

PART 4 Strategic Goals, Directions and Actions



- 4.1 Improve Connectivity
- 4.2 Improve Convenience
- 4.3 Improve Safety and Accessibility
- 4.4 Improve Operations and Maintenance
- 4.5 Improve Vibrancy
- 4.6 Improve Awareness





Strategic Direction 1 - Improve Connectivity

Expanding and enhancing the pedestrian and cycling networks is a fundamental part of making walking and cycling more convenient and attractive travel options in Winnipeg. The heart of Winnipeg's on-street pedestrian and cycling facilities include an extensive network of sidewalks, bicycles lanes, and bicycle boulevards, while the off-street network is defined by the expansive multi-use pathways that loop through and around different neighbourhoods, parks and open spaces of Winnipeg. Many Winnipeg residents enjoy walking and cycling in the City for both recreation and transportation purposes, due to the existing infrastructure, the pathway systems, the flat topography, and scenic riverfront and views offered up in many parts of the community. Nonetheless, there are still notable gaps in both the walking and cycling networks, which can make walking and cycling uncomfortable and create barriers to walking and cycling. A more integrated and connected network of both on and off-street facilities can significantly improve the ease of moving around the community, making travel on foot and by bicycle a more attractive alternative to driving. Further, providing a more comprehensive network will also uphold the commitments in OurWinnipeg, CCDS and the Transportation Master Plan to ensure opportunities for pedestrian and cycling mobility.

The City of Winnipeg has completed a number of projects and initiatives to make more bicycle and pedestrian-friendly environments, and by doing this, walking and cycling have gained considerable momentum within the transportation system in recent years. Some recent gains in regards to increasing bicycle and pedestrian network connectivity have come in the form of:

- ▶ \$80 million invested in pedestrian and cycling programs and initiatives since 2007;
- ▶ Appointment of an active transportation (Pedestrian and Cycling) coordinator;
- ▶ Establishment of an active transportation advisory committee (ATAC);
- ▶ Increased capital budget for annual pedestrian and cycling programs and initiatives;
- ▶ Leveraged funds from other levels of government to expand the network; and
- ▶ Increased public awareness of Pedestrian and Cycling initiatives.

Key Directions:

1A: Expand and Enhance the Sidewalk Network

1B: Expand and Enhance the Bicycle Network

1C: Address Barriers





Altogether, capital investments on active transportation-related infrastructure and programs have increased in Winnipeg in recent years, following the adoption of the 2005 Active Transportation Study, with investments increasing from \$300,000 per year in 2006 to \$3 million in 2009. Much of this increase in funding was due to stimulus funding received by the City for active transportation-related projects between 2009 and 2011 through a major one-time capital investment of \$20.4 million from the Federal Infrastructure Stimulus Fund which went into the active transportation network.

Neighbourhood Based Public Consultation

Public consultation, design and construction of pedestrian and cycling infrastructure can only be done effectively over several years. Furthermore, it is important that processes be found that are effective in getting neighbourhood participation in the planning and design of pedestrian and cycling opportunities.

The process is intended to be much more effective in getting neighbourhood participation in the planning and decision making process concerning plans to improve the ability of residents to use pedestrian and cycling as mobility options. The process is modeled after the teachings of the International Association for Public Participation (IAP2).

Public Participation is defined by IAP2 as any process that involves the public in problem solving or decision making and uses public input to make decisions. This includes all aspects of identifying problems and opportunities, developing alternatives and making decisions.

The best way to describe this process is to list the following core values which are intended to be followed:

- ▶ The public should have a say in decisions about actions that could affect their lives and neighbourhoods.
- ▶ Public participation includes the promise that the public's contribution will influence the decision.
- ▶ Public participation promotes sustainable decisions by recognizing and communicating the needs and interests of all participants, including decision makers.
- ▶ Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.
- ▶ Public participation seeks input from participants in designing how they participate.





- ▶ Public participation provides participants with the information they need to participate in a meaningful way.
- ▶ Public participation communicates to participants how their input affected the decision.

The planning of the details of the process will be determined largely through consultation with the participant stakeholders.



Under the strategic direction to improve connectivity in Winnipeg, the main focus is to expand and enhance the bicycle network, expand and enhance the sidewalk network, and to address barriers that create gaps in the network. Each of these themes are briefly summarized below, and described in further detail in the following sections.



The Pedestrian Network Today. There are currently approximately 2,550 linear kilometres of sidewalk in Winnipeg. The Development Agreement Parameters may require developers to construct and install sidewalks; however, as a general rule, sidewalks are not required on bays, crescents and cul-de-sacs. The City's Transportation Standards Manual sets out sidewalk requirements for new developments, based on land use and road class. In general, sidewalks are:

- Required on both sides of residential collector and arterial roads;
- Required on at least one side of industrial and commercial collector roads; and
- Not required on local streets unless certain volume, safety, or connectivity concerns exist.

The majority of streets in Winnipeg's Downtown and inner city neighbourhoods have sidewalks on at least one side of the street, whereas many newer neighbourhoods do not have sidewalks on either side of the street. In addition to sidewalk availability, the City's Universal Design Standards has specifications for sidewalk design. In particular, it requires that sidewalks should be a minimum width of 1.5 metres. Today in Winnipeg, approximately 93% of sidewalks are at least 1.5 metres in width; however, approximately 7% of sidewalks (or 175 linear kilometres) are narrower than the 1.5 metre requirement. Most of these narrow sidewalks are located in Winnipeg's older neighbourhoods.





The Bicycle Network Today. The City’s bicycle network encompasses nearly 400 km of bicycle facilities -- equal to roughly 8% of Winnipeg’s 3,100 km of streets and roads. Winnipeg’s existing bicycle network includes:

- **Off-street pathways**, which are largely shared with pedestrians and bicyclists. The foundation of Winnipeg’s bicycle network is its extensive system of off-street pathways built around parks, rivers and greenbelts. This system is comparable to that of other mid-sized cities in the Canadian prairies and U.S. midwest (such as Calgary, Minneapolis and Saskatoon) which have harnessed their natural terrain to create strong recreational cycling networks. Although the off-street pathway network is large (with 119 km of paved paths), its recreational function means that it often does not provide direct links between residential neighbourhoods and key destinations, meaning that bicyclists must often transfer to the on-street network to reach day-to-day destinations.
- **Neighbourhood Greenways**, also known as Bicycle Boulevards, make up about 15% of the city’s bicycle network, providing local neighbourhood connections, often on quieter and calmer streets that are parallel

to much busier roads. Some neighbourhood greenways are not optimized for bicycle travel, with inconsistent signage and pavement markings, gaps where the facility is dropped, and a lack of high-quality crossing treatments at arterials.

Table 4.1:
Winnipeg’s Existing Bicycle Network

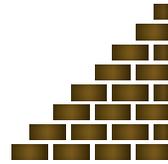
	% of Network
Multi-Use Path (paved)	47 %
Bicycle Boulevard	15 %
Multi-User Path (Unpaved)	11%
Bicycle Lane	10 %
Sharrow	9 %
Sunday Street Closure	4 %
Shoulder Bikeway	3 %
Protected Bicycle Lane	1%





- **Bicycle lanes** account for approximately 10% of Winnipeg's bicycle network. Bicycle lanes are extensive in Downtown Winnipeg, and many cyclists use the available bicycle lanes to get to and from key destinations in Downtown. However, some bicycle lanes end abruptly (i.e. Princess Street, McDermot Avenue) and are located on major streets, often next to parked cars, which are typically appealing only to more seasoned cyclists.
- **Separated bicycle lanes**, or protected bicycle lanes, are a relatively new component of Winnipeg's bicycle network and comprise only 1% of the City's network. There are three physically separated bicycle facilities in Winnipeg, including the Norwood Bridge, Assiniboine Avenue Bikeway, and the Pembina Highway buffered bicycle lane. The integration of separated bicycle lanes into the bicycle network is a current trend in many North American cities as they are viewed as the most desirable facilities by cyclists, and Winnipeg is ahead of other prairie cities regarding implementation of protected bicycle lanes. However, the effectiveness of these separated facilities in Winnipeg is limited by geographic coverage, as there are only 4 km of protected bicycle lanes in the City.

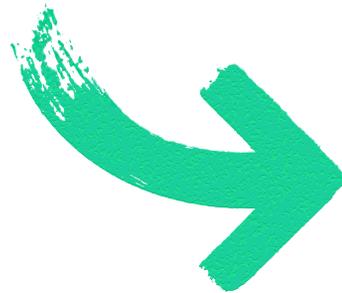
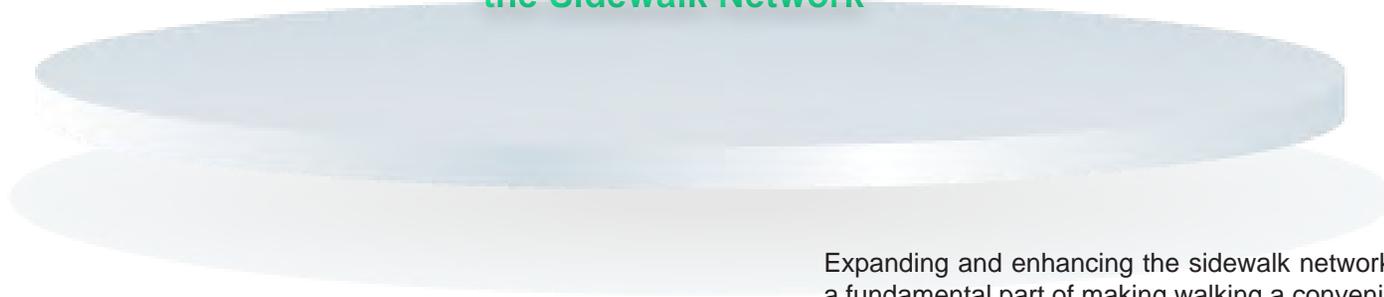




► **Barriers.** The Red and Assiniboine rivers as well as major thoroughfares and railways act as natural and physical barriers that create challenges in navigating Winnipeg by both walking and on a bicycle. Safe crossings are a main concern, and on a number of bridges, both pedestrians and cyclists must use the sidewalk to safely cross. This is a common source of conflict between pedestrians and cyclists. However, there are several pedestrian and bicycle only crossings in the City, including the Esplanade Riel and the recently opened Disraeli bicycle and pedestrian bridge. A key factor for bridge crossings for cyclists is the access and exit points. For example, in the case of the Norwood Bridge, the separated bicycle facility lacks a safe and smooth transition to the on-street shared use roadway. In addition to physical barriers, other network barriers are in place, as Winnipeg cyclists as part of the OttoCYCLE survey, identified major streets such as Pembina Highway, Portage Avenue, Osborne Street and St. Mary's Road as challenging cycling environments.



Key Direction 1A: Expand and Enhance the Sidewalk Network



Expanding and enhancing the sidewalk network is a fundamental part of making walking a convenient and attractive transportation choice in Winnipeg. The City of Winnipeg has an extensive sidewalk network, particularly within the Downtown core and mature neighbourhoods throughout the City. Even though the City has an expansive network of 2,550 linear kilometres of sidewalks, there are many gaps in the sidewalk network, as many large areas of the City do not have any sidewalks, particularly in many of the newer neighbourhoods throughout the City. A lack of sidewalks can discourage people from walking for more of their short local trips within neighbourhoods, as people are forced to walk on the street which can be perceived as less desirable and unsafe.



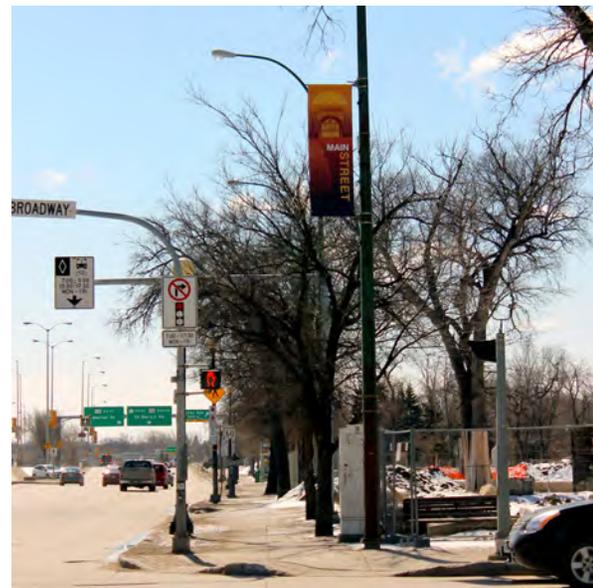


Sidewalks were one of the primary themes that emerged from the input and feedback received during public engagement for the Pedestrian & Cycling Strategies. In the on-line and telephone surveys, the theme of having more sidewalks was identified as one of the most common opportunities identified in Winnipeg. In fact, over half (53%) of telephone survey participants said they would walk more or much more often if sidewalks were added or repaired. Other key themes that emerged throughout the public feedback included requiring sidewalks on new streets, providing sidewalks in activity areas (i.e. schools, bus stops), more separation between pedestrians and motor vehicles on high traffic routes, and better sidewalk connectivity between neighbourhoods, and in high traffic areas.

One of the key components of a walkable neighbourhood is the sidewalk, as the sidewalk essentially functions as the roadway for pedestrians. Sidewalks have many advantages, including:

- ▶ They provide a safe travel area for all transportation system users who need to walk to their destinations or for part of their trip (e.g., people using wheelchairs, the elderly, people pushing strollers, people with visual impairments, children, and people who take the bus).

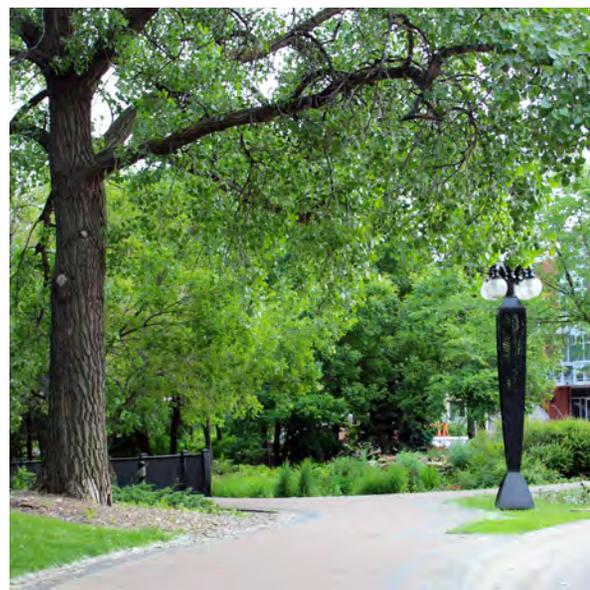
- ▶ Sidewalks significantly reduce pedestrian collisions with motor vehicles. Research has found that in residential and mixed residential areas, pedestrian collisions are more than two times as likely to occur at locations without sidewalks compared to locations with sidewalks.
- ▶ Sidewalks provide separation between motor vehicles and pedestrians.



A good sidewalk tends to have the following characteristics:

- ▶ It is wide enough to comfortably accommodate at least two adults walking side-by-side or two wheelchair users. This results in a minimum desired width of 1.8 metres. This minimum width refers to the path clear of obstructions such as garbage containers, newspaper bins, etc. However, whenever possible, a good sidewalk is wider than 1.8 metres to ensure that people can travel at slower speeds and still feel comfortable knowing that other sidewalk users can easily pass by.
- ▶ It has a buffer from the travel lanes and private property. This buffer separates pedestrians from moving traffic and reduces their exposure to debris, splashing, and perceived risk. Common buffers include planting strips, trees, parked vehicles, and bicycle lanes.
- ▶ Curbing to prevent vehicles and cyclists from encroaching onto it.
- ▶ Gentle cross-slopes (no more than 2%). This is particularly important for people in wheelchairs.
- ▶ Curb ramps at corners.

- ▶ Adequate lighting.
- ▶ Adequate maintenance. This includes continuity, where there are no gaps in the sidewalk network, as well as a smooth surface – free of dips, lifted sections, cracks and potholes. These deficiencies could become tripping hazards and barriers to people in wheelchairs, older pedestrians, children, and people with visual impairments.



Best Practices

Pedestrian Facilities



WIDE SIDEWALKS can create a more comfortable environment, providing enough space for people to walk side-by-side, allow space for people to pass each other, and allow enough space with those using mobility aids such as wheelchairs, walkers, and canes to safely navigate.



ACCESSIBILITY FEATURES Ensuring that accessible curb ramps, tactile surfaces, and accessible pushbuttons are provided throughout the walking environment is important to encouraging mobility for pedestrians of all ages and abilities.



CLEAR SIDEWALK WIDTH Ensuring that utilities, bus stops, and street furnishings do not reduce the sidewalk clear width is important to ensuring sidewalks remain accessible. Obstructions within the sidewalk zone such as light poles, overgrown vegetation, and bus shelters can be problematic especially for people using mobility aids.



LIGHTING Adequate lighting that illuminates the sidewalk and provides visibility of the surrounding area can prevent criminal activity and support a safer pedestrian environment.



WEATHER PROTECTION Ensuring that awnings and/or street trees provide a canopy over the sidewalk area can protect pedestrians from sun, rain, snow, and wind. In addition, it helps to frame the pedestrian environment and establish a pedestrian scale.



MAINTENANCE Sidewalk maintenance that address surface smoothness, cracks and upheaval can improve pedestrian accessibility.





The City of Winnipeg's 2012 Transportation Standards Manual sets out the City's sidewalk requirements for new developments based on land use and road classification as shown in **Table 4.2**. Sidewalks are not currently required on local streets unless certain volume, safety, or connectivity conditions are met. As a general rule, sidewalks are also not required on bays, crescents, and cul-de-sacs. However, sidewalks are required on both sides of residential collectors and arterials, and on at least one side for industrial and commercial collectors. The City has Development Agreement Parameters, which convey the general policy of the City toward new and infill development. According to this agreement, developers may be required to construct and install sidewalks along street rights-of-way as specified and designated by the City as per the sidewalk requirements of outlined in the City of Winnipeg's construction specifications.



Table 4.2:
Existing Sidewalk Requirements

Road Classification	Sidewalk Requirement	Number of Sidewalks
Public Lane	No	None
Residential Local	No, unless:	As Required
Industrial / Commercial Local	<ul style="list-style-type: none"> Land uses adjacent to the street are expected to generate high pedestrian and vehicular volumes: for example, schools, commercial areas, multiple family dwellings, recreational areas. There is a potential safety problem related to pedestrians. There is a need for sidewalk(s) to provide sidewalk continuity, safe routes to schools, commercial areas, transit routes, etc 	1 (at least)
Residential Minor Collector	Yes	2
Residential Major Collector	Yes	2
Industrial/ Commercial Collector	Yes	1 (at least)
Minor Arterial	Yes	2
Major Arterial	Yes	2
Expressway	No	As required

As can be seen in **Map 4.1**, the majority of streets within the Downtown core and many mature neighbourhoods within the inner City have sidewalks on one or both sides of the street, whereas the majority of streets within many of the newer neighbourhoods in the City do not have sidewalks on either side of the street. In comparison, with other cities across Western Canada, Winnipeg's sidewalk requirements for arterial and collector streets is fairly comparable as shown in **Table 4.3**. However, Winnipeg is one of the only cities that does not require sidewalks on at least one side of local streets, highlighting an area of improvement for the City to investigate in the future.



Map 4.1
Availability of Sidewalks in Winnipeg

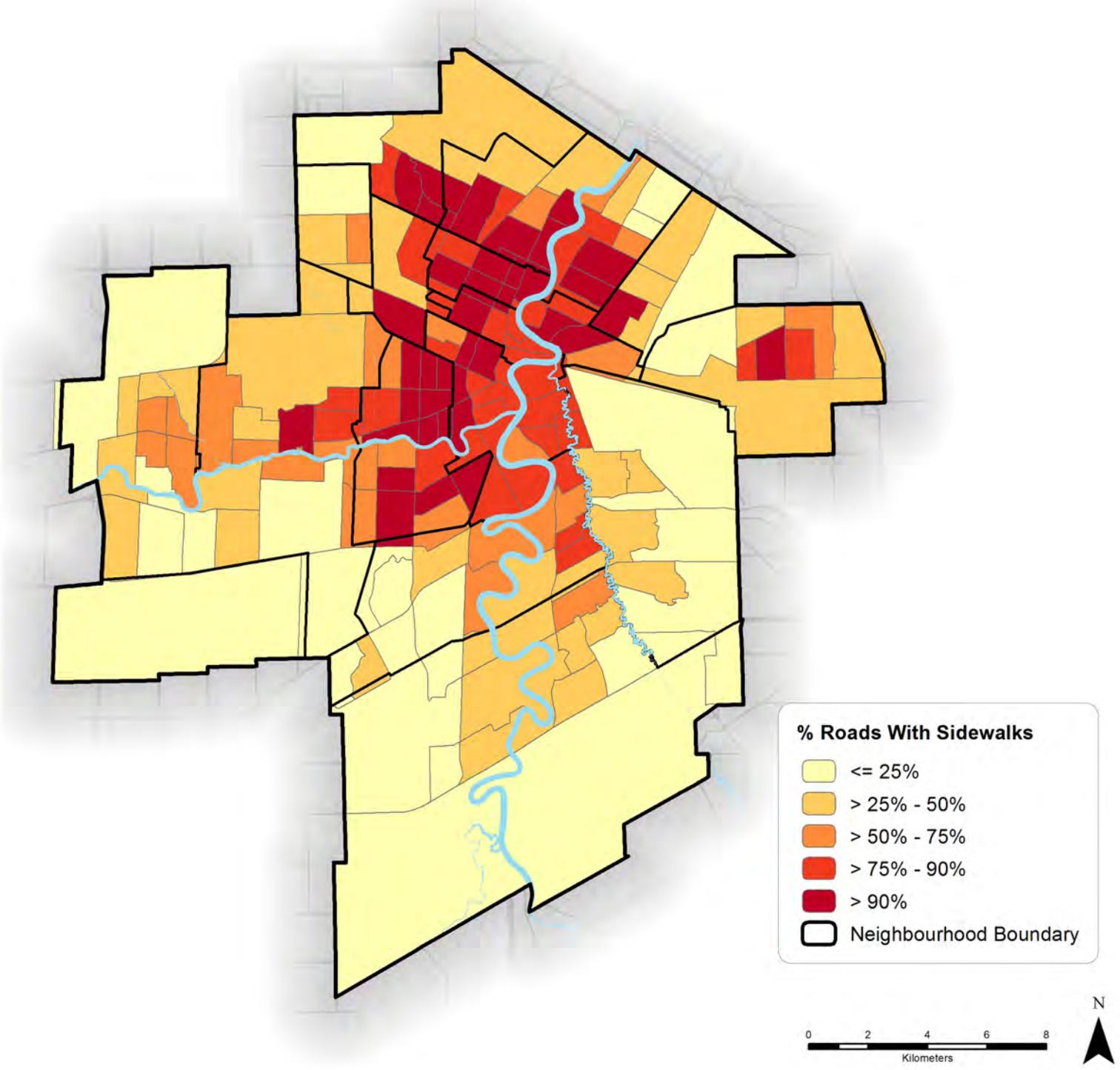


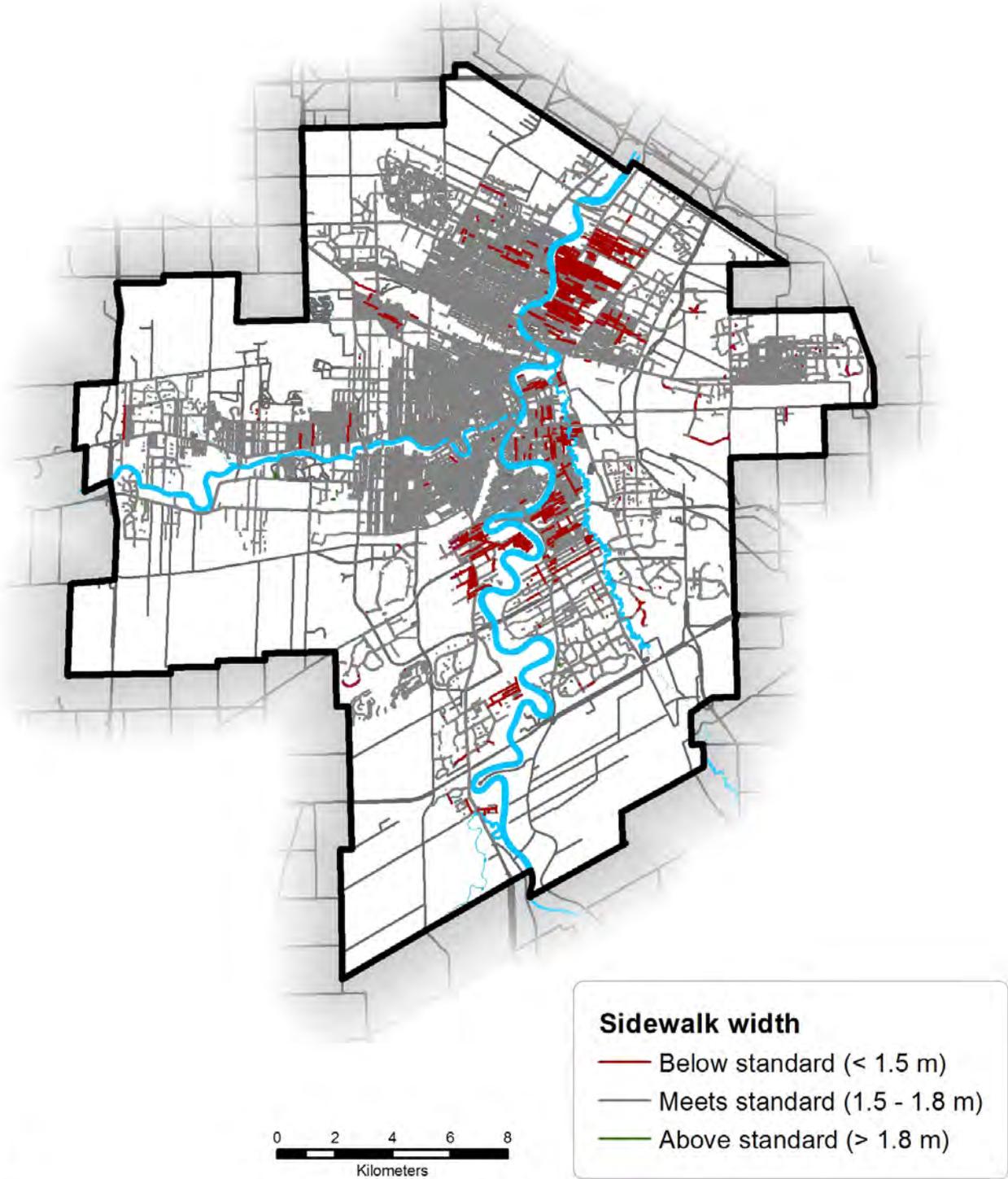
Table 4.3:
Sidewalk Requirements in Other Canadian Cities

Road Classification	City of Calgary	City of Regina	City of Edmonton	City of Saskatoon	City of Vancouver	City of Winnipeg
Highway	Not specified	Not required	Not specified	As per transportation plan	Not required	Not required
Arterial	Both sides	Both sides				
Collector	Both sides	Both sides	Both sides	Both sides	Aiming for 100% coverage	Both sides
Industrial	At least one side	At least one side	One side (including bus stop connecting walks on opposite side)	Both sides	Aiming for 100% coverage	At least one side
Bus Route	Both sides	Both sides	Both sides	Not specified	Aiming for 100% coverage	Not specified
Local	<ul style="list-style-type: none"> Both sides (when adjacent to multi-family, commercial and school sites) One side (Residential Streets) 	<ul style="list-style-type: none"> One side (roads >240m long) None (roads <240m long) 	<ul style="list-style-type: none"> Both sides unless otherwise approved Proposals of "Sidewalk on 1 side" must be able to demonstrate that mobility by all types of pedestrians is not significantly compromised 	At least one side	Aiming for 100% coverage	Not required, unless certain land use conditions are met
Cul-de-sac	One side with more than 20 dwelling units	Not required	Not specified	Not specified	Aiming for 100% coverage	Not required
Minimum Sidewalk Widths	1.1 m	Unknown	1.5 m	<ul style="list-style-type: none"> 1.5 m - local and collector 2.5 m - arterial 3.0 m - expressway 	<ul style="list-style-type: none"> 1.8 m single-family and multifamily with no commercial 5.5 m in commercial areas 	1.5 m

In addition, the City of Winnipeg's 2010 Accessibility Design Standards state that sidewalks shall have a minimum clear width of 1.5 metres. While 93% of sidewalks in Winnipeg meet this minimum width requirement, approximately 7% (or approximately 175 linear kilometres) are narrower than the desirable width. Most of these narrower sidewalks are located in Winnipeg's older neighbourhoods such as East Fort Garry (Wildwood and Crescent Park), Old St. Vital, Central St. Boniface, East Kildonan and North Kildonan. It should also be noted that just over 20% of Winnipeg's older population (people over 65 years of age) also live in these neighborhoods.



Map 4.2:
Current Sidewalk Width



The City of Winnipeg has two policies that govern the implementation of sidewalks in the City, as described below:

Sidewalk Local Improvement Policy

Funding of sidewalks for existing sites currently are based on the whether the street is classified as a Regional and or non-Regional street. The addition of new sidewalks on existing Regional streets is funded by the Capital Budget. The addition of new sidewalks on existing non-regional streets is typically funded using the Local Improvement Program. New sidewalks have been also been installed on non-Regional streets in the last few years through identifying them through the AT Action Plan, which is council approved, therefore granting authority to use capital funds in lieu of the Local Improvement Program. Those locations were mainly identified through neighborhood based public consultation or safe routes to school programs.

The Local Improvement Program is regulated by By-Law No.98/72 and an issue with this policy is that the financial assessment is for the fronting properties however the sidewalk serves a larger population for where it is needed. Changes in sidewalk needs in established neighborhoods have evolved mainly for the following reasons:

- ▶ Older City standards had no requirement for sidewalks on Industrial Locals/Collectors. These streets typically see the highest number of Transit users for accessing employment but there are no sidewalks to provide connections to the transit stops.
- ▶ The City is trying to encourage active modes of transportation, including children walking or using transit to school.
- ▶ There are new traffic issues for existing established neighborhoods, where traffic patterns, volumes and population densities have changed, and therefore the need for a safe and dedicated pedestrian facility now has become more apparent or a higher priority.

The addition of new sidewalks on collector streets that provide a benefit to the larger community to encourage and support transit usage and walking to work or school, and those identified through neighborhood based public consultation programs, should be including at the time the road is renewed or funded through a new non-regional sidewalk program. The Local Improvement program for new sidewalks should remain to provide the public with an opportunity to have a sidewalk installed that is either not rationalized through the Strategies or is a low priority.



Table 4.4:
Suggested Sidewalk Requirements for Winnipeg

Road Class	Land Use	Sidewalk Requirement	Number of Sidewalks
Public Lane	All	No	None
Local	Residential	Yes, if adjacent land use is a school	2
		Yes, and on both sides of the street if, <ul style="list-style-type: none"> • Adjacent land use includes multi-family dwellings and commercial sites • Connectivity is needed to a transit stop, including access from the frontage road to the bus stop • Connectivity is needed to recreational areas • There is a potential safety problem related to pedestrians 	1 (at least) 2
		No, for cul-de-sacs	None
	Commercial	Yes, and on both sides of the street if, <ul style="list-style-type: none"> • Connectivity is needed to transit stops • There is a potential safety problem related to pedestrians 	1 (at least)
	Industrial	Yes, and on both sides of the street if, <ul style="list-style-type: none"> • Connectivity is needed to transit stops • There is a potential safety problem related to pedestrians 	1 (at least)
Collector	Residential	Yes	2
	Commercial	Yes	2
	Industrial	Yes	1 (at least)
Arterial	All	Yes	2
Expressway	All	No	As required



Table 4.5 summarizes the significant differences between current practice in Winnipeg and the recommended changes and the rationale for these differences.

Table 4.5:
Major Suggested Changes to Sidewalk Requirements

Suggested Change	Rationale
Sidewalks should be provided on both sides of local residential roads when adjacent land use is a school	Children may not have the mental capacity, maturity, or experience to determine where to cross the street. Providing sidewalks on both sides can help mitigate the risk of children jaywalking.
Sidewalk connectivity is required for all transit stops	Although the current requirements in Winnipeg include language about transit connectivity, the suggested changes explicitly identify this as a criterion. This is particularly important for industrial areas where many workers commute to work using transit and require sidewalks to perform the first and last part of their commute. The absence of sidewalks in these areas requires pedestrians to share roads with large trucks and potentially at high peak period traffic volumes.
Access should be provided between frontage roads and bus stops	This change follows the requirement that all transit stops must be connected with sidewalks but is more specific in requiring access between the frontage road and the transit stop. This requirement recognizes the difficulty in accessing transit stops on frontage roads, particularly in the winter and especially for seniors or pedestrians with physical impairments.
Sidewalks should be provided on both sides for commercial collectors instead of at least one side	Commercial areas can often include pharmacies, walk-in medical facilities, grocery stores, and other essential destinations. For certain segments of the population (e.g., low income, senior), trips to these amenities must be made by walking. Given the importance of accessing these areas, sidewalks on both sides are recommended for commercial collector roads.



Active Transportation Policy

In 2008, City Council adopted a policy to incorporate Active Transportation facilities into any reconstruction or rehabilitation required on any infrastructure identified as an Active Transportation facility in the Active Transportation Network. This policy was originally formulated through the first principle of the 2005 Active Transportation Study which was that the City of Winnipeg adopt Active Transportation principles as an integrated part of doing business. At that time the Active Transportation Network addressed primarily the needs of cyclists. Through these Strategies the City will separate the pedestrian and cycling networks to address their inherent different needs. With the planning of the pedestrian and cycling facilities now planned to be separate, changes to how sidewalks are funded for local streets will need to be revised.

Actions

It is recommended that the City update its existing practices regarding new sidewalk requirements, in collaboration with relevant stakeholders, with recommended criteria for prioritizing sidewalk construction and maintenance in Winnipeg.

As noted above, sidewalks are a critical component of the pedestrian network and are important in enabling people to walk within and between neighbourhoods and to improve pedestrian safety,

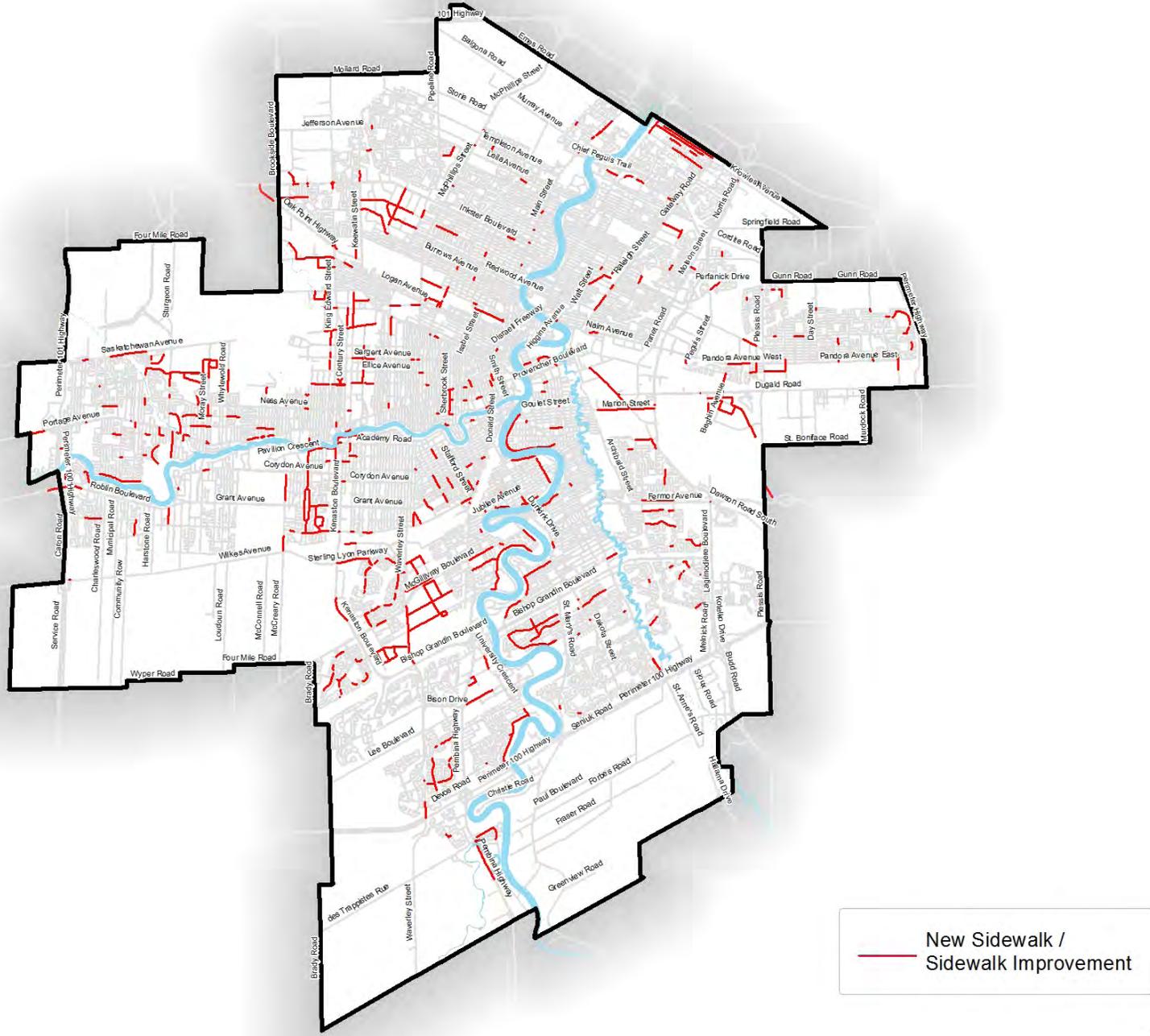
among other things. The following actions are recommended for expanding and enhancing the sidewalk network in Winnipeg:

Update Sidewalk Requirements for New Developments. Currently, industrial and commercial roads are treated the same regarding sidewalk requirements. Local residential roads are also treated similarly to local industrial and commercial roads. There is an opportunity to consider each road classification differently and recognize the different uses and impacts each road classification has on walking. For example, it is reasonable to expect residential and commercial areas to be accessible by walking; however, industrial areas are often accessed by motorized vehicles, particularly transit, although sidewalks may be required to provide access from the bus stop to the final destination.

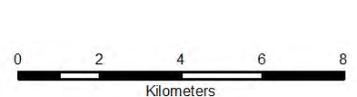
Table 4.4 recommends new sidewalk requirements based on the current practice in Winnipeg and current practices elsewhere in Canada. Sidewalk widths should follow the City of Winnipeg's Universal Design Standards. These standards require 1.9 metre wide sidewalks as part of the public right-of-way within the Winnipeg Downtown Core Area and 1.5 metre wide sidewalks as part of the public right-of-way outside of the Winnipeg Downtown Core Area. These are minimum widths; however, a width of 1.9 m is preferred throughout the City to accommodate all users including people in wheelchairs that may need to pass each other.



Map 4.3:
Proposed Sidewalks



— New Sidewalk /
— Sidewalk Improvement



Eliminate gaps in the sidewalk network on major roads. Many major roads throughout the City do not have sidewalks on both sides of the street. From a safety and accessibility perspective, it is important to provide sidewalks on these arterial streets with higher traffic speeds and volumes. The City should work to eliminate gaps in the sidewalk network on all major roads, including regional roads, arterial roads, commercial and industrial collector roads, bus routes, and truck routes.

Develop a sidewalk infill program. In addition to sidewalk gaps on major streets, there are several other areas of the City where sidewalk coverage is limited, fragmented, or non-existent. On local streets, the City should work to strategically implement new sidewalks in areas of higher pedestrian demand, including schools, seniors centres, hospitals and other key destinations and to address gaps in the sidewalk network.

Widen and improve sidewalks. In addition to providing new sidewalks, the City should work to improve existing sidewalks, including ensuring all sidewalks meet or exceed the City's minimum width requirements. The City should develop a sidewalk improvement program to widen sidewalks that do not meet the minimum standards, and should provide wider sidewalks where feasible in areas of high pedestrian activity, including the downtown; regional, community and neighbourhood mixed use centres and corridors.

Map 4.3 demonstrates examples of locations on collector and arterial streets in established areas that have either a gap in the sidewalk network or require sidewalks on transit routes. Missing sidewalks on local streets are not presented but should be added to represent the findings from various neighborhood based public consultations such as the Safe Routes to School program.

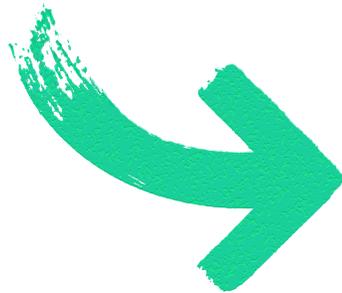
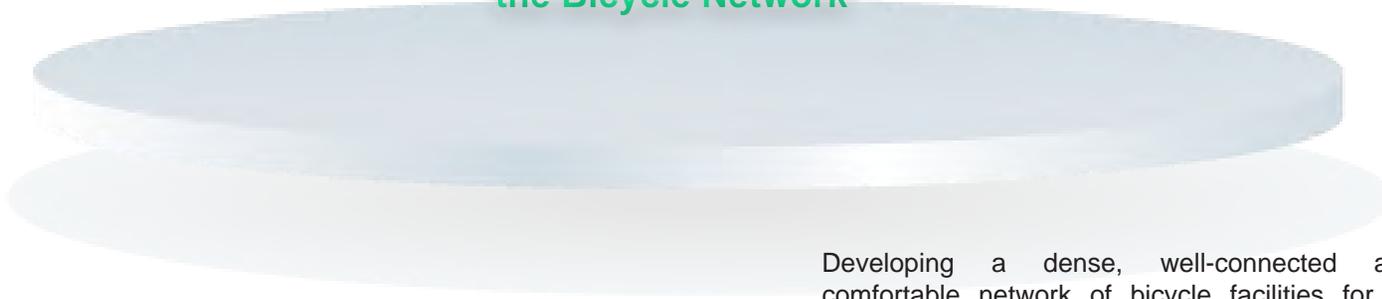


Key Direction	Actions
1A. Expand and Enhance the Sidewalk Network	i Update sidewalk requirements for new developments in consultation with relevant stakeholders.
	ii Eliminate gaps in the sidewalk network on major roads, including regional roads, arterial roads, commercial and industrial collector roads, bus routes, and truck routes.
	iii Develop a sidewalk infill program in the capital budget to provide sidewalks on local roads in areas around schools, seniors centres, hospitals and other key destinations and to address gaps in the sidewalk network.
	iv Develop a sidewalk improvement program to widen sidewalks that do not meet the minimum standards. Ensure all sidewalks meet the City's minimum width standards.
	v Provide wider sidewalks where feasible in areas of high pedestrian activity, including the downtown as well as regional, community and neighbourhood mixed use centres and corridors.
	vi Seek strategic opportunities to implement new sidewalks through partnerships, other capital projects and programs and development opportunities on non-regional roads.
	vii Develop a process to identify priorities for sidewalk implementation based on walking potential equity, connectivity, comfort and cost.





Key Direction 1B: Expand and Enhance the Bicycle Network



Developing a dense, well-connected and comfortable network of bicycle facilities for all users is critical to enabling cycling. Winnipeg has an extensive bicycle network, including over 400km of on-street and off-street bicycle facilities. However, there are many areas with no bicycle facilities, as well as numerous significant gaps in the existing bicycle network. Expanding and enhancing Winnipeg's bicycle network will require a combination of strategies, from upgrading existing facilities and closing spot gaps, to building new bikeways. Above all else, a well-designed cycling network needs to be highly visible, intuitive, and provide links between origins and destinations throughout the community. Ideally, a cycling network should be designed to serve users of all ages and abilities, offering practical route options for those who are comfortable riding in motor vehicle traffic but especially those who are not.



1.0 Network Planning Principles

The long-term bicycle network was developed as a result of a collaborative planning process involving both extensive public input and technical analysis. The overall purpose of expanding and enhancing the bicycle network is to recommend the appropriate location and facility type in order to plan, design, and ultimately build the long-term bicycle network. The long-term bicycle network was developed based on a series of network planning principles as described on the following pages.



A Dense Network

Research conducted by the Cycling in Cities Program at the University of British Columbia has found that, while comfortable cycling facilities are important, bicyclists need to be able to access these routes quickly and easily. The study found that bicyclists are unlikely to detour more than approximately 400 metres to find a route with a bicycle facility. As a result, the study concluded that a bicycle route network with designated facilities spaced a minimum of every 400 metres apart should be the goal for urban areas. As such, the recommendations for Winnipeg are to strive for minimum network spacing of 400 metres in areas with the highest cycling potential, which includes the Downtown core and many mature neighbourhoods with the highest cycling potential. Elsewhere in the City, the bicycle network plan has strived for a minimum network spacing of 800 metres. **Map 4.4** illustrates the current bicycle network spacing based on these guidelines, which can help the City identify gaps in the bicycle network and areas to consider focusing future investments.

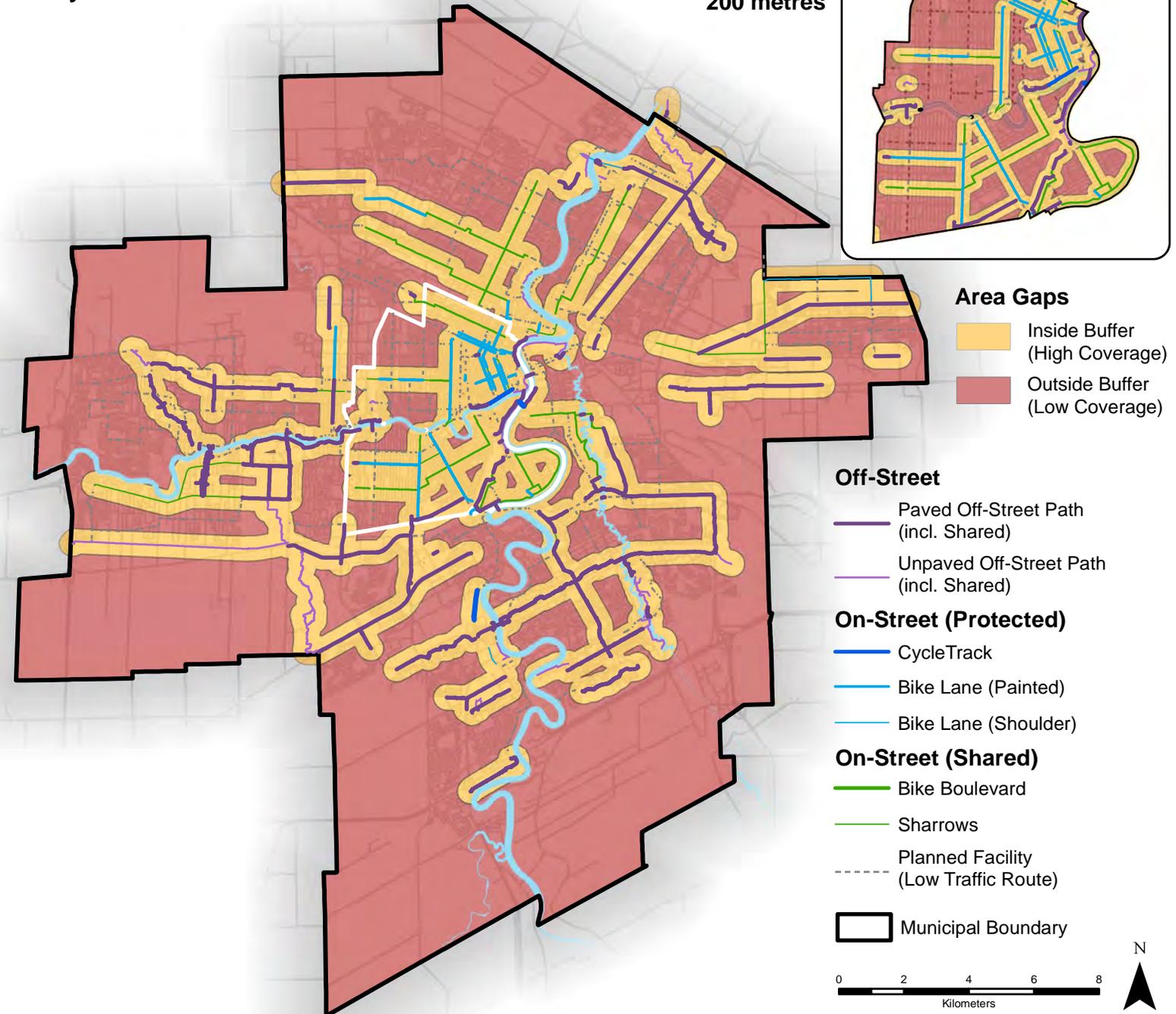


Map 4.4:
Existing Bicycle Network Buffer Map

Area Gaps

► Citywide Network Buffer: 400 metres

► Downtown
Network Buffer:
200 metres



Area Gaps

- Inside Buffer (High Coverage)
- Outside Buffer (Low Coverage)

Off-Street

- Paved Off-Street Path (incl. Shared)
- Unpaved Off-Street Path (incl. Shared)

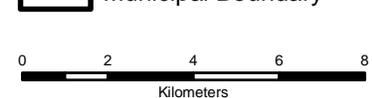
On-Street (Protected)

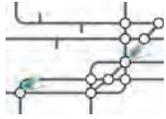
- CycleTrack
- Bike Lane (Painted)
- Bike Lane (Shoulder)

On-Street (Shared)

- Bike Boulevard
- Sharrows
- Planned Facility (Low Traffic Route)

Municipal Boundary





A Well-Connected Network

In addition to developing a bicycle network with regularly spaced bicycle routes to ensure all residents are within a reasonable distance to a bicycle route, it is also critical that bicycle facilities are direct and provide connections to key destinations. Providing direct routes that connect to key destinations will ensure that bicycle travel times are competitive with automobiles. With this in mind, the bicycle network plan has been designed to encourage the City to develop a network comprised of spine routes, supplemented with stub routes providing connections between bicycle routes. This not only connects bicycle routes, but allows cyclists to make connections to other key community destinations. The long-term bicycle network has been designed to ensure connections are provided to major destinations, including:

- ▶ Downtown Core, including connections to the downtown as well as within the downtown;
- ▶ Mixed Use Centres and Corridors;
- ▶ Post-Secondary Institutions, including the University of Manitoba, University of Winnipeg, Universite de Saint-Boniface, and Red River College;

- ▶ Commercial Nodes, including major shopping areas such as Polo Park Shopping Centre and Kildonan Place Shopping Centre;
- ▶ Rapid Transit stations and high activity bus stops;
- ▶ Schools;
- ▶ Parks;
- ▶ Community facilities, such as libraries, community centres, and stadiums; and
- ▶ Hospitals.

It is also important that the on-street bicycle network is integrated with the off-street bicycle network.



A Comfortable Network

To develop more comfortable bicycle facilities across a wide range of conditions found within Winnipeg's network, the City needs a larger toolbox of cycling facility types. There are a number of types of bicycle facilities that the City can consider for different contexts, as shown in the visual summary on the following page.



Visual Summary

Bicycle Facility Types



OFF-STREET PATHWAYS are physically separated from motor vehicles and provide sufficient width and supporting facilities to be used by cyclists, pedestrians, and other non-motorized users. Off-street pathways can have paved or unpaved surfaces. Pathway surfacing plays a large role in comfort for cyclists, with paved or firm surfaces often preferable for cyclists use, including asphalt, stone dust, fine limestone, or gravel screenings.



PROTECTED BICYCLE LANES are physically separated from motor vehicle travel lanes but are located within the road right-of-way. Protected bicycle lanes are a hybrid type bicycle facility combining the experience of an off-street path with the on-street infrastructure of a conventional bicycle lane.



BICYCLE LANES are separate lanes that are designated exclusively for bicycle travel and also include pavement markings.



BUFFERED BICYCLE LANES provide more protected space for cyclists than a conventional bicycle lane, typically through a painted buffered or 'shy' zones on one or both sides of the cyclists.



Visual Summary

Bicycle Facility Types



NEIGHBOURHOOD GREENWAYS, also known as, Bicycle Boulevards are routes on streets with low vehicle speeds and volumes, which include a range of treatments ranging from signage and pavement markings to varying degrees of traffic calming implemented to improve safety for cyclists and other road users.



DIAMOND LANES are reserved for busses and bicycles, and provide direct routes for experienced cyclists along the outer lane of a roadway. The intent of diamond lanes is to create a means of increasing both the speed and reliability of transit service while providing a safe lane for cyclists to ride.



SHOULDER BIKEWAYS, or paved shoulders, are typically found on streets or bridges without curb and gutter with shoulders wide enough for bicycle travel. Shoulder bikeways often, but not always, include signage alerting motorists to expect bicycle travel along the roadway.



SHARED USE LANES provide direct routes for experienced cyclists along the outer lane of a roadway. While cyclists mix with motor vehicle traffic, they are separate from pedestrians using the sidewalk .





The bicycle facilities within this toolbox have varying levels of appeal for different users. Bicycle facilities that are physically separated from motor vehicle traffic, such as off-street pathways and protected bicycle lanes, are generally the most comfortable, along with neighbourhood greenways, which are located on streets with lower traffic speeds and volumes. In general, each type of bicycle facility can be located on a comfort continuum. Facilities along this comfort continuum have different levels of appeal for different users. Not all types of these facilities necessarily meet the needs or appeal to all users. A significant amount of research has found that three types of facilities in particular are most effective at attracting bicyclists of all ages and abilities:

1. Off-street pathways
2. Protected bicycle lanes
3. Neighbourhood greenways

Research at the Cycling in Cities Program at the University of British Columbia found that these three types of facilities are most effective because they are the **most preferred types of facilities** by all groups, including men and women, and among both regular cyclists and non-cyclists; and that they are also **the safest types of facilities**.



Given these findings, off-street pathways, protected bicycle lanes, and neighbourhood greenways have been identified as the most beneficial in terms of increased user comfort and attracting more people to cycle in Winnipeg. The benefits of these facilities are summarized below:

- ▶ **Off-street Pathways** are seen to have relatively high effectiveness for cyclist safety, as they create a safer environment by providing separated and designated spaces for pedestrians and cyclists without interaction with motorized vehicles. In general separated bicycle and pedestrian pathways are seen to have a higher benefit for cyclist (and pedestrian) safety, as separated pathways for pedestrians and cyclists reduces conflict and interaction between the two modes.
- ▶ **Protected bicycle lanes** are extremely effective at improving cycling safety and play a significant role in increasing bicycle ridership, particularly among the interested but concerned market. Within North America, protected bicycle lanes are seen as an effective way to have people of all ages and abilities cycle on busier streets. Protected bicycle lanes have been shown to significantly increase bicycle ridership within one year of installation from between 20 to 170%, with the increase coming from both new cyclists and other who diverted from nearby streets. Studies have also shown

a significantly reduced injury risk associated with protected bicycle lanes compared to other types of facilities and improved safety not only for cyclists but for all road users. In addition, protected bicycle lanes can also improve conditions for pedestrians by significantly decreasing cycling on the sidewalk, and also create a more predictable traffic environment for drivers of motor vehicles by removing the bicycles from the motor vehicle lanes and the sidewalk.



- ▶ **Neighbourhood Greenways** are also a preferred type of bicycle facility and can improve cycling safety. Neighbourhood greenways can include traffic calming to reduce vehicle speeds, allowing vehicles more time to notice cyclists and reduces injury severity when crashes do occur. Neighbourhood greenways also tend to incorporate measures that reduce vehicle volumes, reducing potential conflicts between motorists and cyclists.

Developing a network that feels comfortable for people of all ages and abilities will require providing these facilities that have the highest benefits for cycling safety, and are the most successful at attracting more ridership. Focussing on providing off-street pathways, protected bicycle lanes, and neighbourhood greenways where possible will ensure that the highest standards of quality and comfort are provided throughout the network. This means that for busy streets and other street contexts, off-street pathways will be used where there is enough space, with the highest level of separation possible from different users. Protected bicycle lanes or buffered bicycle lanes will also be used where possible on busy streets to ensure cyclists are separated from motorists. On local streets, neighbourhood greenways will be used, with pavement markings, signage, and traffic calming where needed to ensure low traffic volumes and speeds.

However, as part of a comprehensive bicycle network that meets the needs of all users, there is still a place for all types of bicycle facilities, including bicycle lanes, diamond lanes, and paved shoulders. Although the emphasis of the bicycle network plan is on comfortable bicycle facilities, these are complemented by other types of facilities to create a comprehensive network.

Many cities are focusing on these three types of facilities – off-street pathways, protected bicycle lanes, and neighbourhood greenways – to develop an “All Ages and Abilities” (or “AAA”) network, as described below.

Further details regarding each type of facility are provided in the visual toolboxes on the following pages.





Best Practices

Cities Focussing on AAA Network



SEATTLE'S bicycle network is over 300 miles in length, and is comprised mainly of bicycle lanes, shared lanes, and signed routes. The 2013 Bicycle Master Plan establishes a “city-wide network” targeted at riders of all ages and abilities, composed of on and off-street facilities, protected bicycle lanes, and neighbourhood greenways. A complementary local connector network is similarly comprised of the most comfortable bicycle facilities, but some segments have more conventional bicycle treatments.



MINNEAPOLIS The City of Minneapolis is a leader in year-round bicycle planning, with a city-wide bicycle plan that calls for 43 miles of on-street bicycle lanes and 84 miles of off-street trails. The City is also focussing on neighbourhood greenways to complement the network, as these are seen as a “gateway” for attracting people who are intimidated to ride on busy streets. Newer boulevards are incorporating more traffic calming features than existing bicycle boulevards, and a key feature of the bicycle boulevards is integration with the trail network wherever possible.



VANCOUVER The backbone of the City of Vancouver’s bicycle network is a system of over 400km of neighbourhood greenways. Using a combination of traffic calming measures and diversions, vehicle volumes and speeds are kept low so that cyclists feel comfortable and safe using these routes. The City also has posted all greenways at 30 km/hr to reinforce safety for vulnerable road users. The City has been complementing the network with protected bicycle lanes, placed within the downtown core and other high traffic corridors to promote safe ridership along busy streets. As a result of these initiatives, Vancouver is widely regarded as one of the most bicycle-friendly cities in North America.



CALGARY The City of Calgary adopted a City Centre Protected bicycle lane Network to provide more separated facilities in the downtown core. Protected bicycle lane will connect to many destinations, such as office buildings, commercial districts, arts and recreation places, and residential communities. The City has since opened the 7 Street SW cycle track, the first of the future protected bicycle lane network, which will see a series of east-west and north-south protected bicycle lanes throughout the downtown.



Toolbox

Neighbourhood Greenways



ROUTE SIGNAGE In many cases, neighbourhood greenways can be implemented easily and with low cost with the application of bicycle route signage to identify the road as a bicycle route.



PAVEMENT MARKINGS In addition to signs, bicycle pavement markings can be placed on the roadway to identify the route as a neighbourhood greenway. Bikeway pavement markings in North America are not as highly standardized, and as a result, cities are still experimenting with different designs.



TRAFFIC CALMING treatments do not restrict motor vehicle access but are effective in reducing speeds and volumes and improving safety for pedestrians and cyclists, and can include diverters, traffic circles, speed humps, and curb extensions.



SPEED RESTRICTIONS The City of Vancouver has posted all neighbourhood greenways at 30 km/hr, to further reduce speeds and created a calmed traffic environment that is safe and comfortable for both pedestrians and cyclists.



INTERSECTION TREATMENTS The critical locations on a neighbourhood bikeway are where these facilities intersect major roads. Crossing treatments can be used to assist cyclists, pedestrians and others in crossing major roads, and to minimize potential conflicts with motor vehicles. The range of crossing treatments that are typically considered where neighbourhood greenways intersect major roads are median islands, signalized crossings, and loop detectors.



TRAFFIC DIVERSION measures refer to devices that restrict motor vehicle movement at intersections, while allowing unrestricted movements for cyclists and pedestrians. This include diverters, directional closures, right-in/right-out islands, and refuge median islands.

Toolbox

Protected Bicycle Lanes



CONCRETE BARRIERS provide a solid separation between cyclists and motorists, with a sense of permanence, but can often be easily removed if needed.



ELEVATION The most expensive form of separation is to elevate the entire length of the protected bicycle lane, with the exception of major crossings. This includes separate drainage on the protected bicycle lane, such as it is done in Copenhagen, and to some degree in the Netherlands.



BOLLARDS An inexpensive form of horizontal separation can be using bollards or delineator posts. These can be cheap, simple, and quick solutions to separation, and can have the same impact of making cyclists feel adequately separated from vehicles. Typically bollards can be used for pilot projects, and then once the protected bicycle lane is established, a more permanent type of separation can be installed.



PARKED CARS Using a 'floating' parking lane as separation has the advantage of being relatively inexpensive barrier between cyclists and motor vehicle traffic. With a floating parking lane, cyclists are placed on the right side of parked cars (curbside, adjacent to the sidewalk), removing them from the risk of driver's side 'dooring'.



VISUAL / SURFACE TREATMENTS Some cities have differentiated protected bicycle lanes from pedestrian facilities through providing different visual treatments such as pavers and surface materials. This distinguishes between areas for pedestrians and cyclists, and can be enhanced with landscaping features to further separate users.



PAINTED BUFFER A cheaper solution to separation is providing a hatched painted area, that provides extra space between cyclists and vehicles, but is permeable by vehicles.







Crossing Treatments

The critical locations throughout the network in particular are where bicycle routes intersect with major roads. At these areas, there is a need for treatments that distinguish cyclists and separate bikeways at intersections. As an intersection is the interchange between motorists, pedestrians, and cyclists, it is important that intersections with bicycle facilities have treatments to reduce conflict between bicyclists and other road users. Treatment should serve to increase the level of visibility, denote clear right-of-way and facilitate eye contact and awareness with other modes. Intersection treatments can improve movements for bicyclists, and can be coordinated with timed or specialized signals. Crossing treatments to improve safety at an intersection for bicyclists can include elements such as colour, signage, medians, signal detection and pavement markings. The type of treatment required depends on the bicycle facility, whether there are intersecting bicycle routes, street function and land uses. Some examples of crossing treatments that can be used throughout Winnipeg include:



Visual Summary

Bicycle Crossing Treatments



COLOURED CONFLICT ZONE MARKINGS can be used at intersections, driveways, merge areas and other conflict zones to raise visibility of cyclists and to highlight areas of potential conflicts.



DASHED BICYCLE LANE MARKINGS through intersections serve to position cyclists appropriately as they traverse the intersection and to alert motorists of the potential presence of cyclists in the intersection.



BICYCLE BOXES can be used at signalized intersections to provide cyclists an opportunity to position themselves ahead of queued vehicles, and to proceed through the intersection when the signals turn green in advance of vehicles.



ENHANCED BICYCLE SIGNAL CROSSINGS can include full signals or pedestrian and bicycle activated signals which can be activated by a cyclists using a range of technologies, such as bicycle loop detectors, bicycle pushbuttons, or video detection at traffic signals. Dedicated bicycle signal heads can also be considered.



TWO-STAGE MEDIAN CROSSINGS or refuge islands, are positioned in the middle of the roadway, allowing cyclists to cross the road in two stages instead of one. The median refuge islands provides cyclists (and pedestrians) the ability to safely wait in the middle of the road, before making the second stage of their crossing. This allows cyclists to deal with one direction of traffic flow at a time.



CROSSBIKES or crossrides, are pavement markings that indicate a crossing zone in which a cyclist does not need to dismount. These pavement markings may be combined with a pedestrian crosswalk or may be used to indicate a separate bicycle crossing.

2.0 Prioritizing the Network

The combination of public input and technical analysis has informed a foundation of network planning principles to guide the development of the bicycle network layout and facility selection in Winnipeg. These principles were determined in order to ensure appropriate network coverage that complements the road network, a variety of facility options that appeal to different users, and equitable and convenient access to the bicycle network for all Winnipeggers.

The City should plan the bicycle network and target infrastructure improvements where there is the greatest opportunity to increase the number of cycling trips. Tapping into the larger potential market of the interested but concerned segment represents the greatest opportunity to get more Winnipeggers to cycle. To do this, planning the bicycle network requires care, thoughtfulness, intention, and attention to detail to consistently provide a high-quality experience and environment where anyone riding a bicycle expects and trusts that they can make their trip comfortably from start to finish in every part of the city. Four guiding principles – **network connectivity, equity, cycling demand and potential**, and **cost efficiency** – have been used to guide the development and prioritization of Winnipeg's bicycle network. Using these planning principles, Winnipeg's bicycle network planning aspires to:



30
MacLean
Crescent



Four Guiding Principles



-  ▶ Enhance **network connectivity**. While opportunistic development has been a large driver of construction to date, emphasizing network connectivity means that the bicycle network plan will stitch together existing discontinuous bicycle routes, while expanding the connected system and making navigation easier. This is consistent with feedback from Winnipeggers during public consultation. An important aspect of connectivity is the degree to which the network serves important destinations. Thus, in addition to stitching the existing network into a cohesive whole, achieving network connectivity involves extending the network into the areas where people want to go.
-  ▶ Address **equity**. Bicycling is one of the most affordable forms of urban transportation. Though bicycling has played a large role in recreation in recent memory, its importance as an integral and affordable part of the complex urban transportation system has been rediscovered. Equitable access for all people means that people in all neighborhoods can successfully complete a bicycle trip. In Winnipeg, many households do not have access to a car; many residents are too young or too old to drive or are incapable due to illness or disability; or are simply unwilling to drive. Transportation choices for these users



may include walking, riding a bicycle, taking transit or carpooling. The bicycle network plan strives to achieve equity in two ways – through bringing cycling infrastructure to populations with limited transportation choices, and by distributing infrastructure evenly throughout the city.

- **Population Equity.** There are communities in Winnipeg that would especially benefit from increased transportation options, and a more comprehensive and accessible bicycle network can increase mobility for all populations. In particular, the cycling network must be designed to serve historically under-served populations, including low income households, aboriginal populations, immigrant populations, and people over 65 years old and under 19 years old who have unique mobility needs.
- **Geographic equity.** The bicycle network should provide equitable coverage throughout the City, allowing residents in all areas of the City to have reasonable access to the bicycle network. Also, the bicycle network should be designed to distribute high quality facilities across the city so residents can reach all destinations.

▶ Target areas of potential **high cycling demand** within the bicycle network. Winnipeg's geography and patterns of urban development indicate various levels of cycling potential; some areas people are cycling to and some areas people are primarily cycling through. Land uses in Winnipeg vary across the city from areas with low residential density and disconnected street grids to dense areas with mixed land use. Areas with a variety of land uses, dense population, and moderate topography tend to have the most potential for cycling activity. This plan strives to unleash the pent up demand in areas of the highest cycling potential and nurture increased activity in areas with less inherent cycling activity.

▶ Be **cost efficient**, recognizing that bicycle network projects should provide significant potential benefit for project cost. Striping bicycle lanes, installing traffic calming, wayfinding and signage, and improving trails are typically considered cheaper improvements in relation to constructing new roads, while some bicycle projects, such as bridge structures, can tend to be more costly. While in some cases the total project cost may be more expensive, such projects may have a lower relative cost when the number of people benefitting in a day or year is calculated.



By striving to meet these guiding principles, Winnipeggers in coming years will find bicycle travel within the city to be an increasingly viable option.

3.0 Recommended Bicycle Network

Overall Concept

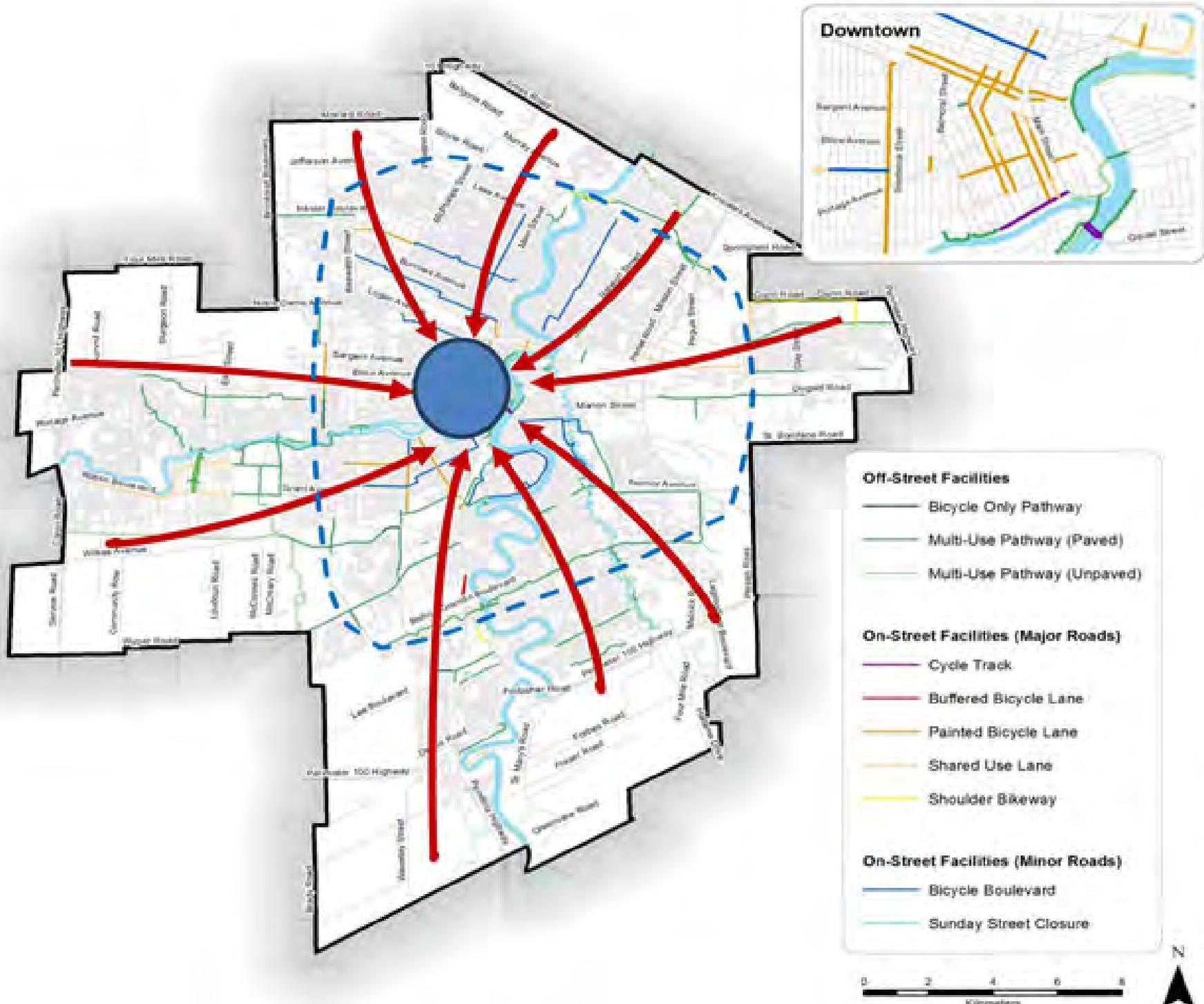
The proposed bicycle network is based on a **'hub and spoke' concept**. This hub and spoke concept is based on creating a City-wide network of high quality facilities that are attractive to people of all ages and abilities. This **City-wide 'hub and spoke' network** will:

- ▶ Create a network of high-quality routes downtown;
- ▶ Establishing bicycle arterials along key corridors that connect downtown with all neighbourhoods and Regional Mixed Use Corridors and Centres; and
- ▶ Developing a cycle ring to provide inter-neighbourhood connectivity and connect with other key destinations throughout the City, including Regional Mixed Use Corridors and Centres.

The 'hub and spoke' City-wide network would be completed by a local network of routes throughout the City that would feed into this City-wide network and connect with other destinations throughout the City.



Map 4.5:
Hub and Spoke Network Concept



This overall City-wide network concept for the bicycle network seeks to connect cyclists to a variety of Downtown and major regional centres and corridors throughout the City, including:

Regional Mixed Use Centres

-  Polo Park Area
-  McPhillips & Leila Area
-  Regent / Lagimodiere Area
-  St Vital Centre
-  Kenaston/ McGillivary Area
-  Kenaston /Sterling Lyon Area
-  Portage Avenue West / Racetrack Road
-  Downtown

Regional Mixed Use Corridors

-  Pembina Highway
-  Portage Avenue
-  Main Street
-  Henderson Highway
-  St. Mary's Road
-  St. Anne's Road
-  Nairn/Regent Avenue West



By ensuring that the City-wide bicycle network connects to these key regional centres and corridors, the network will connect residents to the prominent commercial and employment destinations within Winnipeg. To complete the hub and spoke network, a combination of protected bicycle lanes, neighbourhood greenways, and off-street pathways will be used to ensure that neighbourhoods are connected to the clusters of employment areas and other destinations using high quality facilities that are attractive to people of all ages and abilities. There will be some segments that will be served with conventional bicycle treatments, however, it is recommended that the City prioritize development of radial network or 'spines' of high quality, arterial street bike routes that are comfortable for all users, which emanate from downtown and serves each quadrant of the City and links to adjoining communities.

In general, people of all ages and abilities should be able to access all major destinations using the recommended bicycle network. To support this hub and spoke concept, a complementary **local bicycle network** will also provide neighbourhood-specific bicycle routes. Similarly, the local connecting routes will parallel the overall hub and spoke network, but will serve primarily local destinations and routing and will bring cyclists to the major routes that have city-wide connectivity. Local connecting routes will be composed of bicycle facilities that are appropriate for people of all ages and abilities where possible.

The recommended bicycle network in Winnipeg is comprised of both on-and off-street facilities and seek to apply high quality facilities for a complete, connected and dense bicycle network throughout the City. The recommended bicycle network will support a higher density of routes in urban centres and areas of high cycling potential, with a less dense network in areas with lower cycling potential. Especially in areas of high cycling demand, bicycle facilities should be protected from vehicle traffic and comfortable for all users. While implementing the recommended bicycle network will take time, it is important to seize opportunities at the time of new road construction and road rehabilitee projects to install bicycle facilities. The key components of the proposed bicycle network are described below:

- ▶ **Protected bicycle lanes.** Recognizing that these are the facilities most likely to attract and encourage more ridership in Winnipeg, there are 77.7 km of protected bicycle lanes proposed/upgraded within the recommended network, a significant increase from the existing 4 km in Winnipeg today. These facilities are focussed primarily in areas with high cycling demand and potential, and where vehicle speeds and volumes are high. As one of the highest quality facilities, it is recommended that a dense network of protected bicycle lanes be focussed within the downtown core, as enhancing the existing bicycle network within the Downtown core is accommodating of the





GARRY ST.

PHARMACEUTICALS

↑
EXCEPT BUSES AND CYCLISTS

Red traffic light
Red bicycle symbol

Canada Post logo

particularly high demand and cycling potential within the area. In particular, developing a spine network of protected bicycle lane facilities in the Downtown core will be very attractive to the interested but concerned group.

The bicycle network plan identifies the development of a downtown protected bicycle lane network, which would include upgrading existing painted bicycle lanes to protected bicycle lanes, as well as identifying new protected bicycle lanes. Many of these streets provide connectivity to important areas of Downtown, such as The Forks, the Exchange District, the Civic Centre, the MTS Centre, the Graham Ave Transit Mall, and the riverfront pathways.

In addition to the downtown network, protected bicycle lanes are proposed on several other major streets, with key examples including:

- A protected bicycle lane along the length of **Pembina Highway** could attract more ridership on this key north-south route that connects Winnipeg's Fort Gary and River Heights neighbourhoods to Downtown. This is an important desire line within the transportation network for all users, and providing a safe bicycle facility can attract more people to cycle to access key destinations, areas of employment, and the

services and amenities in south Winnipeg. The City recently opened a bicycle buffered lane on both sides of the street on Pembina, for a 2 km stretch between University Crescent and Markham Road.

- A protected bicycle lane proposed on **University Crescent** (south of Pembina Highway) would serve to provide a safe route to and from the University of Manitoba, connecting into the existing buffered bicycle lanes on Pembina Highway and providing a north-south route connecting downtown and the university neighbourhoods.
- A protected bicycle lane on **Wellington Crescent**, between Kenaston Boulevard and the Maryland Street bridge would fill in a gap in the network by providing a continuous connection along the south side of the Assiniboine River. This facility would connect in the west to the east-west pathway network that connects into Assiniboine Park.
- **St. Matthews Avenue** protected bicycle lane would fill in a network gap between Downtown and the St. James / Assinibonia and neighbourhoods, as well as the Polo Park area. This facility would support east-west network connectivity across central Winnipeg.



► **Off-Street Pathways** make up the majority of Winnipeg's bikeway network today, accounting for 58% of the network. These facilities, typically shared with pedestrians, are excellent recreational opportunities, and many pathways take users along meandering routes along scenic attractions such as the Red River and Assiniboine River. For the most part, the pathway network does not provide direct links between residential neighbourhoods and commercial and institutional destinations. For this reason, Winnipeg has an opportunity to upgrade its path network, harnessing its potential for commuting and everyday trips and serving as a "backbone" for the bicycle network. There are many natural opportunities to expand the pathway network in Winnipeg by taking advantage of opportunities within existing rail right-of-ways, surplus road right-of-ways, planned rapid transit corridors, parks and open space trails, and new road and road upgrade construction projects to create new pathway connections. It is a key that Winnipeg's pathway network develops over time to become increasingly well integrated with on-street routes as well, so it can better serve utilitarian trips as well as recreational trips. Some of the key pathway improvements proposed in Winnipeg that involve enhancing existing pathways include:

- **Chief Peguis Trail extension.** This trail already provides an east-west connection through the River East neighbourhoods, and a further western extension of the trail is proposed, in conjunction with road building. This trail already has an important role in the north part of the 'cycle ring' envisioned for Winnipeg, and extending this trail west can build upon that concept.
- **Bishop Grandin Greenway Trail** is one of Winnipeg's longest multi-use pathways, spanning over 12 km and serving as a multi-use active transportation corridor in south Winnipeg. The trail currently connects from Sage Creek in the east, to Charleswood. With future development anticipated in west Winnipeg, a possible trail connection could be established, extending the Bishop Grandin Greenway west into the rural areas south of Wilkes Avenue. This would also effectively allow the Bishop Grandin Greenway to complete a key part of the cycle ring around Winnipeg.

Other opportunities exist for establishing altogether new off-street pathways. These can include building upon opportunities for new pathway development, such as:







- **Rail Right-of-Ways** in northwest and northeast Winnipeg that have wide rights-of-way and advantageous linear alignments can establish strategic pathway connections throughout north and east Winnipeg. Similar to the approach taken on the Raleigh Street-Gateway, these rail rights-of-way can be used for pathway development to create better connectivity in the Seven Oaks, Inkster, River East, and Transcona neighbourhoods. The Chief Peguis trail and future expansions also intersect with many of the rail corridors, and can enhance connectivity even more in north Winnipeg.
- **Utility rights-of-way.** There is a power line corridor running diagonally through the Seven Oaks neighbourhoods in north Winnipeg (parallel to McPhillips Street). This is a sufficiently wide right-of-way, and establishing an off-street pathway can provide a safe connection for north-south bicycle travel.
- **New road construction** throughout the City, including in neighbourhoods such as west Transcona and River East, should incorporate parallel pathways to tie into existing pathway networks.



- **Rapid Transit corridors** should include either off-street pathways or protected bicycle lanes incorporated into the design.
- ▶ **Neighbourhood Greenways** are the most common type of facility within the recommended network, along with off-street pathways. Neighbourhood greenways are most suitable for non-arterial streets, using signs, pavement markings, traffic calming measures and specialized crossing treatments to discourage through-trips by motor vehicles and prioritize bicycle connectivity, while accommodating local access. Known commonly as bicycle boulevards, more cities are renaming these facilities as local street bikeways, quiet streets, or neighbourhood greenways, in an effort to emphasize the broader benefits of such routes and to appeal to a larger demographic.

Neighbourhood greenways currently represent a small proportion (39 km or 15%) of Winnipeg's bicycle network. While these neighbourhood greenways generally provide comfortable connections for cyclists, the network is not extensive and it is often difficult to cross busier

roads. The recommended bicycle network seeks to expand and enhance the coverage of neighbourhood greenways, building off the natural advantage that many of Winnipeg's, mature, central communities are constructed on a grid street network pattern that is conducive to a network of neighbourhood greenways due to connected permeable blocks and parallel routes adjacent to major streets. A number of dense residential neighbourhoods in Winnipeg's urban core, including Point Douglas, Seven Oaks East, River Heights and St. Boniface West, are well-suited to an extensive neighbourhood greenway network. Throughout Winnipeg's neighbourhoods outside of the core, greenways have been recommended for several local and collector streets that either parallel major roads and/or provide important local level connections.



Multimodal Corridors

Some streets will accommodate bicycle facilities easily within their existing right-of-way, while others may be more challenging due to limited right-of-way. The recommended bicycle network has identified what streets in particular will need to have an established process to consider the mobility of all modes and competing needs when implementing bicycle facilities. These corridors are designated on the recommended network map as needing “detailed corridor review” and include Henderson Hwy, St. Anne’s Road, St. Mary’s Road, segments of Portage Avenue, Grant Avenue and Osborne Street. These corridors can be considered as “multimodal” corridors as they are some of the city’s main travel corridors, serving vehicles, trucks, transit, pedestrians and cyclists alike. Ultimately, these corridors serve a variety of demands from all these users which may constrain bicycle facility development on the existing roadway.

Each of these corridors will require more in-depth analysis either through specific corridor studies, alternatives analysis, and/or project development and design process. Recognizing that these corridors serve desire lines within the bicycle network, these studies can seek to understand whether cyclists can be accommodated on these corridors, or on alternative routes with less competing mobility needs and demands.





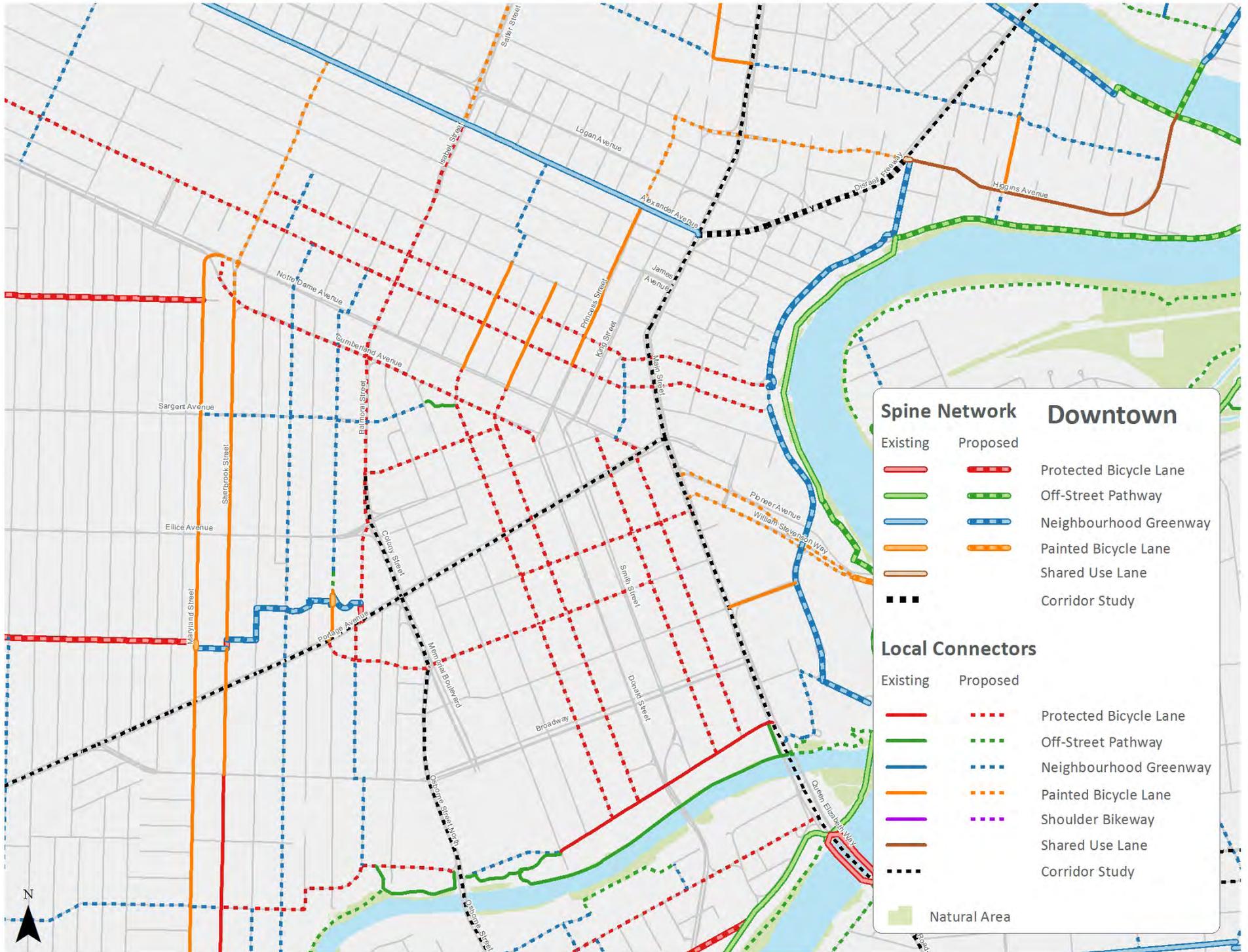
Supportive Policies and Programs

While providing bicycle facility infrastructure is a huge component for the bicycle network, there are also some internal City policies and practices that can provide the City with guidance as it works towards building out the bicycle network. These include:

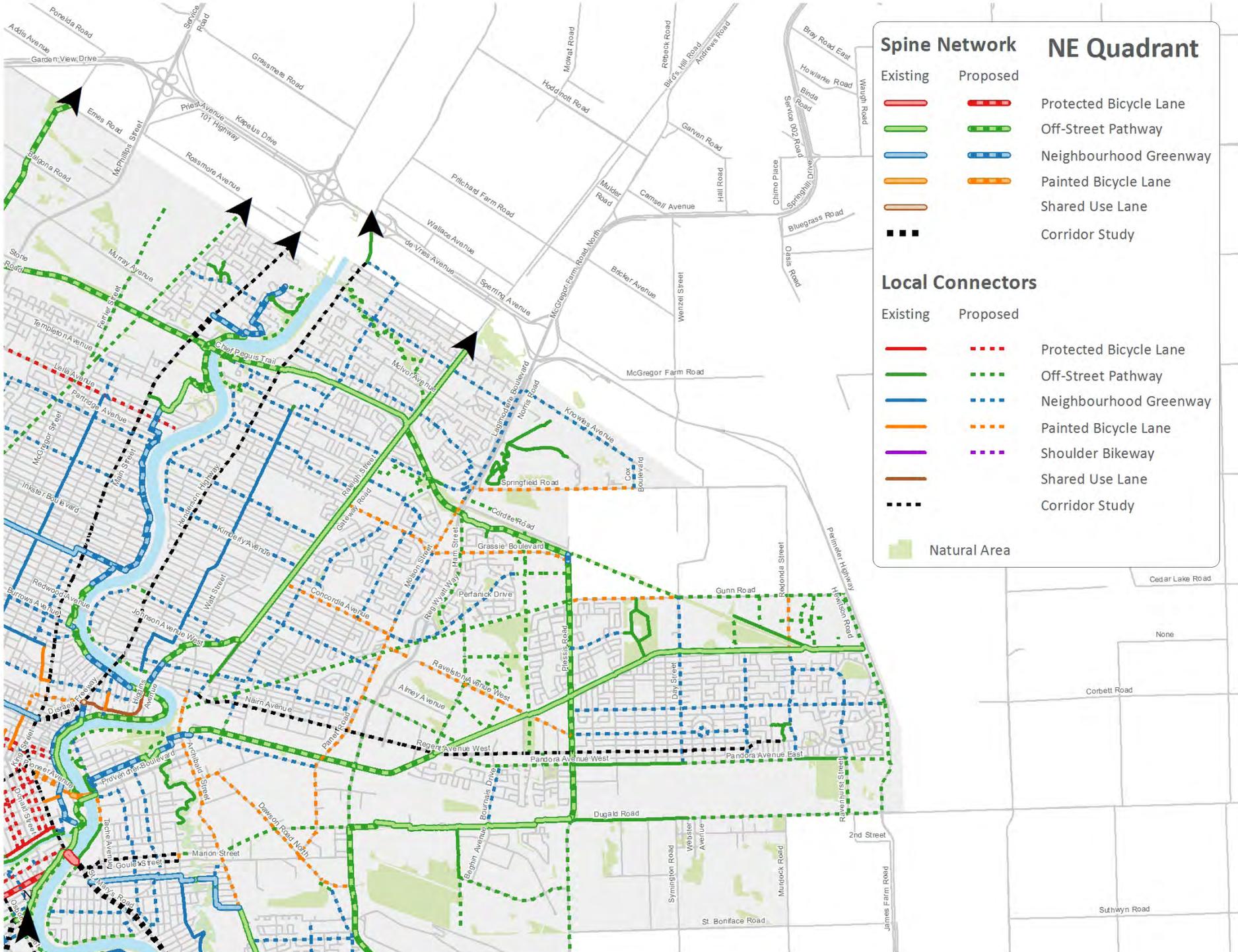
- ▶ **Develop and implement bicycle facility design guidelines.** The City should develop design guidelines for high quality bicycle facilities based on best practices in other communities. The City should construct and upgrade designated cycling routes to a consistent standard that meets or exceeds local and national design guidelines and which utilizes design options that have been successfully implemented elsewhere in North America but which are not available in local or national guides.
- ▶ **Develop a spot improvement program for existing bicycle facilities.** In addition to expanding the bicycle network, the City should develop a spot improvement program to improve existing bicycle facilities. Approach expansion and upgrades of the network in a consistent manner, closing gaps where they exist and prioritizing areas of higher potential demand and addressing areas identified as zones of caution or with a high proportion of collisions involving cyclists.
- ▶ **Make roads more accommodating to cyclists** by removing channelized right-turn lanes where feasible and reducing turning radii to discourage high speed turns, adding pavement markings to highlight conflict zones, and by providing traffic calming and bike permeable traffic diversion on local streets.
- ▶ **Update the City's Transportation Standards Manual (TSM) to incorporate cycling facilities.** The TSM is intended to serve as a design aid for designers and planners working on construction or rehabilitation of transportation facilities in the City of Winnipeg. By incorporating bicycle facilities into the TSM, this can ensure that additions and modifications to the bicycle network are designed and constructed in a consistent manner from one part of the city to another, and in conformance with current transportation design practices and trends.
- ▶ **Design new neighbourhoods to include cycling routes** that are well integrated with the existing cycling network in order to avoid costly retrofits and to facilitate cycling as a viable transportation option for all residents.



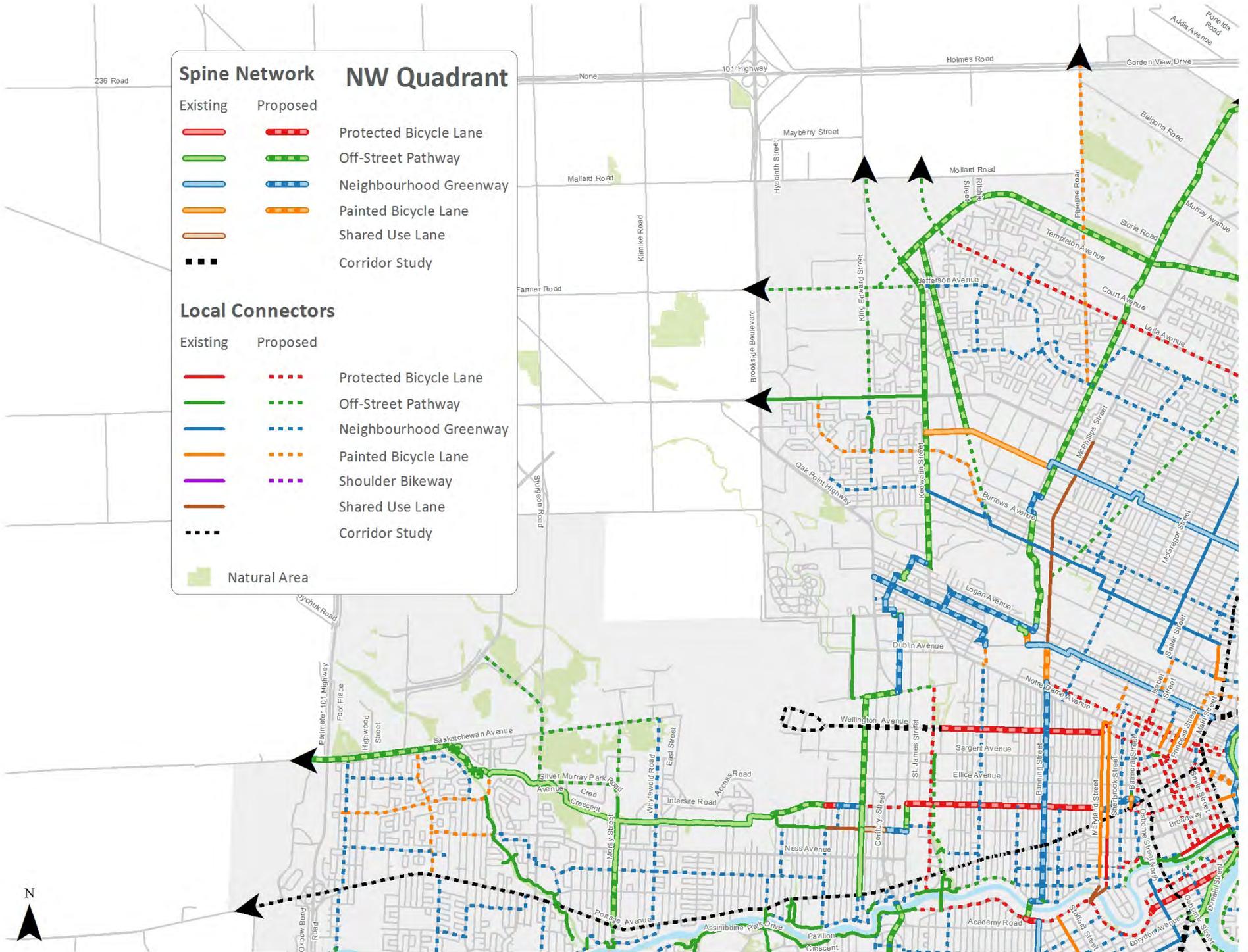
Map 4.6:
Downtown Neighbourhood Map



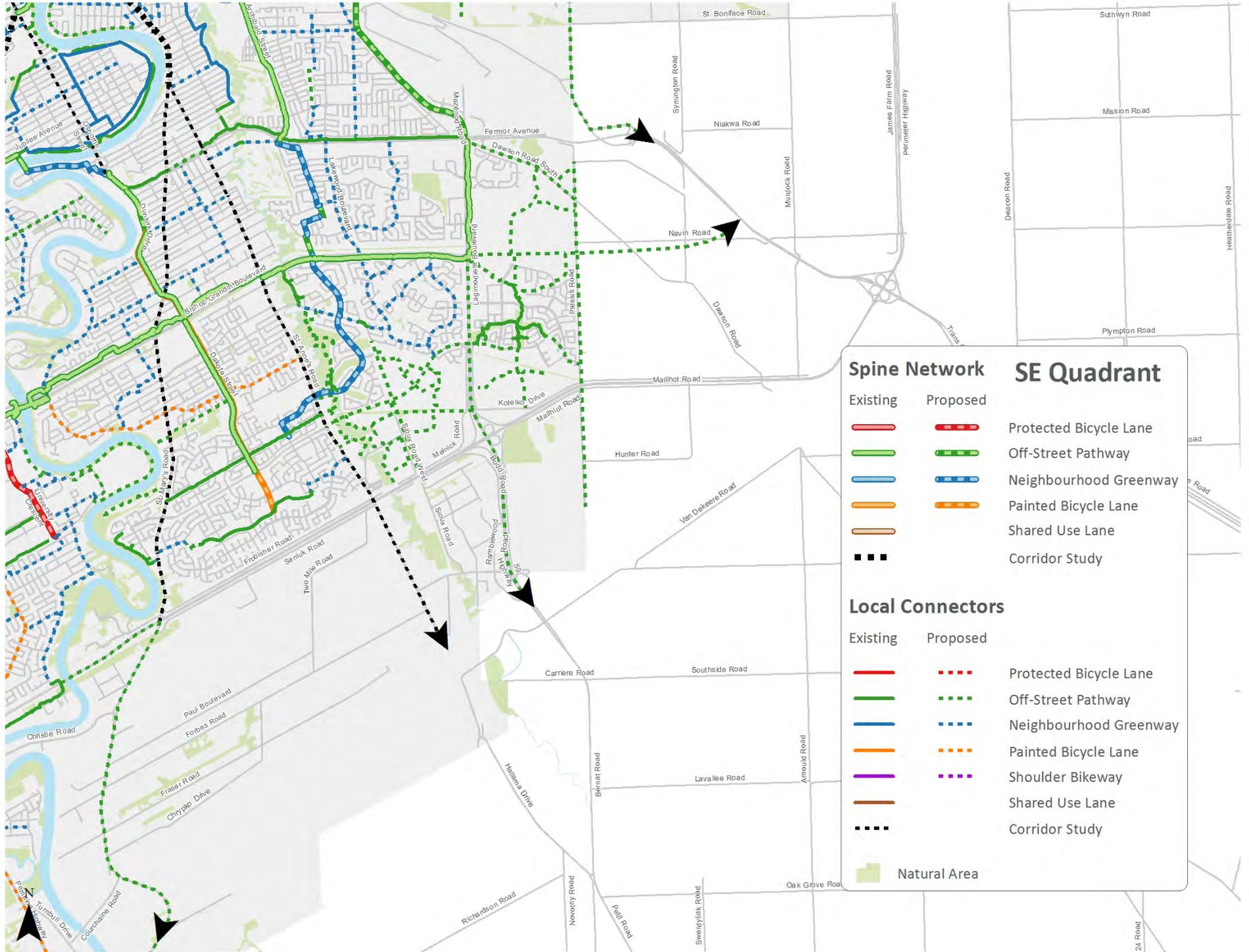
Map 4.7:
North-East Neighbourhood Map



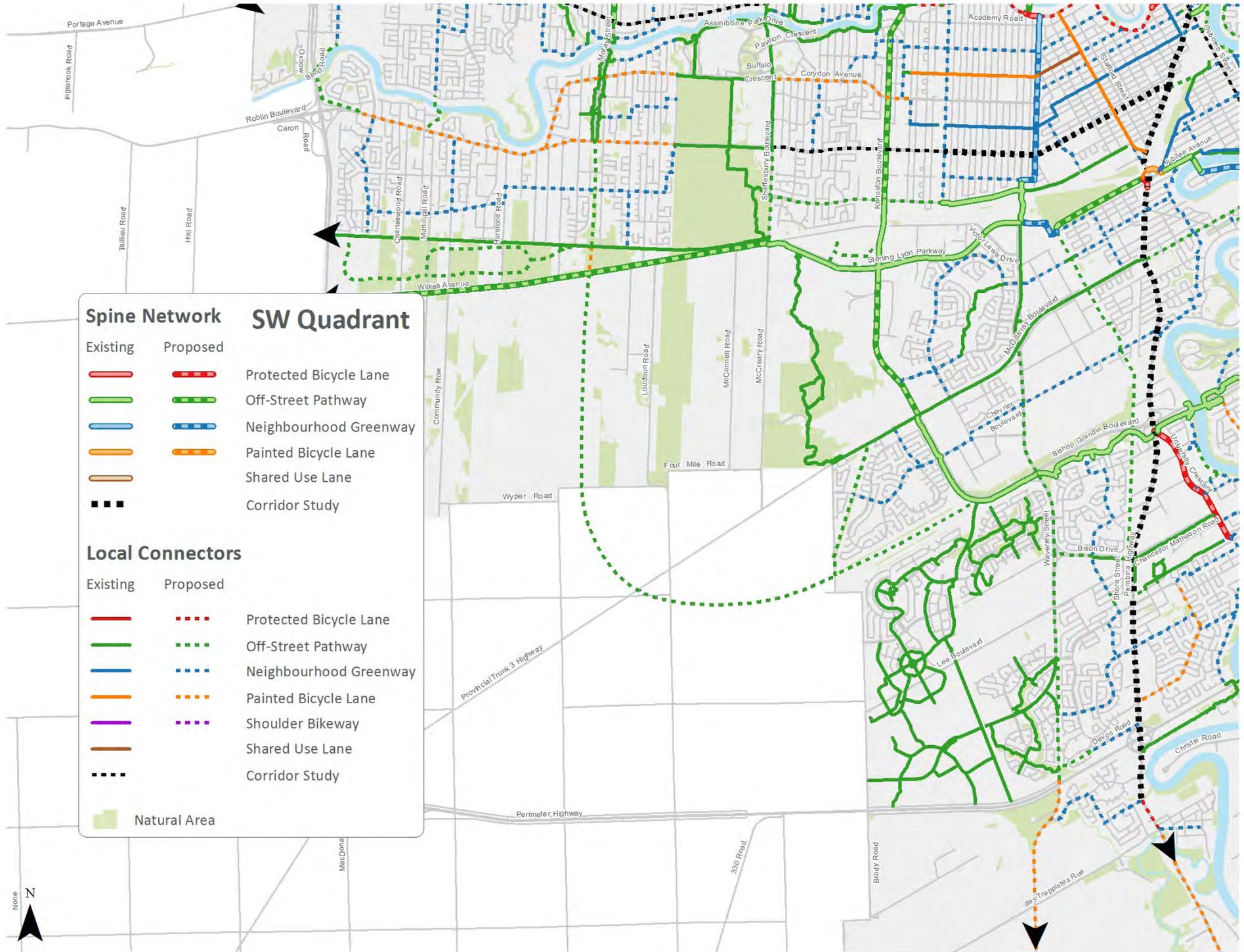
Map 4.8:
North-West Neighbourhood Map



Map 4.9:
South-East Neighbourhood Map



Map 4.10:
South-West Neighbourhood Map



Map 4.11:
City-Wide Long-Term Bicycle Network





ORANGE VILLAGE BUN

RIV

strobel

MEDI SUSHI

THE CHINESE RESTAURANT

Bangkok

ROOSTER

MEDI SUSHI

777

metro

Key Direction**1B. Expand and
Enhance the
Bicycle Network**

- i** Develop a complete, connected, and dense bicycle network throughout the City.
- ii** Develop a Downtown separated bicycle lane network.
- iii** Develop a spine network to provide high quality connections to Downtown from each area of the City.
- iv** Develop local bicycle networks for each neighbourhood that connect to the spine network and to the Downtown.
- v** Identify and prioritize gaps within the bicycle network.
- vi** Continue to expand the off-street pathway network.
- vii** Support the extension of the City's bicycle network to surrounding communities.
- viii** Develop and implement bicycle facility design guidelines that include a bicycle facility selection tool based on traffic speed and volumes.

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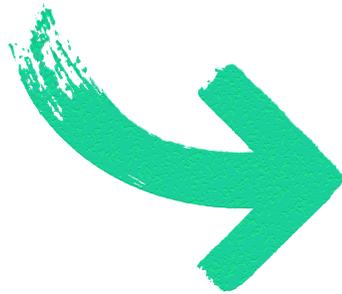
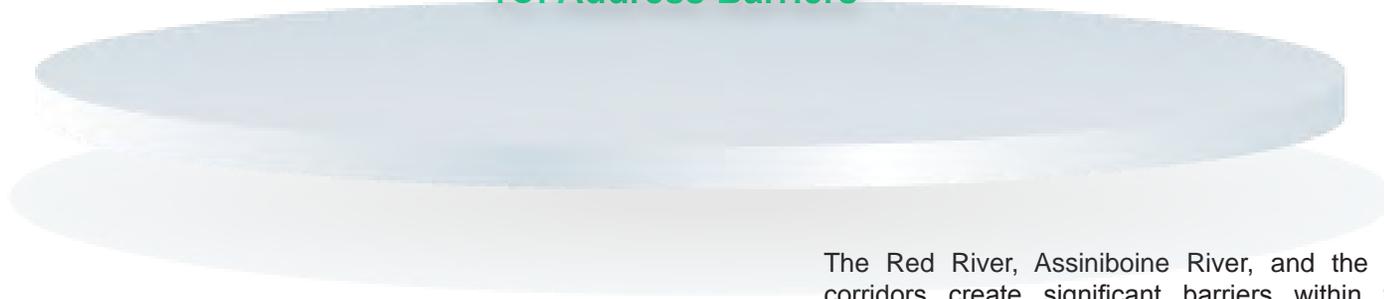
Key Direction

1B. Expand and Enhance the Bicycle Network

- ix Update the Transportation Standards Manual to incorporate bicycle facilities.
- x Ensure that bicycle requirements be addressed in all new and renewal road projects that are part of the bicycle network or where the road provides connectivity or support to the bicycle network .
- xi Pursue bicycle network improvements that establish access to major destinations throughout the City, including regional, community and neighbourhood mixed use centres and corridors, schools, libraries and parks.
- xii Continue to provide, where appropriate and where suitable opportunities exist, bicycle infrastructure in conjunction with transit infrastructure such as rapid transit corridors.
- xiii Design new neighbourhoods to include bicycle routes that are well integrated with the existing bicycle network.
- xiv Where possible, utilize existing hydro and rail rights-of-way and surplus road rights-of-way as a means to provide comfortable, direct cycling routes.
- xv Maintain the asset management program for bicycle facilities and prioritize maintenance and improvements within the Downtown and along the spine network.
- xvi Develop a process to identify priorities for bicycle network implementation/improvements based on cycling potential, equity, connectivity, comfort, and cost.



Key Direction 1C: Address Barriers



The Red River, Assiniboine River, and the rail corridors create significant barriers within the walking and cycling networks, creating challenges to those navigating Winnipeg on foot or bicycle. Currently, several dedicated pedestrian/bicycle bridges exist in Winnipeg: For example the Disraeli pedestrian / bicycle bridge, the Esplanade Riel Bridge, the Forks-South Point Park Bridge and the Assiniboine Park/Overdale Street Bridge. In addition, several bridges feature separated paths for pedestrians or cyclists adjacent to motor vehicle traffic, such as the Norwood Bridge and the rail bridge from Sir John Franklin Park. On most other bridge crossings, such as the Osborne St bridges, special provisions are in place to allow cyclists to legally use paved shoulders.



In order to enhance mobility throughout the pedestrian and bicycle network, there are two primary strategies recommended to address these rail, river, and road barriers throughout Winnipeg:

- ▶ **Upgrade existing crossings** to accommodate bicycle and pedestrian facilities. This can include providing bicycle lanes or paths on crossings, improving shared sidewalks, widening sidewalks, adding lighting and illumination and/or access / egress improvements.
- ▶ **Construction of new crossings**, in order to facilitate connectivity between neighbourhoods and key destinations that are currently isolated from one another. New crossings can serve to provide more permeability and mobility throughout the network for pedestrians and cyclists, and can support natural desire lines where possible. Some of the new crossings are proposed across either the Assiniboine River or Red River, to connect neighbourhoods and trail networks together and/or to connect key destinations such as the University of Manitoba, Assiniboine Park, the Forks, Universite St. Boniface.

The recommended bicycle network recommends the locations in the following table be considered for crossing upgrades to better support people walking and cycling in Winnipeg.

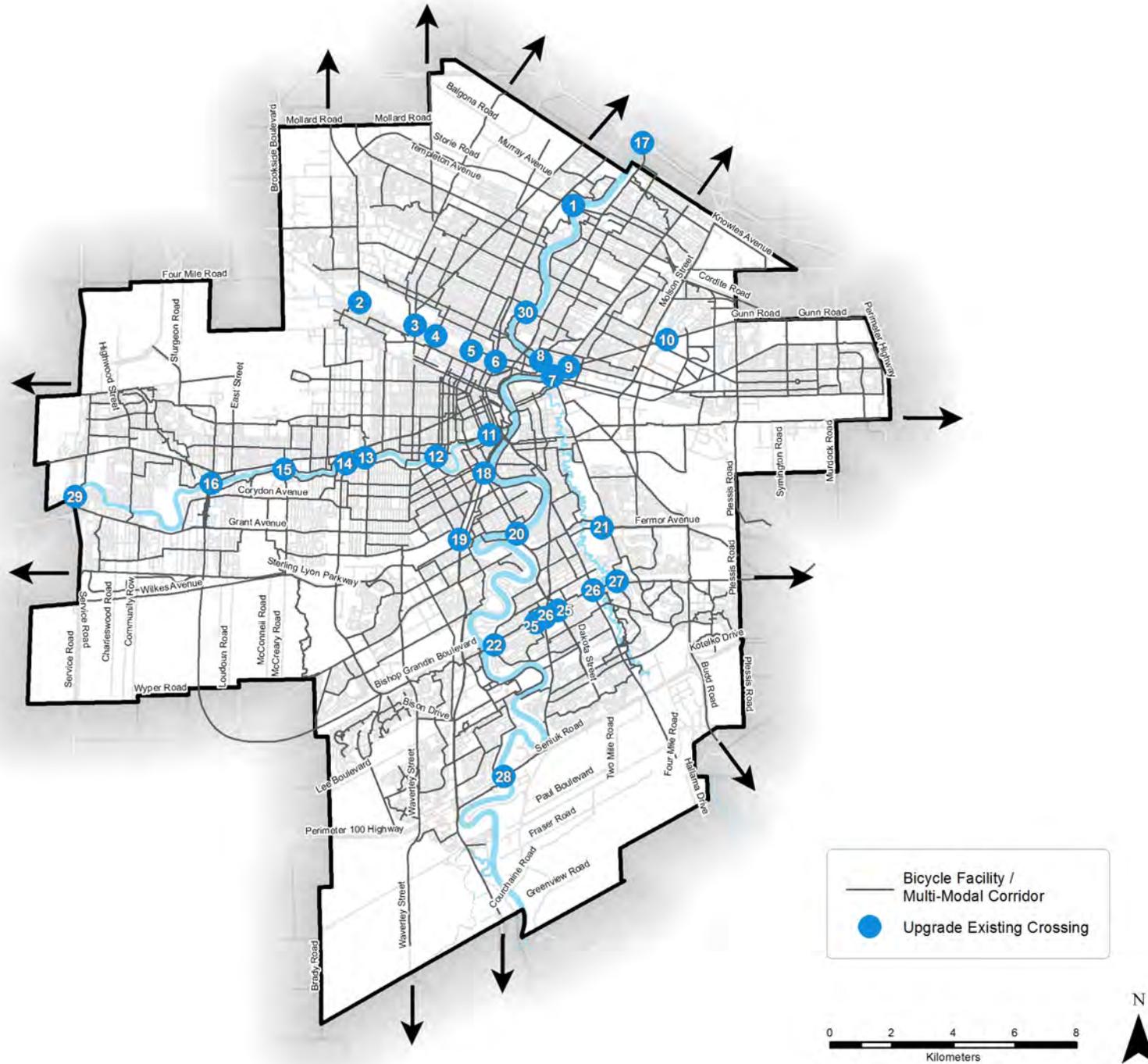


Table 4.5:
Recommended Crossing Upgrades

Crossing Locations		Barrier		
		Road	River	Rail
1.	Chief Peguis Trail		○	
2.	Keewatin Street Underpass			○
3.	McPhillips Street Underpass			○
4.	Arlington Street Bridge			○
5.	Slaw Rebchuck Bridge			○
6.	Main Street (north)			○
7.	Point Douglas Rail Bridge		○	
8.	Lagimodiere-Gaboury Rail Bridge		○	
9.	Nairn Avenue Overpass	○		
10.	Concordia Avenue / Lagimodiere Boulevard	○		○
11.	Donald Street		○	
12.	Maryland Street		○	
13.	Sir Franklin Park / Omand Park Connection		○	
14.	St. James Bridge / Century Street		○	
15.	Assiniboine Park Foot Bridge		○	
16.	Moray Street		○	
17.	Perimeter Highway North		○	
18.	Osborne Underpass			○
19.	Pembina Highway Under Pass	○		○
20.	St. Vital Bridge		○	
21.	Fermor / Archibald		○	
22.	Fort Gary Bridge	○		
23.	Bishop Grandin Boulevard / Glen Meadow Street	○		
24.	Bishop Grandin / St Mary's Road	○		
25.	Bishop Grandin Blvd / Dakota Street	○		
26.	Bishop Grandin Blvd / St. Anne's Road	○		
27.	Bishop Grandin Blvd / Shorehill Drive	○		
28.	Perimeter Highway South		○	
29.	Perimeter Highway West			
30.	Redwood Avenue Bridge		○	



Map 4.12:
Proposed Crossing Improvements



The recommended bicycle network recommends the following locations to be considered for new crossings to better accommodate pedestrian and cyclist mobility throughout Winnipeg:

Table 4.6:
Recommended New Crossings

New Crossings	Barrier		
	Road	River	Rail
1. Seven Oaks / Kildonan Drive Connection		○	
2. Raleigh Street / Anderson Park	○		
3. Callsbeck Avenue/Ravelston Avenue / Lagimodiere Blvd	○		
4. Princess Street / Railyard			○
5. West of McPhillips / Railyard			○
6. Portage Avenue / Omand Park	○		
7. Assiniboine River crossing		○	
8. Fort Rouge Pk/ McFadyen Pk		○	
9. The Forks / Universite de St. Boniface		○	
10. Grant Avenue			○
11. Wildwood / St. Vital Connection		○	
12. Pembina Highway / Bishop Grandin Boulevard	○		
13. University of Manitoba / River Park South Connection		○	
14. Pembina Highway / Perimeter Highway	○		
15. Beauchemin Park / Westwood Connection		○	
16. McGillivray Boulevard / Fort Whyte	○		
17. Lagimodiere Boulevard / Boulevard Sage Creek	○		





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The following actions are recommended to reduce the impact of the road, rail, and river corridors that create gaps and barriers within the active transportation network in Winnipeg:

Key Direction

1C. Address Barriers

Actions

- i** Improve existing grade separated crossings over major roads, rivers, and rail.
- ii** Develop new pedestrian and cycling grade separated crossings of rivers, rail, and major road corridors.





Strategic Direction 2 - Improve Convenience

The TMP points out that over the past several decades, we have predominantly built our communities, workplaces, and shopping and leisure areas to accommodate car use. This pattern has largely come at the expense of other modes of travel, making transit, walking, and cycling less attractive, and in some cases, impossible choices. Car-oriented land development has also meant Winnipeg's urban area has expanded disproportionately to population growth. From 1945 to 1974, the City's population increased by 150%, but the built-up area increased by just 97%. Since 1974, the City's population has increased only 15%, but the built-up area increased by 50%. This shift in density of newer communities and the separation of land uses continue to challenge the transportation system as trip lengths increase and walking, cycling and transit become less convenient options.

A key goal in OurWinnipeg is to accommodate a greater proportion of the City's future growth within the existing built boundary. This would be accomplished through redevelopment and intensification in the City's transit-supportive land use areas: the downtown, mixed-use centres, mixed-use corridors, and major redevelopment sites. Increasing transportation choice to and from these areas will be essential to encourage growth. In addition, increased density will be needed to justify major transportation investments such as rapid transit. Complete Communities and the Transit Oriented Development Handbook have established density objectives for the different transit supportive land use areas. The TMP addresses these objectives from a transportation perspective.

It is recognized that a large proportion of Winnipeg's growth will still take place in new communities beyond the existing built-up area. The goal for OurWinnipeg is to ensure new communities are developed in a sustainable manner, which includes both urban form and transportation choice. This means designing and building new communities with compact urban form and road and transportation networks that are more conducive to public transit, walking, and cycling. The result would be new communities that provide greater choice in housing, employment, and transportation.

In order for walking and cycling to be attractive and competitive transportation choices, they need to be as convenient as possible. The most important factor in the convenience of walking and cycling is that distances between destinations be appropriate for these transportation modes.

Key Directions:

2A: Provide Bicycle Parking and End-of-Trip Facilities

2B: Increase and Improve Multi-Modal Connections





This can be achieved by ensuring that the networks are dense enough by upgrading and installing the required infrastructure as discussed in Strategic Direction 1. In addition to providing pedestrian and bicycle infrastructure, it is also important to provide supportive facilities that make walking and cycling more convenient transportation options. Features such as secure and convenient bicycle parking, end-of-trip facilities, and maintenance stations can increase the ease and appeal of cycling, while ensuring seamless connections between public transit and pedestrian and cycling networks can extend the reach of transit trips and increase the ease and appeal of walking and cycling to get around Winnipeg. Having these types of features can work at breaking down the perceptions that walking and cycling may not be convenient, and can establish more areas of the City as pedestrian and bicycle friendly destinations.

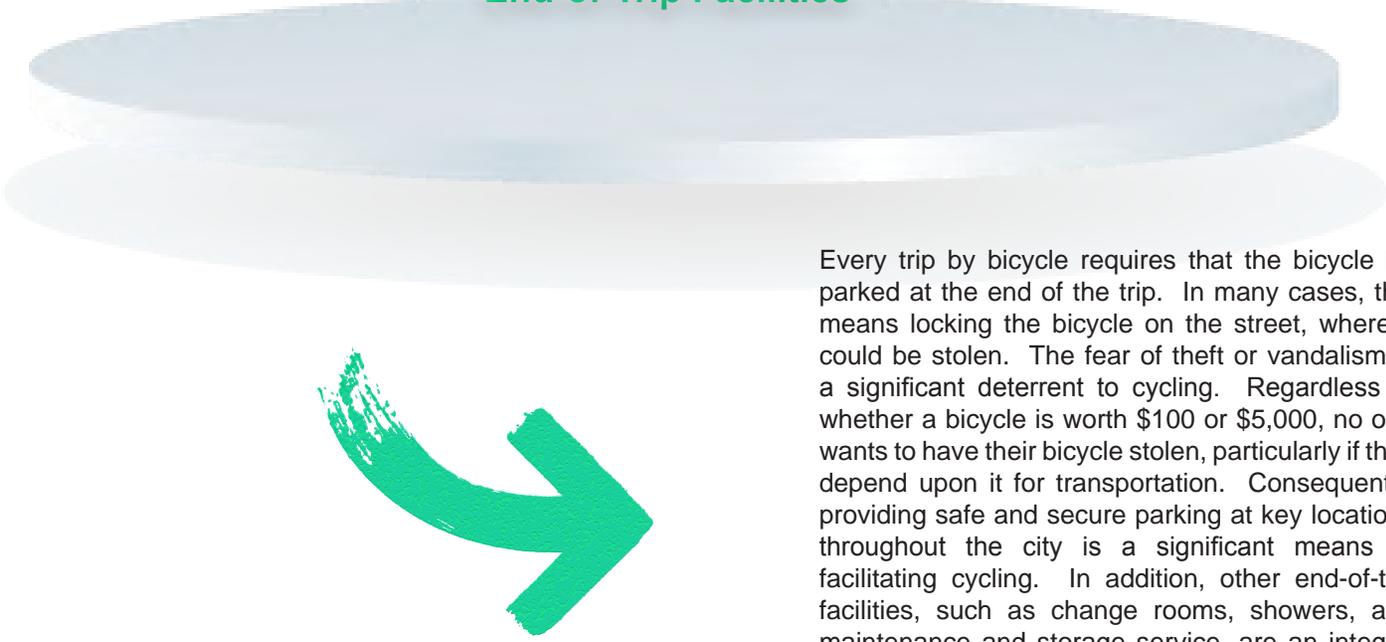
The Key Directions to making walking and cycling more convenient in Winnipeg include providing bicycle parking and end-of-trip facilities, and increasing and improving multi-modal connections. To do so, the City can provide context-appropriate facilities to make walking and cycling in Winnipeg more convenient, such as providing short-term bicycle parking outside key destinations such as grocery stores and community facilities, along with providing secure bicycle parking at major transit stops and bicycle racks on buses. Secure long-

term bicycle parking and end-of-trip facilities can be required in new residential and commercial buildings, while owners of older buildings can be encouraged to retrofit their premises with secure bicycle parking. Walking and cycling can be made even more convenient by ensuring good pedestrian and cycling connections to bus stops, while enhanced pedestrian and cycling connections along with a public bike share program can help to extend the reach of public transit.





Key Direction 2A: Provide Bicycle Parking and End-of-Trip Facilities



Every trip by bicycle requires that the bicycle be parked at the end of the trip. In many cases, this means locking the bicycle on the street, where it could be stolen. The fear of theft or vandalism is a significant deterrent to cycling. Regardless of whether a bicycle is worth \$100 or \$5,000, no one wants to have their bicycle stolen, particularly if they depend upon it for transportation. Consequently, providing safe and secure parking at key locations throughout the city is a significant means of facilitating cycling. In addition, other end-of-trip facilities, such as change rooms, showers, and maintenance and storage service, are an integral part of making the bicycle transportation system more convenient. In Winnipeg and other winter cities, the provision of change rooms, shower, and/or storage facilities for cyclists and their gear can support cycling year-round.



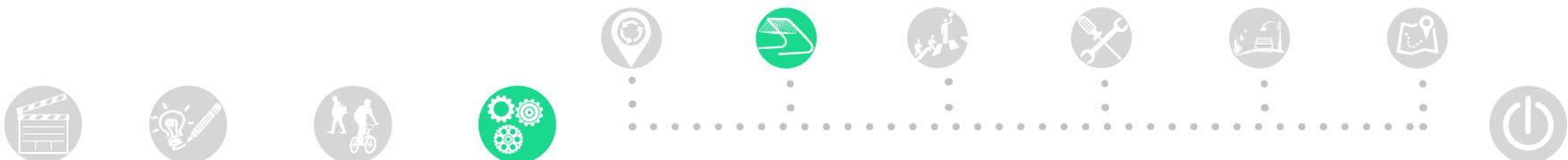
Table 4.7:
Difference Between Short-Term and Long-Term Parking

Criteria	Short-term	Long-term
Parking duration	Less than two hours	More than two hours
Fixture types	Simple bicycle racks	Lockers, racks in secured area
Weather protection	Unsheltered	Sheltered or enclosed
Security	Unsecured, passive surveillance (eyes on the street)	Secured, active surveillance
		Unsupervised:
		"Individual-secure" such as bicycle lockers
		"Shared-secure" such as bicycle room or cage
		Supervised:
		Valet bicycle parking
		Paid area of transit station
Typical land uses	Commercial or retail, medical/healthcare, parks and recreation areas, community centers	

There are many different types of bicycle parking, which can be suitable in certain situations but not others. One of the key considerations in providing bicycle parking is to locate the 'right' bicycle parking facility in the 'right' place. The determination of what is the best facility for a specific location is driven by the needs and motives of the users (such as the purpose of the trip, length of the trip, and length of stay); as well as a variety of other factors at the location in question (such as adjacent land uses, available space, and safety). Bicycle parking is typically categorized as either short-term or long-term. As shown below, short-term generally refers to use of less than two hours, while long-term generally refers to use beyond two hours. **Table 4.7** summarizes the differences between short-term and long-term bicycle parking.

Short-term bicycle parking typically consists of bicycle racks distributed in the public right-of-way in commercial areas and at key destinations throughout the City. Short-term bicycle parking can take a variety of forms, such as a Post-and-Ring Rack or Inverted 'U' Rack. Bicycle racks are generally oriented to residents and visitors, who may stop in the area for shopping or other personal business, and should be located as close to destinations as possible in convenient locations and highly visible for users. It is desirable to provide a limited number of covered bicycle racks to provide protection from the elements.

Long-term bicycle parking is more secure than typical bicycle racks. It may include bicycle lockers, which can be rented by individuals, or larger secure facilities, such as bicycle rooms or cages, secure bicycle parking areas, or Bike Stations. Long-term parking is generally oriented to cyclists who need to park a bicycle for an entire day or longer. Major employment areas, transit stations, and areas with high cycling activity are ideally suited to long-term parking facilities, and they can also be required in private developments.



Visual Summary

Short-Term Bicycle Parking



ON-STREET BICYCLE RACK Single or small group of racks provided within the public right-of-way, typically on the sidewalk.



BICYCLE CORRAL Small to medium group of short-term bicycle racks located on-street, typically by replacing one or more motor vehicle parking spaces. Bicycle corrals minimize sidewalk clutter, free up space for pedestrians and other uses (such as sidewalk cafes), and increase bicycle parking at locations with high demand.



BICYCLE SHELTERS consist of bicycle racks grouped together within structures with a roof that provides weather protection. Bicycle shelters provide convenient short-term and long-term bicycle parking.



TEMPORARY EVENT PARKING typically consists of portable racks that meet the demand for an event. Racks are clustered together, providing a higher level of security than if people were to park the bicycles on their own. Event staff can monitor the area, providing people with peace of mind while they are away from their bicycle.



Visual Summary

Long-Term Bicycle Parking



BICYCLE LOCKERS are essentially large metal or plastic stand-alone boxes and offer the highest level of bicycle parking security available. They are appropriate for daily and overnight parking. They have the additional advantage that cyclists' gear and other accessories can be securely stored along with the bicycle, thus giving cyclists more flexibility in their travel arrangements.



BICYCLE ROOMS Locked rooms or cages which are accessible only to bicycle users, and which may contain bicycle racks to provide extra security against theft. Bicycle rooms are best used in areas where there is a moderate to high demand for parking, and where those who would use the bicycle parking are from a defined group, such as a group of employees.



SECURE BICYCLE PARKING AREA Free-standing buildings or enclosed areas within a larger structure that are particularly useful at major destinations that attract all-day users, such as rapid transit stations or major employment areas. Some secure bicycle parking areas offer access to bicycle repair tools, pumps, showers, or other amenities.



BIKE STATION Full service building facility specially designed to serve all cycling needs including parking, storage, showers, changing rooms, bicycle repair, information centres, and coffee shops.



Winnipeg's City-wide Zoning Bylaw requires that bicycle parking be provided for various land uses, including multi-family residential uses, schools, libraries, offices, hotels, personal services, retail services, supermarkets, restaurants or drinking establishments, and shopping centres. The bylaw requires that the property owners provide 1 lockable bicycle space per 10 required automobile parking spaces for these and other land uses, and that required bicycle parking must be located within convenient access to major building entrances.

Throughout the public consultation for the Pedestrian and Cycling Strategies, Winnipeg residents were asked to provide input and feedback on bicycle parking and end-of-trip facilities. Many respondents stated that there needs to be increased bicycle parking options, more visible and sheltered bicycle parking, showers, and other end-of-trip facilities at their destinations. Respondents' feedback contained several common themes, including:

- ▶ More secure bicycle parking facilities;
- ▶ Providing end-of-trip facilities such as lockers and showers for commuters;
- ▶ Encouraging more businesses to provide bicycle racks for employees; and

- ▶ Developing a "Bike Friendly Business Program" where interested businesses will allow cyclists to use their washroom facilities and refill water bottles.

In order to address these concerns of having more and better opportunities for bicycle users at the end of their trip, enhancing bicycle parking and end-of-trip facilities will require a comprehensive approach that involves the City taking a leadership role in providing facilities at municipal buildings, capturing opportunities through policy and regulatory tools, establishing partnerships with businesses and the private sector, and ensuring bicycle facilities are provided at large-scale and community events to support cyclists. These approaches are described in further detail below:

- ▶ Improving bicycle parking and end-of-trip facilities at **municipal buildings** can send a clear message to residents and businesses that the City supports cycling as a means of transportation. Such proactive investments can benefit employees, residents, and visitors to Winnipeg and can increase access to City services. Providing bicycle facilities at City sites would require identifying the type and quantity of bicycle parking and end-of-trip facilities required for various transit and municipal buildings. This can include the provision of short-term facilities at locations and buildings that see a lot of visitor



activity, as well as the consideration for longer-term bicycle storage (such as bicycle rooms and changing facilities) where there are high concentrations of employees.

- ▶ **Regulatory initiatives** can be a powerful tool to incorporate bicycle accommodation within new developments. As noted above, Winnipeg's City-wide Zoning Bylaws require new developments in various land use types to provide bicycle parking, but does not currently specify bicycle parking types (long-term or short-term), while the Downtown Zoning Bylaw does not include any bicycle parking requirements. The City should build upon current regulations by updating both the City-wide Zoning Bylaw and Downtown Zoning Bylaw to specify requirements for both short and long-term bicycle parking and end-of-trip facilities based on the number of employees and floor area of various land uses, and should also include flexible parking standards, with reduced motor vehicle parking requirements for employment sites that construct end-of-trip facilities. The development of bicycle parking guidelines could also illustrate bicycle parking and end-of-trip facility designs, and be provided to developers and building managers to further support implementation of high quality bicycle parking facilities.

- ▶ **Private Sector partnerships.** It is important that incentives be in place to encourage existing businesses and multi-unit dwellings to provide bicycle parking and end-of-trip facilities. This can include working with business organizations to replace on-street parking in strategic locations with seasonal, higher-capacity bicycle parking opportunities (such as bicycle corrals) that provide good access to local businesses; developing a program to support businesses in existing developments to retrofit existing buildings to provide bicycle parking; and working with the private sector to provide bicycle repair and/or retail and rental services. These facilities work best at high demand locations, such as activity centers and transit stations, to provide the highest level of service to the greatest number of people. The City can support the development of one or more such facilities themselves or in partnership with businesses. Cost-sharing opportunities should also be explored between the City and businesses to provide bicycle parking and end-of-trip facilities.







- ▶ **Community Events.** Large community events can induce traffic congestion and overwhelm motor vehicle parking capacity. One way to mitigate such challenges is to work with event organizers to provide and promote the use of temporary secure bicycle parking and/or bicycle valet programs. This approach has already been in use in Winnipeg, such as at events at the Investors Group Field, where secure parking and bicycle valet options are provided. Similarly, a number of cities throughout North America provide valet service, provided by non-profit organizations and funded partially by user fees and/or corporate sponsorship in order to reduce costs to the City and event organizers.



Key Direction	Actions
2A. Provide Bicycle Parking and End-Of-Trip Facilities	<p>i Demonstrate leadership in providing short-term bicycle parking for visitors to City of Winnipeg facilities, and secure long-term parking and end-of-trip facilities (showers, change rooms, etc) for all employees at municipal buildings.</p>
	<p>ii Update the Downtown Zoning Bylaw to require bicycle parking in new developments.</p>
	<p>iii Update the City-wide Zoning Bylaw to enhance requirements for bicycle parking and end-of-trip facilities where appropriate in new developments City-wide.</p>
	<p>iv Develop bicycle parking guidelines to illustrate bicycle parking and end-of-trip facility designs to further facilitate implementation of high quality bicycle parking facilities.</p>
	<p>v Continue to expand partnerships with BIZes and individual businesses to implement short-term bicycle parking in the public right-of-way.</p>
	<p>vi Develop a program to support businesses in existing developments to retrofit existing buildings to provide bicycle parking.</p>
	<p>vii Require that all event coordinators provide adequate temporary bicycle parking to serve corporate-sponsored and large community events.</p>
	<p>viii Continue to work with BIZes and individual businesses to expand the bicycle corral program</p>

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Key Direction

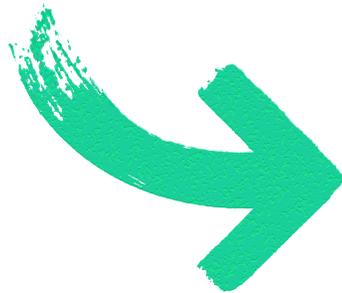
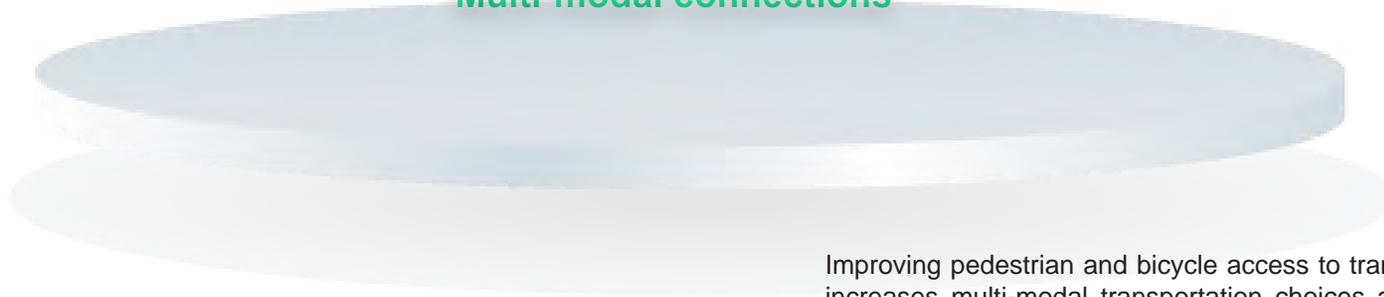
**2A. Provide Bicycle
Parking and
End-Of-Trip
Facilities**

Actions

- ix** Facilitate development of publicly-available full-serve bicycle parking stations in downtown and other areas of high cycling activity.
- x** Maintain and continually update a digital inventory of public bicycle parking locations on the City website and include this information on the City's bicycle map.
- xi** Work with community groups or bicycle shops to create a program to store, repair, and redistribute abandoned bicycles.
- xii** Work with partners to provide amenities such as public bicycle pumps, bicycle maintenance stations, and bicycle parks
- xiii** Continue to support Winnipeg's community bike shop network



Key Direction 2B: Increase and Improve Multi-modal connections



Improving pedestrian and bicycle access to transit increases multi-modal transportation choices and helps to extend the reach of public transit. To develop a comprehensive pedestrian and bicycle network, it is important to look for opportunities to integrate walking and cycling with other modes of transportation, particularly in regards to opportunities for better integration with transit. Walking, cycling and transit can work well in combination, as transit allows pedestrians and cyclists to make trips that are farther than they may be able to walk or ride.

Decision-making related to land use and transportation planning development is guided by OurWinnipeg, the CCDS, and the TMP. Transportation and land use planning in new and existing communities throughout Winnipeg benefits from integrating multi-modal transportation,



including connections to transit service. Supporting documents such as Winnipeg Transit's "**Designing for Sustainable Transportation and Transit in Winnipeg**" further facilitate the implementation of these goals, outlining recommended practices related to facilitating transit use and an efficient transit system.

To encourage transit integration with cycling, Winnipeg Transit currently accommodates bicycles on buses seasonally on three routes, from May until October. 30 transit vehicles on three routes have been equipped with racks that can carry two bicycles each. The service is available on a first-come, first-served basis and at no additional cost to the cyclist. In addition, bicycle lockers are available at Rapid Transit Stations (Ft. Rouge, Osborne and Harness) as well as Osborne Junction and Taylor Park and Ride.

To enable walking and transit connections, the City of Winnipeg and Winnipeg Transit currently have accessibility considerations around bus stops. Considerations for integration with transit must involve looking at bus stops that are not connected to sidewalks and frontage road considerations. The City of Winnipeg requires that new construction and renovation projects include sidewalk access to bus stops. However, of all the transit stops in Winnipeg, approximately 16% of stops do not have sidewalk access. In addition to having sidewalk

access to stops, it is important that riders have a walking distance less than 400 meters according to Designing Sustainable Transportation and Transit for Winnipeg. Finally, Winnipeg Transit provides a number of passenger amenities at many bus stops, including bus stop shelters and heaters, and customer information that can improve the transit customer experience.

To build upon these concerns, some key elements to develop and support further opportunities to increase and improve multi-modal connections in Winnipeg can include:

- ▶ **Bus shelter improvements.** The City of Winnipeg has actively been upgrading bus stops, with a focus on high activity stops. Today, 13% of Winnipeg bus stops have a shelter (approximately 800 bus shelters), and 25% of bus stops have a transit bench (approximately 1,500 benches). Bus shelters are important to protecting waiting bus passengers from the elements, and can significantly impact the comfort and convenience of using transit. It is recommended that Winnipeg Transit and the City continue to monitor the demand and activity levels at bus stops, and to continue the provision of shelters and other bus stop amenities where conditions meet Transit's criteria.



- ▶ **Bicycle-transit integration.** 30 transit buses along three routes (160, 162, and 170) are currently seasonally equipped with bicycle racks. Bicycle lockers are also available at all rapid transit stations, including Ft. Rouge, Osborne and Harness, Osborne Junction and the Taylor Park and Ride. As bicycle-transit integration measures can enhance the ability for cyclists to take longer trips, further integration can be achieved through more visible and secure bicycle parking at the City's rapid transit stations, park-and-rides, and high activity transit stops.
- ▶ **Improved pedestrian and bicycle connections to transit.** The City has undertaken several initiatives to enhance connectivity for pedestrians and cyclists to improve the experience of accessing transit. For example, the City and Winnipeg Transit have implemented accessibility considerations at several bus stops, and the City's sidewalk requirements incorporate the provision of sidewalks in and around transit stops. The City also requires that new construction and renovation projects include sidewalk access to bus stops. It is recommended that through regulatory and site design processes, the City continue to explore opportunities to enhance connectivity for pedestrians and cyclists accessing transit facilities.
- ▶ **Accessible transit.** Ensuring that transit is accessible can promote more transit use for people of all ages and abilities. There are many ways that the City has supported accessibility and design within the transit system, as over 95% of the Winnipeg Transit fleet has Easy Access low-floor accessible buses in the fleet, including features such as kneeling capabilities, electric ramps and priority accessible seating. The entire bus fleet also has audible "next stop" announcers installed on-board. Continuing to improve the accessibility of the transit system is critical to promoting physical activity and active transportation in Winnipeg.
- ▶ **Public Bicycle Share.** Bikeshare programs provide affordable access to bicycles for short-distance trips, and solve the 'last mile' problem for users of public transportation. High activity areas such as Downtown Winnipeg, University of Manitoba, and commercial corridors could potentially support a bike share system in the future. Accessible and convenient bike share systems can be attractive to the most casual riders and visitors and could encourage more Winnipeg residents and visitors to try cycling

The supportive actions below are intended to help make walking and cycling a more convenient and comfortable, experience for residents of all ages and abilities. The actions focus on enhancing accessibility and creating strategic transit-related improvements that can enhance the ease and ability of walking and cycling throughout Winnipeg. The actions are shown on the following page.



Key Direction

Actions

2B. Increase and Improve Multi-modal Connections

- i** Transit to continue its existing program of monitoring demand for new or expanded transit shelters throughout Winnipeg, and to provide shelters where conditions meet Transit’s established criteria.
- ii** Transit will investigate the feasibility of expanding the bicycle rack on bus program, and investigate the feasibility of various methods to increase the integration of cycling and transit in Winnipeg.
- iii** Public Works will supply Transit with information such as bicycle routes, bicycle parking, walking paths, key destinations within five-minute walking distance, wayfinding information, etc. Public Works and Transit will collaborate to integrate such content with Transit’s passenger information, with this content provided to the public at locations such as rapid transit stations, park-and-rides, and high activity transit stops.
- iv** Transit to provide bicycle parking, including short-term and long-term secure bicycle parking, at rapid transit stations, park-and-rides, and high activity transit stops.
- v** Continue to look for opportunities to maximize connectivity between the pedestrian and bicycle networks and transit network.
- vi** Continue to work towards a universally accessible transit system.
- vii** Conduct a Bike Share Feasibility Study





Strategic Direction 3 - Improve Safety and Accessibility

Walking and cycling facilities should be safe and usable by people of all ages and abilities, including seniors, children, and people with disabilities. For pedestrians and cyclists, fragmented infrastructure (including sidewalks, pathways, and bicycle routes), uncomfortable environments, low-accessibility infrastructure, and challenging street crossings can make it more difficult and less desirable to walk or cycle. These types of conditions create safety concerns, either real or perceived, which are very influential on whether someone chooses to walk or cycle to their destination. In fact, pedestrians and cyclists alike are considered 'vulnerable road users' since they are subject to higher risk than drivers and transit users, and this lack of perceived safety can effectively discourage walking or cycling.

Safety and accessibility is also influenced by the prevalence of automobiles and automobile-oriented street design, which can feel threatening to vulnerable road users. Automobile-dominated spaces impact the perceived walkability and bikeability of an area, and no matter the extent of infrastructure, if people do not feel safe using the community's sidewalks, trails, or bicycle routes to get to their destination, then they will likely opt for their car. Given this, providing safe and accessible walking and cycling environments are just as important as providing features that improve comfort and convenience. As heard throughout the public consultation, many of those walking in Winnipeg feel uncomfortable and unsafe in areas with high traffic volumes, speeds and noise, and where sidewalk infrastructure and crossings are inadequate or lacking, and where there are low-lit areas. Cyclists expressed concerns over unsafe crossings, roadways that lack dedicated bicycle facilities, and being in environments where vehicles encroach onto narrow bicycle lanes and shoulders. To overcome these concerns, there are a number of engineering and education strategies that can improve safety and accessibility in Winnipeg.

To address these concerns, this strategic direction of improving safety and accessibility is comprised of several action areas that are focussed on more accessible infrastructure, improved crossings and visibility, safe routes for children and youth, and overall safety enhancements for vulnerable road users.

Key Directions:

3A: Provide Accessible Infrastructure

3B: Improve Pedestrian and Cycling Safety

3C: Provide Pedestrian and Cycling Crossing Treatments

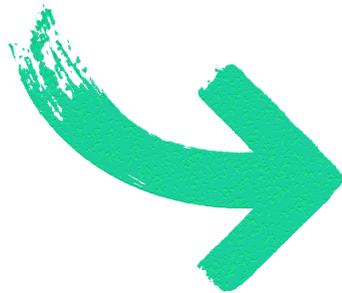
3D: Provide Well-Lit and Visible Pedestrian and Cycling Facilities

3E: Develop Active and Safe Routes to School





Key Direction 3A: Provide Accessible Infrastructure



Walking to everyday destinations can be easy if our city's streets and neighbourhoods are safe and well-designed for pedestrian accessibility. The areas of Winnipeg with high rates of walking are characterized by grid street patterns, high population density, sidewalks, and proximity to multi-use paths and destinations.

It is important that the pedestrian environment city-wide be accessible by a large cross-section of people, including people with disabilities, seniors, and parents with children. It is important that the design of the walking environment includes accessibility features to accommodate the unique needs of these groups, and to provide better pedestrian circulation for everyone. An important area of improving accessibility is at intersections and crossings, as difficult crossings can act as significant barriers to walking, making trips much longer or creating safety issues, particularly for seniors, children, and people with physical and cognitive disabilities.



The Manitoba Human Rights Code ensures that people with disabilities have the same right to the same services as everyone. The Province of Manitoba has enacted Accessibility Legislation that will impact the way the City provides facilities and services in the future.

To address crossing issues and accessibility in general, the City already has in place the Universal Design Policy (2001) and the Accessibility Design Standards (2010), which are both used to review development or building processes and ensure policy is implemented. The Accessibility Design Standards include guidance on walking surface, tactile surfaces to provide information for wayfinding and hazard notification, curb extensions, bus stops, sidewalk width, and street furniture. It is recommended that the City ensure these standards continue to be used to evaluate new development or redevelopment projects in Winnipeg, supplemented with the approaches summarized below, to increase accessibility city-wide:

- ▶ **Ensure the practice of providing accessible curbramps, tactile truncated dome detectable warning surfaces, and accessible signals** as these are critical to facilitate those with visual disabilities and/or using mobility aids to more comfortably navigate through Winnipeg's street network. The City has already been installing truncated dome detectable warning surfaces

at intersections for new construction or retrofit projects, and curb ramps are also provided at the time of new construction. Accessible signals are currently available at select high traffic locations in Winnipeg, assisting impaired pedestrians in crossing safely. The City has a goal to upgrade all existing traffic signals to be accessible by 2023, which will significantly improve accessibility in Winnipeg. Building on these initiatives, the City should continue to identify locations where providing ramps, tactile strips, and accessible signals should be prioritized, whether at the time of new development or retrofit. Doing so will ensure that over time, more crossings city-wide are safe and comfortable for people with disabilities or mobility impairments.

- ▶ **Enhance pedestrian crossing phases**, whether through pedestrian countdown timers or changing the length of signal phasing. Countdown timers in particular were identified by many Winnipeggers throughout the public engagement process as a very well-liked and important safety feature at crossings. Countdown devices give information to pedestrians regarding the amount of time left to safely complete the crossing, and the City has installed 12 pedestrian countdown timers to date, with plans to implement 400 additional



timers over the next 10 years. Continuing to add these devices is a necessary step to facilitate safer crossings, along with ensuring the length of pedestrian crossing phases are adequate. For example, increasing the length of crossing phases in areas with high concentrations of seniors, youth, and children can further support pedestrians of all ages and abilities, and improve accessibility within the system.

- ▶ **Ensure safe pedestrian access to bus stops.** Integrating pedestrian accessibility with transit planning is critical, as every transit trip starts with a walking trip. A requisite of pedestrian accessibility at bus stops is sidewalk access to the stop, and accessible bus stop design.
 - **Sidewalk access to bus stops.** The City currently requires new construction and renovation projects to include sidewalk access to bus stops. However, approximately 16% of bus stops in Winnipeg today still have no adjacent sidewalk. Prioritizing sidewalk upgrades to improve access to underserved bus stops, and working with developers to identify sidewalk upgrades at the time of new development and redevelopment can continually increase the number of sidewalks with transit access, which can serve to not only improve accessibility but to enhance the appeal of both walking and transit.

- **Accessible bus stops** facilitate people with different abilities and special needs to find, board and get off the bus. Accessible bus stop design reduces barriers for seniors, children and youth, and people with physical or cognitive disabilities using the transit system. The City's Accessibility Design Standards has criteria for bus stop accessibility, including large platforms, appropriate bus shelter design, and placement of street furniture. Recognizing the importance of bus stop design to facilitate all types of users to access to the transit system, the City and Winnipeg Transit should aim to have 100% of all bus stops accessible.



Visual Summary

Accessibility Features



ACCESSIBLE CURB RAMPS are critical to provide access between the sidewalk and the street at intersections. Where possible, separate curb letdowns should be properly aligned with crosswalks with directional guidance provided for those with visual impairments.



TACTILE SURFACES can be used to act as indicators to pedestrians who are visually impaired to alert pedestrians that they are approaching an intersection or grade change.



ACCESSIBLE PEDESTRIAN SIGNALS can be used at signalized intersections to assist pedestrians with disabilities and communicate when to walk or not walk in visual formats, such as pedestrian countdown timers, or in non-visual formats, such as through audible tones, speech messages, or vibrating surfaces. The use of braille on pedestrian signals can also enhance the accessibility of intersection crossings.



ACCESSIBLE BUS STOPS facilitate people with different abilities and special needs to find, board and get off the bus. Accessible bus stops can include features such as a wide landing pad for deployment of a wheelchair ramp, tactile surface indicators, signage, sidewalk curb letdowns to access the stop, and seating.



Ultimately, using a combination of these tools can benefit people of all abilities to navigate through the pedestrian network in Winnipeg, providing more safety and accessibility at crossings and throughout other areas of the city. The actions below define how the City can achieve a more accessible network over time:

Key Direction

3A. Provide Accessible Infrastructure

Actions

- i Continue to provide accessible curb ramps with truncated dome detectable warning surfaces at intersection locations within City Standards.
- ii Continue the current plan to upgrade all existing traffic signals with Accessible Pedestrian Signals by 2023.
- iii Continue to add pedestrian countdown timers at all traffic signals.
- iv Increase connectivity to adjacent pedestrian infrastructure for transit stops.
- v Ensure 100% of all bus stops are accessible.
- vi Continue to upgrade existing infrastructure to meet Universal Design Standards.
- vii Review pedestrian crossing times in areas with high concentrations of children, seniors, and people with disabilities.
- viii Reduce pedestrian crossing distances by providing narrower roads and lanes and considering curb extensions or median islands where feasible, particularly in areas with high concentrations of children, seniors and people with disabilities.

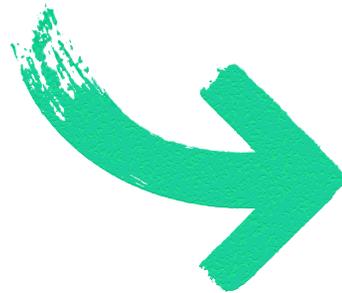




STOP

STOP

Key Direction 3B: Improve Pedestrian and Cycling Safety



Despite the recognized advantages of walking and cycling to improve personal and public health, there are many real and perceived barriers to walking and cycling. Developing more knowledge about what these barriers are, and whether they are infrastructure-related or otherwise, is important to developing practical and effective solutions throughout the City, and to creating conditions that enable more people to walk and cycle. One of the key barriers that prevents people from walking and cycling more is issues around safety, and given that pedestrians and cyclists are particularly prone to injuries and fatalities when involved in a collision, it is important to evaluate more carefully the current conditions that cause these road safety issues. By evaluating these conditions, the City can identify more clearly what measures should be undertaken to create a safer environment for vulnerable road users overall. Ultimately, evaluating the safety needs and issues for pedestrian and cyclists in Winnipeg can contribute to the larger effort throughout Winnipeg and Manitoba to improve



road safety, and can work towards fewer traffic-related fatalities overall. In general, the City can improve road safety and understanding road safety issues through conducting specific safety studies, road safety audits, safety research programs, and through traffic calming approaches.

- ▶ **Undertake pedestrian and cycling safety studies** to understand the specifics behind the main source of road safety issues that act as barriers for these road users, and the specifics behind collision events. Presently in Winnipeg, about one quarter of all pedestrian collisions occur at signalized intersections, with the highest frequency in winter months. In regards to cycling, there were almost 200 reported collisions per year between cyclists and motor vehicles between 2006 and 2010. The vast majority (over 99%) resulted in property damage only or non-fatal injuries. Conducting safety studies focussed on pedestrians and cyclists could examine these statistics more in-depth, looking at factors such as who is involved in collisions, where collisions and road safety issues occur, when collisions occur, and how collisions occur. Knowing more information about these factors can increase understanding around the effectiveness of existing safety treatments, and identify opportunities to improve safety through engineering, enforcement and education measures. It is recommended

that pedestrian and cycling safety studies be conducted individually so as to clearly evaluate the issues facing each mode separately. Understanding this information can further inform and guide the City of Winnipeg's facility development and policy planning regarding bicycle and pedestrian facilities, infrastructure and treatments.

- ▶ **Undertake road safety audits or in-service road safety reviews** to review the safety and operations of the City's road, pedestrian and bicycle facilities. Road safety audits (RSAs) differ in that an audit evaluates the safety performance of specific facilities, and determines if infrastructure is successfully addressing the intended needs of all road users. The foundation of an RSA is fundamentally crash prevention, and the purpose of undertaking an audit is to make new and existing roads as safe as possible. The process of an RSA involves independent auditors that are not involved in any planning or design activities, and their role is to apply safety principles and to provide input on design improvements that can prevent collisions from occurring, as well as collision severity. Road safety audits can be multi-modal in nature, evaluating safety from all perspectives, and can also be strictly cycling or pedestrian-specific to better understand the safety of pedestrians and cyclists in the





transportation system. RSAs can inform improvements to existing infrastructure, as well as planning and design for new infrastructure in the city, and can complement city knowledge on safety and operational improvements for vulnerable road users. The results of these studies will be very beneficial in guiding the priority for upgrades to transportation facilities. For example this information would be useful in developing priorities for the upgrading of the grade separated crossings identified in Key Direction 2C Addressing Barriers.

- ▶ **Incorporate traffic calming measures to the solutions toolkit.** Traffic calming measures can be used to improve road safety for all users through engineered measures that reduce vehicle speeds, discourage high volumes of through traffic, and to minimize conflicts between different road users. Traffic calming measures can be used particularly on neighbourhood greenways to ensure these remain routes with low vehicle speeds and volumes. A range of treatments are applicable to these roads, from relatively basic facilities consisting of signage and pavement markings, to varying degrees of infrastructure (speed humps, chicanes, curb extensions, Traffic Calming Circles, etc) to improve safety for cyclists and other road users.

- ▶ **Support research programs** to further understand pedestrian and cycling safety concerns, and innovative responses. This can include supporting a variety of organizations and agencies to undertake different research focusses. For example, the University of British Columbia's Cycling in Cities program recently conducted the Bicyclists' Injuries and the Cycling Environment (BICE), which was used in the City of Vancouver's Cycling Safety Study. The objective of the BICE study was to better understand the link between bicyclists' injuries based on the type of route they took and the presence of variables that may have contributed to the injury. The study included an analysis of participants who resided in the City of Vancouver, and suffered an injury while bicycling in Vancouver that was serious enough to be treated at a hospital emergency department. The study included 414 recorded injuries between May 2008 and November 2009. This study allowed the City and other interested agencies to understand more about cycling conditions and cyclist preferences, and has been used to inform municipal policy, planning, and facility design.



Best Practices

Pedestrian and Cycling Safety Studies



CITY OF VANCOUVER PEDESTRIAN SAFETY STUDY This study involved an in-depth analysis of all reported collisions involving pedestrians in the City of Vancouver between 2005 and 2010. The analysis examined where collisions were occurring, when they took place, who was involved in the collisions, and how the collision occurred. The analysis was based on collision data provided by the Insurance Corporation of British Columbia (ICBC) and the Vancouver Police Department (VPD) as well as a variety of other datasets, including data regarding infrastructure, spatial, demographic, weather, and light conditions.



CITY OF EDMONTON VIDEO ANALYSIS In order to observe any potential conflicts on new on-street bicycle facilities implemented in 2011, cameras were set up at ten different locations where on-street bicycle facilities were installed in order to observe any potential conflicts with the new infrastructure. A total of 800 hours of video footage was captured, and through evaluation of the footage no critical incidences or unsafe behaviour was observed and each design seemed to operate as expected.



UNIVERSITY OF BRITISH COLUMBIA BICE STUDY The Bicyclists' Injuries and the Cycling Environment study, conducted by the Cycling in Cities program at the University of British Columbia assessed over 400 cycling collision events in Vancouver. The study was conducted with the objective of better understanding the link between bicyclists' injuries based on the type of route they took and the presence of variables that may have contributed to the injury. The study found that protected bicycle lanes and residential bike routes are the safest route features for cyclists, information that has since informed municipal planning efforts.



CALGARY IN-SERVICE ROAD SAFETY REVIEW The City of Calgary recently constructed its first protected bicycle lane on 7 Street in its downtown core. Following implementation of the protected bicycle lane, the City completed an In-Service Road Safety Review to review safety and operational issues for all road users after implementation of the protected bicycle lane, and to improve mitigation measures to address identified issues. The City is also planning on applying lessons learned from this study to the design of future protected bicycle lanes throughout the City.



The following actions are recommended to enhance information about road safety, and to also address overall pedestrian and cycling safety issues in Winnipeg.

Key Direction

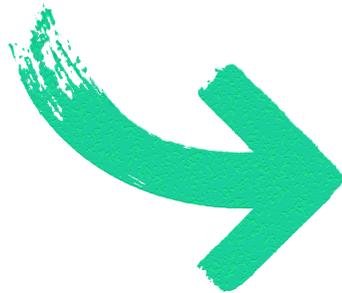
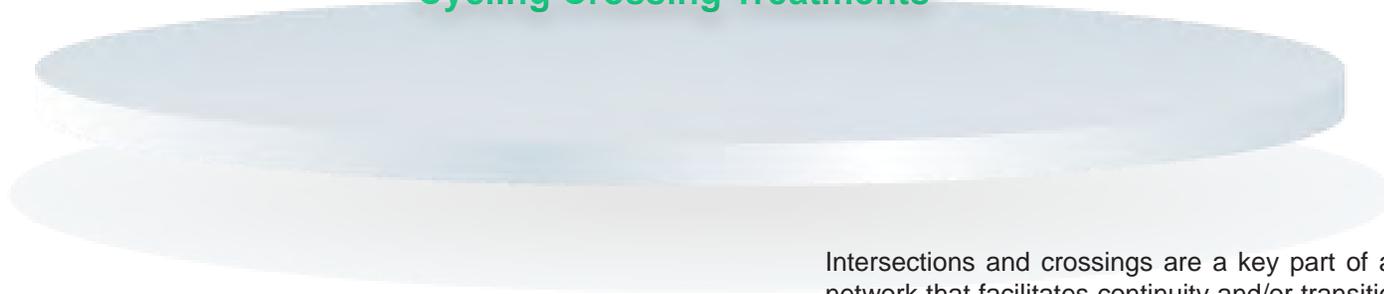
**3B. Improve
Pedestrian and
Cycling Safety**

Actions

- i** Conduct a pedestrian and cycling safety study to identify pedestrian and bicycle collision hotspots, identify where, when, why and with whom collisions involving pedestrians and cyclists are occurring, and to monitor collision trends over time.
- ii** Conduct road safety audits on existing facilities with identified safety issues at strategic locations and for major capital projects.
- iii** Continue to support research programs to improve pedestrian and cyclist safety innovations.
- iv** Include traffic calming and reduced design speeds as specific measures to increase safety and improve the walking and cycling environment, particularly on neighbourhood greenways and in areas with high concentrations of children, seniors and people with disabilities.



Key Direction 3C: Provide Pedestrian and Cycling Crossing Treatments



Intersections and crossings are a key part of any network that facilitates continuity and/or transitions between facilities. They are opportunities to increase accommodation for both cyclists and pedestrians, in order to make the environment safe and comfortable for all. These improvements can go a long way in regards to encouraging more people to walk and cycle, as intersections and crossings are where many cyclists and pedestrians can feel the most vulnerable, especially at areas that are dominated by heavy traffic and automobile movements.

The City currently uses a variety of pedestrian and bicycle crossing controls through the use of several devices such as:

- ▶ **Pedestrian crosswalks** are the most basic type of pedestrian crossing and include side-mounted signs or overhead signs, pavement markings, and an advanced warning sign if necessary.



- ▶ **Pedestrian corridors** consist of a crosswalk with pavement markings, overhead signs with pedestrian-activated flashing amber beacons, side-mounted signs, and advance warning signs if necessary.
- ▶ **Half signals** are traffic signals that typically use a standard red/yellow/green traffic signal on the main street of an intersection or at a mid-block location. Pedestrians can activate the pedestrian phase by using a pushbutton. Motorists on the main road see a steady red indication during the pedestrian phase.
- ▶ **Full signals** are regular traffic signals that also provide pedestrian crossing opportunities.
- ▶ **Grade separated crossings** provide vertical, physical separation between crossing pedestrians and vehicles on the roadway or railway. They may be either underpasses or overpasses.
- ▶ **Pedestrian countdown timers** have been piloted in Winnipeg over the last year, providing more information to pedestrians as they cross a signalized intersection.
- ▶ **Bicycle-activated pushbuttons**, found at some high-traffic locations such as by the Osborne Bridge, help cyclists to activate a signal phase to provide for a safe crossing.

While these devices assist pedestrians and cyclists to navigate through the network, there needs to be more consistent treatments at new and retrofitted intersections to enhance pedestrian and cyclist safety city-wide. The lack of crossing treatments creates challenges and a disconnect in both the pedestrian and cycling networks, and can be detrimental to encouraging more cycling and walking in Winnipeg. To address this, several recommendations for informing the City's approach to crossings and improving conditions for pedestrians and cyclists at crossing locations include:

- **Develop an inventory of all pedestrian crossing locations.** The City already has a GIS inventory of traffic signals and pedestrian corridors, and should develop a comprehensive inventory of all pedestrian crossing treatments by type, including pedestrian crosswalks, pedestrian corridors, half signals, full signals, accessible pedestrian signals, and pedestrian countdown signals. Additional crossing locations should also be identified where warranted, where perhaps there is existing pedestrian demand and/or desire lines but no current crossing infrastructure in place.



- **Implement pedestrian crossing controls as per adopted guidelines.** In 2013, Winnipeg adopted the new Pedestrian Crossing Control Guide published by the Transportation Association of Canada (TAC). This guide, which augments the information about pedestrian crossing control devices and their applications contained in the Manual of Uniform Traffic Control Devices for Canada (MUTCDC), has as its main objective to promote uniformity across the country with respect to the approach used in the provision of pedestrian crossing control. The guide presents a set of guiding principles in the provision of crossing control, which have now been adopted by the City as they move forward in the safe accommodation of pedestrians.
- **Create a warranting process for bike box treatments,** to improve cyclist safety at intersections with high cycling activity and high collisions. A bike box is a designated area located at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible space to get in front of queuing motorized traffic during the red signal phase. Motor vehicles must queue behind the white stop line at the rear of the bike box.
- **Provide bicycle-activated signals or detection at intersections and crossings.** Signalized crossings provide the most protection for cyclists trying to cross the street through the use of a red-signal indication to stop conflicting motor vehicle traffic. The use of signals or bicycle detection is especially a priority when neighbourhood greenways bisect major arterial streets, as this can be an especially dangerous situation for cyclists to navigate through several lanes of traffic. Providing bicycle detection at these locations, as well as at other areas of the bicycle network (such as where bicycle routes bisect and along high traffic bicycle routes) can facilitate smoother bicycle travel throughout the City, and allow safer movements at intersections.







THE UNIVERSITY OF MANITOBA

Toolkit



MARKED CROSSINGS enhance the visibility and safety of crossing pedestrians, where warranted. Raised crosswalks can also be used to extend the level of the sidewalk across the road and act as a traffic calming measure.



PEDESTRIAN REFUGE ISLANDS are placed in the street at an intersection or mid-block to protect crossing pedestrians from motor vehicles. The refuge islands make the crossing the road easier for pedestrians by allowing them to cross in two stages and to deal with one direction of traffic flow at a time.



NARROWER CROSSINGS using curb extensions, bus bulges, and median islands can be provided to reduce crossing distances. Curb extensions extend the sidewalk across the curbside parking lane. Narrower crossings benefit pedestrians by improving visibility and reducing crossing distances, and can offer opportunities for pedestrian amenities, such as landscaping and benches.



ENHANCED BICYCLE SIGNAL CROSSINGS can include full signals or pedestrian and bicycle activated signals which can be activated by cyclists using a range of technologies, such as bicycle loop detectors, bicycle pushbuttons, or video detection at traffic signals. Dedicated bicycle signal heads can also be considered.



BICYCLE BOXES can be used at signalized intersections to provide cyclists an opportunity to position themselves ahead of queued vehicles, and to proceed through the intersection when the signals turn green in advance of vehicles.



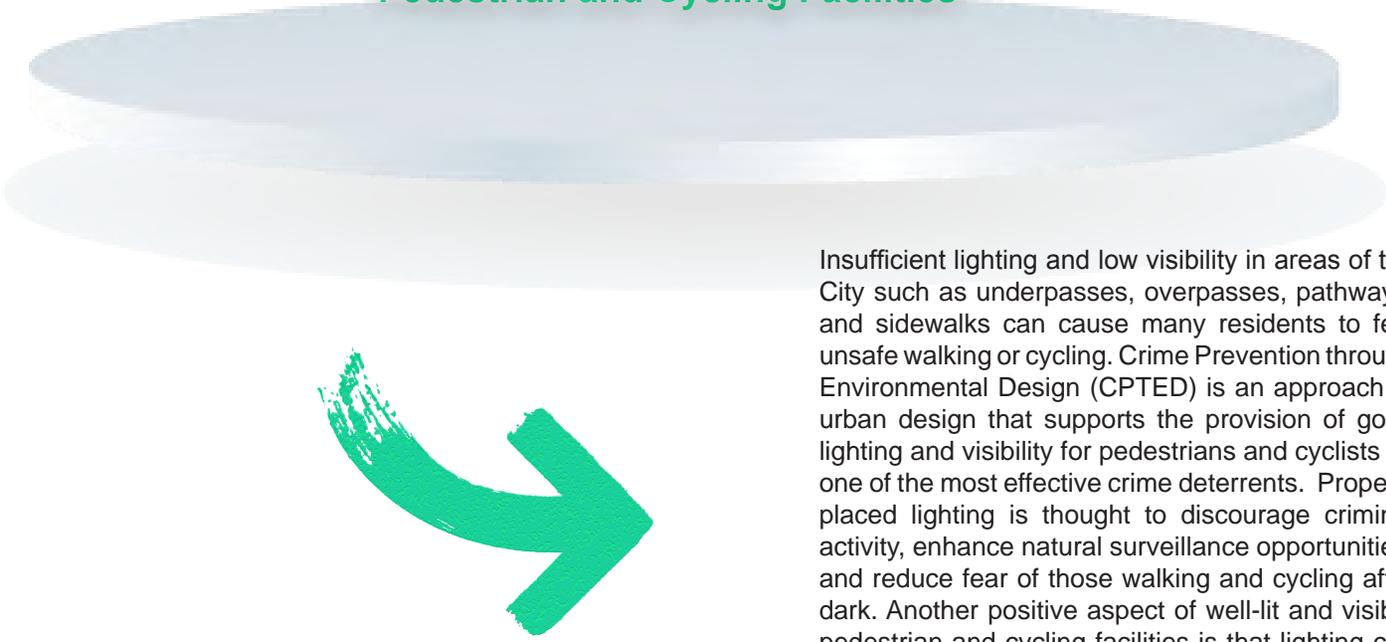
The following actions are recommended to increase the safety and comfort of intersections and crossings for both pedestrians and cyclists in Winnipeg:

Key Direction	Actions
3C. Provide Pedestrian and Cycling Crossing Treatments	i Maintain the inventory of all pedestrian crossing locations.
	ii Identify additional pedestrian crossing control locations where warranted.
	iii Implement pedestrian crossing control in accordance with guidelines approved by Standing Policy Committee in January 2013.
	iv Provide bike box treatments at intersections with high cycling activity and high collisions. Create a warranting process.
	v Provide bicycle activated traffic signals on neighbourhood greenway where they intersect arterial street intersections.
	vi Continue to provide bicycle activated pushbuttons or detection at all traffic signals where required.





Key Direction 3D: Provide Well-Lit and Visible Pedestrian and Cycling Facilities



Insufficient lighting and low visibility in areas of the City such as underpasses, overpasses, pathways, and sidewalks can cause many residents to feel unsafe walking or cycling. Crime Prevention through Environmental Design (CPTED) is an approach to urban design that supports the provision of good lighting and visibility for pedestrians and cyclists as one of the most effective crime deterrents. Properly placed lighting is thought to discourage criminal activity, enhance natural surveillance opportunities, and reduce fear of those walking and cycling after dark. Another positive aspect of well-lit and visible pedestrian and cycling facilities is that lighting can also influence user's feelings about the environment from an aesthetic as well as a safety standpoint. A bright, cheerful environment is much more pleasing than one that appears dark and lifeless. The ability to feel good about one's environment is important in developing a sense of pride and ownership, and to making places feel more safe and secure. Providing lighting and illumination throughout sidewalk, pathway, crosswalk and bicycle route



design is an important consideration, allowing safe and comfortable use of the network both day and night. This is especially important during the winter months as both the morning and evening commutes take place in the dark.



Best Practices

CPTED Principles for Off-Street Pathways



LIGHTING and illumination, especially on off-street pathways, should generally be provided to support safety and functionality. The requirement for lighting will be influenced by the type and intensity of use and by the context of a particular path. Lighting should be considered a requirement in medium to heavily used bicycle and multi-use pathways, pathways through parks / open space without ambient lighting from adjacent streets or which are obscured from public view, and locations with hazards, conflict points, and areas of safety concern.



CLEAR SIGHTLINES are a way of promoting natural surveillance, by placing physical features and people in ways that maximise the ability to view what is happening in a space. Especially for pathway design, maintain reasonably long forward sightlines to enhance visibility, particularly at access points and at approaches to curves for pathways not located adjacent to roads.



FENCING When considering fencing for a pathway, utilize a more open decorative design as opposed to solid fencing, to enhance visibility. Also seek to minimize fence heights where required. Fencing, some forms of landscaping, and locked doors are examples of physical barriers that can create spaces that appear less open and with more concealed areas.



MAINTENANCE CPTED principles adhere to the 'Broken Window Theory' which suggests that one "broken window" or nuisance will lead to others and ultimately to less surveillance and deterioration of an area. Neglected and poorly maintained facilities are seen to be an attraction of criminal activity. It is important to facilitate appropriate maintenance and servicing inspection and operations of pathway facilities and other pedestrian and cycling infrastructure, to show it is a priority area.

The following actions are recommended to enhance visibility and illumination throughout the pedestrian and cycling network in Winnipeg, in order to make more users feel comfortable using the network both day and night.

Key Direction

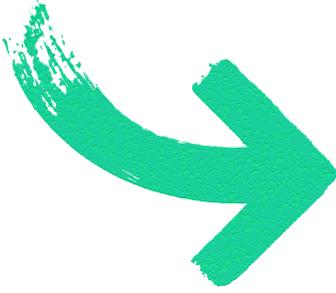
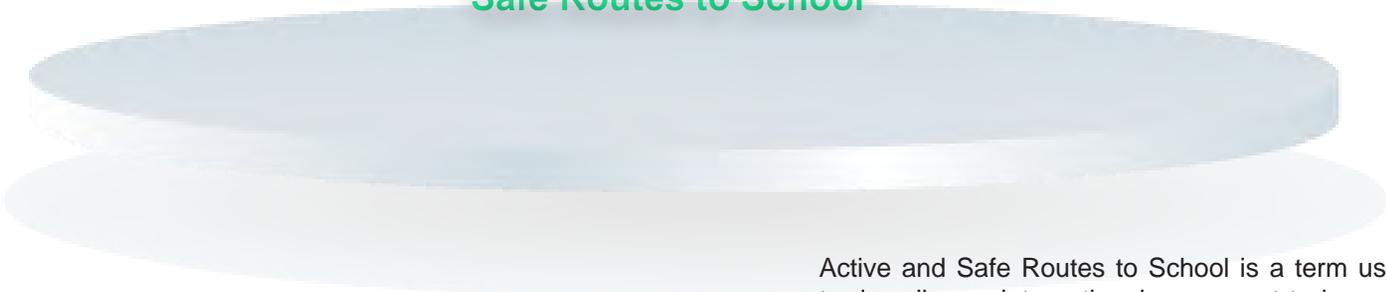
3D. Provide Well-Lit and Visible Pedestrian and Cycling Facilities

Actions

- i Improve visibility of underpasses with lighting and/or open design concepts.
- ii Provide illumination along sidewalks, crosswalks, pedestrian corridors, bicycle routes and pathways where deemed appropriate.
- iii Continue to follow standards to ensure CPTED principles are followed in pedestrian and bicycle facility design.



Key Direction 3E: Develop Active and Safe Routes to School



Active and Safe Routes to School is a term used to describe an international movement to improve children's safety as they walk and bicycle to school. The initiative is built on five program elements, called the "5 E's" of Safe Routes to School, which are engineering, education, encouragement, enforcement, and evaluation. Promotion of the Active and Safe Routes to School program is an important initiative to support the safety of students walking and cycling to school in Winnipeg, and is important as it educates both students and parents on road and traffic safety, and the benefits of walking and cycling. Typically, an active and safe routes to school program is a collaborative process between schools and the City, and can involve various organizations or agencies involved in advocacy and education. For example, the Green Action Centre currently has an Active and Safe Routes to School program that encourages the use of active modes of transportation to get to and from school. Some of the program components include conducting neighbourhood walkabouts, transportation surveys,





walking clubs, walking/cycling school buses for children with adult supervision, no-idling zones and active transportation events, such as Clean Air Day, Commuter Challenge and International Walk to School Day.

Continuing to support the development of Active and Safe Routes to School plans is an important initiative to support pedestrian and cyclist safety in Winnipeg, and it is recommended that this initiative be led by the Winnipeg School Divisions in partnership with the City and other organizations such as the Green Action Centre. By doing so, this can both improve youth pedestrian/cycling safety, but also help introduce students to more sustainable and active forms of transportation.

Key Direction

3E. Develop Active and Safe Routes to School

Action

i

Support and facilitate the development of Active and Safe Routes to School plans and provide appropriate infrastructure and operational improvements.





Strategic Direction 4 - Improve Maintenance

To enable walking and cycling in all seasons, winter cities such as Winnipeg need to maintain sidewalks and bikeways year-round, including snow removal in the winter. While implementation of actual infrastructure to promote walking and cycling is seen typically as a top priority, undertaking ongoing rehabilitation and maintenance of infrastructure needs to be an equally important focus. Maintenance is an important part of enabling more walking and cycling, as pedestrians and cyclists can be uniquely sensitive to the physical condition of infrastructure, in comparison to motorists. For example, maintenance-related issues such as potholes, irregular surfaces, and debris on sidewalks, roadways, and pathway infrastructure can be unsafe and particularly uncomfortable, affecting the comfort and appeal of walking or cycling. In addition, the lack of accessible and/or well-maintained infrastructure can have significant impacts on mobility and accessibility for the full range of users.

The residents of Winnipeg clearly place value and importance on the need for maintenance of sidewalks and roadways. In fact, maintenance and snow removal for pedestrian and cycling facilities emerged overwhelmingly as a top issue and priority throughout the public consultation for the Pedestrian and Cycling Strategies. Common concerns voiced throughout the process included:

- ▶ Poor road / sidewalk conditions such as potholes, roadway smoothness, and cracked pavements;
- ▶ Need to clear and maintain trails in both summer and winter months;
- ▶ Lane striping worn away on many bicycle facilities;
- ▶ Need for better snow clearance on sidewalks, as it creates a large barrier to winter mobility;
- ▶ Bicycle lanes are not always cleared to the curb and often appear to be used as snow storage areas; and
- ▶ Cyclists often have to use busy roads to find a route that is snow cleared.

Recognizing that year-round maintenance is top of mind for many of Winnipeg's residents, and the benefits of maintenance and rehabilitation on improving walking and cycling environments, the key focus of this strategic direction is to enhance maintenance approaches for both the sidewalk and the bikeway network. The discussion below reviews the current maintenance practices within the City, and the areas of improvement where enhancements can be made to the current system.

Key Directions:

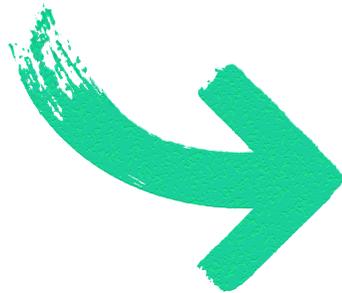
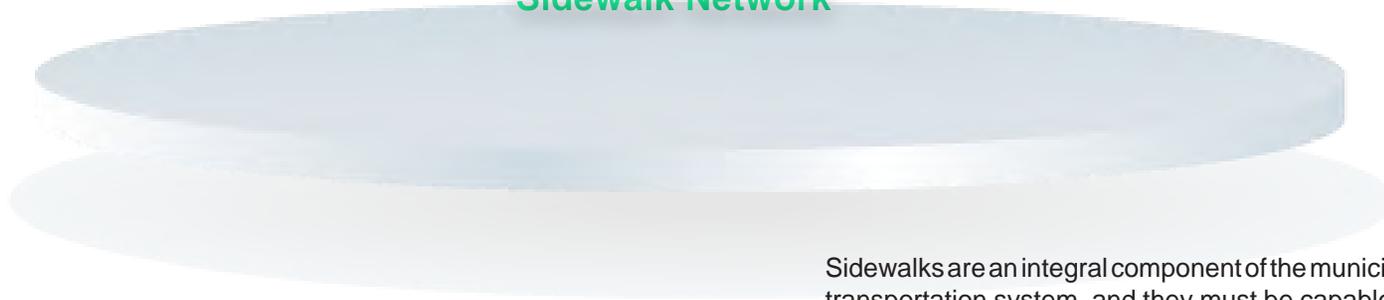
4A: Maintain the Sidewalk Network

4B: Maintain the Bikeway Network





Key Direction 4A: Maintain the Sidewalk Network



Sidewalks are an integral component of the municipal transportation system, and they must be capable of accommodating all users. Maintenance efforts are important to keep sidewalks as near as possible to their original condition, so that infrastructure remains functional and usable over time. The City undertakes sidewalk maintenance in a variety of ways throughout the year. Sidewalk maintenance is allocated into 17 maintenance zones each with a team responsible for maintenance and managing requests, including concrete spot repairs, curb repairs, asphalt patching, and addressing cracks or other surface defects. A sidewalk safety priorities review is undertaken on a rotation basis in three Wards every year. Once complete, the information is kept as a record of when defects were patched or renewed. No formal condition rating is applied to sidewalks due to the limited resources. The information gathered for each zone is used as input to complete sidewalk renewals, and priorities for sidewalk replacement are based on current condition and usage, with the highest priority given to sidewalks on routes to schools and senior centres.



Winter sidewalk maintenance is largely defined by snow removal activities. Currently, the City's Snow Clearing and Ice Control policy recommends priority snow clearance on all P1 routes (i.e. regional roads) and P2 routes (i.e. non-regional bus routes and collector streets), as well as some industrial area streets. This policy actively defines where and when snow removal is undertaken, resulting in the following snow removal priorities:

- ▶ Sidewalks and active transportation trails are normally plowed on the same priority as adjacent streets. The current snow removal priority system for sidewalks is tied to the street priority system, regardless of pedestrian volume or demand for travel on given sidewalks
- ▶ Sidewalks near schools and senior citizen centres are given high priority
- ▶ Snow removal on park pathways is lower priority, done after the City's sidewalk network is cleared

In comparison with other cities throughout Canada and the United States, Winnipeg is one of the few cities where the municipality is responsible for snow clearance on all public sidewalks, as many other jurisdictions require property owners or residents to clear sidewalks.



 CITY	 RESPONSIBILITY	 TIME FRAME
Boulder, CO	Owners or residents	Within 24 hours
Calgary, AB	Owner or occupant	Within 24 hours
Charlottetown, PEI	City	Not specified
Chicago, IL	Every owner or occupant of any building abutting a public sidewalk	If snowfall ends before 4:00 pm – 3 hrs to clear snow; If snowfall ends after 4:00 pm – clear before 10 am next day
Denver, CO	Property owners	Home owners – within 24 hr of end of snowfall; Businesses – within 4 hrs of end of snowfall
Des Moines, IA	Residents or business	Within 48 hours of end of snow fall
Edmonton, AB	Property owners	Within 48 hours
Fargo, ND	Residents	Within 48 hours of end of snow fall
Halifax, NS	City	Between 12 – 36 hours after snowfall
Madison, WI	Owner or occupant of property adjacent to the sidewalk	By noon of the day after the snow stopped
Minneapolis, MN	Residents or businesses	Houses / duplexes - within 24 hrs after snow fall; Apartment complexes – within 4 hrs after snow fall
Ottawa, ON	City	Between 4 - 16 hours after snowfall
Regina, SK	Property owners	Downtown within 24 hours, all properties outside of downtown 48 hours
St Paul, MN	Owner or occupant of property adjacent to the sidewalk	Within 24 hr of end of snow fall
Saskatoon, SK	Property owners	Residential sidewalks within 48 hrs. Designated commercial/suburban areas must be cleared in 24 hrs
Seattle, WA	Residents or businesses	Within 24 hours after snow fall
St John, NL	City - only heavily used sidewalks	Not specified
Toronto, ON	City (except downtown)	72 hours after snow has stopped
Winnipeg, MB	City	Within 36 hours



While current approaches within the City succeed in addressing select maintenance and snow removal concerns, there still are opportunities for improvement. There are some key strategies which can actively result in more adaptive responses to evolving sidewalk infrastructure needs throughout the City, as summarized below:

- ▶ **Develop sidewalk inventory and condition assessment.** The City should continually create and update an inventory of sidewalks including condition, width, adjacent road classification, pedestrian volume, adjacent land use and integrate this information into a Geographic Information System. Using this information, the City could also develop a Sidewalk Density Index for each neighbourhood or major destinations (e.g. sidewalk kilometres per km² within a particular neighbourhood or community destinations).

The City performed a sidewalk assessment program in 2002 to identify sidewalk conditions, in which 20,000 segments were rated. The inventory data was documented and hardcopy lists were provided to the foremen for each maintenance zone to guide repairs. Regularly undertaking an inventory and assessment of sidewalks can continually inform the City and maintenance crews about the state of the City's sidewalks and where repairs are needed.

- ▶ **Develop a process to prioritize sidewalk maintenance.** Once sidewalk conditions are inventoried and assessed, it is important to establish maintenance priorities for these assets. The City could use an approach that utilizes GIS to identify network gaps, proximity to key pedestrian destinations (i.e. proximity to schools), and proximity to recreational areas. Using these metrics, the City could assess where the highest needs and priorities are for sidewalk maintenance. This could also be part of an asset management program for sidewalk facilities, focusing on sidewalk conditions around schools and senior centres, hospitals and other key destinations. A separate asset management program could also be developed for Downtown Winnipeg.
- ▶ **Develop a separate snow clearing priority system for sidewalks.** In the current system, where sidewalk snow removal is tied to the priority of the adjacent roadway, sidewalks that experience high volumes of pedestrians may be overlooked for snow clearing, simply because the adjacent street is not deemed an immediate priority. Alternatively, sidewalks with low volumes of pedestrians might be regularly snow cleared, due to the fact that the adjacent roadway is deemed high priority. Due to this, the City would benefit from developing a separate snow removal priority system for



sidewalks, based more on pedestrian activity and demand. In addition, snow clearance on sidewalks should be based on time since the end of snowfall condition, rather than a snowfall accumulation condition. It is recommended that the City study the feasibility of the following sidewalk priority system:

- **Priority 1 Sidewalks**, including all sidewalks located in the downtown square, as defined in the existing snow clearing policy, and all sidewalks in the vicinity of hospitals, nursing homes, and seniors residences (whether on arterials, collectors or local streets). Priority 1 facilities should be plowed to bare pavement by City personnel within 24 hours of end of snowfall.
- **Priority 2 Sidewalks**, including all sidewalks, neighbourhood paths, and cut-throughs along regional streets, bus routes, and in the vicinity of elementary schools and places of worship. Priority 2 facilities should be plowed to bare pavement by City personnel within 48 hours of end of snowfall.
- **Special sidewalks**, including all sidewalks along residential streets, existing Priority 2 streets which are not bus routes, and along other existing Priority 1 streets (as stated in the existing policy) which are not part of

the proposed Priority 1 Sidewalks category. Special sidewalk facilities should become the responsibility of every owner or occupant of any building abutting the public sidewalk. These sidewalks should be cleared within 24 hours of end of snowfall and should be shovelled to bare pavement. Sand or other de-icing agents should be applied by those responsible for snow clearing to control ice accumulation. It is recommended that the entire width of sidewalk be shovelled, including the curb cut ramp in the case of corner lots. Penalties should be imposed on residents who fail to clear their sidewalk.

Requiring residents to clear the residential sidewalks abutting their homes may be something the City considers in the future if it could result in an increase in service level. There are many factors affected by this possible change in policy that have not been investigated at this time.

Currently all City sidewalks are cleared to a compacted snow surface, except sidewalks in the Downtown which are generally plowed to a paved surface whenever conditions allow. Residential sidewalks are normally cleared within 5 working days. Work on weekends and holidays are limited. This means that the snow on these sidewalks has been left for



several days to a week. By this time the snow accumulation has been packed and hardened, by cold weather, wind, and pedestrian activity, in such a way that removal requires heavy equipment. If the snow was cleared within 24 hours this would not be a significant issue. As a result it would be possible that the snow clearing could be done by hand by the residents.

It is possible that funding savings resulting from residents being responsible for clearing residential sidewalks could be used to increase the quality of snow clearing efforts on higher priority sidewalks. For example all sidewalks might be cleared to a paved surface instead of a compacted snow surface. In addition, it could be possible to snow clear some of the designated park pathways that currently are only cleared as a last priority and only when adequate funds are available. However, the administration and enforcement of a policy requiring residents to clear residential sidewalks would have a cost associated with it. This issue requires further study in order to determine its feasibility.

There are significant problems related to the idea of residents being responsible for clearing sidewalks abutting their residents. Many residents are physically unable to clear sidewalks or are away from their homes during snow events. In addition, it is reasonable

to expected significant opposition to such a radical change in snow clearing policy. If the idea proves to be financially feasible a comprehensive public consultation program would be required in order to determine whether this policy change could be instituted.

► **Develop support programs to encourage resident sidewalk snow removal on residential streets.**

As noted above, the “Special Sidewalks” category would be the responsibility of the owner or occupant of any building abutting a public sidewalk. Although it is common in most cities across North America to require owners and occupants to clear sidewalks on residential streets, this is a significant change for Winnipeg. As such, the City should develop support programs to encourage resident sidewalk snow removal on residential streets. This could include:

- **Establishing a snow angels program** to support sidewalk clearing for seniors and others with mobility restrictions during the winter. Snow Angels programs are typically reliant on neighbours and volunteers to help neighbours to clear public sidewalks after a snowfall, so seniors and/or those with mobility issues, can still use the sidewalks to run errands, go shopping, and travel around. Snow Angels programs recognize



the importance of walking for vulnerable groups, and would be a way to facilitate a safe walking environment year-round in Winnipeg.

- **Establishing a reporting program for those who are unable to clear their sidewalk**, especially for those unable to clear their sidewalk due to health or mobility impairments, or who are on vacation and unable to clear their sidewalks, the City should establish a reporting program on the City's website for residents to notify the City and request support.
- ▶ **Develop snow removal priorities for pathways**, since many pathways provide critical connections and recreational opportunities in the winter. Currently, the snow clearing on park pathways is considered as a "Priority IV" undertaking and does not start until after the completion of the City's public sidewalk network. Pathways eligible for snow removal include those with logical connections to the Active Transportation Trails, and critical pathways within city parks and neighbourhood parks. Currently there is not a standard of how much snow cover is acceptable along these trails or when these trails are cleared following a snow event. Building on this existing approach, it is important to continually refine the

snow removal priorities for Winnipeg's pathway network, especially as the network expands and pedestrian demands change over time.



The responses received from the Pedestrian and Cycling Strategies engagement process indicated the need for a revised approach to sidewalk maintenance and snow removal. Below are the proposed actions to guide the City's approach to ensure safe and well-maintained infrastructure throughout the City.

Key Direction

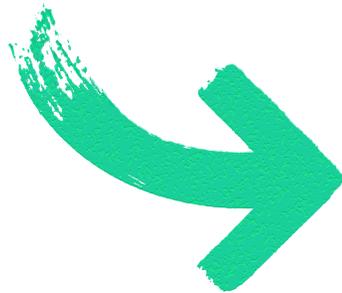
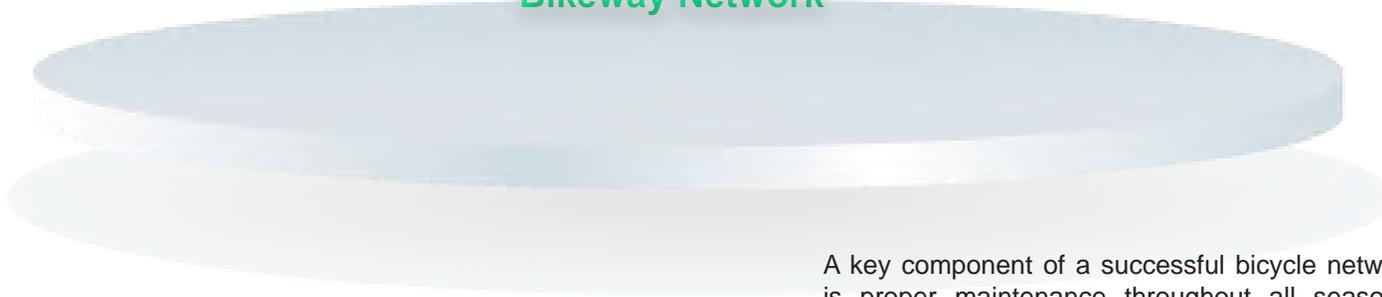
4A. Maintain the Sidewalk Network

Actions

- i** Regularly update the sidewalk inventory including condition, width, adjacent road classification, priority level, adjacent land use and integrate this information into a Geographic Information System.
- ii** Develop a pedestrian facility maintenance categorization system.
- iii** Refine the asset management program for sidewalks and prioritize improvements for areas around schools, seniors centres, hospitals and other key destinations.
- iv** Develop a separate snow clearing priority system for sidewalks to achieve a higher level of service for sidewalk clearing.
- v** Develop a strategy to snow clear residential sidewalks within 24 hours.
- vi** Refine the priority network of off-street pathways for snow removal.
- vii** Develop and encourage support programs to encourage resident sidewalk snow removal on residential streets.



Key Direction 4B: Maintain the Bikeway Network



A key component of a successful bicycle network is proper maintenance throughout all seasons. Bicycle route maintenance can often be overlooked or neglected due to tight operating budgets, large outstanding maintenance needs, or an insufficient inventory of bikeways maintenance issues. However, like all sidewalks and roadways, bicycle facilities require regular maintenance, especially sweeping, maintaining smooth roadways, ensuring that gutter-to-pavement transition remains relatively flat, and installing bicycle-friendly drainage grates (as seen throughout Winnipeg). Year round maintenance, especially during the winter months, is an important practice for a city like Winnipeg that has a substantial cycling culture where people want to cycle year-round for transportation and recreation. Good maintenance practices are of particular importance for communities wanting to encourage more people to cycle, as cyclists are especially susceptible to falls or collisions due to uneven road surfaces, potholes, and debris on the roadway.



Currently, the City typically maintains on-street bicycle facilities at the time of road resurfacing or rehabilitation. In Downtown, bicycle lanes on roads with high vehicle volumes get priority for maintenance. The City also has a dedicated budget for off-street pathway renewal and maintenance, which typically consists of improving pathway surfaces. Pathways are also swept as part of the annual spring clean-up maintenance activities. In regards to snow removal, the City's bicycle lanes are mainly located on Priority 1 and 2 streets, and are cleared accordingly to these standards.

Recognizing that the bicycle network needs to be continually maintained year-round to encourage more and safer cycling in Winnipeg, the following strategies are recommended:

▶ **Coordinate bicycle facility maintenance with road operations and maintenance activities.**

Ensuring that bicycle facility maintenance occurs at the time of road rehabilitation and other improvements can result in a cost-efficient way to address both road and bikeway maintenance. Where opportunities exist to incorporate both roadway and bikeways maintenance simultaneously, these projects should be identified and assigned higher priority to ensure improvements to bicycle facilities over time. This can include coordinating and refining activities such as the sweeping program and

pathway resurfacing. Incorporating bicycle facilities into an asset management program can also serve to ensure a more coordinated and prioritized approach to maintenance.

▶ **Accommodate cyclists during roadway construction activities.**

It is important to accommodate cyclists during construction and maintenance activities when roadways or paths might be closed or unavailable. Cyclists should be given sufficient warnings of route closures (i.e. "Bike Route Closed," "Trail Closed") and provided adequate detour information to bypass the construction zone. Signage information should also display alternate routes and dates of closure. Alternate routes should provide reasonable directness, equivalent traffic characteristics, and be signed. General guidance includes:

- Provide fire and police departments with maps of the bicycle network, along with access points to gates/bollards;
- Enforce speed limits and other rules of the road; and
- Enforce all trespassing laws for people attempting to enter adjacent private properties.



- ▶ **Designate and prioritize a Winter Cycling Network for snow removal.** As discovered through public feedback and input, many residents are willing to bicycle in the winter, so long as bicycle routes are maintained and network connectivity is preserved. The bicycle network should be treated like the rest of the roadway networks – with the highest demand bicycle routes receiving the first and most thorough snow treatment, and other bicycle routes being treated subsequently depending on their network importance. By doing this, the City should determine a ranking based on level of use of each of these bicycle routes, effectively establishing a “Winter Cycling Network”. Three facility priorities are recommended for snow removal purposes:
 - **Priority 1 bicycle routes**, including all on-street bicycle lanes on regional roads that are classified as Priority 1 streets for snow clearance. Additionally, these would include off-street pathways and bicycle routes on non-regional Roads with the highest bicycle daily volumes, as well as their connections. These routes should be plowed within 36 hours of the end of an average storm. During a major storm, however, advanced priority for plowing should be given to Priority 1 and Priority 2 sidewalks, as well as to Priority 1 and Priority 2 streets.
 - **Priority 2 bicycle routes**, including bicycle routes with moderate bicycle daily volumes, and their connections. These trails should be plowed within 48 hours of the end of an average storm. Similar to Priority 1 routes, advanced priority for plowing should be given to Priority 1 and Priority 2 sidewalks, as well as to Priority 1 and Priority 2 streets during a major storm.
 - **Priority 3 bicycle routes**, are those with low bicycle daily volumes. These trails should be cleared to a compacted snow surface within 5 days of the commencement of an all-out plowing operation.
- ▶ **Design bicycle routes to facilitate snow removal.** One of the best ways to facilitate the removal of snow from bicycle routes is thoughtful roadway and bicycle facility design. Unfortunately, with roadways that include typical, unprotected bicycle lanes at the edge of the roadway, the bicycle lane often becomes the area for snow storage on the roadway, as was noted by the public. This leaves cyclists either trying to share the car lanes or riding on the edge of the road while trying to avoid piled-up snow– both of which are unsafe and uncomfortable. There are several roadway planning and design considerations that can be taken to avoid this situation, including:



- **Plan new or renewed roadways with sufficient right-of-way** to provide enough right-of-way for a bicycle lane and an adequately sized storage space on the road side. This would allow a typical truck-mounted snowplow to plow snow into the storage space rather than the bicycle lane. A 1.8 m bicycle lane would also allow for some narrowing of the bicycle lane due to adjacent snow storage, while still maintaining functionality.



- **Provide a wide bicycle lane buffer.** Where feasible, a wide protected or unprotected bicycle lane buffer can provide

ample storage space for snow, while providing cyclists protection from vehicles. A minimum 1.5 metre buffer is preferable to accommodate moderate snowfall with minimum encroachment upon the bicycle lane. This design would require the use of a smaller bicycle lane snow plow to clear this portion of the roadway.

- **Restrict on-street parking during snow events.** Where a bicycle lane is located between on-street parking and the vehicular



lane, parking along the roadway can be restricted during snow events to allow this space to become snow storage space. While this isn't an option for all roadways, it could be utilized along priority bicycle routes in the winter.

- **Where possible, clear parallel off-street facilities or neighbourhood greenways** for cyclists, so accommodating cyclists on the main route is less necessary. It would be important to ensure that alternate snow routes are clearly marked, well-maintained, and bikeway network connectivity isn't affected.
- **Provide Enough Width for Small Truck Snowplows.** The City has small, specialized snow removal vehicles that are



used to remove snow where typical snow removal vehicles are too wide to pass. Many cities with harsh winter climates have a fleet of these specialized vehicles and ATV mounted snowplows primarily for the purpose of clearing sidewalks. While these vehicles can be useful for clearing some narrower protected bicycle lanes and off-road trails, they hold a disadvantage in that they require special training to operate, they typically operate slower than truck mounted plows and they require a vehicle to transport them to the snow removal site. The preferred practice is to design protected bicycle lanes and off-road trails so that typical pickup truck mounted plows can clear them. In order to do this, the protected bicycle lane and buffer or trail has to have at minimum 2.4 metres of clear space (minimum 2.7 metres preferred).

- **Recessed Thermoplastic Pavement Markings.** Milling the area of pavement 3mm in depth where thermoplastic pavement markings are applied has shown to be effective in reducing damage as a result of snowplows in a 2010 study. Minneapolis, MN mills the area of pavement where thermoplastic bicycle lane indicators are placed to help reduce damage as a result of snowplows. While this method

results in more expensive installation costs, if the bicycle lane is located on a street that receives heavy plowing, it may save in long-term maintenance costs (and help preserve safety conditions along the roadway). Milling may also be applied to off-road trails that receive heavy plowing.

- ▶ **Develop a bicycle counting and monitoring program.** By undertaking continual bicycle counts, the City can monitor the development of bicycling activity on a regular basis, and can evaluate and assess if a community is achieving its cycling objectives. Bicycle Accounts typically report on important public input that can be used and incorporated into the bicycle planning process. The Bicycle Account can also be, in itself, an opportunity to do community-wide marketing and communication on bicycling.



The responses received from the Pedestrian and Cycling Strategies engagement process indicated the need for a revised approach to bikeway maintenance and snow removal. Below are the proposed actions to guide the City’s approach to ensure safe and well-maintained cycling infrastructure throughout the City.

Key Direction	Actions
4B. Maintain the Bikeway Network	<p>i Coordinate bicycle facility maintenance with Operating Programs, refine the sweeping program, and continue to invest in annual pathway resurfacing.</p>
	<p>ii Add accommodation of bicycle users during construction and maintenance activities to the City’s Manual of Temporary Traffic Control in Work Areas on City Streets.</p>
	<p>iii Designate and prioritize a Winter Cycling Network for snow removal.</p>
	<p>iv Design bicycle routes to facilitate snow removal and snow storage.</p>
	<p>v Continue to develop a pedestrian and bicycle counting and monitoring program.</p>
	<p>vi Maintain the asset management program for bicycle facilities and prioritize maintenance and improvements within the Downtown and along the spine network.</p>





Strategic Direction 5 - Improve Vibrancy

The vibrancy of a place depends on the level of positive and acceptable human activity that takes place within it. In turn, the level and type of activity that happens in a place is greatly influenced by the physical and urban design of that place, and the activity that is planned to take place there and/or is able to be accommodated in it.

In the CCDS, urban design is defined as the complete arrangement, look and functionality of any area(s) within a town, city or village. It recognizes that urban design is shaped by factors at various scales of design and that all scales of design influence how people live – how they engage with each other and how they engage with the physical place around them.

At the macro-scale, urban design relates to how a neighbourhood is laid out – what the transportation network looks like and how land uses, destinations and the associated activities they contain are organized in relation to that street network. Also relevant at the macro-scale is how framework streets such as arterial and collector streets (with appropriate pedestrian and cycling facilities) as well as regional pathways provide direct linkages between neighbourhoods, and to key localized or regional destinations.

At the micro-end of the scale, urban design relates to individual site layout and orientation, the architectural expression of building facades (projections, openings, patterns and materials) and the details and materials of streetscape elements (trees, design of seating amenities, lighting, bike racks, etc.).

Together, the macro and micro scale of urban design influence how walkable and accessible by bike an area is and how efficiently and effectively that area can be served by transit. In order for our communities to be designed to be walkable, bikable and served efficiently by transit, the decision making tools used in land use planning and development processes need to each do their part to ensure that urban environments are capable of achieving vibrancy. The City of Winnipeg would benefit from working with the development industry and other stakeholders to develop a Local Area Planning Handbook, sub-division guidelines and site design guidelines to provide the necessary guidance to ensure pedestrian and cycling needs are addressed at each level for effective implementation.

Key Directions:

5A: Enhance Land Development and Site Design Tools

5B: Enhance Streetscapes and the Public Realm





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BUSKSTOP
BUSK RULES

FOR BUSKERS:

- Perform between 10:00 AM and 6:00 PM
- Perform on the designated busk area
- Perform on the designated busk area
- Perform on the designated busk area

FOR VISITORS:

- Listen to the music and enjoy the performance
- Listen to the music and enjoy the performance
- Listen to the music and enjoy the performance

Scotiabank

At the local area planning scale, it is important to ensure that the framework streets provide direct connections to adjacent areas, both to support direct and short trips between neighbourhoods by foot and by bike, but also to maximize transit route coverage and directness. Orientation of land uses in relation to these framework streets must ensure community destinations and attractions such as commercial and mixed use development; public facilities such as schools, libraries and community centers; transit stops/stations; and other places of employment so that they are located close to the framework streets, and so that higher density residential development is located within proximity to such destinations. This will increase the number of direct and short trips that can be taken by active modes or transit.

The same principles apply when lands are subdivided and new routes or networks of travel are established. Care must be taken so that the local street network together with the framework streets provide a network of short blocks and a high density of intersections to provide opportunities for short and direct trips for pedestrians and cyclists.

At the site design level, factors such as site organization, building placement and building entrance orientation, vehicle and bicycle parking supply, and layout all impact whether interior and exterior destinations on individual parcels of

land are easily and conveniently accessed as a pedestrian or by bicycle.

Like many other communities in North America, Winnipeg is facing challenges from being an auto-dependent community. In recent history, the form of many North American cities evolved from being compact and mixed-use areas where people could live, work, and shop in close proximity, to more dispersed and segregated land use patterns that placed residences further from services and amenities. The design of suburban areas has fostered a market for auto-oriented land uses, which, in turn has increased pressures to build more road space to support driving for our daily needs. This change in urban structure and the form of cities has made it more difficult to walk and cycle to serve our daily needs, while also making the provision of attractive transit services more challenging. In addition, the shift of land use and travel behaviours has minimized the vibrancy of certain areas and created sizable barriers to providing attractive transportation choices.

Walking and cycling can help create vibrant, liveable streets and support healthy, active lifestyles for people of all ages and abilities. The Pedestrian and Cycling Strategies presents an opportunity for infrastructure, programs, and policies to enable more walking and cycling; however, land use must be supportive to create areas where people want to



walk and cycle. This presents a unique opportunity to reinforce the City's overarching land use vision as articulated in OurWinnipeg and the CCDS. These documents seek to make more sustainable and vibrant neighbourhoods throughout Winnipeg, through more dense and clustered developments, more mixed use and diverse services, pedestrian-friendly urban design, and high quality public spaces. Areas such as Downtown, and centres and corridors (characterized by mixed uses and higher densities) are identified as where these changes can have the most impact, and where enhanced conditions can result in more safe and comfortable walking, cycling, and transit use – and just more local vibrancy overall.

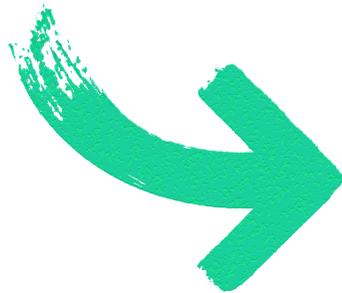
The need to do this was also clearly emphasized throughout much of the public input and feedback received as part of the Pedestrian and Cycling Strategies process. Stakeholders and the public highlighted various issues and opportunities with land use and site design, including:

- ▶ Fewer car-oriented developments;
- ▶ More compact and mixed-use land uses to encourage more walking and cycling;
- ▶ Amenities such as rest areas, public art, garbage bins, wayfinding, water fountains;
- ▶ Interactive public spaces and public art; and
- ▶ More playgrounds or recreational spaces for children and youth.

This Strategic Direction to Improve Vibrancy builds on these opportunities, with supportive actions that seek to capture the opportunity to enhance streetscapes, the public realm, and site design to create more pedestrian, cyclist, and transit-friendly environments.



Key Direction 5A: Enhance Land Development and Site Design Tools



In addition to place-making, land development and site design influences transportation choices. Well-designed communities make walking and biking the best way to move around for local trips. Specific design principles that support sustainable travel modes are embraced within the 5 D's of land use and transportation design, known as destinations, distance, density, diversity, and design. The impacts of these features on walking and cycling is summarized below:

- ▶ The presence of **destinations**, including destinations with the services and amenities that meet daily needs and are reachable by walking, cycling or riding transit.
- ▶ **Distances** between destinations (i.e. between home, work, school, parks) must foster travel lengths that are short enough to be done by walking or cycling, or when further apart, by



transit. Distances are influenced both by the mix of land uses and the layout of the transportation network, in particular factors such as block length and intersection density. Small, well-connected blocks allow people to walk and cycle between destinations without the need to make long detours.

- ▶ Higher **densities** of residential, employment and service and amenities are necessary to ensure a sufficient population is present to allow businesses and services to be successful.
- ▶ A **diversity** of housing, services, and employment within a neighbourhood can increase the opportunities for residents and employees to walk or cycle to access local destinations
- ▶ **Design** characteristics of the road network, buildings, and public realm influence the attractiveness of walking, cycling and taking transit. A public realm design that is attractive and comfortable can make people more willing to travel farther and longer within it on foot or by bicycle.

While many of these characteristics promote neighbourhood design that is supportive of walking and cycling, many of Winnipeg's neighbourhoods are designed primarily to accommodate motor

vehicles, with limited focus on pedestrians or cyclists. This type of automobile-oriented neighbourhood design makes walking, cycling, or even transit a less attractive option, and can make street environments less enjoyable for residents. Even where streets have comfortable infrastructure for walking or cycling, residents will be deterred from using these modes if the street network within their neighbourhood is indirect and circuitous. Pedestrians in particular are very sensitive to longer routes; they travel slowly and therefore additional trip length can add significant time onto their trips; direct routing should be a priority for pedestrians. In several neighbourhoods within the city, levels of walking are higher where a strong grid road network is present, even if there are gaps in sidewalk coverage.

The City should work with relevant stakeholders to identify the characteristics of neighbourhood design that fosters high levels of pedestrian, cycling, and transit ridership in Winnipeg and other cities. Once consensus has been reached around these characteristics guidelines should be developed to ensure that future neighbourhoods are developed to enable pedestrian, cycling, and transit ridership.

There are opportunities to promote more of these characteristics throughout Winnipeg within new neighbourhood development and redevelopment activities. In fact, there are several different tools that the City could employ in working with the



development community and other stakeholders to promote more walking and cycling-friendly environments:

- ▶ **Incorporate walking and cycling requirements into various regulatory tools, including:**
 - **Development agreements**, which are used by the City as a legal contract that sets out terms and conditions under which land development is to take place. Development agreements are one of the tools available to the City to ensure accommodations for pedestrians and cyclists, as well as access to transit at the time of development. Given the number of city departments that are involved in services, utilities, and infrastructure for pedestrians and cyclists, it is important that the City improve interdepartmental efficiency to identify pedestrian and cycling requirements to be captured at the time of development agreement.
 - The City can also explore creating a **development checklist tool** to encourage bicycle and pedestrian-friendly development. As used by various other local governments throughout Canada, a development checklist in Winnipeg could

be used to assess how a development application fulfills the City's overarching goals and policies related to land use, environment, transportation, and other elements. This checklist could evaluate how a development is aligned with the directions for bicycle and pedestrian-friendly design, as articulated in OurWinnipeg and Complete Communities. Ultimately, the purpose of a checklist would be to provide land development guidance to developers on how their project aligns with City aspirations for complete and sustainable communities, and where areas of improvements may exist.

- Using **transit, walking and cycling network plans** as tools within other planning processes, including OurWinnipeg and secondary plans. Secondary plans are used to provide more detail on how different neighbourhoods, districts, or areas of the city are to be developed. Secondary plans refer to neighbourhood plans, area redevelopment plans, area structure plans and so on. Throughout the development of a secondary plan, land use concepts are drafted, community design elements are identified, and infrastructure and site servicing needs are laid out. As part of



the latter, transportation infrastructure and servicing needs are considered for roads, transit, pedestrian and bicycle networks. Having city-wide and local network plans already in place at this stage in the process could inform the infrastructure and site servicing requirements for a development, ensuring that these needs match the aspirations of the City.

- In addition to these tools, the City should explore where additional opportunities to integrate requests for pedestrian or cycling facilities into the plan approval process may be, including during secondary plan formation and other processes.
- ▶ **Work with the development industry** and relevant stakeholder groups (such as the Urban Development Institute) to encourage development of walkable and bikeable communities. Many stakeholders within the development industry are already actively incorporating walking and cycling facilities as per best practices and site design principles upon their own initiative. It is important to continually work with the development industry to promote the benefits and advantages of walking and cycling-friendly developments. Continually engaging with the industry can also

provide opportunities to inform stakeholders on the City's land use vision and aspirations for the future.

- ▶ Support **infrastructure and design features** that support pedestrians, cyclists, and transit riders, through provision of sidewalks, bicycle routes, pathways, and access to transit. In order to ensure that sustainable transportation is supported through site design, the City should actively work with the development industry to enhance pedestrian and bicycle connectivity to, within, and through new development and redevelopments. This can include actions such as upgrading sidewalks at the time of redevelopment, ensuring redevelopment incorporates pedestrian and bicycle pathways, and encouraging site designs that promote a high level of access to transit for residents and employees of new developments. The City should provide more detailed guidance on site design features for mixed use centres and corridors, in order to ensure that pedestrian and bicycle connectivity is being maximized in both new developments and redevelopment.



Key Direction**5A. Land
Development and
Site Design****Actions**

- i** Improve interdepartmental efficiency in identifying pedestrian and cycling requirements for development agreements.
- ii** Work with the development industry and other stakeholders to support the practical implementation of walkable and cyclable communities.
- iii** Develop a checklist with provide land development guidance regarding bicycle and pedestrian network design, and pedestrian, bicycle and transit supportive site planning.
- iv** Incorporate minimum pedestrian, bicycle and transit network requirements into the Plan Approval Process.
- v** Ensure that pedestrian, cycling and transit network plans are developed to support walkability and bikability considerations in Area Structure Plans, precinct plans and area master plans.
- vi** Continue to support downtown development by upgrading sidewalks where required as redevelopment occurs.
- vii** Ensure site design in redevelopment sites to enhance pedestrian and bicycle connectivity within mixed use centres and corridors.
- viii** Ensure that the bicycle network and sidewalk network provide connections to all Mixed Use Centres and Corridors.

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Key Direction

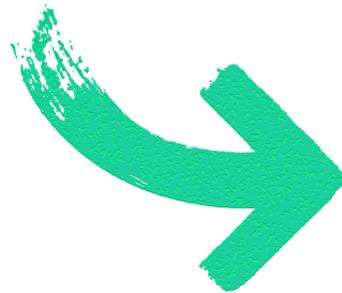
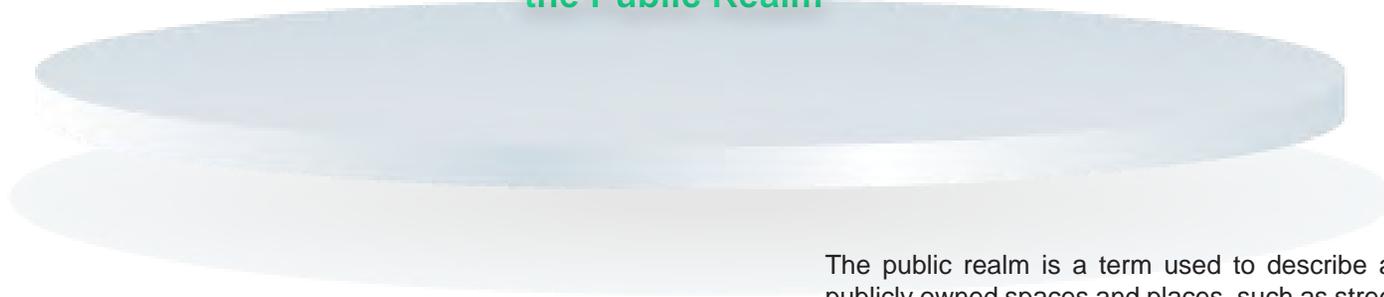
Actions

**5A. Land
Development and
Site Design**

- ix** Aim to have an internal street and pathway network within the development site together provide an acceptable level of pedestrian and cycling connectivity.
- x** Aim to achieve pedestrian and cycling connections from new development sites to surrounding existing and anticipated networks.
- xi** Develop flexible parking standards to reduce motor vehicle parking requirements if pedestrian and bicycle facility requirements are met or exceeded.
- xii** Work with developers at the time of development to accommodate transit supportive neighbourhood design, and to place all residents and employees within 400 metres walking distance of a bus stop.
- xiii** Work with transit at the time of new development to enhance transit service to meet demand.



Key Direction 5B: Enhance Streetscapes and the Public Realm



The public realm is a term used to describe any publicly owned spaces and places, such as streets, pathways, right-of-way, parks and open spaces, and civic buildings and facilities. Within the public realm, the city-wide street network in particular comprises one of the most extensive public spaces in a community, though not always considered a high quality public space as most streets primarily function as thoroughfares and are dominated by automobiles. The public realm, and the streetscapes within it, are the areas where Winnipeggers move through, strongly defining the areas of everyday life where we live, work, and play. By enhancing the public realm and streetscapes, there is the ability to create more welcoming and vibrant everyday spaces to travel to and through, linger within, and socialize. It is also inherent that by creating a more inviting and safe public realm, more people may be encouraged to walk or cycle to and within certain destinations. It is of critical importance that in improving the vibrancy of streetscapes, a



balance must be struck in regards to managing the conflicting demands of traffic management and the preservation and enhancement of the public realm. OurWinnipeg and the CCDS direct the City to embrace the concept of Complete Communities and Complete Streets. Complete Streets aim to provide a range of transportation options, including private automobiles, transit, cyclists and pedestrians in a safe and efficient manner. Complete streets are context sensitive and generally incorporate road treatments that address the unique issues of each corridor.

Lastly, it is important that streetscape and public realm improvements be strategically undertaken where it will have the most benefit. The CCDS identifies mixed use centres and corridors as focal points of the community, to be defined as areas with mixed uses, high densities, spaces for gathering, and high-levels of accessibility by different modes. Public realm improvements, such as high-quality plazas, parks, and streetscape enhancements, are identified as a tool to enhance these mixed use centres and corridors, making these ideal areas of the city to focus these strategies on in the future. Some of these key approaches to actively enhance the streetscapes and public realm in Winnipeg are summarized below:

- ▶ **Support more streetscape amenities within the public realm** that enable comfort, convenience and enjoyment of public spaces. Streetscape amenities often serve to improve the physical environment of a public space, through elements that either add an aesthetically appealing feature and/or serve a useful function. Typically streetscape amenities refer to a wide range of street furnishings, such as benches, street trees and planter boxes, street lighting, banners, bicycle racks, and public art. However, gathering spaces such as outdoor café patios, plazas, and parklets also serve as an amenity since they have place-making qualities that add street activity and vibrancy to an area.

Streetscape amenities placed within the public realm are intended to create more attractive and lively areas that encourage people to spend more time outdoors, and to provide more opportunities for people to rest and socialize. Typically, streetscape amenities are publicly shared resources, targeted at improving the pedestrian environment. However, the effect of these amenities can be to create attractive destinations for both cyclists and transit users as well.



While streetscape amenities can effectively create more pedestrian, cyclist, and transit-friendly spaces, it is also important to be cognizant of appropriate design, quality, maintenance, and placement characteristics, so that amenities do not become visually unappealing, or become obstacles or hazards for those with cognitive or visual disabilities. It is also important to collaborate with local businesses when considering streetscape improvements, to gain buy-in and input on the solutions.

- ▶ **Accommodate cyclists to travel through and within mixed use corridors and centres,** so that cyclists can easily access and enjoy the services and amenities within areas, and effectively contribute to the local vibrancy. By ensuring that people can access mixed use corridors and centres throughout Winnipeg by sustainable transportation, there can be less reliance on the need to drive (and park) in these areas, contributing to more pedestrian, cycling, and transit-friendly environments. Providing bicycle access to future mixed use corridors and centres can be achieved through ensuring features such as bicycle pushbuttons, connected bicycle routes, and bicycle parking in the public right-of-way. Having ample bicycle parking in high activity areas not only adds to the vibrancy, but also adds an aesthetically interesting feature to the streetscape. For

example, the City already has an active program of implementing seasonal bicycle pads and corrals within the street right-of-way, which involves removing a parking space that previously would have been occupied by cars, and adding in bicycle parking that can attract cyclist trips and encourage longer stays within the area.



Visual Summary

Streetscape Amenities



STREET FURNISHINGS or street furniture is a term used to describe objects within the public right-of-way that are for public use, as a shared resource. Street furniture can include benches, tables, seating, garbage cans, and bollards.



PLANTERS & STREET TREES can be placed within the public realm on planting strips, medians, and along sidewalks. Street trees can benefit an area by providing shade and rain protection, creating a safer and more interesting walking environment, and also by absorbing precipitation and producing less water runoff.



BANNERS & ENTRANCE FEATURES add liveliness to the street, designate districts, and highlight significant areas, while also promoting events and history.



WIDE SIDEWALKS can allow a more comfortable walking experience. Wider sidewalks can create opportunities for more furnishings and greenery, and support more opportunities for resting and interacting with a space.



PUBLIC ART can contribute to creating a sense of place and community identity. Public art can effectively enliven and enhance the public realm, through providing interesting built environment features, and providing opportunities for people to interact with their environment.



PATIOS. Outdoor patios for cafes and restaurants create formal places for people to rest, socialize, put eyes on the street, and add overall vibrancy and street life to an area.



ROUTE



EXCEPT
CYCLISTS



The responses received from the Pedestrian and Cycling Strategies engagement process indicated the need to improve vibrancy at both the local and city-wide level. Below are the proposed actions to achieve enhancements to Winnipeg's public realm, and the streetscapes within.

Key Direction

5B. Enhance Streetscapes and the Public Realm

Actions

- i** Create vibrant streetscapes and places in conjunction with partners by providing public amenities such as street trees and vegetation, planters, patios, plazas, parklets, banners, and public art and supporting special programming along mixed use centres and corridors and in the Downtown.
- ii** Ensure the bicycle network provides access to mixed use corridors and centres.
- iii** Ensure bicycle parking is provided in the public right-of-way at destinations in mixed use centres and corridors.





Strategic Direction 6 - Increase Awareness

A range of support initiatives to increase education and awareness around walking and cycling must also be in place to encourage people to walk and cycle more in Winnipeg. These types of programs and initiatives to increase awareness can help people to learn how to use Winnipeg's streets safely as a pedestrian or a bicycle user. Measures to increase awareness are considered 'softer' measures for promoting walking and cycling, since they involve no engineered features or design mechanisms.

Approaches to increase awareness can include enhanced wayfinding, signage, trip planning tools, route maps, skills-building programs, and promotional campaigns. Improving awareness about walking and cycling in the City can also be a cost-effective approach to enable people to feel more safe and comfortable using active modes to get around, while encouraging increased use of pedestrian and cycling facilities.

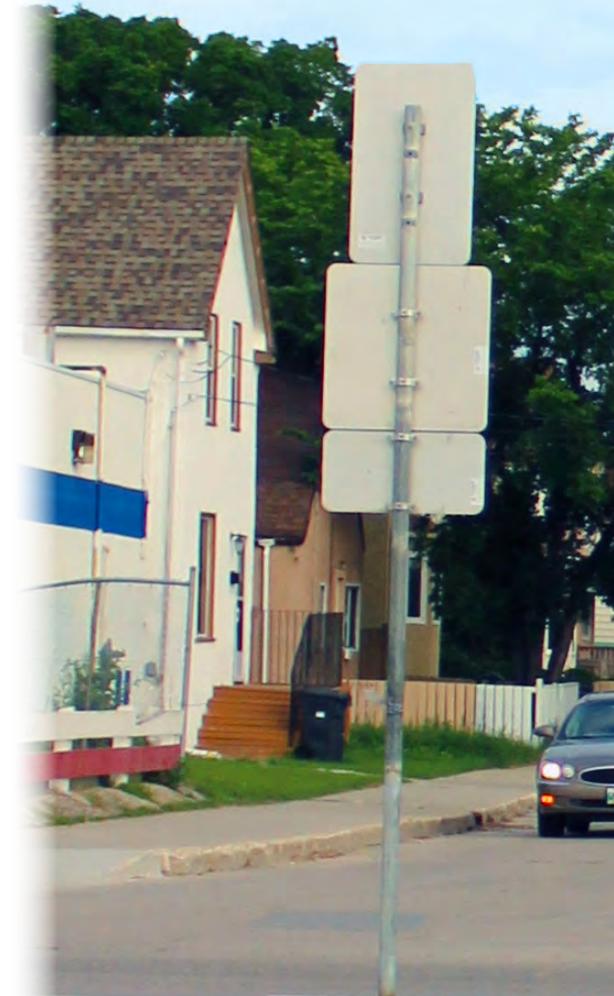
The Key Directions to increasing awareness about walking and cycling in Winnipeg include enhancing wayfinding, signage and trip planning; improving education and awareness; and increasing marketing and communications. The supportive actions that uphold these directions seek to create a comprehensive approach to walking and cycling in Winnipeg – by ensuring that more user information and programs are in place to make walking and cycling more attractive and convenient ways to travel around Winnipeg.

Key Directions:

6A: Enhance Wayfinding, Signage, and Trip Planning

6B: Improve Education and Awareness

6C: Increase Marketing and Communication

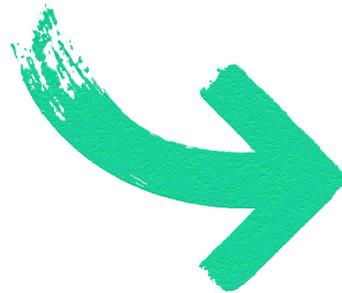
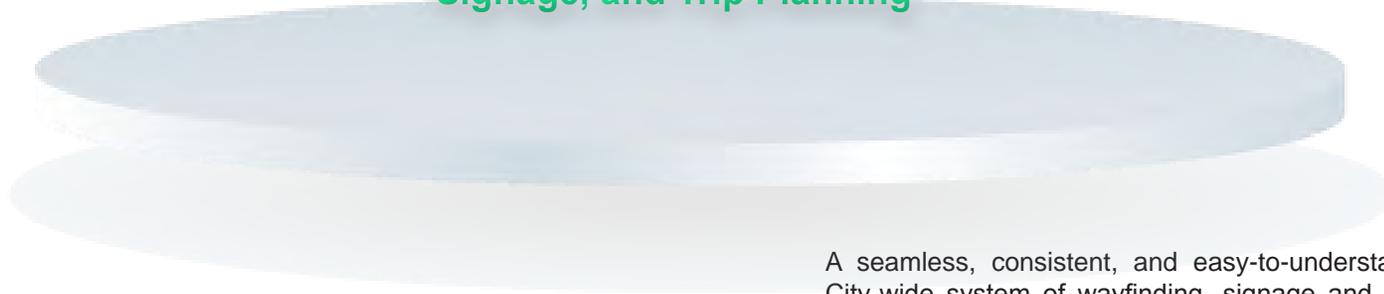


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EXCEPT
CYCLISTS

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Key Direction 6A: Enhance Wayfinding, Signage, and Trip Planning



A seamless, consistent, and easy-to-understand City-wide system of wayfinding, signage and trip planning tools for both walking and cycling is important to making the local network easier to navigate. The City of Winnipeg has a variety of wayfinding, signage and trip planning measures currently in place. Wayfinding measures are primarily focussed on pedestrians and vehicles, largely within the Downtown area and at key visitor destinations such as The Forks, and high traffic areas such as in the skyways. The City also has a webpage with “maps and routes”, including a city-wide cycling map and visual tours of several pathways.

Wayfinding, signage and trip planning was identified as a key support measure for both pedestrians and cyclists in Winnipeg through the public consultation for the Pedestrian & Cycling Strategies.



A number of improvements were identified, including:

- ▶ More wayfinding on the street with maps identifying destinations;
- ▶ Enhanced pathway signage and branding;
- ▶ Milestone markings on pathways; and
- ▶ Signage displaying the distance and time required to access destinations.

The benefit of building on and expanding the existing wayfinding, signage and trip planning tools is that they can further enhance the ability for **pedestrians and cyclists** to identify facilities and destinations City-wide. Some key ways to expand and enhance the City's approach is to focus on the development of city-wide **wayfinding guidelines**, more **pedestrian wayfinding initiatives**, **cyclist mapping tools**, and **local-level wayfinding initiatives**, as described below:

- ▶ **Wayfinding Guidelines** should be developed to ensure a common and consistent City-wide wayfinding system for both pedestrians and cyclists. This can include agreed-upon protocols for route naming and identification of destinations, as well as the consistent design and application of route markings and cycling signage. The guidelines should provide information on the variety of wayfinding signs available for various contexts, including decision, confirmation, and turn signs. Best practices from other cities indicate that providing guidelines on signage with directions, destinations, distances, and travel times to key destinations are important.



- ▶ The **pedestrian wayfinding** system that is currently applied throughout Downtown can be enhanced to provide additional information to residents and visitors in Downtown and in other high activity areas of the City. This can include information kiosks for pedestrians identifying key information such as rapid transit, community facilities and businesses, as well as a map with “you are here” information and a five-minute walking distance. This would need to be implemented consistently in Downtown Winnipeg and other community and mixed use centres and corridors throughout Winnipeg that are anticipated to have an increasing amount of pedestrian activity. Transit stops will be key opportunities for locating wayfinding facilities.
- ▶ **Mapping tools** are already provided to cyclists through the City-wide cycling map identifying existing, proposed and future bicycle routes, and key destinations. To ensure that cyclists have information that is up-to-date with developments in the network, the map should be regularly updated, and provided in print and on-line formats. The City should also design a map to be accessible to people for whom English is not a primary language and to people who might need larger text.
- ▶ **Neighbourhood-level wayfinding.** In addition to the City-wide wayfinding information, the City should continue to work with partner agencies and organizations to develop more detailed neighbourhood-based maps showing walking and cycling routes. This can provide people with more fine-grained information on where to travel within their own neighbourhood to access local destinations, and can complement the city-wide information.



Ultimately, using a combination of these tools can benefit both the experienced and inexperienced pedestrians and cyclists, providing more information on how to navigate through Winnipeg more effectively. The actions that have been developed to support more wayfinding, signage and trip planning for both pedestrians and cyclists in Winnipeg are below.

Key Direction	Actions
6A. Enhance Wayfinding, Signage and Trip Planning	<ul style="list-style-type: none"><li data-bbox="583 699 1346 760">i Develop Pedestrian and Cycling Wayfinding Guidelines.<li data-bbox="583 808 1822 868">ii Enhance and Expand Pedestrian Wayfinding Information in the Downtown as well as community and neighbourhood mixed use centres and corridors.<li data-bbox="583 933 1503 977">iii Continue to produce and annually update the City-Wide Cycling Map.<li data-bbox="583 1031 1388 1063">iv Develop Neighbourhood-Based Walking and Cycling Maps.

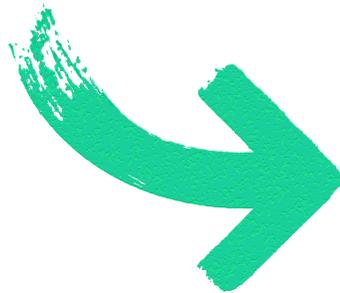




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SAINT-BONIFACE

av **TACHE** AVE

Key Direction 6B: Improve Education and Awareness



As the City seeks to enable walking and cycling as convenient and attractive forms of transportation, education and awareness for pedestrians, bicycle users, and motorists will become increasingly important. Education and awareness is part of a well-rounded approach to creating safe and varied transportation options, and while infrastructure is not built overnight, education and awareness can build confidence and knowledge of how to travel through the City. Also, education and awareness efforts can actively build community interest for City investments in walking and cycling.

Currently, there are many education and awareness efforts in Winnipeg, such as the City's Bike Week, International Trails Day, Jane's Walk, the Commuter Challenge, and MPI's education programs, that can be expanded relatively efficiently to meet requests for increased education and awareness. Public



feedback throughout the Pedestrian and Cycling Strategies clearly emphasized the need for more education and awareness initiatives targeted at pedestrians, cyclists, and drivers, and to make this a focus area for the City in efforts moving forward. Some of the common themes heard from residents included:

- ▶ Ensure inclusion of vulnerable user groups in education and awareness;
- ▶ Increase the availability and sources of information for tourism outlets and recreational centres on walking and cycling opportunities;
- ▶ Spread awareness of the benefits walking has on public health and physical and mental well-being;
- ▶ Integrate walking and cycling with maps, apps, and route planners; and
- ▶ Better integrate the delivery of cycling information and education between Manitoba Public Insurance (MPI), Winnipeg Regional Health Authority (WRHA), and the Province.

Building on these themes, some approaches that can be used to build more walking and cycling awareness throughout Winnipeg include:

- ▶ **Interactive trip planning tools** should be developed for both pedestrians and cyclists. These could be integrated with the City's Navigo Transit Trip Planner, or as a stand-alone trip planner for walking and cycling trips. This type of tool could make bicycle and pedestrian available data in an open format to support development of third-party mobile applications for walking and cycling.
- ▶ **Targeted outreach programs.** Targeting walking and cycling education towards the City's more vulnerable and underrepresented populations (i.e. new immigrants, aboriginals, low income, seniors, and children and youth) can lead to City-wide benefits. This can include providing walking and cycling informational pamphlets, or information on skills training courses at community centres to reach underrepresented populations. The City should also work with its partners, including advocate groups, non-profit associations, and other government agencies to develop and deliver targeted outreach programs. As many of the vulnerable and underrepresented groups are concentrated in specific neighbourhoods in the City, these can also be targeted neighbourhood-based campaigns to reach out to a combination of these groups.



- ▶ **Active and Safe Routes to School (ASRS) programs** spread awareness among children, youth, and parents on walking and cycling skills. ASRS programs typically focuss on the 5 E's of engineering, education, encouragement, enforcement, and evaluation. Through initiatives such as in-class curriculum, walking clubs, walking/cycling school buses, no-idling campaigns, and active transportation-based field trips, these programs support increasing walking and cycling education and uptake among students. This initiative could continue to be led by the Green Action Centre in partnership with the City and the Winnipeg School Divisions.
- ▶ **Bicycle Friendly Business Districts** can increase awareness about cycling by establishing initiatives that encourage residents, visitors, and employees to cycle to shops and restaurants. Bicycle Friendly Business Districts can vary in their specifics, but they all allow a business district to “brand” itself as welcoming to customers who arrive by bicycle. The City could work with the BIZ Associations to support the development of Bicycle-Friendly Business Districts, focusing on areas of high cycling potential as highest priorities. Currently the Downtown and Exchange BIZ's are running such a program as a pilot.
- ▶ **Bicycle tourism.** Promoting cycling for tourism can result in local economic development benefits, and activities to promote bicycle tourism could include the City working with local organizations and businesses to promote cycling. For example, Rivers West is a local organization dedicated to developing the Red River corridor as a destination. Rivers West is focused on creating year round recreational, tourism, economic and conservation opportunities from Emerson to Lake Winnipeg.
- ▶ **Promotional materials** can increase awareness City-wide about walking and cycling opportunities. In conjunction with partners such as MPI, MIT, Winnipeg School Division, WRHA, and advocacy groups, the City could support the development and delivery of materials to assist a wide range of people about the benefits of walking and cycling, as well as to assist them to navigate through Winnipeg by foot or bike. Materials should be accessible to non-English speakers.



- ▶ **Road safety campaigns.** This type of campaign can be critical to raise awareness of common behaviours that can cause serious injuries and potentially fatal consequences for all road users. The program should focus on common behaviours identified through a safety study, such as pedestrians jaywalking, cyclists running stop signs, and motorists failing to yield. The program should be targeted not only to pedestrians and cyclists, but also to motorists.
- ▶ **Public events** such as an IceCycle event, Sunday street closures, ciclovias, Bike to Work Day/Week, Walk to Work Day/Week, International Walk to School Day, and other events can encourage uptake in walking and cycling and gain momentum for active transportation.
- ▶ **Bicycle Try-It Library** can focus on spreading awareness to groups who may not currently ride a bicycle or have access to a bicycle. A “Bicycle Try-It Library” is a traveling library that can give people an opportunity to try out different types of bicycles, scooters and bike trailers in order to expose more people to the experience of cycling.

Examples from other cities that are embracing education and awareness initiatives are shown on the following page.



Best Practices

Education & Awareness



DRIVER EDUCATION In Denmark, drivers' education courses incorporate pedestrian and cyclist safety. Much emphasis is placed on the dangers of distracted driving and the consequences of driving while distracted or under the influence.



SCHOOL EDUCATION Every child in the Netherlands and Denmark must pass a bicycle safety course and exam that is integrated into the school curriculum. The material is both theoretical and practical, with children learning the rules of road, and learning to ride a bicycle and manoeuvre through traffic.



PUBLIC EVENTS - ICE CYCLE Saskatoon annually holds Ice Cycle, which celebrates active transportation as a year-round activity. Ice Cycle is a celebration of winter bike riding for all ages, and involves a workshop on winter riding at noon, and a bike parade through the downtown area.



PUBLIC EVENTS - CYCLOVIAS A ciclovias refers to the closing of city streets to automobiles for the enjoyment of cyclists and the public. Ciclovias have spread throughout the world, including Winnipeg, which hosted Canada's first official ciclovias.



BICYCLE TRY-IT LIBRARY The City of Edmonton has a Bicycle Try-It Library which gives people an opportunity to try out different types of bikes, and items not widely available locally (such as cargo bikes). The program seeks to spark the interest of Edmontonians to choose cycling as a possible form of sustainable transportation when the opportunity exists to do so.



BICYCLE FRIENDLY BUSINESS DISTRICTS Long Beach, California has a bicycle friendly business district program to encourage visitors to shop and dine locally through bike-related businesses, bike racks and corrals, bike lanes and signage. There are 6 designated bicycle-friendly business districts in the community.





ACCESS AT REAR

Key Direction**6B. Improve
Education and
Awareness****Actions**

- i** Make bicycle and pedestrian trip planning information widely accessible through an interactive trip planning tool and mobile application.
- ii** Support and encourage targeted community outreach programs for vulnerable populations.
- iii** Continue to support Active and Safe Routes to School programming.
- iv** Support providing bicycle education and skills training for students in elementary, middle, and high school.
- v** Support the development of Bicycle-Friendly Business Districts.
- vi** Support the development of a bicycle tourism initiative.
- vii** Work with partners to develop and deliver information materials outlining the benefits of walking and cycling.
- viii** Support the development of a road safety awareness campaign for all road users.

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Key Direction

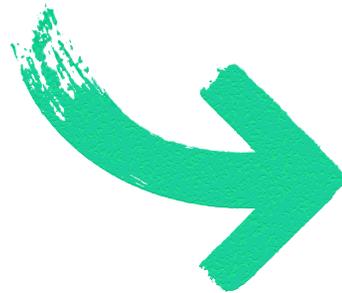
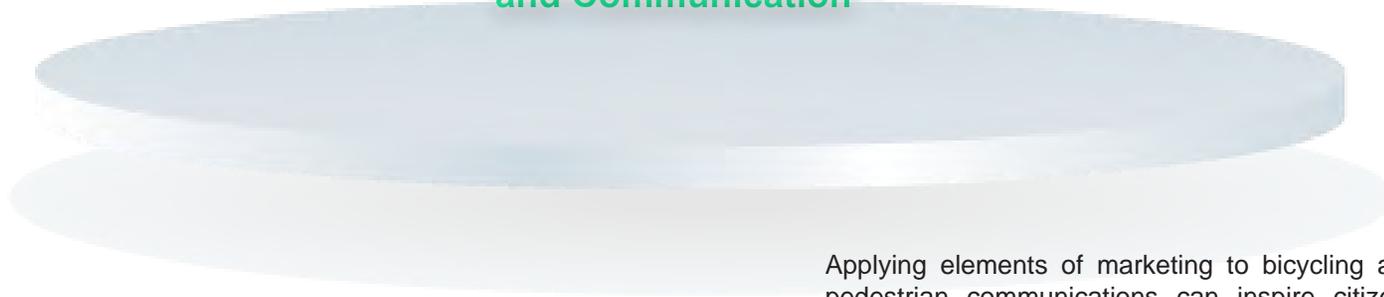
**6B. Improve
Education and
Awareness**

Actions

- ix Work with partners to develop an education campaign targeted towards motorists.
- x Work with the Province and Manitoba Public Insurance to include information about cycling as part of driver education and included in drivers' license test.
- xi Support the provision of adult education and cycling skills training throughout the City year-round.
- xii Continue to support and advertise special events and programs to promote walking and cycling.
- xiii Support events that encourage on-going neighbourhood-level walking and cycling.
- xiv Integrate walking and cycling information into existing resources.
- xv Support the development of a Bicycle Tri-It Library.



Key Direction 6C: Increase Marketing and Communication



Applying elements of marketing to bicycling and pedestrian communications can inspire citizens to consider walking and cycling, and can allow individuals and cities to reap the many rewards of increased bicycle and pedestrian traffic. Marketing that focusses particularly on the positive, the light-hearted, and even humorous subjects, with the ability to appeal to the majority, can actively engage people to think about the options to walk and cycle more. In Winnipeg today, there is little marketing and communication for walking and cycling, however organizations and movements such as “Join the Movement”, “Active Transportation Network”, and Bike Winnipeg have created recognized brands associated with increasing physical activity. With several other advocacy organizations and partner agencies (such as MPI, WRHA, GAC) that also participate in marketing and communications efforts, and events such as Ciclovia and Bike Week, there may be other opportunities for increasing marketing opportunities around walking and cycling.



In particular, some opportunities to pursue marketing in Winnipeg include:

- ▶ Establishing a **recognizable visual identity** can be important, particularly as more events, construction, and news pertaining to walking and cycling are available. A more comprehensive branding strategy and/or a visual identity can be used to market educational material and spread awareness as established for wayfinding.
- ▶ **Target communication outreach towards vulnerable groups to identify unique issues.** By focussing communication efforts for different vulnerable and underrepresented groups, the City can gauge what prevents these groups from participation in walking and cycling, what are the best forums for participation, and what are the perceptions about walking and cycling.
- ▶ **Using city-wide campaigns to deliver positive messaging to promote walking and cycling.** Campaigns and city-wide communications through various forums such as radio advertisements, bus shelter advertisements, online/website and others can be important way to reach out to all communities and to increase more awareness about walking and cycling.

Many cities around the world have focussed on promoting active transportation positively through marketing and communications. Often, campaigns help to mythbust the perceived barriers to walking and cycling, namely perceptions about lack of time, health issues, weather, safety and security, age, and the feeling that walking and cycling are impractical. Some other examples are on the following page.



Best Practices

Marketing & Communication



CITY OF OULU, I BIKE OULU CAMPAIGN Based off of the original I Bike CPH, as pictured by the City of Copenhagen, the brand for “I Bike Oulu” brands the community as the winter cycling capital of the world and is available on a number of bicycle facilities and promotional materials.



CITY OF VANCOUVER, BIKE VANCOUVER BRANDING The logo and name – Bike Vancouver – is seen across the city from promotional materials, to t-shirts, bike racks, and to the website and prizes.



CITY OF COPENHAGEN, SHOP BY BIKE Shop by Bike aims to reduce energy used in urban goods transport by replacing unnecessary cars with bicycles. Shop by Bike offers easy possibilities to reach beyond the established population willing and able to bicycle to work/school. The majority (80%) of shopping trips and purchased goods were shown to be manageable with nothing more than a bicycle basket.



LEGOMAN In order to promote new bicycle boxes, the City of Edmonton created lego-man based videos to teach people how to use the new facilities. These videos, available through the City’s website, as well as on YouTube, allow people a more engaging and fun way to learn about components of the bicycle network.



The following actions are recommended to bolster the role of marketing and communication within the process of planning for walking and cycling in Winnipeg.

Key Direction

6C. Improve Marketing and Communications

Actions

- i** Develop a comprehensive branding strategy and visual identity for all walking and cycling related communications from the City of Winnipeg.
- ii** Work with vulnerable groups and find out what their key issues are in order to better communicate with them.
- iii** Develop a campaign using positive messaging to promote walking and cycling.
- iv** Develop and provide community based travel marketing programs to encourage people to walk, cycle and use transit.

