

CITY OF MANKATO

COMPLETE STREETS PLAN & POLICY:

Adopted: April 27, 2015

City of Mankato
Leading the way...

Table of Contents

Introduction 3
What Are Complete Streets? 3
Benefits of Complete Streets 4
Mankato Complete Street Policy 5
Engineering Considerations 6
Design Guidelines 6
Vehicle Speed 7
Design Vehicles 7
Intersections 7
On-Street Parking 8
Pedestrian and Bicycle Use 8
Land Use 9
Functional Classification Guide 9
Creating and Designing Complete Streets 10
Tool Kit & Design Guidelines 11
Sidewalk Guidelines 11
Crosswalks 13
Bicycling 15
Types of Bicyclists 16
Types of Bicycle Facilities 16
Traffic Calming 20
Transit 23
Proposed Bike Facility Projects 24
2015 Bike Facility Projects 24
2016 Bike Facility Projects 34
2017 Bike Facility Projects 36
2018 Bike Facility Projects 39
Proposed Sidewalk Projects 43
Appendices 44
On Street Bicycle Routes and Trails 45
Sidewalk and Trails Plan 46
Transit Route Map 47
Land Use and Zoning Map 48
Roadway Functional Classification Map 49
Public Comments from February 26, 2015 Open House 50
City of Mankato Complete Streets Resolution 53

Introduction

What Are Complete Streets?

Complete Streets are streets and sidewalks that are designed and constructed to serve everyone – pedestrians, bicyclists, and drivers – and they take into account the transportation needs of all people, including children, older adults, and people with disabilities or impaired mobility.



As state and local governments have worked to improve the road network, they have primarily focused on efficiency or making the flow of traffic better for drivers. This has resulted in overbuilt roadways with additional turn or travel lanes that increase the walking distance across intersections and reduce shoulder area to bicyclists. Traffic signals are timed and phased to facilitate vehicles moving through intersections. The curve radius at intersections have increased so traffic can turn at higher speeds which also increases the walking distance across the intersection.

The emphasis on improving the efficiency of vehicle traffic had in many cases created streets that are unfriendly to pedestrians and bicyclists creating an increasing need to drive. Complete Streets policies and projects are aimed at changing streets from places where vehicles dominate to places where all users are accommodated.

Complete Streets may include the following elements:

- Pedestrian and ADA Compliant Elements. Sidewalks, crosswalks, curb ramps, accessible pedestrian signals, detectable tactile cues and warning, and longer intervals;
- Bicycle Elements. Bicycle routes and lanes, signage and pavement marking, and bicycle racks;
- Streetscape Elements. Street trees, landscaping, rain gardens, permeable paving materials, and buffers between vehicles and people;
- Traffic Calming and Access Management Elements. Intersection bump outs, curb extensions, textured material, and center refuge islands. Driveway consolidations, modifications and closures; and
- Transit and Parking Elements. Accessible bus stops, shelters and pull-out integrated with pedestrian enhancements. Delineated on-street parking spaces and curb/sidewalk bump-outs.

Benefits of Complete Streets

Streets are an integral part of Mankato and they affect the quality of life and character of our community. They connect neighborhoods, and provide access to businesses, jobs, schools, shopping and services. Complete Streets provide multiple benefits to communities and residents:

- Downtown Revitalization and Economic Health. Business districts with Complete Streets that are inviting for pedestrian and bicyclists report higher retail sales, a higher percentage of residents shopping locally, and increased appeal to visitors;
- Safe Places for Children to Walk, Bike and Play. Complete Streets can help increase the percentage of children walking and biking to school, which has declined dramatically in the past 50 years;
- Reduced Transportation Costs. Complete Streets with improved options for walking and biking helps people save money as U.S. families typically spend between 20% and 40% of their income on transportation;
- Active Living and Good Health. Residents in neighborhoods with Complete Streets who have safe places to walk and bike close to home are more likely to be physically active, which is associated with lower rates of obesity and chronic disease;
- Improved Mobility for Older Adults and People with Disabilities. Complete Streets (including sidewalk networks) that are accessible and easy to navigate improve transportation options for older adults and people with physical, vision or cognitive disabilities or impairments; and
- Environmental Health. Complete Streets with improved options for walking and biking helps reduce vehicle miles driven and associated pollution, particularly pollution and greenhouse gases.



Mankato Complete Street Policy

Design Standards and Maintenance

- The City Engineer shall include bicycle, pedestrian and transit facilities in all streets construction, reconstruction, rehabilitation and pavement maintenance projects conducted by or behalf of the City, as appropriate, subject to the exceptions contained herein.
- The City shall plan, design, build and maintain all bicycle, pedestrian, and transit facilities in accordance with accepted federal, state and local standards and guidelines, but will consider innovative and/or non-traditional design options as appropriate.

Design Standards Exceptions

- The incorporation of bicycle, pedestrian, and transit facilities shall be mandated in all street construction, reconstruction and pavement maintenance projects undertaken by or on behalf of the City, except under one or more of the following conditions:
    a. The City Engineer determines there is insufficient space within the right of way to safely accommodate such new facilities.
    b. The City Engineer determines that inclusion of such new facilities would require an excessive and disproportionate cost.
    c. The City Engineer determines that inclusion of such new facilities would create a public safety risk for users of the public right of way.
    d. The project is limited to routine or seasonal maintenance activities such as mowing, sweeping, or spot pavement repairs, including chip and seal and cracking sealing activities.
    e. Bicyclists and pedestrians are prohibited by law from using the facility.
    f. There is documentation that there is an absence of current and future need.
- The City Engineer shall document with supporting data the reasoning for the decision to exempt the particular project from the Complete Streets Policy.

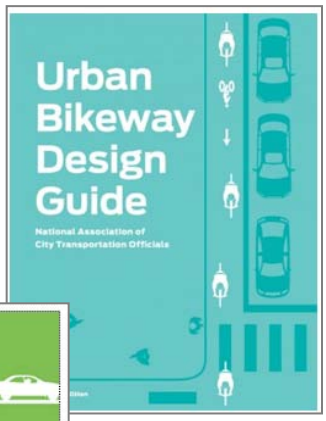
Plan Review Process and Reports

- Planning studies and/or engineering feasibility reports for street projects prepared by or on behalf of the City shall include documentation of compliance with this Policy.
- The Multimodal Committee shall review all street construction, reconstruction, rehabilitation and pavement maintenance projects for consistency with this Policy.

The City Council shall receive an annual report from the City Engineer on the City's consistency with the Policy with respect to all street construction, reconstruction, rehabilitation and pavement maintenance projects under design or construction by or on behalf of the City.

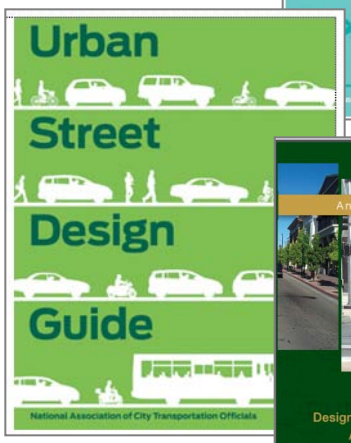
Engineering Considerations

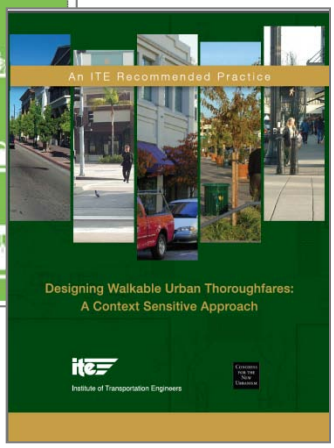
The Complete Streets plan is part of a City's Vision to meet the needs for various modes of transportation and providing a safe network of facilities to accommodate access and travel for all users. For Complete Streets to be successful, every road project should be evaluated for compliance with the Complete Streets Policy and guiding principles. Road projects vary across a spectrum from the new development of roadways in subdivision development to the reconstruction of existing streets. Other roadway projects can include surface improvements such as milling and overlay, seal coating, chip sealing and resurfacing projects. Modifications to streets within Mankato shall be reviewed in accordance with proven and accepted design criteria. Treatments and modifications for one street may not be suitable in another street. Transportation projects shall be reviewed by the City Engineer to meet the criteria of safety, feasibility, proper application and policies established by the engineering department.



Design Guidelines

When designing roadway projects within Mankato, it is important to consider nationally and regionally recognized guidelines. This will provide the best approach for creating standards for new features or transportation facilities within the right of way. This will provide consistency and reduce the potential for conflict. The following is a list of commonly accepted guidelines for street design the City of Mankato will utilize as resources:





- A Policy on Geometric Design of Highways and Streets, 6th Edition, AASHTO
- Guide for the Development of Bicycle Facilities, 4th Edition, AASHTO
- Guide for the Planning, Design, and Operation of Pedestrian Facilities, 1st Edition, AASHTO
- Manual on Uniform Traffic Control Devices, Federal Highway Administration
    - Bicycle Facilities and the Manual on Uniform Traffic Control Devices, Federal Highway Administration
- Public Rights of Way Accessibility Guidelines, U.S. Access Board
- Memorandum: Bicycle and Pedestrian Facility Design Flexibility, Federal Highway Administration
- Designing Walkable Urban Thoroughfares: A Context Sensitive Approach: An ITE Recommended Practice, Institute of Transportation Engineers and the Congress for the New Urbanism

- Urban Bikeway Design Guide, National Association of City Transportation Officials
- Urban Street Design Guide, National Association of City Transportation Officials
- Highway Capacity Manual 2010, Transportation Research Board
- Complete Streets Complete Networks, Active Transportation Alliance
- City of Mankato Center Renaissance Plan City of Mankato

Vehicle Speed



Vehicle target speed is the 85th percentile speed that is desired for a given street. Lowering vehicle speeds is a primary goal for Complete Streets because it directly impacts the severity as well as number of crash-related injuries and fatalities.

Target speed can be achieved through a combination of engineering treatments, driver education, and police enforcement. Streets should be designed with target speeds and speed limits that are appropriate for both their current and future context, including roadway classification and street type, as well as adjacent land uses and user demand.



Specific design treatments are capable of achieving predictable speed and volume reductions, though their benefits must balance with the potential impacts on parking and emergency vehicles. On local roads and in school zones, target speeds should be set at or below 30 MPH in order for pedestrian safety to be maximized.

Design Vehicles

A design vehicle is a vehicle type that needs to be accommodated in the design of the roadway or intersection. Street functional classification will help determine the intended vehicle type as well as the land use in the area. In order to design safe and efficient intersections along its route, it is extremely important to select the design vehicle which will be using them. All roadway designs shall meet the minimum standards for the needs of the fire department as well as other emergency vehicles.

Intersections

Intersections are significant points of conflict within the street system. Their impact on safety, capacity, speed, and user costs is considerable. For this reason, intersections deserve special attention in their design. Design considerations should include the type of traffic control, capacity analysis, degree of access control for the functional classification of the street, pedestrian traffic, bicycle traffic and lighting. The use of small turning radii, raised intersections, crosswalks, lighting, textured pavement, roundabouts and other speed mitigating design elements should be prioritized whenever possible to improve that safety for all users.

On-Street Parking

On-street parking is beneficial in the many areas of Mankato that have limited off-street parking. In these areas of Mankato, residents rely on on-street parking as their historical home does not allow for off street parking. The City Center has efficient on-street parking as these spaces experience the most use and the highest turnover. On-street parking can also provide a traffic calming benefit providing increased safety as drivers tend to travel at slower speeds. These slower speeds provide pedestrians, bicyclists and drivers more time to react; and when a crash does occur, the severity is greatly reduced. On-street parking designs can include parallel parking, 45 and 60 degree parking as well as reverse angle parking. The benefits of on-street parking should only be implemented with the use of appropriate design elements to avoid negative consequences.

Pedestrian and Bicycle Use

All roadway designs shall take into consideration pedestrian and bicycle use of all ages and abilities. Factors that contribute to a quality environment for both bicyclists and pedestrians can include the following:

- Pleasant visual environment
- Network of existing infrastructure separated from traffic. Boulevards created along the street provide a more appealing sidewalk to walk along vs. a sidewalk that is built curbside
- Short street crossing distances
- American with Disabilities (ADA) Requirements

Safety of the pedestrian and separation from high speed traffic is of the utmost importance in planning for pedestrian facilities. Complete streets need to provide for a range of passive and active uses including, but not limited to walking, waiting for transit, and crossing the street. While specific treatments or dimensions may vary by context, the goal in any environment is to have a continuous pedestrian network that provides dedicated space for pedestrians and separation from vehicles.

Factors that contribute to successful bicycle routes include the following:

- a well-connected network of bicycling facilities
- well marked bicycle routes
- safe travel routes
- direct travel routes, particularly when bicycling for purposes other than strictly exercise or recreation

When determining bicycle routes, factors such as surrounding land use, the speed of cars on the street and the directness of the route connecting destination, should all be considered. An additional consideration includes the different types of bicyclists with varying levels of expertise and comfort riding in mixed traffic. Creating viable transportation options means that a variety of facility types should be provided to create a bicycling network.

Land Use

Street designs should take into consideration the various land uses throughout Mankato. Areas zoned as residential will have different design requirements than areas that are zoned as Central Business District or Commercial. Street designs will need to accommodate the adjacent land uses and the users of the street. Commercial and industrial areas will likely need larger turning radii and larger travel lanes to accommodate commercial trucks. Residential areas may have speed and traffic volume issues which may require other engineering treatments to provide necessary safety for all users.



Arterial Street in CBD Area, Mankato



Local Street in Residential Area, Mankato

Functional Classification Guide

Like most jurisdictions in the United States, City of Mankato's streets have been categorized in order to better understand how they serve motor vehicle traffic. Each road's classification has been determined by the state using guidelines developed by the American Association of State Highway and Transportation Officials (AASHTO). Complete Streets projects must take into consideration this roadway classification as it helps determine how the road and network needs to be treated to handle the traffic volumes and other conflicts that may arise as a result of design changes. It is also often used in determining Federal or State funding criteria when improvements are needed. The road classifications for the urban environment of City of Mankato are as follows:

Principal Arterial

- Serve major activity centers, highest traffic volume corridors and longest trip demands
- Carry high proportion of total urban travel on minimum mileage
- Interconnect and provide continuity for major rural corridors to accommodate trips entering and leaving urban area and movements through the urban area
- Serve demand for intra-area travel between the central business district and outlying residential areas

Minor Arterial

- Interconnect and augment the higher-level Arterials
- Serve trips of moderate length at a somewhat lower level of travel mobility than Principal Arterials
- Distribute traffic to smaller geographic areas than those served by higher-level Arterials
- Provide more land access than Principal Arterials without penetrating identifiable neighborhoods
- Provide urban connections for Rural Collectors

Major Collector

- Serve both land access and traffic circulation in higher density residential and commercial/industrial areas
- Penetrate residential neighborhoods, often for significant distances
- Distribute and channel trips between Local Roads and Arterials, usually over a distance of greater than three-quarters of a mile
- Operating characteristics include higher speeds and more signalized intersections

Minor Collector

- Serve both land access and traffic circulation in lower density residential and commercial/industrial areas
- Penetrate residential neighborhoods, often only for a short distance
- Distribute and channel trips between Local Roads and Arterials, usually over a distance of less than three-quarters of a mile
- Operating characteristics include lower speeds and fewer signalized intersections

Local Road

- Provide direct access to adjacent land
- Provide access to higher systems
- Carry no through traffic movement
- Constitute the mileage not classified as part of the Arterial or Collector systems

Creating and Designing Complete Streets

A variety of design treatments and engineering solutions can be created in any street design. It is important to involve the community, provide engineering, and education necessary for successful implementation. The City of Mankato has created a tool box which shows many possible treatments. This tool box, as documented below, will be utilized as a starting point. This toolbox will provide guidance in determining which elements are most appropriate and feasible to the street in design.

Tool Kit & Design Guidelines

Walking

We start and end nearly every trip as a pedestrian. Despite this, walking is often the least considered mode of travel when it comes to providing convenient, safe and adequate facilities. Well-designed pedestrian facilities can create a more walkable environment, where pedestrians feel safe and secure because they are not intimidated by adjacent traffic.

Sidewalk Guidelines

While the design of a sidewalk depends on its location and function, the following general guidelines should be considered:

Sidewalks should be at least 5 feet wide. If sidewalks are too narrow, fewer people can use them, people have to walk single file, and people may be uncomfortably close to buildings and/or automobile traffic. Narrow sidewalks may not provide enough clear space for people who use walking aids or wheelchairs. Even wider sidewalks should be installed in areas near schools, on commercial streets, or in other areas where there will be many people walking. The minimum width for an Americans with Disabilities Act (ADA)-compliant sidewalk is 3', but sidewalks this narrow should be limited to short distances and wider passing spaces may need be provided at set intervals if the sidewalk is less than 5' across. Wheel chair ramps with detectable warning domes should be installed where sidewalks cross a curb, and existing ramps should be upgraded to meet current ADA guidelines.

Obstructions – such as utility poles, untrimmed trees or shrubs, or illegally parked vehicles – can create even narrower spaces with little room to maneuver around them. Narrow sidewalks are also more likely to have driveway crossings with steep cross slopes and curb ramps with insufficient landings and/or steep ramp grades.

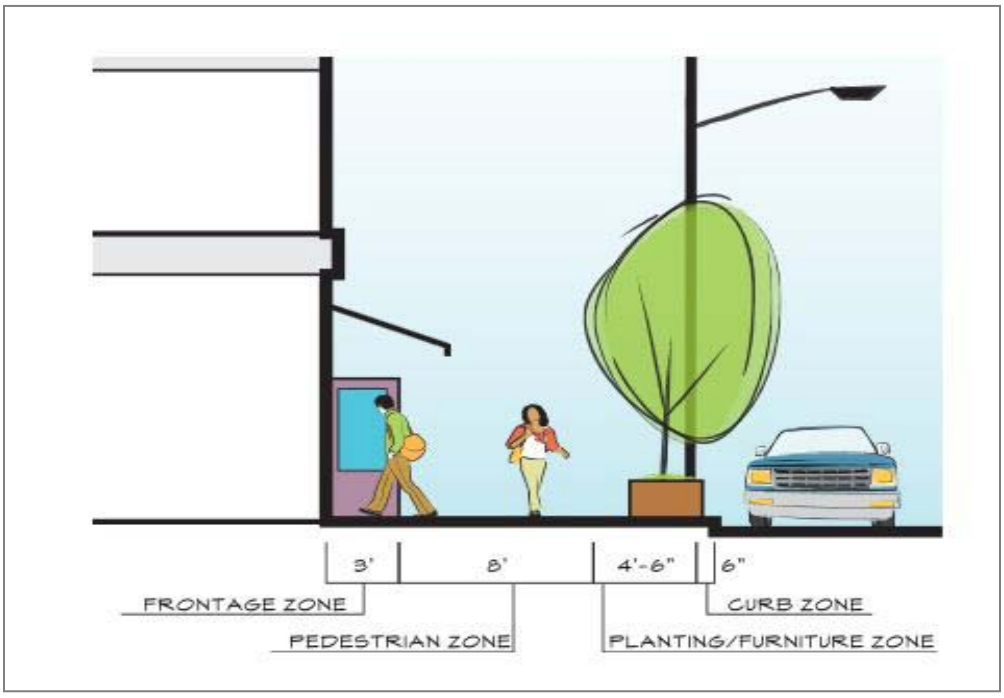
There should be at least a 4-foot buffer between the sidewalk and the vehicle travel lane. As pedestrians, we feel more secure when there is a buffer between ourselves and moving vehicles. The buffer may include an on-street parking lane, an on-street bike lane, greenspace or planting strips, raised curbs, space for street trees, street furniture, street lights or utility poles, or a combination of those elements.

Sidewalks should be at least 8 feet wide where buildings abut the sidewalk. The three additional feet of sidewalk is needed so that doors can be opened and people can enter and exit buildings without blocking the sidewalk for other pedestrians.

Sidewalks should continue across driveways. Sidewalks should not be paved over in order to maintain a continuous, level surface with minimal cross-slope.

Sidewalks should be constructed of concrete or a material with a similar lifespan and performance.

Sidewalk Zones. The sidewalk corridor can include several zones depending on the setting:



Curb Zone. For curbed streets, the curb zone is typically the first 6 inches of the sidewalk corridor immediately adjacent to the roadway. The curbs function both to prevent street run-off from flowing onto sidewalks and adjacent properties, and to discourage people from driving or parking off the roadway. People with vision impairments also use curbs to identify the border between the sidewalk corridor and the roadway.

Planting/Furniture Zone. The planting/furniture zone lies between the curb and pedestrian zones. Items such as signs, utility poles, fire hydrants, parking meters, benches, mailboxes and newspaper boxes should be located in this zone rather than within the pedestrian zone where they become obstacles. The planting/furniture zone is commonly an unpaved planting strip, particularly on residential or side streets. If the planting/furniture zone is paved, which is more typical in a downtown setting or on a commercial street, it is frequently distinguished from the pedestrian zone by a different surface color, texture and/or pattern.

The planting/furniture zone also serves as a buffer between the pedestrian zone and the roadway. To provide a sufficient buffer, this zone should be at least 2' wide. When adjacent to an on-street parking lane, the width should be at least 3' and have enough clear space to allow people to get in and out of the parked vehicles. If it will be serving as a planting strip, this zone should be at least 4' wide to provide enough space for street trees. A wider planting/furniture zone also provides a place to store snow cleared from the roadway and pedestrian zone.

Pedestrian Zone. The portion of the sidewalk corridor specifically reserved for people to walk on is the pedestrian zone. It should be completely free of obstacles, protruding objects, and vertical obstructions, which are particularly hazardous to pedestrians with vision impairments who may not be able to detect or avoid them. The appropriate width of this portion of the sidewalk corridor is discussed above.

Frontage Zone. The frontage zone is the area between the pedestrian zone and the property line. A frontage zone is needed when buildings are located right at the edge of the sidewalk, most common in a downtown setting or on a commercial street. This zone should not be less than 1' wide and may need to be wider to accommodate building doors that open out into the sidewalk corridor and other activities at the edge of the sidewalk. Sidewalk cafes, protruding display windows, street vendors, sandwich board signs, and sidewalk sales may all occur or be located within the frontage zone if there is adequate width. Like the planting/furniture zone, the frontage zone is frequently distinguished from the pedestrian zone by a different surface color, texture and/or pattern. If the sidewalk corridor is adjacent to lawns or landscaped areas, as is common on residential streets, a frontage zone will not be needed.

Crosswalks

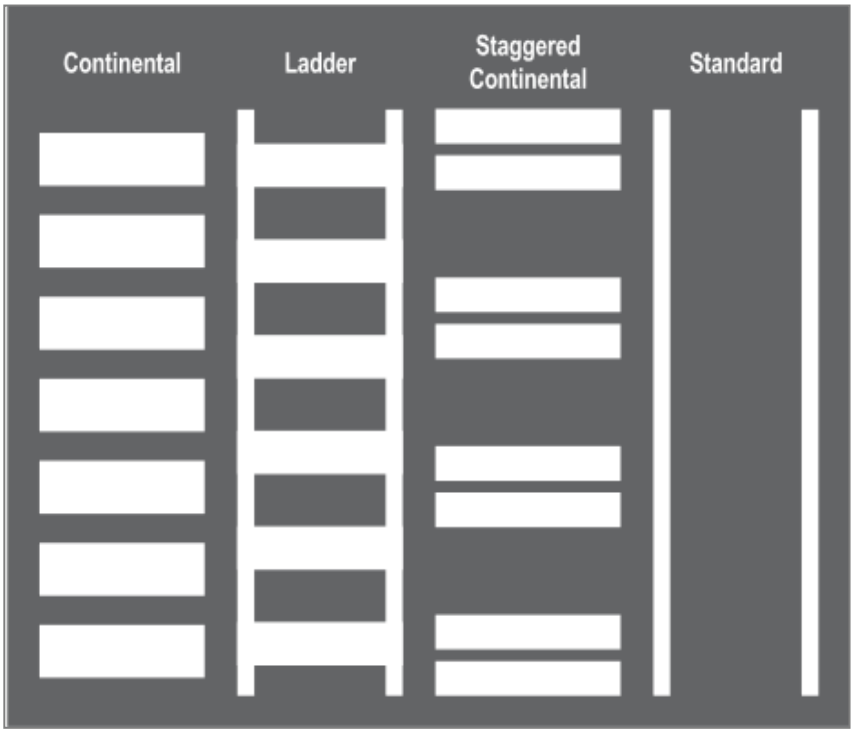
Crosswalk Guidelines. As pedestrians, we are at risk whenever we have to cross the roadway. For this reason, sidewalk networks should be designed to minimize the number of times people need to cross the road when walking between destinations. Marked crosswalks are an effective method for improving safety and reducing accidents.

Crosswalks indicate the preferred locations for pedestrians to cross a street and provide warning to motorists that people may be crossing. The following are guidelines for crosswalks which should be considered:

The length of crosswalks should be minimized and signals appropriately timed to allow all pedestrians to cross safely. A shorter crossing distance improves safety by minimizing pedestrians' exposure to moving traffic. Long crossing distances also make it more difficult for seniors, children and people with impaired mobility to safely cross a street. Median refuge islands should be considered for crossings that are more than 60' long.

Crosswalks located at intersections are preferred to those located at mid-block. Typically, crosswalks should be installed at intersections controlled by either stop signs or a traffic control signal. Mid-block locations are acceptable when warranted by heavy pedestrian traffic or to provide access to a major pedestrian destination. When the distance to the nearest crosswalk is more than 500', people are more likely to jaywalk rather than walking a long distance to the crosswalk and a mid-block crosswalk may be justified. Crosswalks are implied at all intersections whether or not they are marked, while mid-block crossings can only be created by a marked crosswalk.

Marked crosswalks should be at least 6 feet wide. Marked crosswalks should be delineated by white lines and should be designed in accordance with the Manual of Uniform Traffic Control Devices (MUTCD). The MUTCD includes a number of options for crosswalk markings. Research indicates that the continental design is the most visible to drivers, and is recommended at high-traffic roadways. The painted lines should be 12 to 24 inches wide and separated by gaps of 12 to 60 inches. The gap between the lines should not be more than 2.5 times the width of the lines. The lines in the continental design can be aligned so that vehicle wheels pass between, rather than over, them to extend their lifespan.



The standard design is typically the lowest cost to install and maintain, and is suitable for lower-traffic intersections. The width of the lines may be reduced to 6 inches at low-traffic intersections.

Marked crosswalks can be an attractive streetscape element. The travel portion of the crosswalk may be painted or have a tactile surface (ex. pavers or stamped concrete) to further distinguish it from the travel way. Decorative crosswalks are often installed as part of an overall streetscape design intended to create an attractive downtown or similar pedestrian-oriented destination. The surface material should be visible, non-slippery and not cause a tripping hazard.

There are techniques for stamping patterns into concrete or asphalt to create the appearance and texture of brick or pavers. A crosswalk painted brick red with white outlines closely mimics a crosswalk built of brick pavers and is much less expensive to build and maintain.



Marked crosswalks require regular maintenance. Crosswalk markings will require regular repainting or replacement, particularly on heavily traveled streets. The standard or solid designs are frequently used on low-volume residential or side streets, and their simple design reduces installation and maintenance costs.

Street lighting should be installed at all street intersections. Mid-block street lighting should typically be installed on residential and collector streets in areas of high pedestrian or bicycle activity (such as schools, parks, transit stops and centers, access to transit, and commercial and recreational facilities that draw large numbers of pedestrians) and along all arterial streets. There are many different types of lighting sources and fixtures available to the designer. Regardless of the lighting equipment used, the level and consistency of lighting provided, the design should normally conform to RP-8, "American National Standard Practice for Roadway Lighting," and guidance provided by the Illuminating Engineering Society of North America.

Complete street lighting designs should:

- Ensure pedestrian walkways and crossways are sufficiently lit;
- Consider adding pedestrian-level lighting in areas of higher pedestrian volumes, downtown, and at key intersections;
- Install lighting on both sides of streets in commercial districts; and use uniform lighting levels.

Bicycling



Bicycling as a mode of transportation involves sharing the road with vehicles. Even in communities with separated bike paths, it will not be possible to travel between most destinations entirely off-road. Because of this, most streets should incorporate design elements that facilitate bicycling. It is not necessary to specifically designate streets as bicycle routes or provide bicycle lanes. Rather, all roadways should be maintained and upgraded to accommodate safe and convenient bicycle travel.

The type of accommodation depends on the type of road and characteristics of traffic. On low volume, residential streets, bicyclists can easily become integrated vehicles and may not require any separation. The street is a shared-space used by vehicles, bicyclists and pedestrians. However, special treatments are necessary and greater separation is required to accommodate bicyclists on higher-volume and/or higher-speed roadways.

Types of Bicyclists

Three categories of bicyclists should be considered: young children, the average rider, and the advanced bicyclist. Mankato allows young children to bicycle on the sidewalk, but older children and adults are encouraged to bike on the road. Advanced bicyclists are generally comfortable riding with vehicles even in high-traffic situations, but the average rider will probably not be comfortable where there is not a designated space for bicycling such as a bike lane or shoulder. Because the majority of bicyclists are young children or average riders, bicycle facilities should be designed to serve their needs.

Young children and average riders prefer low volume, low-speed roads or designated bicycle facilities with well-defined separation from motorized vehicles. These riders are best served by a well-marked network of neighborhood streets and designated bicycle facilities. However, on higher-volume and/or higher-speed roadways, special treatments are necessary and greater separation is required to accommodate bicyclists that are at least 4' wide to feel comfortable riding on shared roadways.

Types of Bicycle Facilities

Bicycle Advisory Lane—A street segment (or series of contiguous street segments) that has been modified to accommodate through bicycle traffic but discourages through motor traffic.





Bicycle Boulevard—A street segment (or series of contiguous street segments) that has been modified to accommodate through bicycle traffic but discourages through motor traffic.

Bicycle (Bike) Box—A defined and/or colored area at a signalized intersection provided for bicyclists to pull in front of waiting traffic. The box is intended to reduce car-bike conflicts, particularly involving right-turning movements across the path of a bicyclist, and to increase bicyclist visibility.





Bicycle (Bike) Lane—A portion of a roadway that has been designated by striping, pavement markings, and signs for the preferential or exclusive use of bicyclists.

Bicycle (Bike) Path—A pathway that is intended for the exclusive use by bicyclists, where a separate, parallel path is provided for pedestrians and other wheeled users. Most pathways are shared between bicyclists and other uses.



Bikeway—A generic term for any road, street, path, or traveled way that is in some manner specifically or legally designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.



Bus/Bikeway—A marked lane for exclusive use by buses and cyclists. May also be referred to as a bus/bicycle lane.

Contraflow Bicycle Lane—A bicycle lane that allows bicyclists to travel the opposite direction of motor vehicle traffic on a one-way street.



Cycle Track—A bicycle facility, typically unidirectional, that is separated from motor vehicle travel lanes, as well as sidewalks and pedestrians, by a physical barrier such as on-street parking or a curb, or is grade-separated.



On-road Accommodation—A facility that is part of the roadway or traveled way that is typically used by bicyclists and/or motor vehicles such as a shared lane, wide curb lane, bicycle lane, or bikeable shoulder.

Off-road Accommodation—A path that is separate from the roadway used by motor vehicles. This may be parallel to a roadway or separate, as it may pass through parks within the public right-of-way or on private right-of-way. This can be separated from pedestrian traffic (bicycle path) or shared with pedestrian traffic (shared use path).

Paved Shoulder—The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of sub-base, base, and surface courses. Use by cyclists may be allowed or prohibited based upon specific State laws.

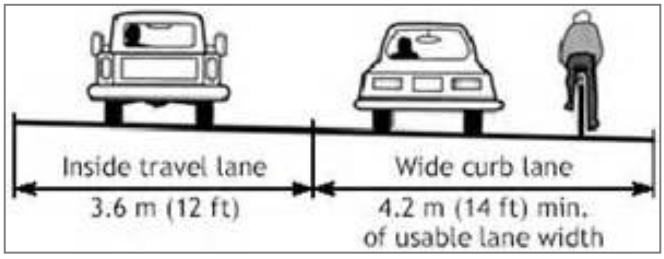




Separated Bicycle Facility—A bikeway within or adjacent to the roadway and separated from moving traffic by barriers or curbs, parking lanes, striped buffers, and other means. Separated bicycle facilities may be unidirectional or bidirectional.



Shared Lane—A lane of a traveled way that is open to bicycle travel and motor vehicle use.



Narrow Lane—A travel lane less than 14' in width, which does not allow bicyclists and motorists to travel side-by-side within the same traffic lane and maintain a safe separation distance.

Wide Curb Lane—A travel lane at least 14' wide, adjacent to a curb, which allows bicyclists and motorists to travel side-by-side within the same traffic lane.



Shared Lane Marking (SLM or "Sharrow")
A pavement marking symbol that assists bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side-by-side within the same traffic lane.

Shared Roadway—A roadway that is open to and legally permits both bicycle and motor vehicle travel; any existing street where bicycles are not prohibited.

Shared Use Path—A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Such facilities are often referred to as "trails."



Signed Shared Roadway (Signed Bike Route)—A shared roadway that has been designated by signing as a preferred route for bicycle use.



Trail—Non-descriptive general term typically referring to off-roadway facilities but with no standardized definition. Use should generally be avoided as it may refer to a range of facilities, including a coarse, unpaved hiking/biking route or a paved urbanized facility.

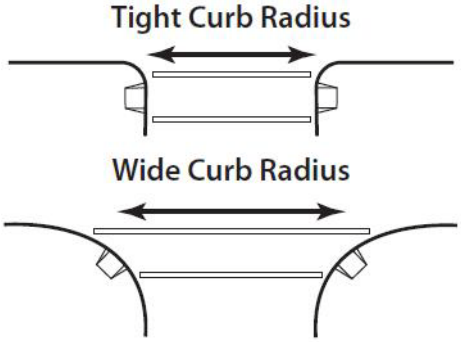
Traffic Calming

Pedestrian and bicyclist safety can also be addressed by altering how vehicles occupy and use the street. There are a variety of techniques, commonly referred to as traffic calming measures, that involve making physical changes to the roadway in order to alter driver behavior, reduce travel speeds and provide a safer environment for pedestrians and bicyclists.

The aim of traffic calming is to balance the needs of motorists with other users, including pedestrians and bicyclists. Instead of treating the street only as a conduit for vehicles passing through at the greatest possible speed, it becomes shared space that creates a sense of place. Traffic calming techniques are designed to reduce the impact of motor vehicle traffic by slowing traffic, or literally “calming” it. This makes streets friendlier to pedestrians and bicyclists. Traffic calming measures are frequently combined with streetscape improvements such as landscaping, decorative pavement, street lights, benches, bike racks, or similar amenities to make the street a pleasant place to be. Low-impact development approaches to managing storm water may also be integrated into traffic calming projects.

Traffic calming can be applied inexpensively and flexibly. Many of the strategies employ painting lines, colors and patterns on existing pavement; using planters, installing bollards, planters or other removable barriers; eliminating or adding parking; or installing sidewalk extensions or similar structures at intersections and crosswalks. Many traffic calming measures can be tested through temporary installations that once fine-tuned can be rebuilt with more permanent materials.

Common traffic calming measures include:



Tighter Curb Radius. The longer the radius of a curb, the faster a motorist can drive around that curve. Reducing the radius to less than 20' also narrows intersections and increases sidewalk space, which reduces the crossing distance. This gives pedestrians a better chance to see and be seen by approaching traffic.

Curb Extensions. Curb extensions, bump-outs, bulb-outs, chokers, or neck-downs extend the sidewalk or curb line out into the parking lane or road shoulder. This reduces the effective width of the street and has multiple pedestrian safety benefits. Curb extensions reduce the crossing distance, and therefore the time it takes a pedestrian to cross the street. They visually and physically narrow the roadway, which causes motorists to slow down. Curb extensions also improve the ability of pedestrians and drivers to see each other. Curb extensions can help define a gateway or entry point to a downtown or neighborhood. They can provide space for landscaping, signs, kiosks, street lamps or other amenities.



Narrowing Travel Lanes. Conventional traffic engineering has recommended travel lanes that are 12' wide (or greater) to meet safety standards, but newer evidence shows that lanes as narrow as 9' can still be safe for driving. Narrowing lanes also allows space for addition of bicycle lanes and improves crossing for pedestrians and gives them more space to walk.

Raised Islands. Raised islands are typically used on heavily traveled streets and/or multi-lane streets. They are placed in the center of the street at intersections or mid-block. Pedestrians do not have to cross the entire street at once, but can cross partway to the island and wait for another gap in traffic or turn of the lights to get across the remaining lane(s).





Raised Crossing. A raised pedestrian crossing is essentially a speed table or a speed hump with a flat portion the width of a crosswalk (typically 10' to 15' wide). Gently sloping ramps about 6' wide are placed on either side of the raised crossing. The raised crossing is generally at the same height as the sidewalk, while speed tables or bumps are typically between 3 to 6 inches.

Raised Intersection. A raised intersection is similar in concept to the raised crossing, except that the entire center of the intersection is raised to the height of the sidewalk. Raised intersections often incorporate a decorative or tactile surface treatment and serve as an aesthetic streetscape element.





Roundabouts. A raised, circular island in the center of an intersection around which all vehicles must travel until reaching their destination street. Roundabouts create a slower moving, steady flow of traffic and reduce conflict points, resulting in fewer accidents. Although roundabouts are not usually signalized, approaching vehicles naturally slow down as the streets narrow in their approach. Slower vehicles along with the installation of crosswalks provide pedestrians a safer, more obvious opportunity to cross. The center island can serve as a gateway to a downtown or neighborhood. A sloping ramp around the perimeter of the raised island allows buses, trucks and other large vehicles to maneuver the continuous curve while still maintaining a lowered speed.

Transit

Well-planned and designed transit facilities provide safe, comfortable and intentional locations for riders to access transit. They send a message to all street users that transit is a legitimate and viable form of transportation. Generally speaking, there are three levels of transit facilities on compete streets:

- Stops – dedicated waiting areas with appropriate signage for passengers waiting to board a transit vehicle
- Benches – dedicated seating for transit passengers; and
- Shelters – covered locations, usually with seating and other amenities, for transit passengers

Ideally, passenger shelters should be located at occasional intervals along all transit routes and especially at stops with substantial passenger activity. However, factors such as cost and limited right-of-way may limit the placement of shelters. At stop locations with passenger activity throughout the day, a bench is recommended at minimum, while a shelter is preferred. Larger developments – shopping centers, office buildings, etc. – should be encouraged to build transit shelters concurrently with construction (this can be achieved through land development regulations).

Regardless of the facility type chosen, the transit stop should be located on a level surface, such as a concrete pad, that provides a safe distance from moving vehicles in the traveled way. The stop should be located to provide passengers convenient access to and from their likely destinations, particularly passengers with disabilities. Transit stops also should maintain a clear area for disabled access from the bus shelter to a waiting transit vehicle. This depends on a number of factors, including sidewalks and ramps, building placement and street crossing opportunities (both mid-block and at intersections).

Transit Facility Guidelines:

Transit Stop. Minimum for all transit routes. Should include appropriate signage and be located on a flat, dry surface with safe clearance from moving vehicles.

Bench. Minimum at locations serving multiple passengers throughout the day.

Shelter. Preferred at locations serving multiple passengers throughout the day.







Proposed Bike Facility Projects

2015 Bike Facility Projects

Stadium Road Project

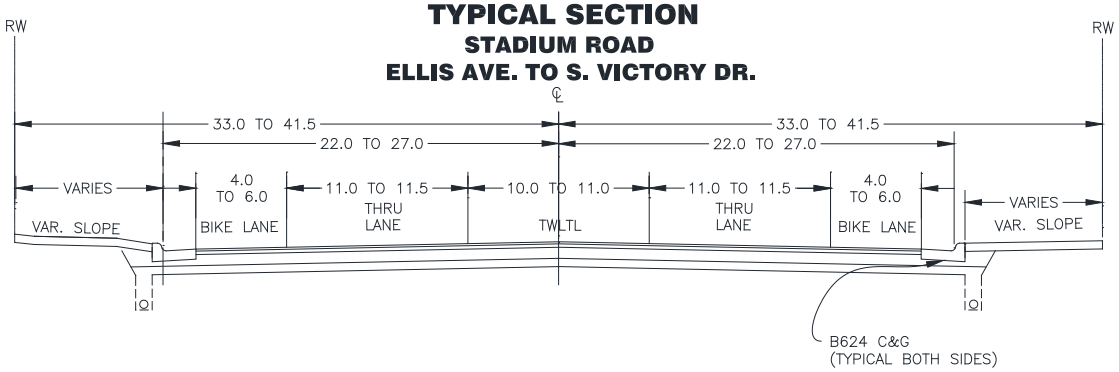
Existing Conditions

Stadium Road from Ellis Avenue to South Victory Drive consists of right of ways ranging from 66' to 83' with street roadway widths ranging from 44' to 54' curb to curb. Roadway pavement marking configurations consist of 3-lane sections with variable widths along the length of the road with no parking along both sides. The center lane functions as left turn lanes at various intersections and as two-way left turn lanes predominantly along the rest of the route. Stadium Road is functionally classified as a minor arterial with ADT's ranging from 9,500 to 13,900 (MnDOT 2009).



Proposed Bike Facility Improvements

Stadium Road is expected to be resurfaced in 2015 by Blue Earth County at which time, striping and pavement markings can be adjusted to accommodate dedicated bicycle lanes along the length of the project at minimal costs. Stadium Road from Warren Street to Monks Avenue will have the most constrained cross section which will consist of two 11' travel lanes and one center turn lane of 10' with marked 4' wide bike lanes. All other sections will have bicycle routes consisting of 6' travel lanes. Bicycle pavement markings and signage will be installed along the length of the project as well as slip ramp improvements near the S. Victory Drive roundabout.



East Mulberry Street

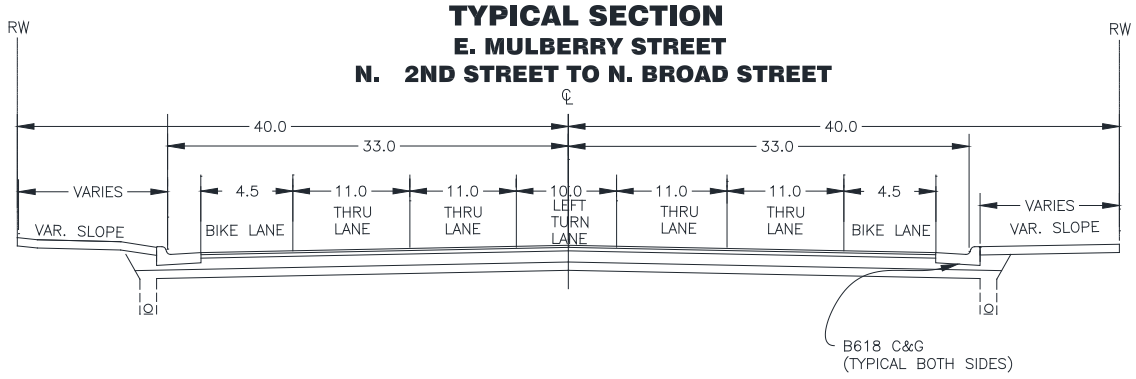
Existing Conditions



East Mulberry Street from North 2nd Street to North Broad Street consists of a right of way of 74' with a street roadway width of 66' curb to curb. Roadway pavement marking configurations consist of a 5-lane section with 12' lanes with no parking along both sides. The center lane functions as left turn lane intersections. Mulberry is functionally classified as a minor arterial with an ADT of 21,500 (MnDOT 2009). MnDOT will be constructing pedestrian and bicycle improvements along Veterans Memorial Bridge in 2015. The project includes the westerly on/off ramp of Highway 169 in North Mankato to the intersection of North 2nd Street and East Mulberry Street in Mankato.

Proposed Bike Facility Improvements

East Mulberry Street will consist of a 5-lane section with the center lane as a left turn lane. A 4' marked bicycle lane will be created on both sides of the street with additional pavement markings and signs indicating a bike lane along the length of the project. Existing traffic lanes will be narrowed to better accommodate the proposed bike lanes. Slip ramps will be created at the intersection of N. 2nd Street to route the on-street bicycle routes onto the sidewalks that will connect with MnDOT's ADA sidewalk/trail improvement project that will be completed in 2015.



Poplar Street/A Street/Minnesota Street/Cherry Street Project

Existing Conditions



Poplar Street from Sibley Parkway to A-Street will consist of a right of way of 60' with both rural and urban cross-sections. The urban section has a street roadway width of 40' curb to curb. Roadway pavement marking configurations consist of a 2-lane section with no parking along both sides. Poplar Street is functionally classified as a local street with an ADT of 2,800 (MnDOT 2009).

The City of Mankato will be reconstructing Poplar Street in 2015 from Sibley Parkway to D-Street with surfacing, sidewalks and curb and gutter improvements. A-Street consists of a 56' right of way with street roadway width of 36' curb to curb and no parking along both sides. Minnesota Street consists of a 66' right of way with a street road width of 36' curb to curb with no parking on both sides. Both A-Street and Minnesota Street are functionally classified as local streets with an ADT to be unknown, but is anticipated to be 2,500 or less.

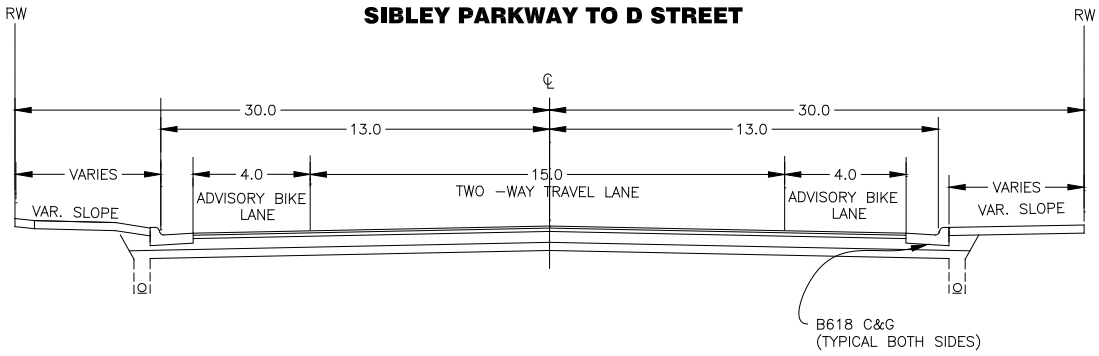


Cherry Street consists of an 80' right of way with a street roadway width of 48' curb to curb. Roadway pavement markings include 2-12' travel lanes with 12' parking lanes along both sides of the street. Cherry Street is functionally classified as a major collector with an ADT of 5,700 (MnDOT 2009).

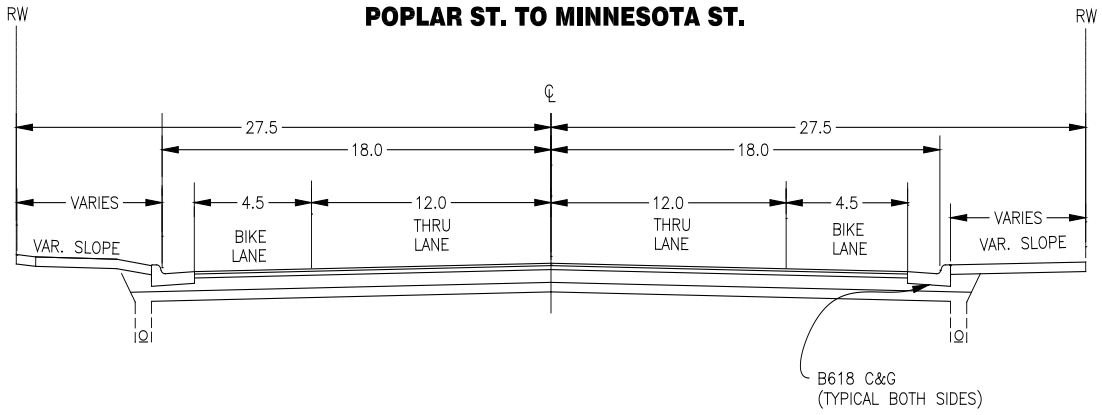
Proposed Bike Facility Improvements

Poplar Street will consist of 4' advisory bike lanes with a 15’ two-way travel lane. A-Street and Minnesota Street will consist of two-12' travel lanes with bicycle lanes ranging from 4' to 5' with no parking on both sides. Cherry Street will have a similar section from South Riverfront Drive to South Broad Street consisting of two-11' lanes and 5' bike lanes with 8' parking lanes on both sides. Existing traffic lanes along Cherry Street will be narrowed to 11' and parking lanes will be reduced to 8' wide to accommodate new 5' bicycle lanes. Bicycle pavement markings and signs will be installed along the length of the project.

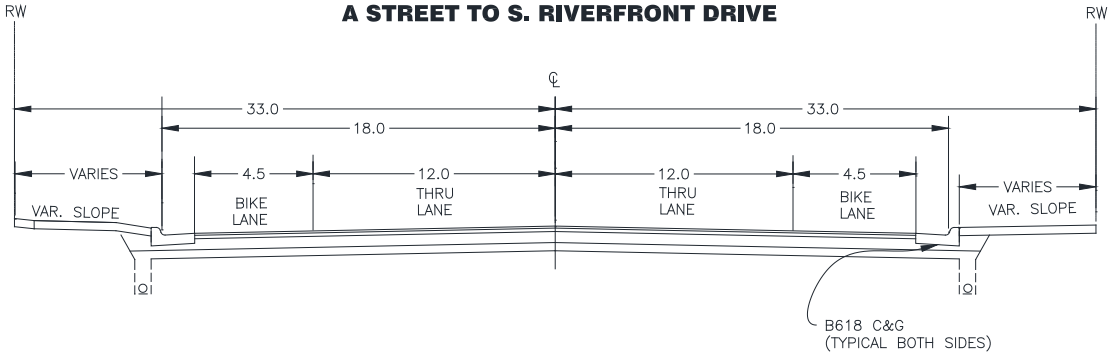
TYPICAL SECTION
POPLAR STREET
SIBLEY PARKWAY TO D STREET



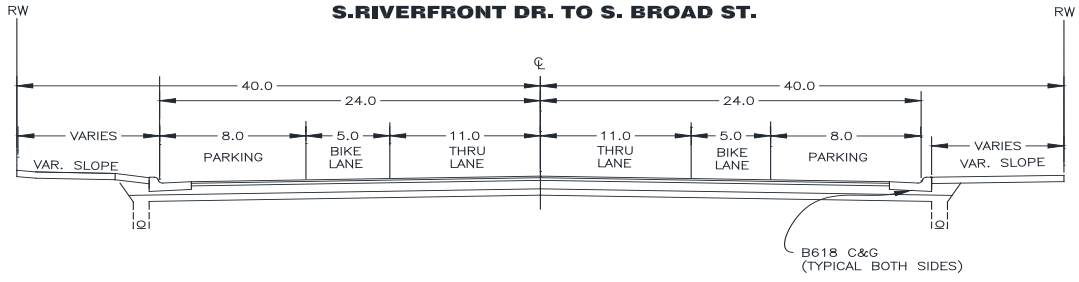
TYPICAL SECTION
A STREET
POPLAR ST. TO MINNESOTA ST.



TYPICAL SECTION
MINNESOTA STREET
A STREET TO S. RIVERFRONT DRIVE



TYPICAL SECTION
WEST/EAST CHERRY STREET
S.RIVERFRONT DR. TO S. BROAD ST.



Broad Street Project

Existing Conditions

The Broad Street project is over 3 miles in length and will utilize streets such as Good Counsel Drive, North 4th Street, East Mabel Street, Broad Street, Lincoln Street, Van Brunt Street, Willard Street and finally W. Pleasant Street to complete a bicycle link from the north side of city, through the city center and eventually to Stoltzman Road. The existing conditions are as follows:

<u>Good Counsel Drive- From North Riverfront to North 4th Street</u>

- Right of Way- Varies
- Street Pavement width curb to curb - 28' to 40'
- Pavement Marking Configuration- 2-12' travel lanes with no parking on both sides
- ADT-Unknown
- Local Street



<u>North 4th Street- From Good Counsel Drive to East Mabel Street</u>

- Right of Way- 66'
- Street Pavement Width - 28' curb to curb with 20' on rural sections
- Pavement Marking Configuration- 2-12' travel lanes with no parking on both sides
- ADT-Unknown
- Local Street

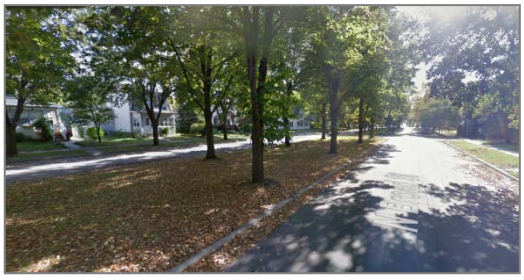


<u>East Mabel Street- From North 4th Street to North Broad Street</u>

- Right of Way- 66'
- Street Pavement Width - 32' curb to curb
- Pavement Marking Configuration- 2-12' travel lanes unmarked with parking on the south side
- ADT-800 (2009 MnDOT)
- Local Street



North Broad Street- From East Mabel Street to Thompson Street



- Right of Way- 120'
- Street Pavement width - 2-28' curb to curb-one way streets
- Pavement Marking Configuration- 1-12' travel lane unmarked with parking on one side
- ADT-1150 (2009 MnDOT)
- Local Street

North Broad Street- From Thompson Street to Madison Avenue



- Right of Way- 100' to 120'
- Street Pavement width - 44' curb to curb
- Pavement Marking Configuration- 2-12' travel lane (one-way) marked with parking on both sides
- ADT-1,100 to 1,650 (2009 MnDOT)
- Local Street/Minor Collector

North Broad Street- From Madison Avenue to Lincoln Street



- Right of Way- 100'
- Street Pavement width - 44' curb to curb
- Pavement Marking Configuration- 2-12' travel lane marked with combinations of parking on both sides, one side parking and areas with limited parking restrictions
- ADT-1,450 to 6,600 (2009 MnDOT)
- Minor Collector/Local Street

Lincoln Street- From Broad Street to South Second Street

- Right of Way- 66'
- Street Pavement Width - 32' curb to curb
- Pavement Marking Configuration- 2-12' travel lane marked with one side parking
- ADT-2,000 (2009 MnDOT)
- Local Street

Van Brunt Street- From South Second Street to Willard Street

- Right of Way- 80'
- Street Pavement Width - 40' curb to curb
- Pavement Marking Configuration- 2-12' travel lane marked with parking on both sides
- ADT-2,000 (2009 MnDOT)
- Local Street

Willard Street- From Van Brunt to Pleasant Street

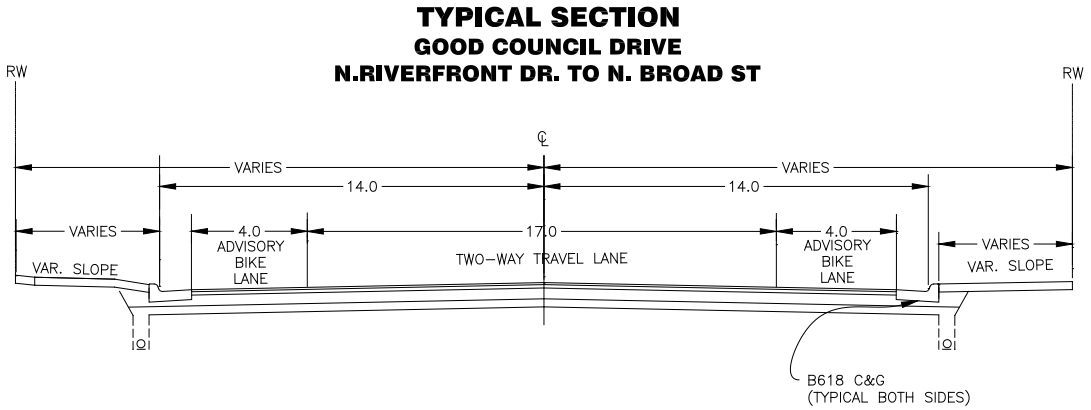
- Right of Way- 66'
- Street Pavement Width - 36' curb to curb
- Pavement Marking Configuration- 2-12' travel lane marked with parking on the east side
- ADT-unknown
- Local Street

Pleasant Street- From Willard Street to Stoltzman Road

- Right of Way- 66'
- Street Pavement Width - 36' curb to curb
- Pavement Marking Configuration- 2-12' travel lane marked with parking on the north side
- ADT-2,800 (2009 MnDOT)
- Minor Collector

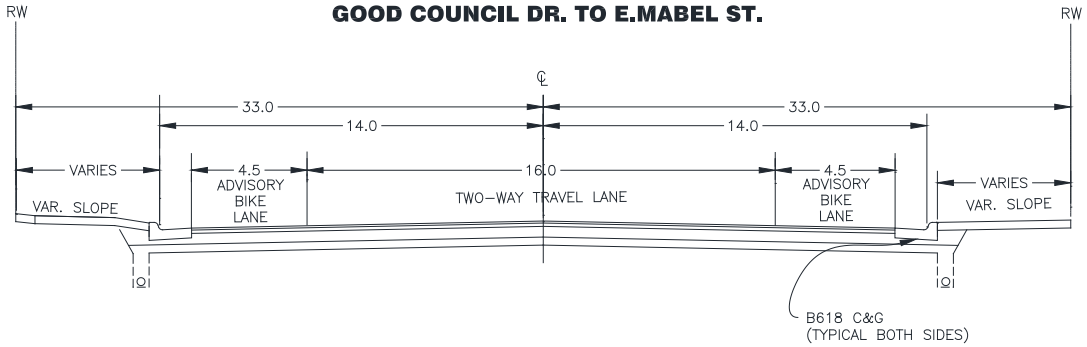
Proposed Bike Facility Improvements

Good Counsel will consist of an unmarked roadway with 4' advisory bike lanes on both sides and one 17' two-way wide thru lane with no parking on both sides. Existing centerline pavement markings would be removed and replaced with 2 advisory bike lanes. Bicycle pavement markings and signs would be installed along the length of this street. *Note that this section of road is planned for the 2016 construction year.*



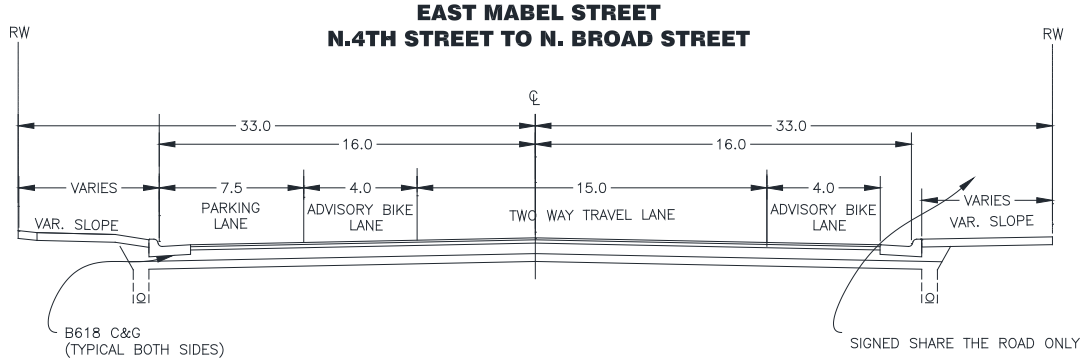
North 4th Street is proposed for a future reconstruction project which will have improved surfaces, curb and gutter and sidewalks in the 2016 construction year. N. Fourth street would be built to a cross-section of 28' curb to curb and would consist of a pavement marking configuration of one-16' two-way traffic lane with 4.5' advisory bike lanes on both sides. A trail would be constructed through the park connecting N. Broad Street to Good Counsel Drive. Parking would be prohibited on both sides of N. 4th Street and bicycle pavement markings and signs will be installed along the length of this project. *Note that this section of road is planned for the 2016 construction year.*

TYPICAL SECTION
NORTH 4TH STREET
GOOD COUNCIL DR. TO E.MABEL ST.



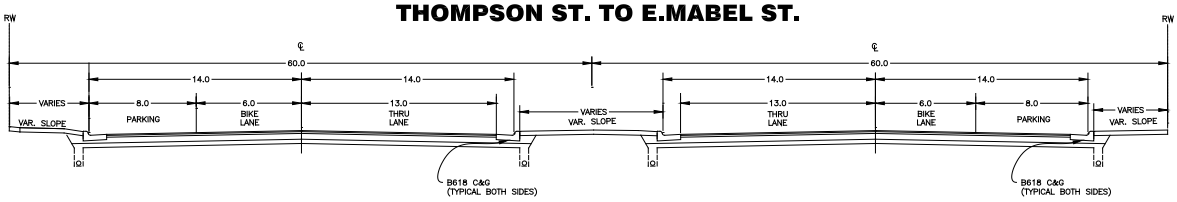
East Mabel Street will consist of two-4' wide advisory bike lanes and one 15' two-way traffic lane with a 7.5' wide parking lane adjacent to property owners. Bicycle pavement markings and signs will be installed along the length of the project. *Note that this section of road is planned for the 2017 construction year.*

TYPICAL SECTION
EAST MABEL STREET
N.4TH STREET TO N. BROAD STREET



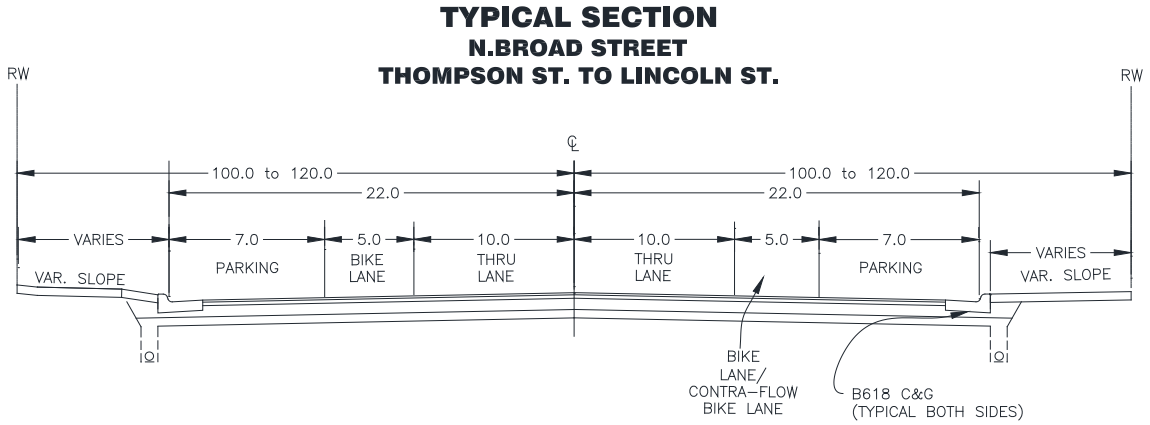
North Broad Street from East Mabel Street to Thompson Street will consist a 13' wide through lane with marked 6' wide bike lanes and 8' parking lanes adjacent to the properties. Parking along the center median will be prohibited. Bicycle pavement markings and signs will be installed along the length of the project. *Note that this section of road is planned for the 2017 construction year.*

TYPICAL SECTION
NORTH BROAD STREET
THOMPSON ST. TO E.MABEL ST.

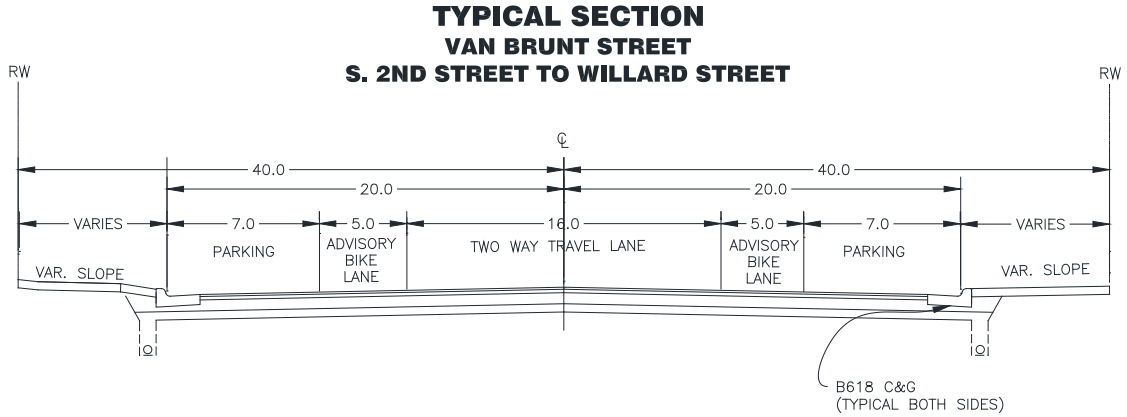


North Broad Street from Thompson Street to Lincoln Street will consist of a 2-10' travel lanes with 5' marked bicycle lanes on both sides of the street with 7' parking lanes. A contra-flow bicycle lane will be created from Thompson Street to Madison Avenue as

this section is currently a one-way street. Existing parking restrictions will remain in place. Bicycle pavement markings and signs indicating bike lane will be installed along the length of the route. Colored bikes lanes will be installed at high volume intersections as necessary. *Please note that N. Broad Street from Madison Avenue to Cherry Street will be planned for 2015 construction year and all remaining sections are planned for 2016.*

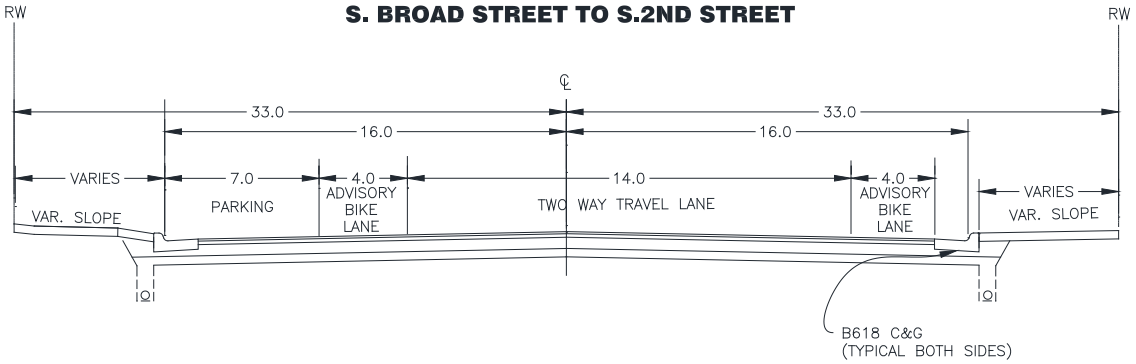


Van Brunt Street will consist of two-5' wide advisory bike lanes and one 16' two-way traffic lane with a 7' wide parking lanes on both sides of the street. Bicycle pavement markings and signs will be installed along the length of the project. *Note that this section of road is planned for 2016 construction year.*



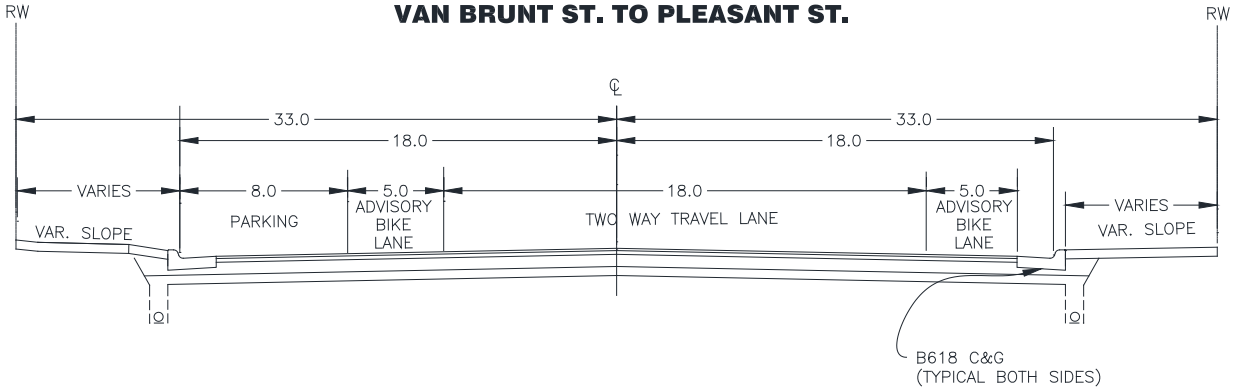
Lincoln Street will consist of two-4' wide advisory bike lanes and one 14' two-way traffic lane with a 7' wide parking lane adjacent to the property owners. Bicycle pavement markings and signs will be installed along the length of the project. *Note that this section of road is planned for the 2016 construction year.*

TYPICAL SECTION
LINCOLN STREET
S. BROAD STREET TO S.2ND STREET

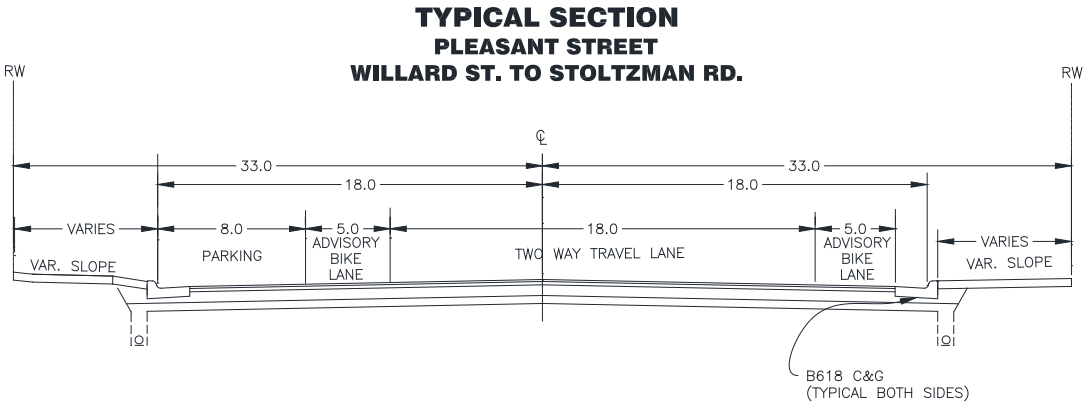


Willard Street will consist of two-5' advisory bike lanes and one-18' two-way traffic lane with an 8' parking lane along the the east side of the street. Bicycle pavement markings and signs will be installed along the length of the project. *Note that this section of road is planned for the 2016 construction year.*

TYPICAL SECTION
WILLARD STREET
VAN BRUNT ST. TO PLEASANT ST.



Pleasant Street will consist of two-5' advisory bike lanes and one-18' two-way traffic lane with an 8' parking lane along the the south side of the street. Bicycle pavement markings and signs will be installed along the length of the project. *Note that this section of road is planned for the 2016 construction year.*



2016 Bike Facility Projects

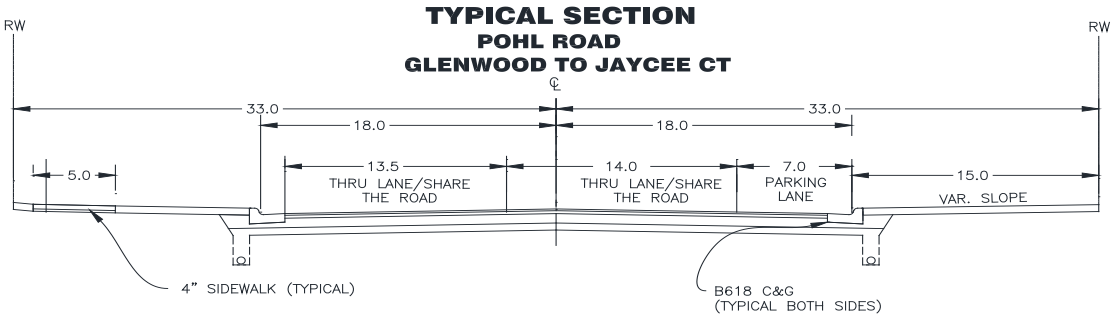
Pohl Road Project

Existing Conditions

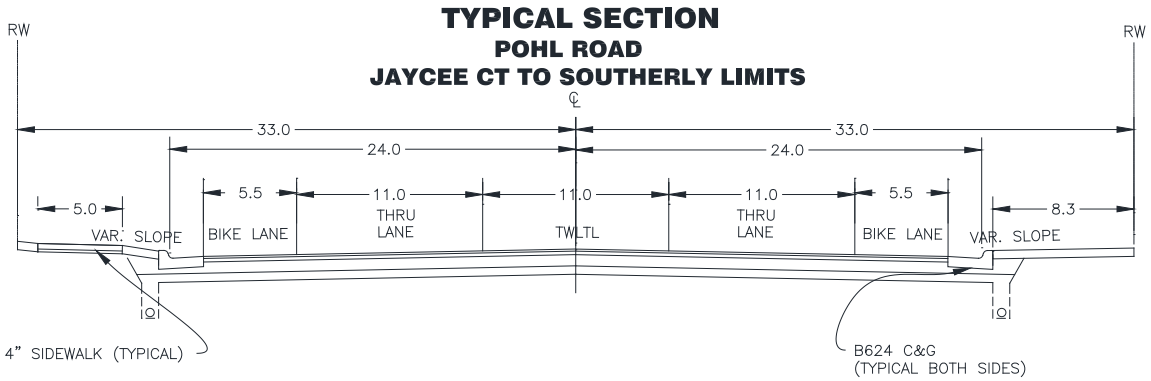
Pohl Road from Glenwood Avenue to southerly city limits consists of a right of way ranging from 66' to 74' with street roadway widths ranging from 36' to 48' curb to curb. Roadway pavement marking configurations consist of a two-12' lane roadways with parking allowed on the east side from Glenwood Avenue to Jaycee Court and then a 3-lane section from Jaycee Court to southerly city limits with no parking on either side. Pohl Road is functionally classified as minor collector with ADT's ranging from 1,250 to 4,900 (MnDOT 2009).

Proposed Bike Facility Improvements

Pohl Road from Glenwood Avenue to Jaycee Court will consist of wide outside lanes that will be able to accommodate both bicycles and motorists in the same lane width. *Note that this section of road is planned for the 2020 construction year.*



Pohl Road from Jaycee Court to southerly city limits will consist of 3-11' lanes with one lane in each direction and a continuous two-way left turn lane in the center. Bike lane pavement markers will be used to create 5.5' bicycle lanes on both sides of the street.



Bermuda Drive Project

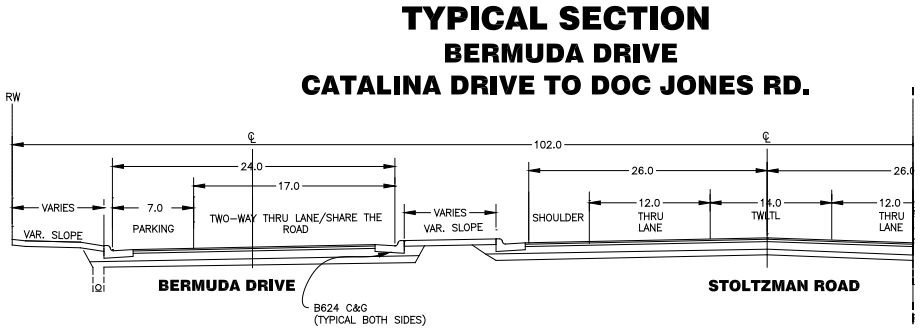
Existing Conditions



Bermuda Drive from Doc Jones Road to Catalina Drive is a frontage road adjacent to Stoltzman Road (County Road 16) which resides in a right of way of 102' with a roadway width of 24' curb to curb. Roadway pavement marking configurations consist of an unmarked roadway with seasonal no parking on the east side and standard parking on the west side. Bermuda Drive is functionally classified as a local road with an unknown ADT but is expected to be less than 1,500 cars per day. Stoltzman Road has an existing trail along the south side that terminates at Doc Jones Road and then begins at Catalina Drive creating a missing transportation link for the non-motorized.

Proposed Bike Facility Improvements

Bermuda Drive will consist of a 17' unmarked two-way travel lane with shared road signs along the length of the project. Existing seasonal no parking will need to be removed along the east side of Bermuda Drive with the only parking being allowed along the west side.



2017 Bike Facility Projects

Warren Street/Val Imm Drive/Ellis Avenue/Maywood Avenue/Balcerzak Drive Project

Existing Conditions

This project is over 2 miles in length and will utilize streets such as Warren Street, Highland Avenue, Val Imm Drive, Ellis Avenue, Maywood Avenue, and Balcerzak Drive to complete a bicycle network from Pohl Road, to the Minnesota State University – Mankato campus, and finally to the bicycle netwrok on Broad Street. The existing conditions are as follows:



Warren Street – From Broad Street to Val Imm Drive

- Right of Way – Varies
- Street Pavement Width – 48’ curb to curb
- Pavement Marking Configuration – 4-12’ travel lanes with no parking on either side
- ADT – 9,900 to 11,400 (MnDOT 2009)
- Local Street



Van Imm Drive – From Highland Ave to Birchwood Street

- Right of Way – Varies
- Street Pavement Width – 28’ to 42’ curb to curb
- Pavement Marking Configuration – 2-12’ to 14’ travel lanes with no parking on either side
- ADT – 3,900 (MnDOT 2009)
- Major Collector



Ellis Avenue – Birchwood Street to Maywood Avenue

- Right of Way – Varies
- Street Pavement Width – 42’ curb to curb
- Pavement Marking Configuration – Unmarked roadway with parking on east side
- ADT – Unknown
- Local Street



Maywood Avenue – Ellis Avenue to Warren Street

- Right of Way – 60’
- Street Pavement Width – 42’ curb to curb
- Pavement Marking configuration – Unmarked roadway with parking on south side
- ADT – Unknown
- Local Street

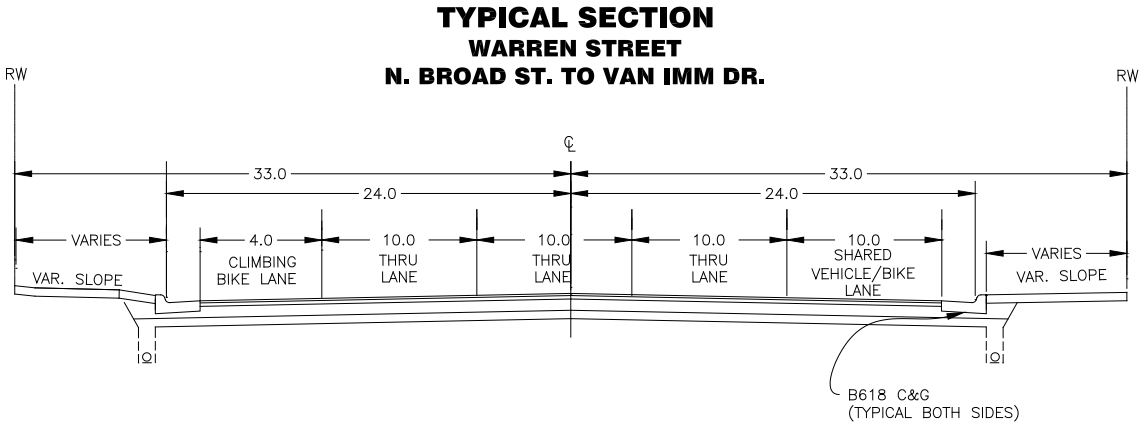
Balcerzak Drive – Warren Street to Pohl Road

- Right of Way – 80’
- Street Pavement Width – 44’ curb to curb
- Pavement Marking Configuration – 4-11’ travel lanes with no parking on either side
- ADT – 9,100 to 10,000 (MnDOT 2009)
- Minor Arterial

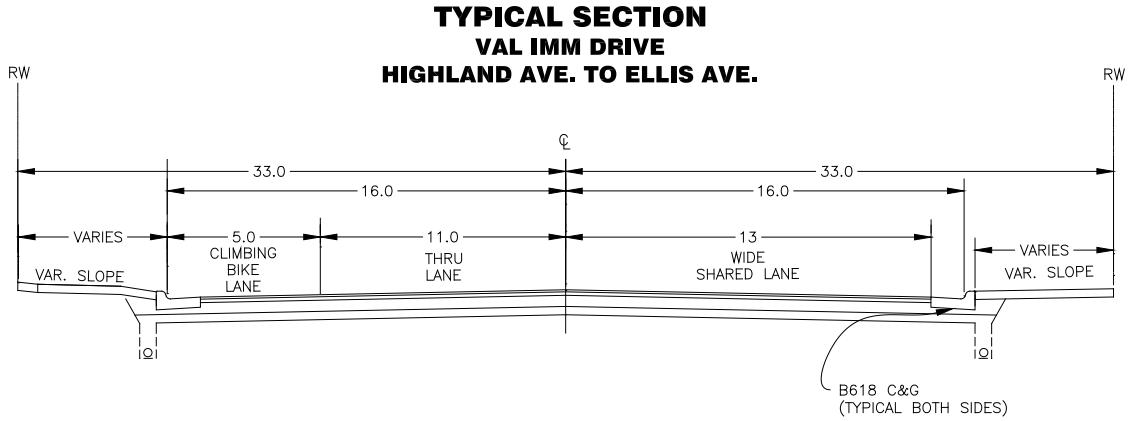


Proposed Bike Facility Improvements

Warren Street from Broad Street to Val Imm Drive will consist of four –10’ travel lanes with a one uphill 4' wide bicycle lane and no parking on either side. Bicycles will utilize and share the outside travel lane. Bicycle pavement markings and signs will be installed along the length of the project.

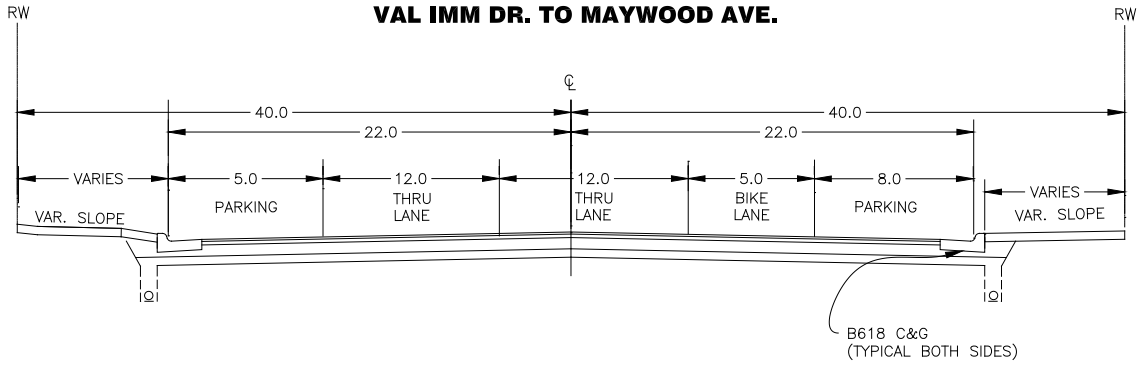


Val Imm Drive will have -13' share shared travel lane and an 11' uphill travel lane with 5' bicycle climbing lane with no parking on either side. Bicyclists and motorists will share a wide outside lane down Val Imm Drive hill. Bicycle pavement markings and signs will be installed along the length of the project.



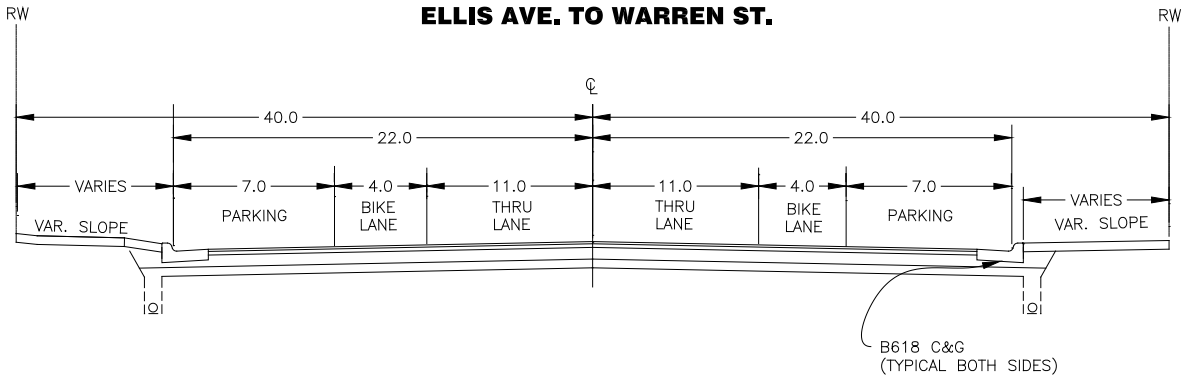
Ellis Avenue will consist of two–12’ travel lanes unmarked with 5' marked bicycle lanes on both sides. Parking will be allowed on the east side consisting of a 8' wide parking lane. Bicycle pavement markings and signs will be installed along the length of the project. *Note that this section of road is planned for the 2020 or later construction year.*

TYPICAL SECTION
ELLIS AVENUE
VAL IMM DR. TO MAYWOOD AVE.

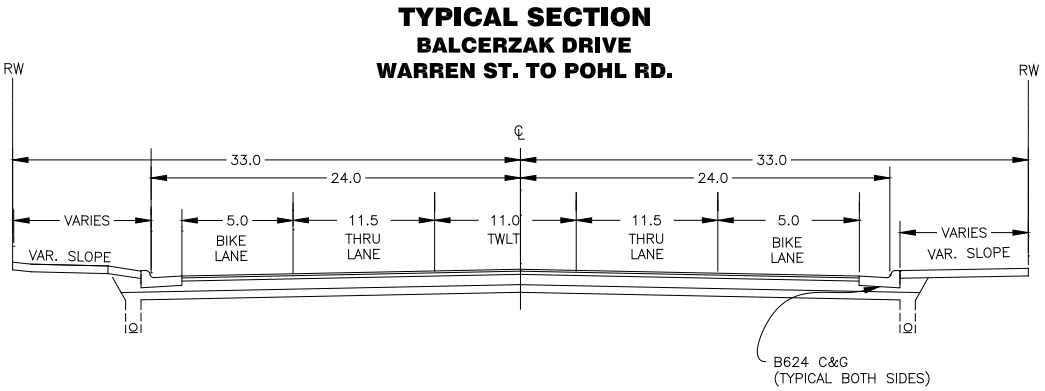


Maywood Drive will consist of two–11' travel lanes unmarked with 4' marked bicycle lanes on both sides. Parking will be allowed on both sides of the street consisting of 7' wide parking lanes. Bicycle pavement markings and signs will be installed along the length of the project. *Note that this section of road is planned for the 2020 construction year.*

TYPICAL SECTION
MAYWOOD AVENUE
ELLIS AVE. TO WARREN ST.



Balcerzak Drive from Warren Street to Pohl Road will consist of a new 3 lane section consisting of two-11.5’ travel lanes and an 11' two-way left turn lane. 5' wide bicycle lanes will be on both sides of the street with no parking on either side. Bicycle pavement markings and signs will be installed along the length of the project. *Note that this section of road is planned for the 2020 construction year.*



2018 Bike Facility Projects

Main Street/Hosanna Drive Project

Existing Conditions

This project is over 1 mile in length and will utilize Main Street and Hosanna Drive to complete a bicycle link from Victory Drive to the trail stemming from Highway 22 to allow access to Kennedy Elementary School from nearby houses. The existing conditions are as follows:

<u>Main Street – From Victory Drive to Hosanna Drive</u>



- Right of Way – Varies
- Street Pavement Width – 32’ curb to curb
- Pavement Marking Configuration – 2-11’ travel lanes with parking consisting of one sided and two sided configurations.
- ADT – 5,700 (MnDOT 2009)
- Minor Collector

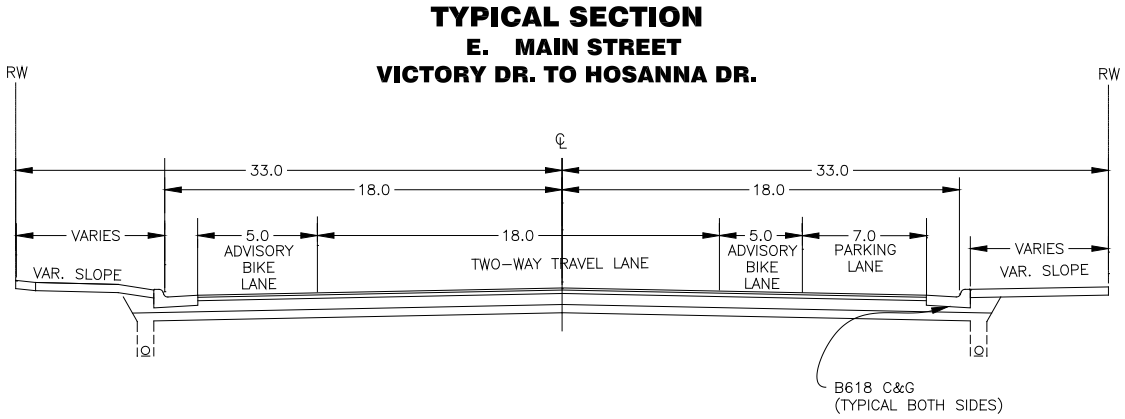
<u>Hosanna Drive – From Main Street to Peace Pipe Park</u>



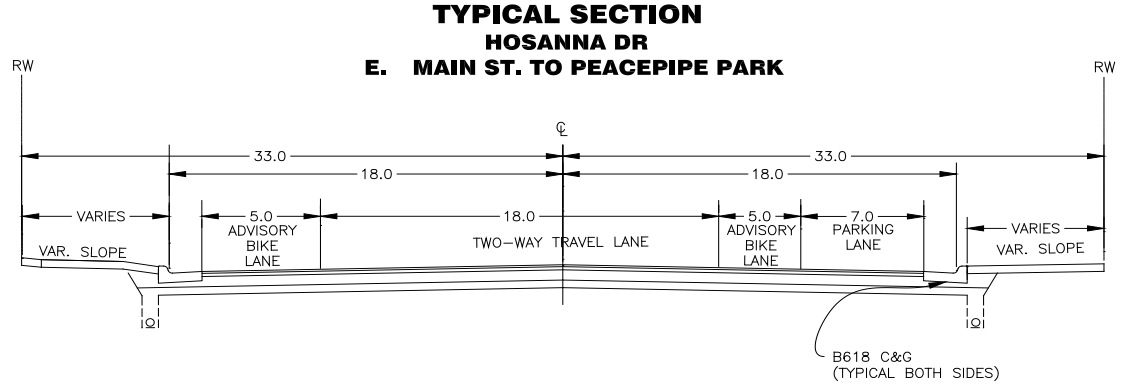
- Right of Way – 60’
- Street Pavement Width – 32’ curb to curb
- Pavement Marking Configuration – unmarked roadway with unmarked parking on both sides of the street
- ADT – Unknown
- Minor Collector

Proposed Bike Facility Improvements

Main Street from Victory Drive to Hosanna Drive will consist of two-5' advisory bike lanes and one-18' two-way traffic lane with a 7' parking lane along one side of the street. Parking restrictions would need to be implemented where parking is allowed on both sides of the street. Bicycle pavement markings and signs will be installed along the length of the project.



Hosanna Drive from East Main Street to Peacepipe Park will consist of two-5' advisory bike lanes and one-18' two-way traffic lane with a 7' parking lane along one side of the street. Parking restrictions would need to be implemented where parking is allowed on both sides of the street. Bicycle pavement markings and signs will be installed along the length of the project.



West Pleasant Street Project

Existing Conditions

This project will utilize West Pleasant Street to connect the Broad Street project to the Red Jacket Trail. The existing conditions are as follows:

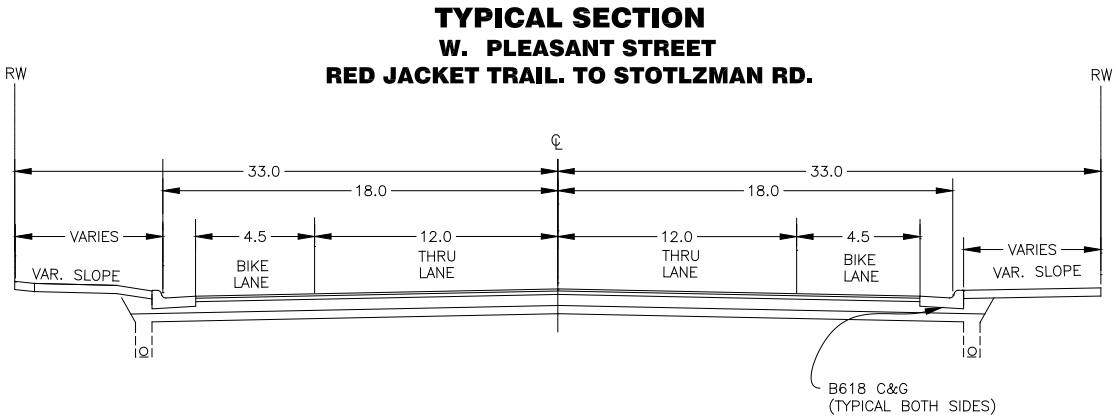
<u>West Pleasant Street – From Stoltzman Road to Red Jacket Trail</u>

- Right of Way – 66 feet
- Street Pavement Width – 32’ curb to curb
- Pavement Marking Configuration – 2-15’ travel lanes with no parking on either side from Stoltzman Road to Baker Avenue; from Baker Avenue to the Red Jacket Trail, parking exists on one side of the street.
- ADT – 3,150 to 5,500 (MnDOT 2009)
- Major Collector



Proposed Bike Facility Improvements

West Pleasant Street from Stoltzman Road to the Red Jacket Trail will consist of two-12' travel lanes and will have a 4.5' bicycle lanes with no parking on either side. Additional parking would need to be restricted from Baker Avenue to the Red Jacket Trail. Bicycle pavement markings and signs will be installed along the length of the project.



Warren Street Project

Existing Conditions

<u>Warren Street – Balcerzak Drive to Stadium Road</u>

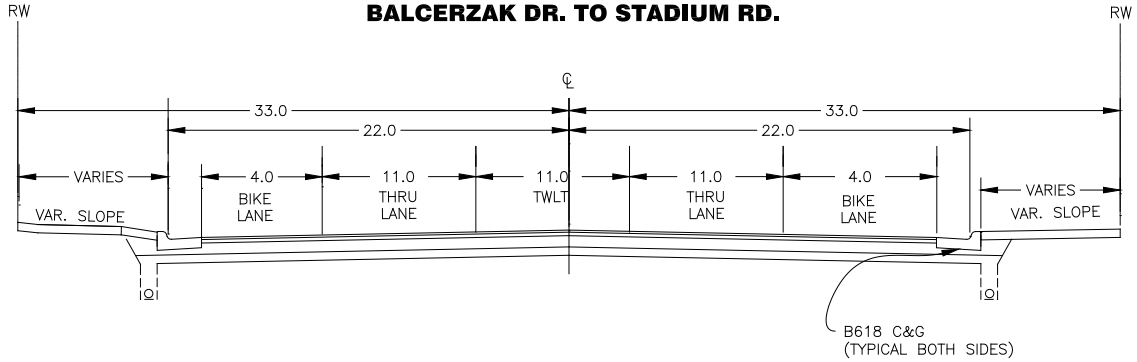
- Right of Way – 66'
- Street Pavement Width – 44' curb to curb
- Pavement Marking configuration – 3-12' lanes with a center two-way left turn lane roadway with no parking on either side
- ADT – 7,900 to 8,700 (MnDOT 2009)
- Minor Arterial



Proposed Bike Facility Improvements

Warren Street from Stadium Road to Balcerzak Drive will have two-11' lanes with an 11' two way left turn lane and 4' wide bike lanes along both sides of the street. Parking will be prohibited on both sides. This project will receive funding from the 2018 Transportation Alternatives Program that the City received in 2013. Bicycle pavement markings and signs will be installed along the length of the project.

TYPICAL SECTION
WARREN STREET
BALCERZAK DR. TO STADIUM RD.



Diamond Creek Road Project

Existing Conditions

Diamond Creek Road – From Stadium Road to Crystal Lane

Crystal Lane - From Diamond Creek to Hosanna Drive



- Right of Way – 60’
- Street Pavement Width – 36’ curb to curb
- Pavement Marking configuration – 2-11' lanes with parking on both sides.
- ADT – Unknown MnDOT
- Local Road

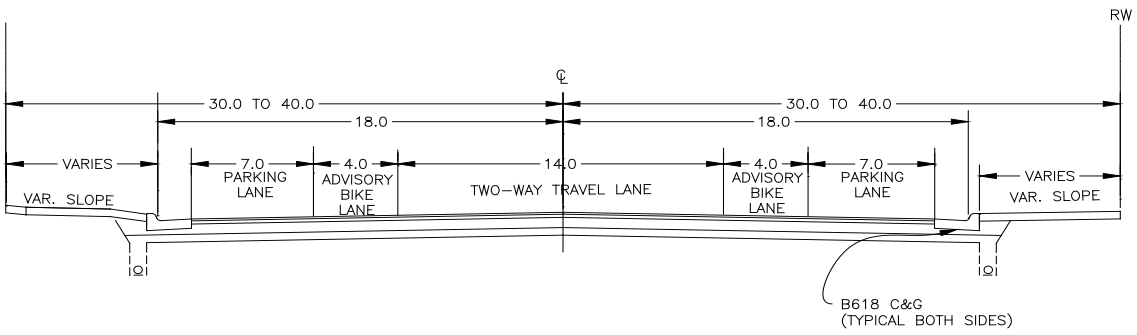
Hosanna Drive –Crystal Lane to Hoffman Road

- Right of Way – 80’
- Street Pavement Width – 36’ curb to curb
- Pavement Marking configuration – 2-11' lanes with parking on both sides.
- ADT – Unknown MnDOT
- Local Road

Proposed Bike Facility Improvements

Diamond Creek Road, Crystal Lane and Hosanna Drive will have a 14' two-way travel lane with and two 4' wide advisory bike lanes with parking on both sides of the street. Bicycle pavement markings and signs will be installed along the length of the project.

TYPICAL SECTION
DIAMOND CREEK RD/CRYSTAL LANE/HOSANNA DRIVE
STADIUM ROAD TO HOFFMAN ROAD



Proposed Sidewalk Projects

The City of Mankato developed a master plan in 1998 which served as the guide for identifying the needs and creating a broad network of sidewalks and trails throughout the community. This plan was originally created trying to provide connectivity to schools as well as creating a network of connectivity throughout the Mankato Area. Since then, this plan has been modified and updated to meet the current needs that have been addressed through various committees and safe routes to school (SRTS) planning efforts.

In 2013, the Mankato Area Public Schools (Independent School District 77) developed a SRTS plan which addresses problems and deficiencies within the existing infrastructure, signage and other barriers that hinder elementary students to safely walk/bicycle to their elementary schools.

The goal of a SRTS plan is to instill walking and bicycling habits in school children by putting in place a safe and attractive walking and bicycling environment in and around school areas. The resulting health benefits for students as they walk and bike to school makes a SRTS plan like this an important component in instilling and shaping the life-long active living habits of school children. The partnership between Mankato Area Public Schools and the City of Mankato, in producing the plan, was aimed at realizing the full benefits of a SRTS plan for the school children and community of Mankato.

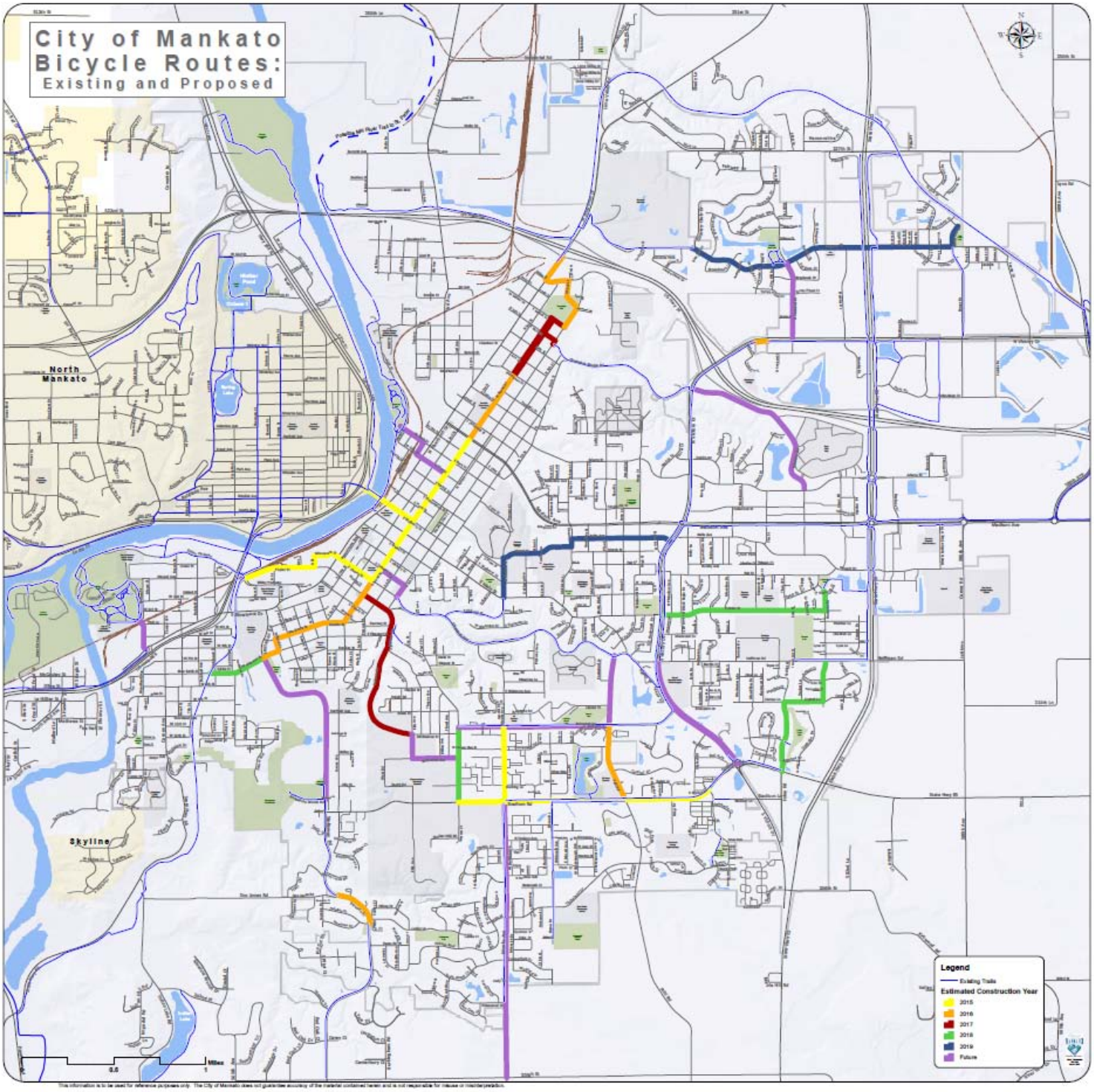
In the Appendix, a proposed sidewalk and trail plan shows all existing sidewalk, proposed sidewalk as well as SRTS walks. As existing streets are reconstructed or resurfaced within Mankato, this plan will be reviewed to verify that sidewalks links are installed as noted in the Complete Streets plan. SRTS sidewalks that have been identified in the 2013 Mankato Area Public Schools SRTS Plan are noted and will become priority on standalone sidewalk construction projects.

This existing plan with the addition of the SRTS routes added was then reviewed by the city's Multimodal Transportation Committee in 2014. This committee is comprised of members of the Mankato area who have vested interested in the various modes of transportation and represent with representatives from transit, pedestrian and bicycle interests, air and transportation areas. This committee reviewed and provided additional recommendations in 2014 for sidewalk and trail connections in the Mankato area.

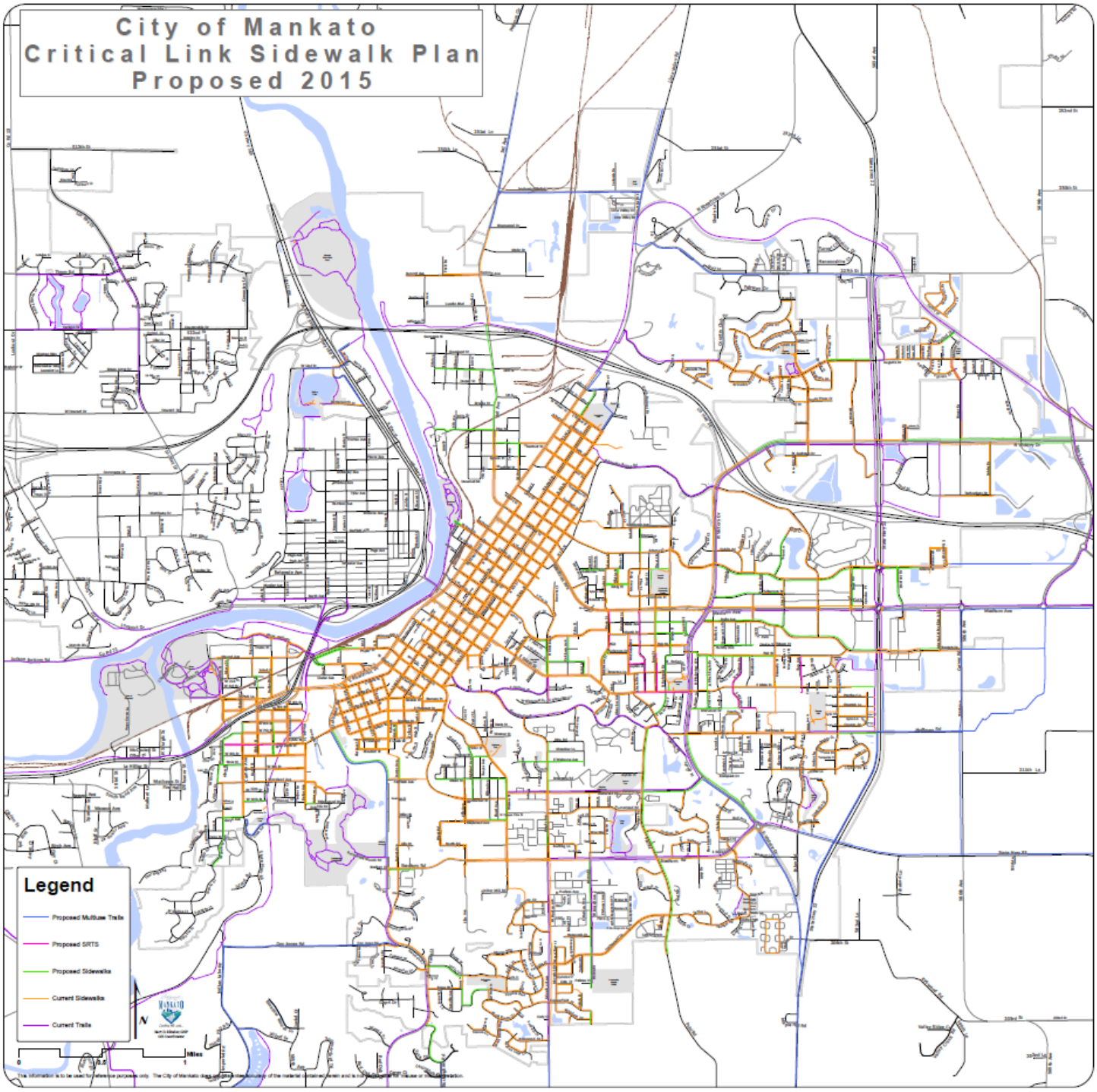
On February 26, 2015, an open house was held at the City of Mankato to review the proposed plan and seek additional input from the citizens of Mankato.

Appendices

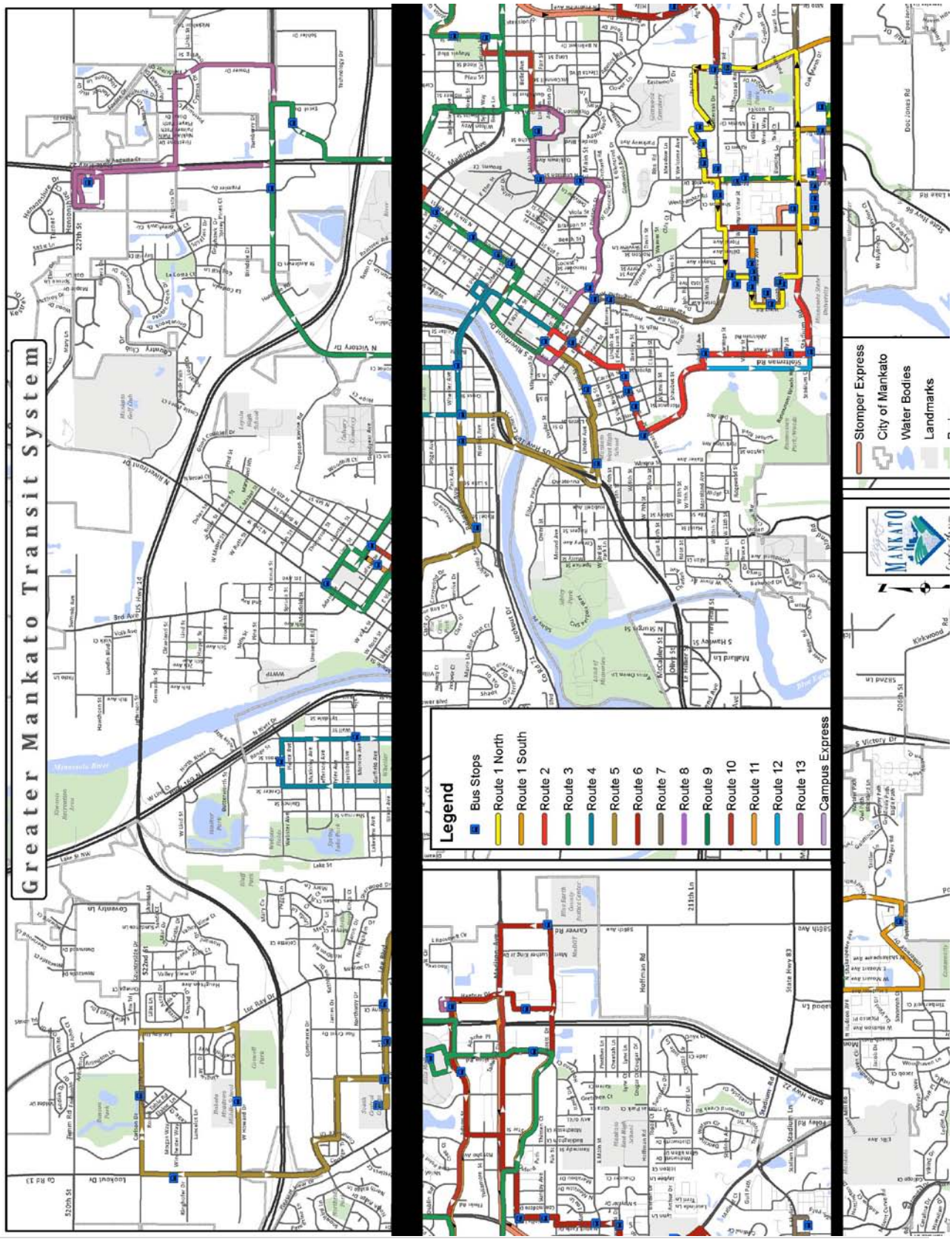
On Street Bicycle Routes and Trails



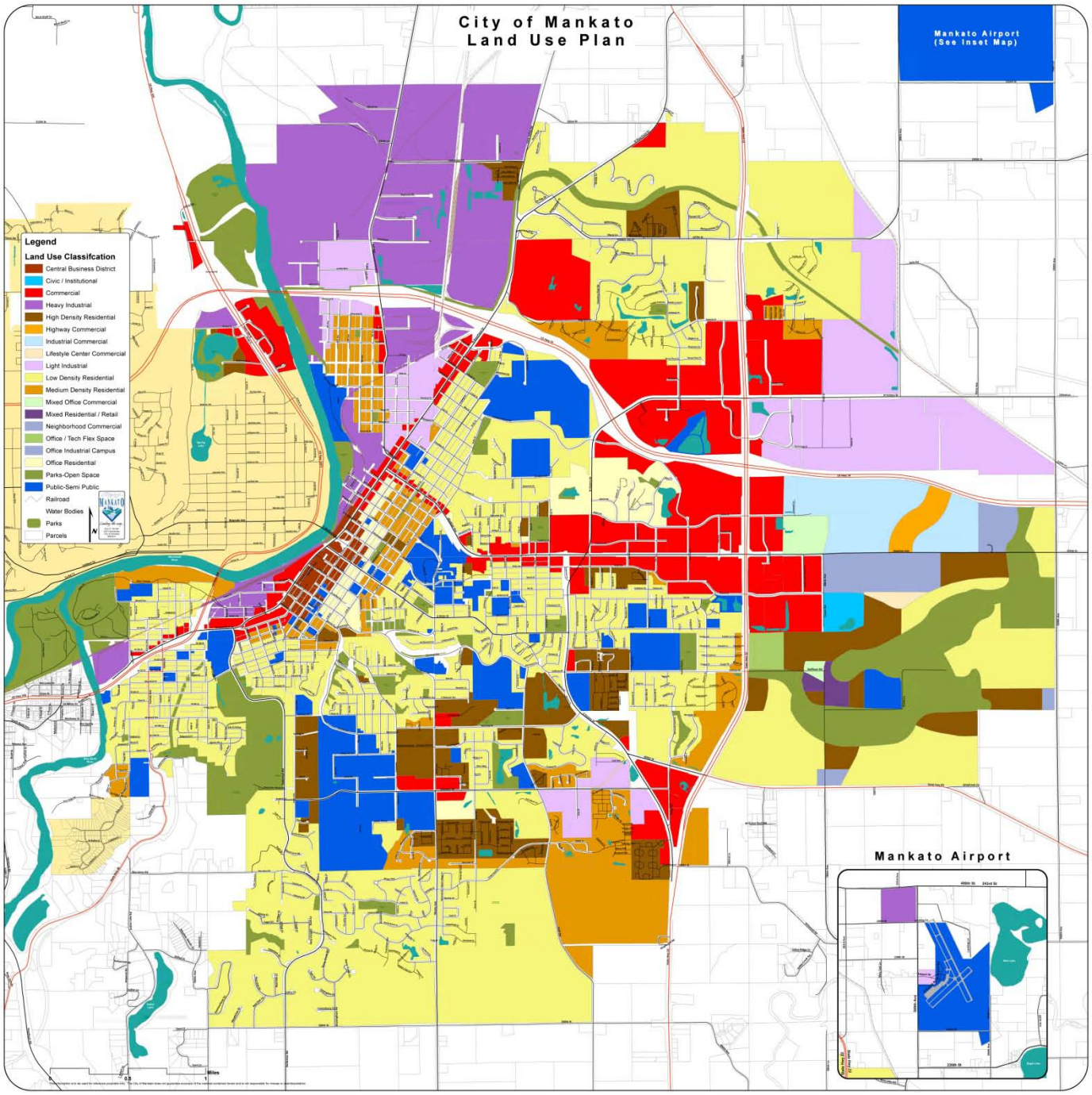
Sidewalk and Trails Plan



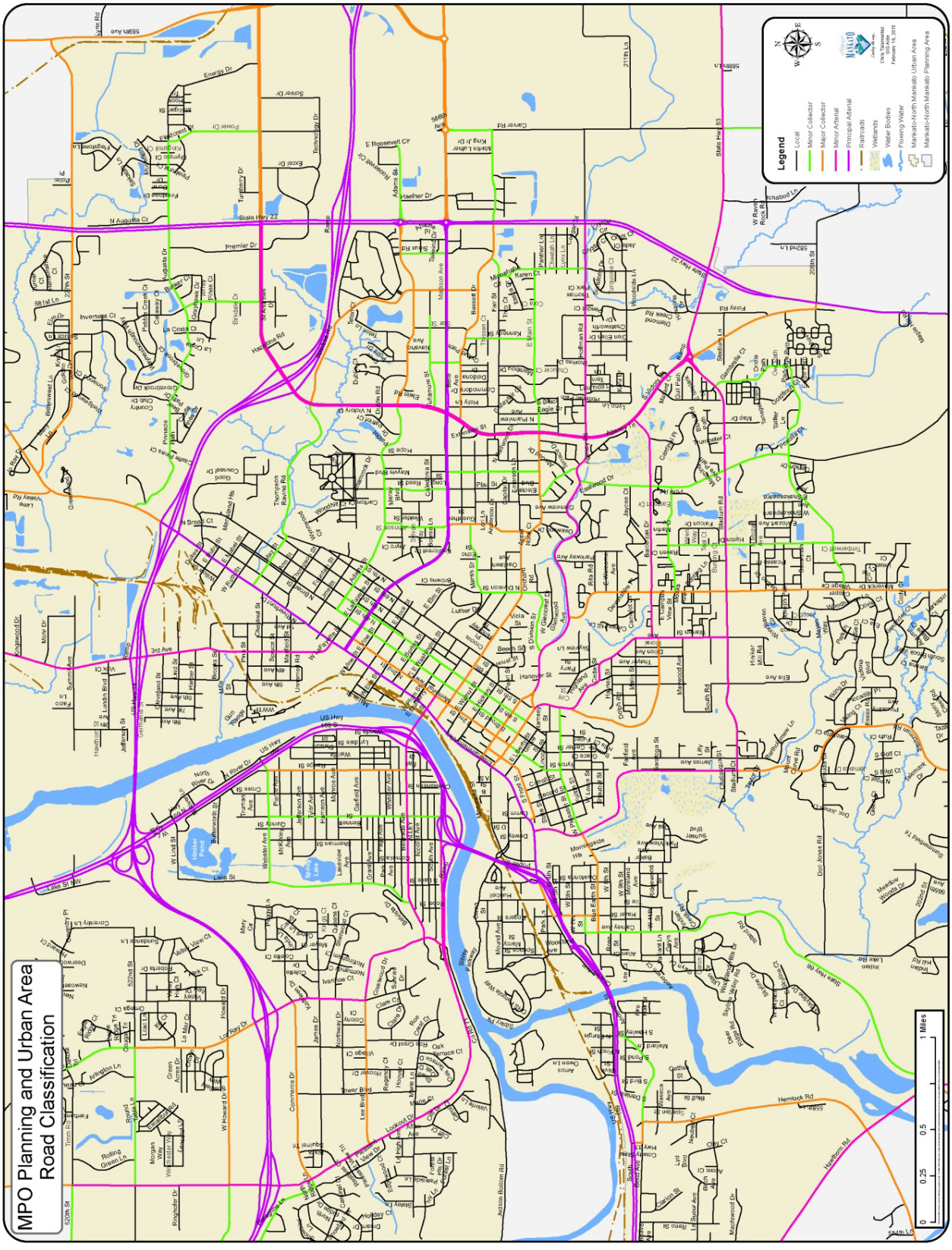
Transit Route Map



Land Use and Zoning Map



Roadway Functional Classification Map



Public Comments from February 26, 2015 Open House

BIKE & TRAIL ROUTES COMMENTS & SUGGESTIONS

- How will bicyclists cross Madison Ave at Broad St. when there are not traffic control devices for motorists on Madison Ave?
- Adams St from Haefner Dr to N Victory Dr and Raintree Rd (entire length) both need on street bike facilities such as bike advisory lane.
- Please plan bike advisory lanes for hilltop Main St.
- It would be nice to be able to cross Victory Dr at Fair St.
- Please make sure semaphores on Broad St are long enough for continuous flow of bicycles in both directions. We don't want to stop at every red light, just a motorists don't usually have to if timed correctly.
- 3 lane coversion of Warren great idea! This would be more ped/bike/and car friendly and make it more accessible for Historical Society.
- I support a bicycle trail on Madison Ave. we need a reasonably graded access up the hill in that area.
- On proposed bike path on Augusta crossing route? Given the increase in traffic volume on Route 22, especially when route 169 is closed in 2016 - with the addition of a bike path on Augusta – something needs to be done at the Augusta - Route 22 intersection to safely facilitate bike traffic crossing that route.
- Share the road sign – a dream come true.
- I would like see N Broad St, N4th St and the last two blocks of N 6th St turned into a 2-way street, so we have consistency w/2-way streets. With Broad St being a wider road, the vehicle speeds to increase. That could have an effect to bicyclists traveling N on Broad St going against the flow of traffic.
- Madison Ave is a steep hill for bicyclists but also a straight way to Madison Ave business. Adding a trail from the bottom of Madison to Victory is essential to feel safe and create a safe place for bicyclist to quickly navigate to those businesses.
- Make it safe for kids and families to ride to the Children's Museum from the Red Jacket and River trail. Perhaps a protected bike lane along Poplar St and then to the Children's Museum.
- Thompson Ravine is a great option for bicyclist to get to the mall area so connecting Thompson Trail with a trail on Raintree road would be helpful to get to businesses in that area. I believe the shoulder is wide also so adding a bike lane would be helpful too.
- I see that initially the 10' shared lane coming down and 4' bike lane going up will be striped – that's good. Eventually do the 3' lane section and add a barrier between traffic and bike lane. Perhaps try a temporary barrier to check it out.
- Consider connecting the new Children's Museum with the Red Jacket via a dedicated bike trail. The bike trail could be designed specifically to encourage safe biking in family groups with young children.
- Connect MN River trail and Rex Mcbeth trail to cross MN River at Hwy 14 Bridge.
- Bike route Poplar St to 5th St is over on Cherry which has a very steep grade. Why not remain on Warren?
- Add bridge over Riverfront Dr at YMCA location? Hand drawn map done.
- Adding a sidewalk on the south side of Stadium Road from the bus stop at James to the apartments to the east.

SIDEWALKS & TRAILS

- Sidewalk next to Riverfront by ramp and Olives (Hilton)
- Please add sidewalk on Carney Ave between 6th & 7th St. Put on East side.
- Install missing link on multi-use trail ASAP. Near DeGroods Appliance)
- Need bump outs for crosswalks. We (Salvage Sisters) have a ton of out of town shoppers who want to walk from shop to shop especially during "old town shopping events". They cannot cross the road! The main parking lot is on one side of street and shoppers need a way to cross.
- Fairfield Avenue Convert path up the hill from slope to steps. Would make it much safer to traverse.
- Free flowing traffic downhill from Washington St is dangerous for (children) pedestrians crossing Washington and N. Broad and badly needs crosswalk markers to indicate pedestrian right of way, if not a stop sign.
- Pedestrians have a hard time crossing Riverfront from one side the other and there is a lot of space between traffic lights.
- It would be nice to have an off-road shared use trail connection to the existing trails in the city (i.e. from Vet's bridge to the River Walk trail). That way folks with kids of others who aren't comfortable riding on the street can get around.
- Access across Vets and N Star bridges that are not covered with plowed snow. Try to avoid stairs such as are on N Star bridge onto River Trail - ramp a better idea year around. Thank you for all the trails and plowing of them in the winter.
- Pedestrian paths landing from S Riverfront area/Sibley Parkway towards trails into Sibley Park along river confusing to navigate. More clearly delineated paths, especially near railroad track/bridge and the 169 overpass would help improve navigability/connectivity.

PUBLIC TRANSIT

- Please consider an after school bus route that would pick-up kids at schools and drop them off at the YMCA. The YMCA is talking about getting rid of its bus system.
- A bus connection between South Central College area (Lee Blvd) to MSU campus through Lincoln Community Center.
- Have a short run bus circulating in the main hilltop retail area encouraging shoppers to park in one spot and take the bus. Offer an all day pass for this route so shoppers won't mind multiple trips to their cars. The buses for this route may need modification for more convenient transport of purchased items.
- Long range replace the buses in the hilltop retail area with an elevated light rail system above the streets and parking lots.
- Transit comment – More attractive bus shelters/stops General Comment – Site plan reviews should always consider people on foot or bike getting to the front door of a business instead of only catering to cars and parking. Create setbacks, wider sidewalk/furniture areas, etc. Also, incorporate appropriate landscaping/street scaping with walkways and trails.
- Nicer/more prominent bus shelters

GENERAL COMMENTS

- Are way finding signs in the plan?
- Utility access covers (manholes and valves) can be a safety hazard especially if the pavement has been built up with multiple seal coats. I support marking those within 3' of the curb with reflective yellow paint so cyclists are more likely to see them in poor lighting conditions.

- Paint a yellow dot on the street 135' from a traffic light (3 seconds travel time). Advertise the purpose: if you haven't passed the dot when the light turns yellow, you must prepare to stop because you won't beat the red light without speeding.
- On lights not yet fitted with traffic flow sensors, program them to sue flashing red lights at all times when traffic is usually light. This will reduce wait times and the temptation to race the lights.
- Suggest that a bike/ped advisory committee to provide ongoing input into bike & ped needs.
- Would be helpful to get bikes out first before turn signal happens so bike could get into lane to go across bridge onto Poplar or on the Red Jacket. None of this is addressed. It Is a safety issue.

- Connectivity & Safety are missing from the Red Jacket to the Minneopa trail. One will not go through Sibley to get there. A system down Riverfront or through Poplar & Monks up through Sibley, Woodland is needed. Also, the handover of 66 under bridge into corner is unsafe. A bike stoplight under 169 at Riverfront by YMCA would be helpful to get bikes out first before turn signal happens so bike could get into lane to go across bridge onto Poplar or on the Red Jacket. None of this is addressed. Is a safety issue.
- Use QR codes downtown to identify restaurants, bars, public parking, historical sites, art galleries, etc.
- West Mankato - there seems to be a lot of students/university employees that live here. Why are the hours so limited? Students at the university would consider both living downtown and taking the bus more if the bus ran past 5:30ish during the week.

CONNECTIVITY OPPORTUNITIES

- A bike lane will be added on Broad and hopefully increase bike traffic for residents and tourists but there are businesses along Riverfront that wouldn't have signage on Broad to indicate they are down the block. I propose way finding on Broad over 2nd St.
- Bike connection from Poplar to Children's Museum - for biking and outings to Children's Museum.

City of Mankato Complete Streets Resolution

RESOLUTION ADOPTING THE CITY OF MANKATO COMPLETE STREETS PLAN AND POLICY

WHEREAS, the City of Mankato recognizes that its transportation network (e.g., streets, sidewalks, trails and pathways) is intended to balance the needs and interests of all users of all ages and abilities; and

WHEREAS, streets are a key factor in the experience of the public realm and play a crucial role in economic development, public safety and health and overall quality of life; and

WHEREAS, the design and function of our streets has often favored the motorist over other users, notably bicyclists, pedestrians, transit users and persons with disabilities; and

WHEREAS, Active Transportation integrates physical activity into daily lives through increased emphasis on walking, bicycling, and public transportation; and

WHEREAS, Active Transportation improves public health, reduces traffic congestion, enhances air quality and supports local economic development; and

WHEREAS, the City of Mankato has recently completed a Complete Streets Plan and Policy which serves as a guide for public investment and incorporating multimodal transportation; and

WHEREAS, the City of Mankato seeks to create an interconnected network of transportation facilities which accommodates all modes of travel in a manner that is consistent with neighborhood context and supportive of community goals; and

WHEREAS, Complete Streets are defined as streets that are planned, designed, operated and maintained to enable safe access for all users and upon which pedestrians, bicyclists, transit users, persons with disabilities, and motorists of all ages and abilities are able to safely move along and across streets; and

WHEREAS, the City of Mankato seeks to establish a Complete Streets policy to incorporate Active Transportation into the planning, design and operation of all future City street projects whether new construction, reconstruction, rehabilitation, or pavement maintenance; and

WHEREAS, it is recognized that certain streets may not be feasible, whether physically or financially, for Complete Streets accommodation.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF MANKATO, MINNESOTA:

1. The City Council of the City of Mankato approves and adopts the Complete Streets Plan and Policy attached to this Resolution.

This resolution shall become effective upon its adoption.

Passed this 27th day of April, 2015

Eric T. Anderson
Mayor

ATTEST: Renae Kopischke
Renae Kopischke
Executive Secretary