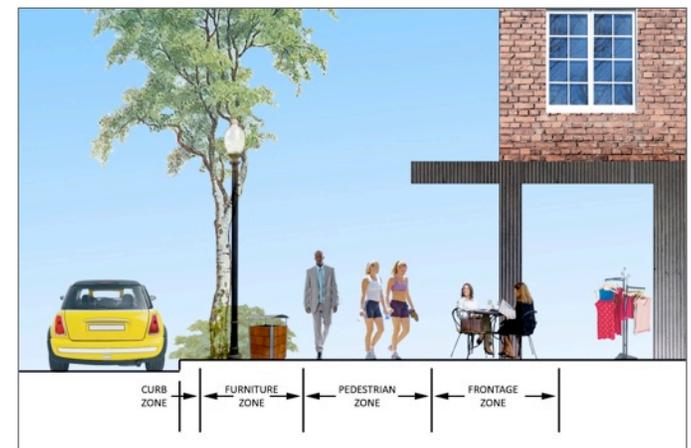
#### Sidewalks

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 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 a main street / commercial district should be between 6 to 8 ft. Width for a residential district should be at least 5 ft.
- 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 ft 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



**Sidewalk zones and their uses and relative dimensions in a commercial district like Maple Plain's downtown.**



**Sidewalk zones in a mixed use district like Maple Plain's redevelopment districts.**

pedestrian zone and moving motor-vehicles - increasing comfort and 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.

### Application in Maple Plain

- Sidewalks, developed to include usable space and amenities in all four zones, should be provided in Maple Plain’s downtown district
- Over the long-term, residential sidewalks should be provided at those locations identified in this plan as part of long-term walking networks for the city

### 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 accommodate wheelchair users and reduce conflicts with motor-vehicle traffic.

### Application in Maple Plain

- Curb ramps should be provided at the corners of all existing and future sidewalks

### Marked crosswalks and advanced stop bars

Marked crosswalks are a visual indication of locations where pedestrian crossings can legally and safely occur. They help create a continuous 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, and at stop-sign controlled intersections in main street commercial districts. When placed at locations where more than one lane of travel per direction is possible (including turn



*Curb ramps at a corner.*



*Pedestrian at a marked “zebra” crosswalk in Hopkins.*

lanes), they should be combined with Advanced Stop Bars in order to minimize risk of “Hidden Threat” crashes. Advanced Stop Bars are placed on the roadway at least 10 ft before marked crosswalks.

### Application in Maple Plain

- Marked crosswalks should be provided at all intersections in the Downtown District, and around other community destinations in the city
- Only high visibility designs (“ladder” or “zebra”) should be used in Maple Plain
- Advanced Stop Bars should be provided at all marked crosswalks, including those at midblock crossings

### Curb extensions / Bump-outs

Bump-outs extend the sidewalk and curb into the motor-vehicle parking lanes at intersection locations. These features (also known as “neck-downs”) 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 in the line of vehicle traffic. Bump-outs work especially well on busy collector streets, on minor arterials where on-street parking is allowed, and in commercial / downtown districts.

### Application in Maple Plain

- Curb extensions should be provided at all intersections in the Downtown District (including those where the Downtown District abuts State Highway 12), and on routes providing access to other community destinations in the city

### Medians / Pedestrian refuge 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.



**Curb extensions at an intersection. Image courtesy of Federal Highway Administration / Context Sensitive Solutions.**



**Photo-rendering of a proposed pedestrian refuge island along Cedar Avenue, in Minneapolis.**

### Application in Maple Plain

- Over the long term, as Highway 12 is reconfigured to better fit with Maple Plain’s context, medians and crossing islands across it should be provided

### Designated pedestrian and bicycle shoulders

As an interim measure, while a city’s pedestrian network is developed, space available within existing paved roadways can be reallocated to provide designated space for pedestrian travel. This can be accomplished quickly and inexpensively by striping new shoulder space along existing roadways and painting this new space to differentiate it from the motor-vehicle portion of the travel-way. On-street parking may need to be restricted in some locations to provide sufficient space.

### Application in Maple Plain

- Locations along Budd Avenue (north of Highway 12), Independence Street, Main Street E, Baker Park Road, Pioneer Creek Drive, and Halgren Road (north of Highway 12), among others

### Pedestrian Hybrid Beacon / HAWK signal

The Pedestrian Hybrid Beacon (PHB, also know as HAWK or High-Intensity Activated crossWalk) is a pedestrian-activated red-indication signal designed for use at intersection and midblock locations. PHBs, while relatively new to the US, have been in use in Europe for decades and have been successfully deployed in North American cities like Tucson, AZ; Lawrence, KS; and Vancouver, BC.

The Pedestrian Hybrid Beacon 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.



*Illustration of a potential combined pedestrian / bicycle shoulder along Independence Street.*



*Pedestrian Hybrid Beacon installed in Saint Cloud, on 12th Avenue.*

*Image: Courtesy of Thomas Dumont, MnDOT District 3.*

Pedestrian Hybrid Beacons are approved for use by MnDOT at midblock crossings and also at intersection locations where current engineering practices make providing a standard traffic signal difficult. Installed cost for a typical crossing ranges between \$75,000 to \$150,000.

#### Application in Maple Plain

- A Pedestrian Hybrid Beacon will provide protection for pedestrians and cyclists wishing to safely cross Highway 12. A PHB should be placed at the intersection of Budd Avenue and Highway 12, or at a midblock location between the intersections of Budd Avenue and Main Street East with Highway 12

### Rectangular Rapid Flashing Beacon

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. 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 Maple Plain

- To provide crossing movements across Baker Park Road at Independence Street and/or Main Street East to access Baker Park, and potentially at Halgren Road south of Highway 12



*Potential application of a Pedestrian Hybrid Beacon at a midblock location between Budd Avenue and Main Street East, on Highway 12.*



*Solar-powered RRFB installation. Image courtesy of ELTEC Corporation.*

## For Maple Plain’s biking network

Most investments that improve conditions for Maple Plain pedestrians will also improve conditions for cyclists (by making users of non-motorized transportation more visible, by offering additional opportunities to cross streets, and by calming motor vehicle traffic, among others). Similarly, facilities that are especially helpful for cyclists can also be used by and improve conditions for pedestrians. A brief listing and description of these treatments is offered in this section.

### Defining minimal appropriate facilities for biking

The Minnesota Department of Transportation, in its Bikeway Facility Design Guide (2007), provides a set of guidelines that establish minimum dimensions and treatments for specific roadway contexts.

This document, which is hereby incorporated into the Maple Plain Walking and Biking Plan by reference, offers a method for determining the minimal dimensions and type of facilities that will meet goals of cyclist safety and comfort while responding to specific local roadway conditions, including number of motor-vehicle lanes, motor-vehicle speed, and number of traffic lanes, as well as whether the proposed bicycle facility is to be provided on a curb-and-gutter cross section (in a developed “urban” context) or on a shoulder-and-ditch section (for a rural or undeveloped context). These facility selection tables are found in Chapter 4 of the Design Guide.

For a shoulder and ditch section (like Baker Park Road, for example) the facility selection matrix indicates a minimal facility of an 8 ft paved shoulder:

### For a rural section:

<b>Motor Vehicle ADT (2 Lane)</b>	<500	500-1,000	1,000-2,000	2,000-5,000	5,000-10,000	>10,000	
<b>Motor Vehicle ADT (4 Lane)</b>	N/A	N/A	2,000-4,000	4,000-10,000	10,000-20,000	>20,000	
<b>Motor Vehicle Speed</b>	25 mph	PS = 4 ft* or SL	PS = 4 ft* or SL	PS = 4 ft* or WOL	PS = 4 ft*	PS = 4 ft*	Not Applicable
	30 mph	PS = 4 ft* or SL	PS = 4 ft* or WOL	PS = 4 ft*	PS = 4 ft*	PS = 6 ft	PS = 6 ft
	35 - 40 mph	PS = 4 ft* or SL	PS = 4 ft* or WOL	PS = 6 ft	PS = 6 ft	PS = 6 ft	PS = 8 ft
	45 mph and greater	PS = 4 ft*	PS = 4 ft*	PS = 6 ft	PS = 8 ft	PS = 8 ft	SUP or PS= 10 ft

\* See discussion in Section 4-3.1 regarding rumble strips on 4-foot shoulders.  
PS = Paved Shoulder, SL = Shared Lane, SUP = Shared-Use Path, WOL = Wide Outside Lane

**Table 4-2, MnDOT Bikeway Facility Design Guide.**

Baker Park Road is a two-lane road, with ADT of 2,700 motor-vehicles per day, and posted speed limit of 45 mph. According to the MnDOT Design Guide, the minimum appropriate treatment is a paved shoulder (noted as “PS” in the chart) of 8 ft width or greater. Currently, the existing shoulder provided along Baker Park Road varies from 4 ft to 7 ft.

Similarly, Halgren Road (County Road 83) is a two lane road, with ADT of 3,350 and posted speed limit of 30 mph. According to the MnDOT Design Guide, the minimum appropriate treatment here is a paved shoulder (“PS”) of 4 ft width or greater. Currently, a 2.5 ft shoulder is provided there.

The MnDOT Design Guide similarly provides a facility selection matrix for use in locations in built-up areas or urban areas - applicable, for example, to the portion of Budd Avenue (County Road 19) located within Maple Plain’s Downtown District:

**For an urban section**

Table 4-1: Bikeway Design Selection for Urban (Curb and Gutter) Cross Section - English Units							
<b>Motor Vehicle ADT (2 Lane)</b>		<500	500-1,000	1,000-2,000	2,000-5,000	5,000-10,000	>10,000
<b>Motor Vehicle ADT (4 Lane)</b>		N/A	N/A	2,000-4,000	4,000-10,000	10,000-20,000	>20,000
<b>Motor Vehicle Speed</b>	25 mph	SL	WOL	WOL	WOL	BL = 5 ft	Not Applicable
	30 mph	SL with sign	WOL	BL = 5 ft	BL = 5 ft	BL = 6 ft	BL = 6 ft
	35 - 40 mph	WOL	BL = 5 ft	BL = 5 ft	BL = 6 ft	BL = 6 ft	BL = 6 ft or PS = 8 ft
	45 mph and greater	BL = 5 ft	BL = 5 ft	BL = 6 ft	BL = 6 ft	BL = 6 ft or PS = 8 ft	SUP or PS = 10 ft
BL = Bicycle Lane, SL = Shared Lane, WOL = Wide Outside Lane, SUP = Shared-Use Path, PS = Paved Shoulder							

Table 4-1, MnDOT Bikeway Facility Design Guide.

In this location, Budd Avenue is a two lane road with ADT of 2,350 motor-vehicles per day and a posted speed limit of 30 mph. According to the MnDOT Design Guide, the minimal facility recommended to safely accommodate bicycle riders is a bike lane (noted as “BL” in the matrix) of 5 ft width or greater. Currently no bicycle lanes are provided at this location.

**Expanding access to bicycle mobility**

It is important to note that the dimensions included in the MnDOT Design Guide charts are recommended minimums developed to respond to the needs of traffic-tolerant adult cyclists (those who are already comfortable riding near motor-vehicle traffic). To follow through on the goal of accommodating and inviting use by other adults and by children it may be necessary to increase the minimum dimensions to provide greater separation from motor-vehicle traffic (which increases pedestrian and cyclist comfort).

**How to obtain space to accommodate facilities**

There are several approaches that can be used in Maple Plain (alone or in combination) to accommodate walking and biking facilities of appropriate types and dimensions on existing roadway:

- **Narrowing existing travel lanes:** For example, Baker Park Road currently has two motor vehicle travel lanes that are each 13 ft wide (by comparison, standard highway travel lanes are 12 ft wide). By narrowing and restriping each to 11 ft (allowed under current FHWA and AASHTO guidance, and without any negative impact on roadway capacity or safety), 2 ft of pavement can be added to existing paved shoulders, increasing them to 6 or 9 ft of width (depending on location) - which meets MnDOT minimums. And if this is combined with ...
- **Lowering speed limits on existing roadways,** the type of facility required, or its dimensions, decrease. If the speed limit along Baker Park Road (currently 45 mph) were lowered to 30 or even 35 mph, the minimal required width for a rideable paved shoulder decreases to 4 ft (for 30 mph) or 6 ft (for 35 mph) instead of the 8 ft required for the current limit. As an additional benefit, crossing Baker Park Road to access the park would become easier, safer and more comfortable for pedestrians and cyclists of all ages.

### 3.5.1 Addressing Highway 12

Highway 12 is the single most important barrier to pedestrian and bicycle movement in Maple Plain, and has been identified as such by participants in this project’s public workshops, by City authorities, by the City’s 2008 Comprehensive Plan, by the Minnesota Design Team’s 2006 visit, by the City’s 2008 Redevelopment Implementation Plan, and other guiding documents.

Highway 12’s present configuration impedes the safe and comfortable movement of people walking and cycling across Maple Plain, and decreases access to the City’s civic institutions, to centers of economic activity, and to local and regional parks and recreational assets.

Additionally, it decreases the potential for the kind of economic development sought by the city and articulated in its Comprehensive Plan and its Redevelopment Implementation Plan.

Effectively addressing Highway 12’s impacts will be the most challenging component of this Plan. This section presents a vision and potential plan of action for accomplishing this task.

#### Present conditions

Highway 12 is a State Highway, and is under the jurisdiction of the Minnesota Department of Transportation. It is classified as a Principal Arterial, and runs generally east-west through the center of Maple Plain. It carries approximately 16,300 motor-vehicles per day near its intersection with Budd Avenue (2008). Posted speed limits within Maple Plain vary between 45 miles per hour (west of Halgren Road) to 40 miles per hour (between Halgran Road and Delano Avenue) to 35 miles per hour (east of Delano Avenue).



**Highway 12 acts as a barrier for pedestrian and bicycle circulation between the northern and southern portions of Maple Plain.**



**Currently, approximately 16,300 motor-vehicles, including heavy trucks, use Highway 12 through Maple Plain every day.**

## Current configuration

Highway 12 currently provides one 12-foot travel lane in each direction, one center left turn lane (approximately 14 foot wide), and a shoulder on each side of the roadway, which becomes a right-turn lane at Halgren / County 83. The left turn lane is provided through most of Highway 12's extent through Maple Plain. It gradually disappears west of 83 and south of Oak street, at the city's eastern end. The shoulder provided is 12 foot wide, with an urban "curb-and-gutter" section provided east of Delano Avenue, and a rural "shoulder and ditch" section provided west of this point. Approximately 100 ft of right-of-way is included through most of Highway 12's extent in Maple Plain.

## Roadway character and response to context

As currently configured, Highway 12 serves its "Principal Arterial" (providing through transportation) function well, with a Level Of Service (LOS) C. There is little change to the roadway's character while it traverses Maple Plain to acknowledge that it is traveling through a city rather than a rural area - its cross section, speed limits and crossing characteristics offer a limited response to the "city" context while in Maple Plain and impinge on the community's quality of life, potential for redevelopment, economic activity, and walkability.

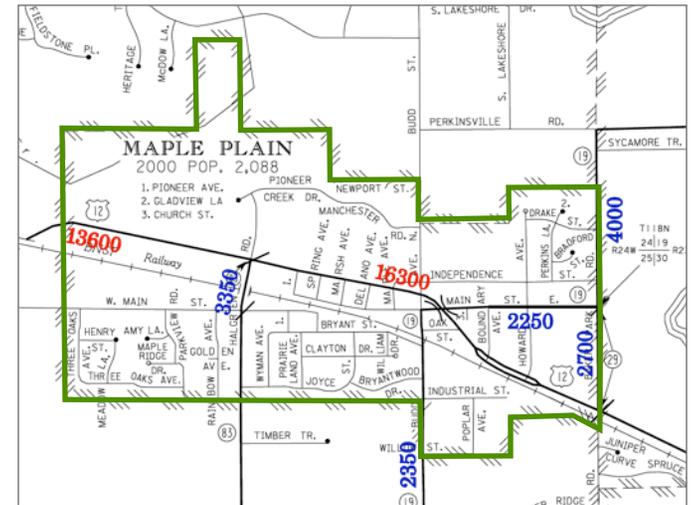
## Pedestrian and bicyclist accommodations

Accommodations for pedestrians and bicyclists are almost entirely absent along and across Highway 12. There are no sidewalks along it, even for the stretch closest to the city's Downtown District (which includes City Hall, a Hennepin County library, and several shops and restaurants). There are presently no bicycle facilities along or across Highway 12.

## Signalized intersections on Highway 12

Signalized intersections are provided at two locations in Maple Plain:

- At Halgren Road / County Road 83, and
- At Baker Park Road



**2008-2009 traffic volumes in and around Maple Plain.**  
Source: MnDOT



**Sidewalks are not provided along Highway 12. Image: At the intersection of Maple Avenue and Highway 12, adjoining Maple Plain's Downtown District.**

## Marked crosswalks on Highway 12

No fully marked (four leg) crosswalks are provided in the city. Partially marked crosswalks are provided at three locations along Highway 12:

- At the signalized intersection with Halgren Road / County Road 83, with markings for the southern and eastern crossing movements,
- At the unsignalized intersection with Budd Avenue (serving the Downtown District), with markings for the eastern crossing movement only, and
- At the signalized intersection at Baker Park Road, with markings for the southern and eastern crossing movements

The relative lack of crossing facilities, coupled with relatively high traffic speeds and volumes, work against goals of increased connectivity in the city, and against efforts to provide a supportive environment for Active Living goals.

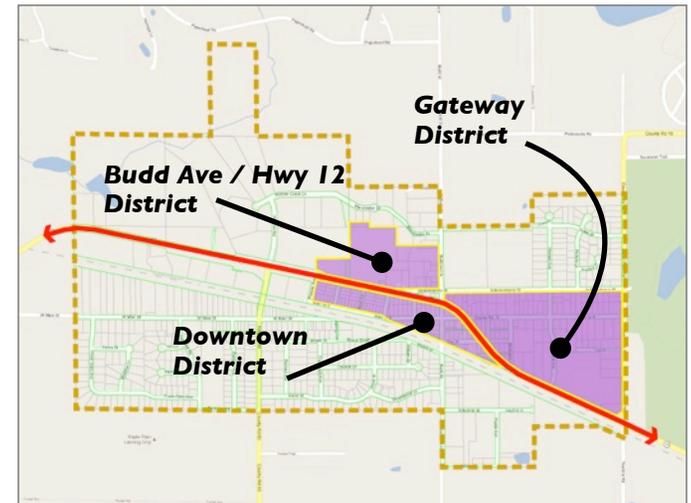
## Public realm and placemaking

The public realm is the space people inhabit when they are out walking, shopping or sightseeing, or simply getting from place to place. It is the sum of spaces that are open to and exist for all people that visit, pass through, or live in a place.

The configuration of Highway 12 does not currently provide a context-appropriate response (in terms of urban design, pedestrian accessibility, and aesthetics) to the environment of Maple Plain as it traverses the city. As a result, walking along Highway 12 today is unpleasant, uncomfortable and inconvenient. In an ultimately unproductive cycle, activities have therefore “turned their back” on the highway and its hostile presence.

## Potential

The challenge, and great opportunity, is to seize this as an opportunity to rethink the relationship between the city and Highway 12, and to develop solutions that re-knit, by appropriately contextualizing Highway 12, the city’s connectivity and access. That is the purpose of this chapter.



*The three Special Area Plan Districts identified in the 2030 Maple Plain Comprehensive Plan (shown in purple) are immediately adjacent to Highway 12.*

## Vision

Highway 12 can be transformed into a corridor that supports value-creation for the City of Maple Plain, and that welcomes pedestrian and bicycle traffic across and along its extent, connecting local and regional assets, providing sustainable, long-term prosperity, and improving quality of life for city residents while continuing to fulfill its Principal Arterial functions.

### A sample transformation



*An arterial running through a city ...*



*... and how investments in the public realm can re-contextualize transportation assets, encourage greater rates of walking and cycling, and support privately-funded development that transforms the landscape while building community prosperity and wealth. Photo simulations courtesy of Urban Advantage, Inc. and the Living Streets Manual.*

## What would it take to transform Highway 12?

Highway 12 can be reconfigured so that it becomes a corridor that also works for people on foot and on bikes, and that supports the creation of economic value as it travels along Maple Plain.

Two places to start are by:

- Safely and comfortably accommodating crossing movements, so that it is no longer avoided in residents' and visitors' experience of Maple Plain, and,
- Working closely with MnDOT to rethink the road's cross section ahead of potential reconstruction - so that it calms motor vehicle traffic that is traveling along it while also providing walking and bicycling routes along its extent through the city.

## Recommendations

Two sets of recommendations related to Highway 12 are provided in this chapter:

- Recommendations for improving movement **across** Highway 12, and
- Recommendations for improving movement **along** Highway 12

### Improving movement **across** Highway 12

Two locations along Highway 12 are selected for specific recommendations in this section: Budd Avenue and Main Street.

#### Location 1: Budd Avenue and Highway 12

The most important pedestrian and cyclist crossing movement of Highway 12 is along Budd Avenue, providing access to the City's Downtown, and supporting connectivity across Maple Plain to Northside Park, the Discovery Center, and Baker Park, among other destinations. Protected crossing movement for non-motorized travel at Budd Avenue is not currently provided. **Providing a protected crossing at this location is the highest-priority recommendation for this Plan.**

The uninterrupted flow of Highway 12 traffic at Budd Avenue (approximately 16,300 cars and trucks per day), flowing at high speeds (posted at 35 and 40 mph adjacent to the intersection) creates an extremely uncomfortable and uninviting pedestrian and cyclist environment, constitutes a potentially hazardous condition for people on foot or bike, and forms a barrier for connection across Maple Plain.

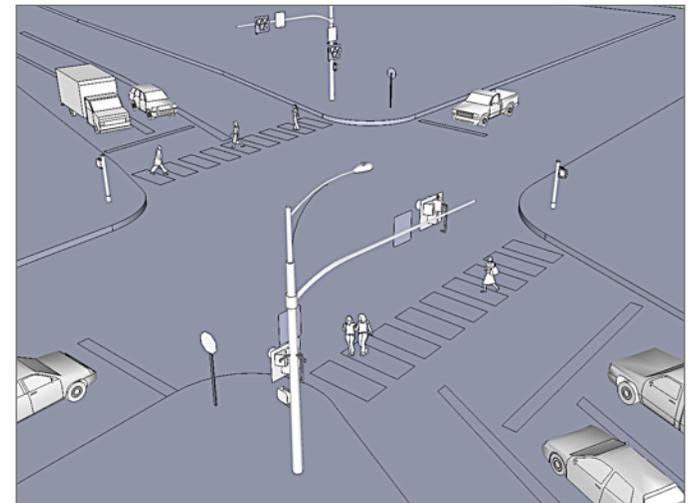
#### >> Immediate priority: Provide signal-protected pedestrian and bicycle movement across Highway 12

- Install a conventional traffic signal or a Pedestrian Hybrid Beacon (also known as a “HAWK signal”) to enable the safe passage of pedestrians at this location. Movement along both legs of the Budd Avenue across Highway 12 should be protected by a red signal indication.

Both types of signals would allow signal-protected pedestrian movement across Highway 12.



**Providing safe and comfortable pedestrian and cyclist crossing movements at Budd Avenue is the highest priority for this Plan.**



**One potential solution is the provision of a Pedestrian Hybrid Beacon at the intersection of Budd Avenue and Highway 12.**

The pedestrian-actuated HAWK signal (which would provide a red signal for Highway 12 traffic only when a pedestrian is present) would have less impact on motor-vehicle operations along Highway 12 than a conventional traffic signal (which would cycle through red at set intervals, or when motor-vehicles were present on Budd Avenue, or when actuated by a pedestrian). The most recent edition of the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD, which sets statewide standards for traffic control devices) confirms the appropriateness of using this signal at intersections of this type.

### **Budget**

Total cost for installation of a new conventional traffic signal varies, but is in the range of \$200,000 to \$300,000. Total cost for installation of a new HAWK signal is between \$75,000 to \$150,000.

### **>> Short-term priority: Bicycle-actuated crossing signal**

Cyclists wishing to travel across Highway 12 would need a way to activate the crossing signals recommended above. A bicycle-specific loop detector, installed in the bike lanes provided on either side of Highway 12 on Budd Avenue, will help cyclists cross the intersection by recognizing the presence of bikes and tripping signal changes at the signals. Pavement markings are included to help cyclists position their bikes where they can be detected. Improving detection of bikes at this intersections will help improve cyclist safety and convenience.

### **Location 2: Main Street and Highway 12**

Poor sightlines (especially for eastbound traffic along Highway 12), high speed of motor-vehicle traffic, and high desire for pedestrian travel along this direction for access to Maple Plain's Downtown make this location an important focus for improvement. Because of the low likelihood for realignment of Highway 12 to resolve sightline issues, the non-motorized routes recommended elsewhere in this Plan attempt to channel primary pedestrian and bicycle access to and through Maple Plain's Downtown along Budd Avenue.



**Another potential solution for this crossing is to provide a Pedestrian Hybrid Beacon and a crossing median just east of the Budd Avenue intersection.**



**A loop detector marking helps cyclists to position their bicycles where they can be detected to activate the crossing signal.**

## Improving movement *along* Highway 12

Over the long term, Highway 12, can become an asset that supports local value creation and increased connectivity while continuing to serve its Trunk Highway / Principal Arterial function.



**Highway 12 could be reconfigured to serve both through traffic and community needs.  
Image courtesy of Patricia Smith and the Living Streets Manual.**



**View of Highway 12 as it travels through Delano (just west of Maple Plain). Its cross-section includes a planted median, a wide shoulder, boulevard and sidewalks.**



**A potential reconfiguration of Highway 12 as it travels through Maple Plain. Sidewalks and a cycletrack could provide inviting pedestrian and bicycle facilities.**

### 3.5.9 Park and Ride Facility

#### Background

The City of Maple Plain, in partnership with Metro Transit and Hennepin County, has initiated the process to develop a 200-stall Park and Ride facility to facilitate transit service for commuters traveling between western Hennepin County and the Twin Cities.

Maple Plain is currently outside of Metro Transit's service area. Residents, along with other commuters from western Hennepin County, must at present travel to Park and Ride facilities or transit stops located elsewhere to access regional transit services.

To address this deficiency and improve access to local and regional transit service for residents of Maple Plain and nearby communities, the City of Maple Plain, working in partnership with Metro Transit and Hennepin County, has initiated the process to develop a 200-stall Park and Ride within the city's boundaries.

The proposed facility is located along Baker Park Road, just north of Highway 12, in the City's Gateway Redevelopment District.

The walking and biking routes and connections presented as part of this Plan will link residential neighborhoods, the Downtown District, and other business and employment districts to the facility. In addition, the Park and Ride's proposed location immediately adjacent to future higher-density residential and mixed uses in the Gateway District will provide convenient access to residents and workers.



*Illustrative site plan for the proposed Maple Plain Park and Ride facility. Illustration courtesy of Kimley-Horn and Associates.*



## Recommendations

This Plan recommends:

- Priority implementation of the Baker Road walking and pedestrian improvements described in other sections of this Plan in order to provide high quality non-motorized access to this facility
- Dedication of space, and development of a walking and biking link between the western end of the facility and Howard Avenue, as shown on the "Recommended Routes" map provided in this Plan. This link would be located just north of where the MPFC building currently sits, and would provide convenient access to Downtown and other quadrants of the city while decreasing the need for Park-and-Ride users to travel along Baker Road
- Inclusion of adequate bicycle parking in the facility. A minimum of 20 bicycle parking spaces should be provided. Given the nature of the proposed commuter transit service, bicycle parking will need to accommodate multi-hour / long-term use. Ten "inverted-U" racks with a canopy structure (for weather protection) would meet these minimum requirements. If possible, at least four bike locker spaces should be provided. Please see the "Bicycle Parking" chapter of this document for additional guidance.



***Bicycle parking facilities offered at a MetroTransit Park and Ride facility.***

## 3.5.10 Connection to Luce Line Regional Trail

### Background

The Luce Line Regional Trail is one of the premier transportation and recreational trails in our region. With a length of about 70 miles, it runs west from Theodore Wirth Trail in Minneapolis past Maple Plain to the city of Cosmos in west-central Minnesota.

Approximately 9 miles of the trail are presently paved (from Vicksburg Lane in Plymouth to Theodore Wirth Parkway), with the remaining 63 miles west of Plymouth provided as a crushed limestone trail. The surface is suitable for walking, jogging and bicycling. The trail provides connection to multiple recreation and transportation trails along its extent, including to important regional assets.

### Connection to Maple Plain

The trail is about 1.6 miles south of Maple Plain’s downtown along Budd Avenue (less than 10 minutes at an easy bicycle-riding pace), and about 1 mile south of Joyce Street on County Road 83 (about a 5 minute ride). No designated connection is presently provided to and from Maple Plain.

### Recommendation

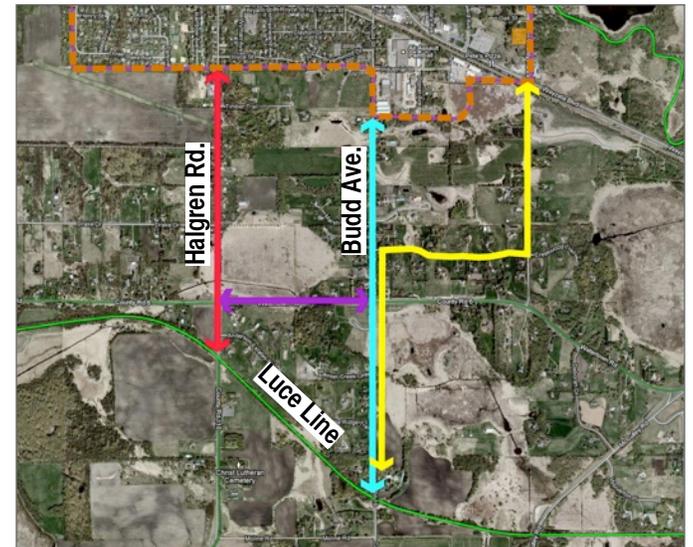
This Plan strongly recommends the development of a connection from Maple Plain to the Luce Line Trail. Several routes from Maple Plain are viable connections, including:

- 1) a north-south alignment on Highway 83 (shown in red on the map below),
- 2) a north-south alignment Along Budd Avenue / Highway 19 (shown in light blue), and
- 3) an alignment running south of Baker Road along Townline Road, then turning left on Broadmoor Drive and then south on Highway 19 (shown in yellow).

County Road 6 (shown in purple) can serve as an east-west connector to expand access to the trail.



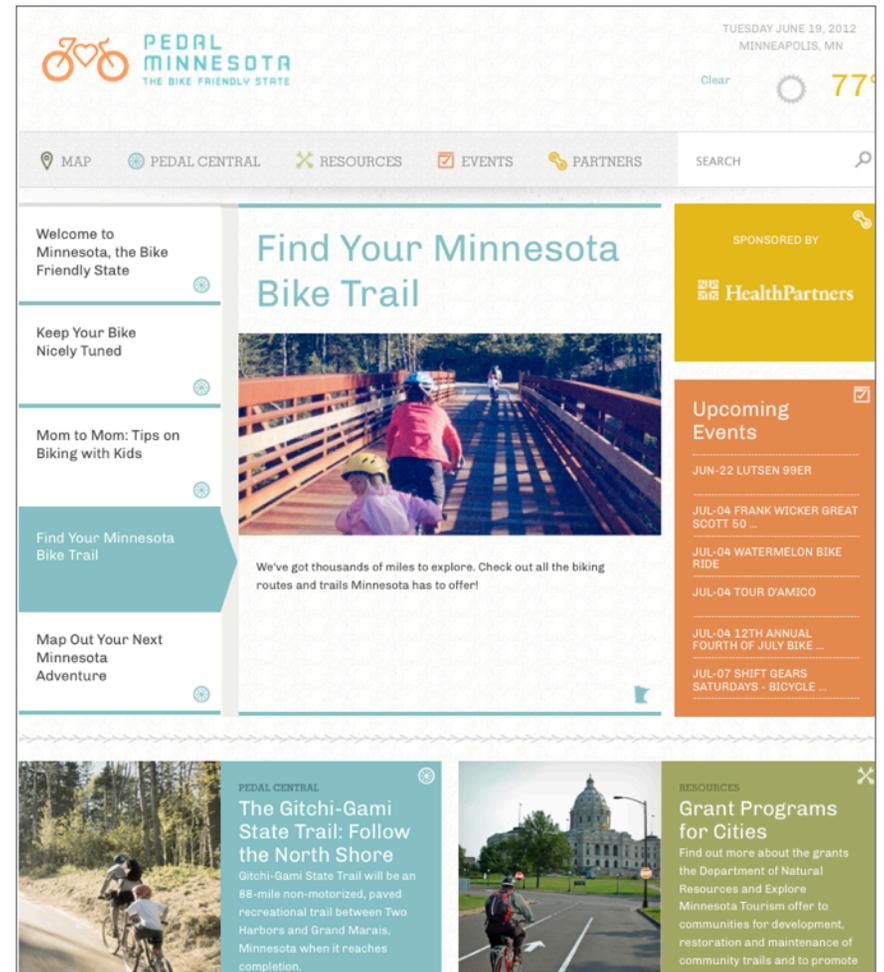
*The Luce Line Regional Trail as it traverses Golden Valley.*



*Potential connections from Maple Plain to the Luce Line Regional Trail*

Each of the alternatives has different advantages and disadvantages. Ideally, all three alignments could be improved and developed over time. However, for purposes of short-term implementation, the preferred alternative for this Plan is development of the Budd Avenue / Highway 19 alignment, as it has significantly lower motor-vehicle traffic volumes than the Highway 83 alternative (about 1/3 lower, which may provide a more pleasant walking and riding environment), and provides direct access to Maple Plain's downtown area, which may be advantageous in attracting tourists and recreational riders to patronize local businesses.

An additional short-term implementation recommendation would be to develop the Townline Road / Broadmoor Drive connection, as it would improve connectivity between the Luce Line and the Baker Park Trails.



***Pedal Minnesota is a new promotional campaign aimed at increasing travel and tourism to Minnesota towns through their connection to bicycle trails and related assets. Providing legible and understandable connections to the Luce Line may help increase the number of riders who visit and enjoy Maple Plain and its businesses.***

### 3.5.11 The Maple Plain BMX Park

#### Background

Bike parks provide a specially prepared terrain for BMX riding. They are very popular with children and young adults, and also with adults who practice mountain cycling. They provide an opportunity for fun social and athletic activity, and support and encourage physical activity in young people. Many cities, including Eagan and other Minnesota cities, have begun to include these facilities within their park systems.

Maple Plain has had a BMX track for several years. Originally located near the city’s fire station, it was closed in 2007 for construction of the water treatment plant. In 2010, a partially completed track was opened in the northwest corner of Northside Park. Completion of the park, including grading of jumps and pump track, clay sealing of the riding surfaces, and regular maintenance have not occurred and conditions at the facility have deteriorated to the point where the city is contemplating razing the site.

#### Recommendation

This Plan strongly recommends completion of the Maple Plain BMX facility, as it is consistent with the Active Living principles that inform this Plan, and provides access to healthful and fun physical activity for Maple Plain residents, including children and young adults.

It is estimated that a total of \$5,000 to \$10,000 is needed to remedy current deficiencies and complete the track to a high standard that will be amenable to the needs of children and young adults, and novice and experienced riders. Potential sources of funding for this facility include grant programs from Hennepin County Active Living and the International Mountain Bicycling Association (IMBA - please see [www.imba.com/resources/grants](http://www.imba.com/resources/grants)).



**The Ventura Park BMX pump track in Portland, Oregon. Image courtesy of Jonathan Maus, BikePortland.org**



**At the Lexington Street Bike Park, in Eagan. Image via Lexington Street Bike Park Facebook page.**

### 3.5.12 The Maple Plain Boardwalk

#### Background

The idea of a connection between Maple Plain and Pioneer Park through the wetlands in the northwest corner of the city was first articulated by the Minnesota Design Team in their 2006 visit and charrette in Maple Plain, as part of a recommendation to develop a "Bogwalk" that would connect Maple Plain residents to their city's natural resources and surroundings.

The idea received favorable response from Maple Plain residents and officials, and was incorporated into the city's 2030 Comprehensive Plan as part of a proposed trail connecting Baker Park to Pioneer Park in the City of Independence.

It should be noted that Baker Park Reserve, at the eastern edge of the Maple Plain, currently includes a boardwalk for part of the trail running north-south between Lake Independence and Half Moon Lake (near the Half Moon Group Camp).

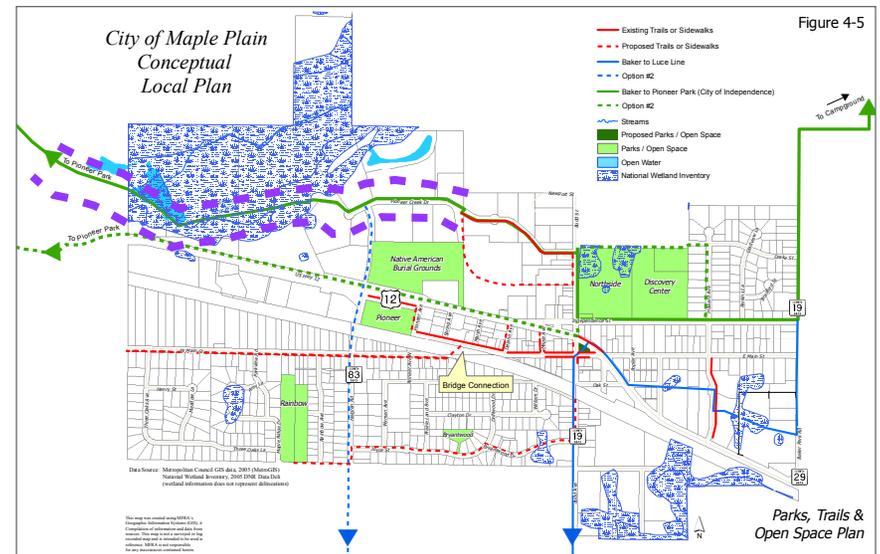
#### Recommendations

This Plan recommends implementation of the boardwalk connection providing access between Maple Plain and Pioneer Park in Independence over the medium to long term.

The boardwalk should be approximately 10 ft wide, providing space for shared use by walkers and cyclists. The structure would be supported on pilings for the portion over the wetland. Sample images and cross section, as well as a preliminary budget, are provided on the next page.



The Maple Plain Bogwalk (in blue, at the city's western edge), shown in a design sketch from the Minnesota Design Team's 2006 visit.



A potential alignment for the boardwalk concept (green line with purple dash outline), from the city's 2030 Comprehensive Plan.

## Budget

As originally proposed (based on the 2030 Comprehensive Plan and conversations held as part of this project), the total length of boardwalk, running from approximately the western end of Pioneer Creek Drive to County Road 90, just south of Hillstrom Road, in Independence, is approximately 1.2 miles, of which approximately 2/3 is over wetland. Assuming that the portions not on wetland (approximately 2,100 feet) are provided as crushed aggregate path on sand bed and compacted subgrade, and that the 4,200 ft over wetland consist of timber structure supported on piling, an approximate construction cost of \$1.5 million to \$1.7 million is anticipated.

Options for reducing potential construction costs include reducing the boardwalk's cross section (a width of 6 ft would still permit walkers and wheelchair users to travel abreast with comfortable space), as well as the exploration of alternative alignments that minimize the portion over the wetland (and thus reduce the length of the more expensive elevated portions of the trail). It may also be possible to enlist volunteer labor for constructing some portions of the boardwalk, further reducing costs.

## Next steps

Developing a set of preliminary designs and alignments would help investigate and establish the most optimal route (in terms of costs and potential amenity value) and lead to more refined cost estimates. This task is recommended as a short term priority that will in turn facilitate funding and potential implementation.



*The boardwalk in Baker Reserve Park. Image courtesy of Three Rivers Park District.*



*A proposed cross-section for the Maple Plain boardwalk.*

### 3.6 Bike parking and other end of trip facilities

End of trip, or ancillary facilities, are those provisions made for pedestrians and cyclists at the beginning and end of their trip. They are especially necessary for cyclists - bicycle parking, for example, 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 end of trip facilities cannot be overlooked: if these are inadequate or if finding them is enough of an inconvenience (for example, if no bike parking is available at a destination), 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.

Many types of end of trip facilities are routinely used in cities throughout the world - from bicycle parking racks to long-term, secure bike storage or lockers, to showers and changing space for commuters, to “Bike Stations,” dedicated bike storage locations (usually located near transit hubs or other major destinations) where cyclists drop off their bikes to be stored and serviced as needed while the cyclist is at their destination.

#### End of trip facilities for Maple Plain

The type of end-of-trip facility most needed in Maple Plain is bicycle parking. Although important improvements have been made in 2012 (with the installation of several high-quality racks in the city’s downtown), there is still insufficient bicycle parking available. 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.



*Bicycle parking conveniently located in a commercial district.*



*Bike parking provided at MPFC. It is well-located (next to the store’s front door), but is of a type that does not provide secure locking or stability for the bicycle.*

## 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 two hours. A standard “inverted U” rack (see below), appropriate location and placement, and weather protection is recommended. This type of parking is recommended for Maple Plain’s 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 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. Long-term bicycle parking should be provided at Maple Plain schools, office and employment sites. Bike lockers should be considered for the Park-and-Ride facility currently under development.

## Recommendations

- Improve bicycle parking at Maple Plain 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
- Provide appropriate long-term parking facilities at the new Park-and-Ride facility



*Availability of parking provides convenient access to an essential element of a bicycle network. Image courtesy of Bikes Belong Coalition.*

## 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 improve 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



*Two types of rack recommended by this Plan: the "inverted U" (left) and the "post and loop" (right).*



*"Wave" racks are not recommended because cyclists tend to use them as if they were a single "inverted U." This limits their actual capacity to two bikes regardless of the potential or stated capacity.*

- 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 inhibiting pedestrian movement to or from the building
- 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



***Bicycle parking areas should be located as close as possible to the building entrance they serve.***

## 3.7 Maintenance

*This chapter provides an overview of maintenance recommendations for sidewalks and bikeways in Maple Plain. 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 Maple Plain 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

A pedestrian or wheelchair user depends 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, 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 Maple Plain's 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 plans 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 Maple Plain's 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 Maple Plain's 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 the 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

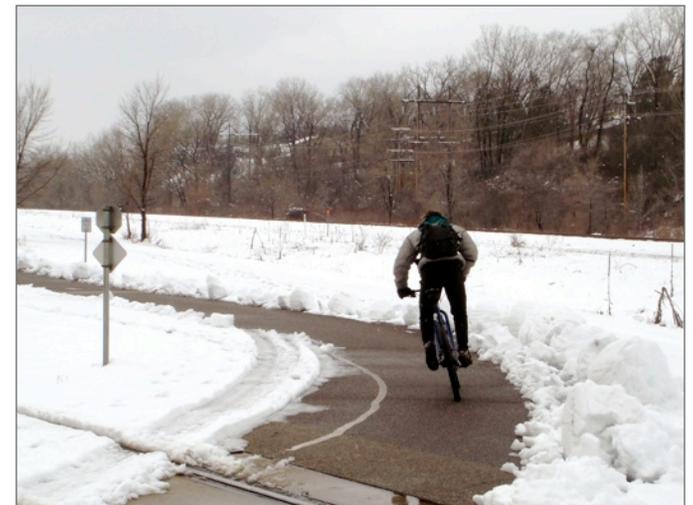
A useful approach for maximizing the efficiency of maintenance investments is to identify locations where accumulation of snow or ice would significantly impede pedestrian and bicycling access and safety so that these locations are prioritized for clearing by maintenance immediately after a storm event.

### 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.



***Poorly maintained sidewalks will force pedestrians to use the motor-vehicle travelway, or will deter them from walking at all. Image courtesy of the Pedestrian and Bicycle Information Center (PBIC).***



***A well maintained network of walking and biking facilities can encourage year-round use.***

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.

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.

## 3.8 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 Maple Plain's transportation and recreation infrastructure.

This chapter presents some ideas that may help Maple Plain 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.

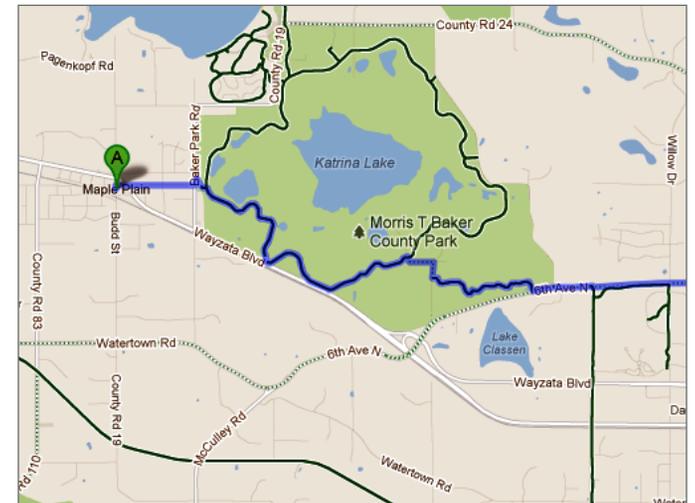
### Inviting users to routes and facilities

#### 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 Maple Plain website (like CycloPlan or Google Maps) where pedestrians and cyclists type in their destination and receive one (or several) recommended routes.



***Bike rodeos teach safe cycling techniques and encourage families to ride together.***



***Bicycling route from Maple Plain to Plymouth, as recommended by Google Maps - which now includes options for walking, biking, and transit 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's 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 Maple Plain. Similar events, including Open Streets / Ciclovía 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 Maple Plain's 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 Luce Line Trail could help bring in additional visitors and customers to Maple Plain's Downtown.



**Open Street events close car traffic in one or two city streets and invite residents and visitors to use them on foot or bike instead.**



**Bike Walk to Work Day has been held in the Twin Cities for several years.**

## Student programs

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 Maple Plain to encourage student cycling include:

- Work with the Discovery Center and with nearby 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 in the US. 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. Maple Plain 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



*Walking to school also benefits children by helping them learn about the layout and context of their community. Image courtesy of the Pedestrian and Bicycle Information Center (PBIC).*



*Bike to school programs help students learn to travel under their own power. Image courtesy of Bikes Belong Coalition.*

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 acceptable 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 Maple Plain 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.

## Section IV

# Implementation and Funding

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

### In this section

4.1 - Potential funding sources

## 4.3 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 Maple Plain. This section presents a compilation that may serve as a starting point for future efforts.

Grant or Program name	Organization	Walk? / Bike? / Both?	Program description	Additional information	Potential project
Livable Communities Development Account	Metropolitan Council	Both	Intended to link housing, jobs, and other amenities through comprehensive, well-designed networks. Projects can occur on both local and regional scales.	<a href="http://www.metrocouncil.org/services/livcomm/LCAresources.htm">http://www.metrocouncil.org/services/livcomm/LCAresources.htm</a>	Trails at redevelopment districts, esp. adjacent to Park and Ride
Hennepin County Transit Oriented Development Grant	Hennepin County	Both	To be used with multi-jurisdictional projects in order to connect people with transit. This includes the provision of pedestrian and bicycle facilities.	<a href="http://hennepin.us/portal/site/HennepinUS/menuitem.b1ab75471750e40fa01dfb47ccf06498/?vgnnextoid=665fb42321ff5210VgnVCM20000048114689RCRD">http://hennepin.us/portal/site/HennepinUS/menuitem.b1ab75471750e40fa01dfb47ccf06498/?vgnnextoid=665fb42321ff5210VgnVCM20000048114689RCRD</a>	Trails at redevelopment districts, esp. adjacent to Park and Ride
Hazard Elimination and Railway-Highway Crossing Programs	Federal Highway Administration (FHWA)	Both	Uses funds from HSIP to eliminate hazards at railroad crossings and to provide safe crossing facilities.	<a href="http://safety.fhwa.dot.gov/safetealu/fact_sheets/ftsht1401d.cfm">http://safety.fhwa.dot.gov/safetealu/fact_sheets/ftsht1401d.cfm</a>	Improvement of railroad crossing at Budd Ave
National Highway System (NHS)	Federal Highway Administration (FHWA)	Both	The NHS provides a number of different grants, including some that pertain to pedestrian and bicycle safety and facilities.	<a href="http://www.fhwa.dot.gov/planning/national_highway_system/">http://www.fhwa.dot.gov/planning/national_highway_system/</a>	
Surface Transportation Program (STP)	Federal Highway Administration (FHWA)	Both	Can be used for pedestrian or bicycle facilities, or the creation of non-construction projects such as maps or education.	<a href="http://www.fs.fed.us/eng/pubs/pdf/07771814.pdf">www.fs.fed.us/eng/pubs/pdf/07771814.pdf</a>	

Grant or Program name	Organization	Walk? / Bike? / Both?	Program description	Additional information	Potential project
Congestion Mitigation and Air Quality Act (CMAQ)	Federal Highway Administration (FHWA)	Both	Intended to reduce air pollution and congestion by encouraging cycling and walking through provision of facilities or other resources such as maps and education.	<a href="http://www.fhwa.dot.gov/environment/air_quality/cmaq/">http://www.fhwa.dot.gov/environment/air_quality/cmaq/</a>	
National Scenic Byways Program (NSBP)	Federal Highway Administration (FHWA)	Pedestrian	This grant is used for construction of pedestrian walkways along scenic byways. It requires 20% local contribution.	<a href="http://www.bywaysonline.org/grants/">http://www.bywaysonline.org/grants/</a>	
Recreational Trails Program	Federal Highway Administration (FHWA)	Both	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.	<a href="http://www.fhwa.dot.gov/environment/recreational_trails/">http://www.fhwa.dot.gov/environment/recreational_trails/</a>	
Highway Safety Improvement Program (HSIP)	Federal Highway Administration (FHWA)	Both	Intended to increase safety and reduce fatalities on the National Highway System. This includes pedestrian and bicycle facilities. A 10% local contribution is required.	<a href="http://safety.fhwa.dot.gov/hsip/">http://safety.fhwa.dot.gov/hsip/</a>	
Transportation Enhancements (TE) (to be replaced by the Transportation Alternatives Program (TAP))	Federal Highway Administration (FHWA)	Both	Intended to provide transportation enhancements including rail-to-trail programs, 'main street' projects, and streetscape improvements among others.	<a href="http://www.fhwa.dot.gov/environment/transportation_enhancements/">http://www.fhwa.dot.gov/environment/transportation_enhancements/</a>	
Safe Routes To School (SRTS)	National Center for Safe Routes to School	Both	This grant provides funding for pedestrian and bicycle facilities along school routes.	<a href="http://www.saferoutesinfo.org/">http://www.saferoutesinfo.org/</a>	
Active Living Research	Active Living Research	Both	Supports studies which promote active living through policy, particularly in regards to childhood obesity.	<a href="http://www.activelivingresearch.org/grantsearch/grantopportunities">http://www.activelivingresearch.org/grantsearch/grantopportunities</a>	

Grant or Program name	Organization	Walk? / Bike? / Both?	Program description	Additional information	Potential project
Safe Kids Walk This Way	Safe Kids USA	Pedestrian	Intended to create a safer pedestrian environment by educating motorists and children. This goal is achieved through community engagement practices.	<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>	
Job Access and Reverse Commute Grants	Federal Transit Administration (FTA)	Both	This program aims to connect low-income residents and welfare recipients to work places via transit access and pedestrians and bicycle facilities.	<a href="http://fta.dot.gov/grants/13093_3550.html">http://fta.dot.gov/grants/13093_3550.html</a>	Trails to Park and Ride facility
Land and Water Conservation Fund (LWCF)	National Park Service (NPS)	Both	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.	<a href="http://www.dnr.state.mn.us/grants/recreation/parkroads.html">http://www.dnr.state.mn.us/grants/recreation/parkroads.html</a>	
Rivers, Trails, and Conservation Assistance Program	National Park Service (NPS)	Both	Provides guidance to communities for the preservation of land and water as well as the development of recreational trails and greenways.	<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>	

## Section V

### Appendix

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

#### In this section

- A.1 - Survey form
- A.2 - Rules of the road for Minnesota cyclists
- A.3 - Toolbox of best practice treatments for pedestrian and bicycle mobility

# A.1: Online survey

## Survey - Maple Plain Trail and Sidewalk Master Plan

*This survey is part of a project to develop a Trail and Sidewalk Plan for the City of Maple Plain. Your answers will help us understand your ideas and concerns about walking and biking in and around the City of Maple Plain. Your responses will be kept confidential.*

### Part 1: Walking in Maple Plain

1. During the summer months - how often do you **walk** to a destination in or around Maple Plain? *(Please select one category)*

- Never, or almost never
- Once or twice a week
- More than a couple of times a week, but not everyday
- Everyday, or almost everyday

2. Which destinations?

*(Please list up to your top 3 destinations)*

- 1.
- 2.
- 3.

3. What would help you walk more often?

*(Please write your answers here)*

4. Which destinations in or around Maple Plain do you wish you could walk to more easily?

*(Please list up to three)*

- 1.
- 2.
- 3.

### Part 2: Bicycling in Maple Plain

1. During the summer months - how often do you **bicycle** to a destination in or around Maple Plain? *(Please select one category)*

- Never, or almost never
- Once or twice a week
- More than a couple of times a week, but not everyday
- Everyday, or almost everyday

2. Which destinations?

*(Please list up to your top 3 destinations)*

- 1.
- 2.
- 3.

3. What would help you ride your bicycle more often?

*(Please write your answer here)*

4. Which destinations in or around Maple Plain do you wish you could ride a bicycle to more easily? *(Please list up to three)*

- 1.
- 2.
- 3.

**Part 3: Additional comments**

Please provide any additional information or ideas that you think could help improve conditions for walking or bicycling in Maple Plain.

**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:

**END OF SURVEY - THANK YOU!!!**

## 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 Maple Plain's 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)