WINNIPEG PEDESTRIAN AND CYCLING STRATEGIES



Winnipeg

URBAN systems

Winnipeg Pedestrian and Cycling Strategies

Final Report

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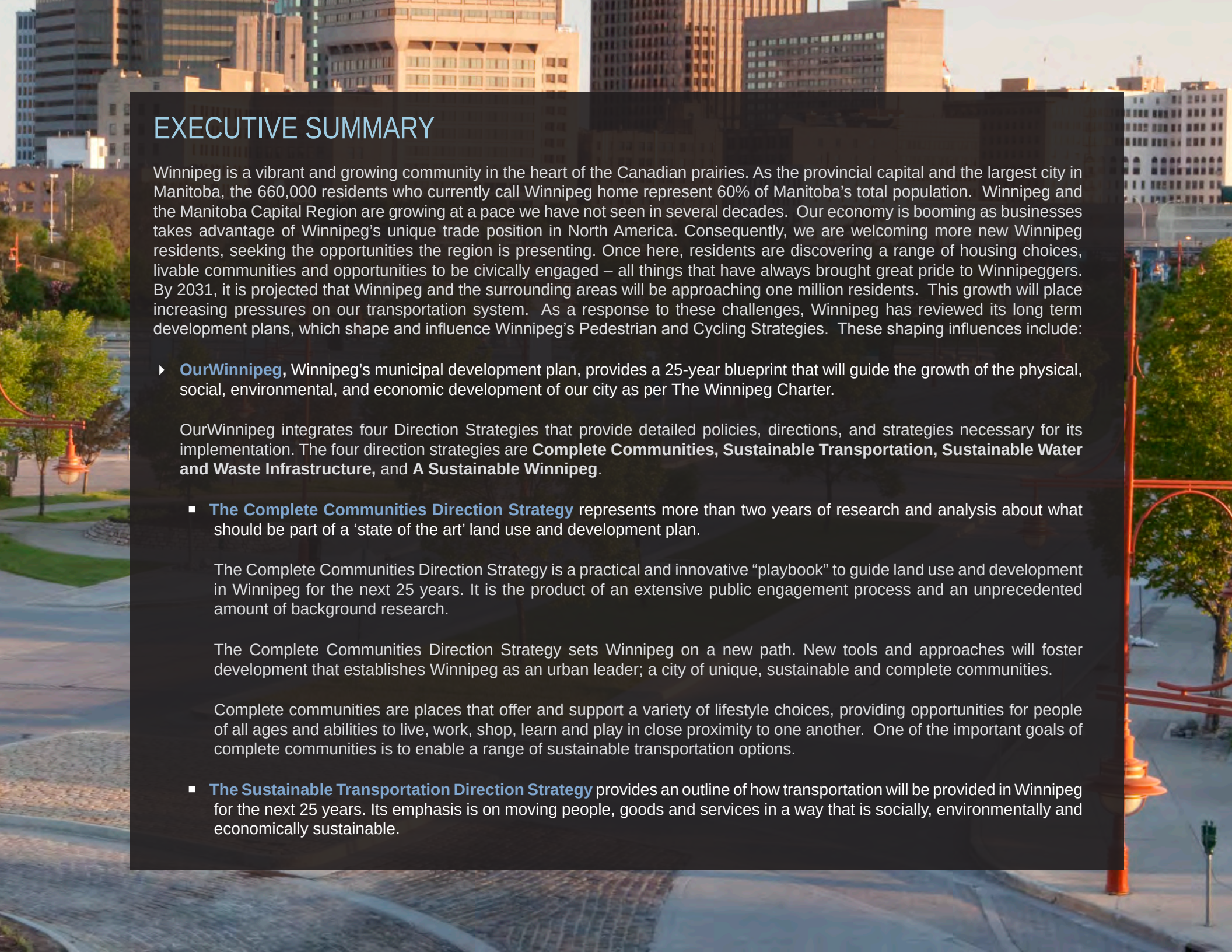
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EXECUTIVE SUMMARY

Winnipeg is a vibrant and growing community in the heart of the Canadian prairies. As the provincial capital and the largest city in Manitoba, the 660,000 residents who currently call Winnipeg home represent 60% of Manitoba's total population. Winnipeg and the Manitoba Capital Region are growing at a pace we have not seen in several decades. Our economy is booming as businesses takes advantage of Winnipeg's unique trade position in North America. Consequently, we are welcoming more new Winnipeg residents, seeking the opportunities the region is presenting. Once here, residents are discovering a range of housing choices, livable communities and opportunities to be civically engaged – all things that have always brought great pride to Winnipeggers. By 2031, it is projected that Winnipeg and the surrounding areas will be approaching one million residents. This growth will place increasing pressures on our transportation system. As a response to these challenges, Winnipeg has reviewed its long term development plans, which shape and influence Winnipeg's Pedestrian and Cycling Strategies. These shaping influences include:

- **OurWinnipeg,** Winnipeg's municipal development plan, provides a 25-year blueprint that will guide the growth of the physical, social, environmental, and economic development of our city as per The Winnipeg Charter.

  OurWinnipeg integrates four Direction Strategies that provide detailed policies, directions, and strategies necessary for its implementation. The four direction strategies are **Complete Communities, Sustainable Transportation, Sustainable Water and Waste Infrastructure,** and **A Sustainable Winnipeg**.

  - **The Complete Communities Direction Strategy** represents more than two years of research and analysis about what should be part of a 'state of the art' land use and development plan.

    The Complete Communities Direction Strategy is a practical and innovative "playbook" to guide land use and development in Winnipeg for the next 25 years. It is the product of an extensive public engagement process and an unprecedented amount of background research.

    The Complete Communities Direction Strategy sets Winnipeg on a new path. New tools and approaches will foster development that establishes Winnipeg as an urban leader; a city of unique, sustainable and complete communities.

    Complete communities are places that offer and support a variety of lifestyle choices, providing opportunities for people of all ages and abilities to live, work, shop, learn and play in close proximity to one another. One of the important goals of complete communities is to enable a range of sustainable transportation options.

  - **The Sustainable Transportation Direction Strategy** provides an outline of how transportation will be provided in Winnipeg for the next 25 years. Its emphasis is on moving people, goods and services in a way that is socially, environmentally and economically sustainable.

Meeting future demand for continued mobility requires a balanced approach, intended to develop a community where transportation is easy and convenient today while not compromising the mobility needs of future generations.

The practices contained in the Sustainable Transportation Direction Strategy will result in the ability to better integrate land use and transportation planning. They will enable Winnipeg to assess future transportation needs systematically and proactively.

The Sustainable Transportation Direction Strategy formed the authority and the policy framework for the development of the Transportation Master Plan.

- **Winnipeg's Transportation Master Plan (TMP)** was approved by Council in November 2011. The purpose of the TMP is to present a long-term strategy to guide the planning, development, renewal and maintenance of a multi-modal transportation system in a manner that is consistent with projected needs, and aligned with the City's growth and the overall vision for a sustainable Winnipeg as expressed in OurWinnipeg, the Complete Communities Direction Strategy, and the Sustainable Transportation Strategy.

  With increased growth comes greater opportunities and challenges for transportation. From a transportation planning perspective, Winnipeg has been relatively fortunate in that growth in the recent past has been stable and predictable. However, the higher level of growth projected over the next two decades will require innovative and proactive transportation solutions in order to ensure the transportation system delivers the necessary performance to nurture Winnipeg's current and future economic prosperity.

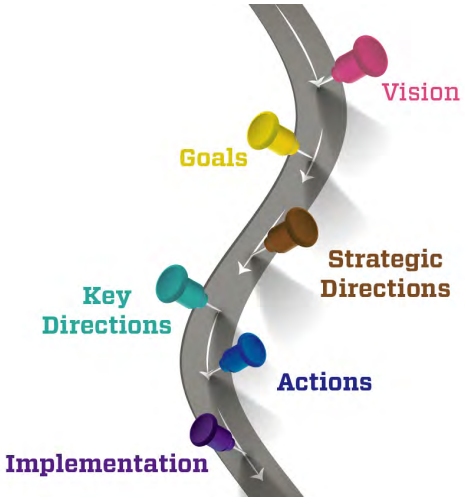
  Fortunately, growth and economic development also provides an opportunity to invest and shape our transportation system to improve the efficiency of the movement of people and goods by road. It will also require us to enable more sustainable forms of travel including walking, cycling and transit.

  A key underlying goal of the TMP is to expand the range of travel options that are available to residents, workers and visitors, and to ensure that people are not dependent on one single mode. Specifically, the TMP directly calls for the development of the Pedestrian and Cycling Strategies.

The Pedestrian and Cycling Strategies seek to maximize transportation options by ensuring the accessibility, comfort, and safety of walking and cycling in Winnipeg, and to establish directions for walking and cycling policies, infrastructure, and programs over the next 20 years and beyond. By doing so, the Strategies are intended to provide a detailed implementation strategy with short, medium, and long-term priorities for walking and cycling improvements.

The Pedestrian and Cycling Strategies have been developed with the broad participation of Winnipeggers. Community involvement was key in ensuring that the Strategies reflect the values and interests of residents and key stakeholders. In total, the City heard from over 3,000 Winnipeggers during the development of the Pedestrian and Cycling Strategies. There were several opportunities for public input through various forums, including an on-line survey, telephone survey, stakeholder workshop, and open houses. The Strategies were also guided by input and feedback received from City Staff and a Stakeholder Advisory Committee that represented a variety of key stakeholders and sectors.

The vision and goals of the Pedestrian and Cycling Strategies inform the overall direction of the strategies, and serve as the basis for the directions and recommended action areas.



The Pedestrian and Cycling Strategies include a long-term vision for walking and cycling in Winnipeg, supported by seven overarching goals and a series of six strategic directions with supporting key directions and actions. The vision has been designed to describe the broad aspirations for the future of walking and cycling in Winnipeg. The vision consists of a series of inspirational statements that act as the framework to guide the direction of walking and cycling in Winnipeg into the future. The vision statement for the Strategies describes the future desired "end state", or result, of implementing the Strategies:

- Walking and cycling are safe, convenient, practical, and attractive transportation choices for people of all ages and abilities.
- Equitable access to walking and cycling provides greater transportation choices for residents and visitors in neighbourhoods across Winnipeg. This will improve personal mobility, promote healthy living, and reduce greenhouse gas emissions, thus contributing to quality of life and community well-being.
- The community is engaged in transparent processes to invest in and prioritize cost-effective, progressive, and innovative infrastructure, support programs, and policies.
- Walking and cycling facilities are strategically integrated with land use to foster walkable and bicycle-friendly communities in existing and new neighbourhoods.
- Walking and cycling infrastructure will be maintained in good repair, operational in all seasons, including establishment of priority networks for winter maintenance.
- Winnipeg is recognized as a leading Winter City in promoting walking and cycling throughout the year.

This vision statement is supported by seven main goals that are aligned with the City's overarching objectives as stated in Our Winnipeg, the CCDS and the Transportation Master Plan, and provide the foundational elements that shape the specific walking and cycling directions and actions. The goals also set the basis for the performance measures and prioritization criteria, which are outlined in Part 5 of the Strategies.

The Pedestrian and Cycling Strategies then include six Strategic Directions along with supporting Key Directions and Actions that support the vision and goals.



The Pedestrian and Cycling Strategies provide a framework for making walking and cycling more safe, convenient, and comfortable modes of transportation in Winnipeg. The Strategies include a comprehensive package of actions that are intended to guide Winnipeg's planning and capital investment decisions as well as on-going operations and maintenance activities to enable walking and cycling over the long-term. The full cost to implement the Pedestrian and Cycling Strategies is estimated to be approximately $334 million over the long-term. In addition the Pedestrian and Cycling Strategies are estimated to require approximately $3.7 million in Annual Operating Costs.



Improve Connectivity
A. Expand the Bicycle Network
B. Expand and Enhance the Sidewalk Network
C. Address Barriers



Improve Convenience
A. Provide Bicycle Parking and End-of-Trip Facilities
B. Increase and Improve Multi-Modal Connections



Improve Safety & Accessibility
A. Provide Accessible Infrastructure
B. Improve Pedestrian and Cyclist Safety
C. Provide Pedestrian and Cyclist Crossing Treatments
D. Provide Well Lit and Visible Pedestrian and Cyclist Facilities
E. Develop Safe Routes to School



Improve Maintenance
A. Maintain the Sidewalk Network
B. Maintain the Bikeway Network



Improve Vibrancy
A. Enhance Streetscapes and the Public Realm
B. Land Development and Site Design



Increase Awareness
A. Enhance Wayfinding, Signage, and Trip Planning
B. Improve Education and Awareness
C. Increase Marketing and Communication

Recognizing that the long-term vision will require significant investment, an implementation strategy was developed to prioritize improvements and identify short-term, medium-term, and long-term improvements.

The implementation strategy for the Pedestrian and Cycling Strategies is based on a number of principles that the City should follow as it moves forward with implementing the Strategies.

The Pedestrian and Cycling Strategies are the first step, not the last step. The Pedestrian and Cycling Strategies are the first strategies of their kind developed for Winnipeg and represent a comprehensive package of engineering, programming, and education initiatives to enable walking and cycling. However, the Strategies are intended to lay the foundation for implementing the plan over the short, medium and long-term. In that regard, the Strategies should be seen as the first step in a long-term commitment to enabling walking and cycling. Implementation of the Strategies will required sustained and dedicated financial and staff resources over the long-term.

The Pedestrian and Cycling Strategies is a flexible and living document that should be reviewed and updated frequently. The Pedestrian and Cycling Strategies recommend a wide range of short-term initiatives to be implemented over the next five years. As such, the City should monitor progress implementing the Strategies on a regular basis, and should commit to reviewing and updating the Strategies every five years to update changing priorities and needs and to reflect completed projects.

The City should develop a yearly Pedestrian and Cycling Action Plan to identify upcoming projects and initiatives as part of its efforts to keep the Strategies a living document on an annual basis.


WOLSELEY AVE

The City should engage in Neighbourhood- Based Public Consultation to implement many recommendations of the Strategies. Many of the initiatives in the Strategies require more detailed input and technical work, and the City should work closely with its partners and with neighbourhoods as it works to move forward with priorities in the Strategies.

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).

Successful implementation of the Pedestrian and Cycling Strategies will require significant changes in operational practices for the city of Winnipeg. The most important of these changes are highlighted below:

Increased funding levels:

The full cost to implement the Pedestrian and Cycling Strategies is estimated to be approximately $334 million over the long-term, approximately 20 years). In addition the Pedestrian and Cycling Strategies are estimated to require approximately $3.7 million in Annual Operating Costs. Increased funding levels for active transportation, as well as identifying partnerships and leveraging other funding sources, will be required to meet these costs.

Increase staff resources:

Implementation of the Pedestrian and Cycling Strategies includes not only additional financial resources, but the City requires additional staff resources to implement the various strategies. The TMP commits to allocating sufficient funding in future capital and operating budgets to complete the pedestrian and cycling networks (Enabling Strategy (d) in the Active Transportation section). Evidence from cities across North America clearly demonstrate that having several staff members dedicated exclusively to walking and cycling is critical to enabling walking and cycling. An analysis of the 40 largest U.S. cities shows that cities with larger staff, both in count and per capita, have higher levels of bicycling than cities with smaller staffs.

In addition to maintaining a dedicated full-time Pedestrian and Cycling Coordinator position, this should include at least three dedicated full-time staff resources in the following positions:

Bicycle and Pedestrian Design Engineer

Bicycle and Pedestrian Planner

Bicycle and Pedestrian Education and Promotion Coordinator

Improved monitoring:

A monitoring strategy is essential to ensure that the Pedestrian and Cycling Strategies are implemented as intended, and to determine whether the plan is achieving its goals. A monitoring program will also enable City staff to appropriately allocate monetary and staff resources and to implement prioritized initiatives of the Pedestrian and Cycling Strategies. Monitoring also provides a means of identifying changing conditions which would require changes to the Strategies.

The monitoring program will focus on identifying 'measures of success' for two components: first, the degree of progress in implementing the plan, and secondly, the outcomes of the plan. Measures of success are described in the table starting on page 310. These include general measures of success for the overall Pedestrian and Cycling Strategies, as well as specific measures of success related to each Strategic Direction.

To assist in monitoring these, and other, measures of success, the City should expand its current pedestrian and cycling monitoring initiatives, and should develop and implement a comprehensive **Pedestrian and Cycling Monitoring Program** within one year of adoption of this plan. This Pedestrian and Cycling Monitoring Program will help to identify baselines for each of these measures of success.

The City should follow this up by communicating the results of its Pedestrian and Cycling Monitoring Program by developing and publishing a Walking and Bicycle Account. A **Walking and Bicycle Account** is a tool to monitor the development of bicycling and walking activity in a community on a regular basis, and is used to assess if a community is achieving its cycling and walking objectives. Walking and Bicycle Accounts typically report on important public input that can be used and incorporated into the bicycle and pedestrian planning process. The Bicycle and Walking Account can also be, in itself, an opportunity to do community-wide marketing and communication on bicycling and walking.

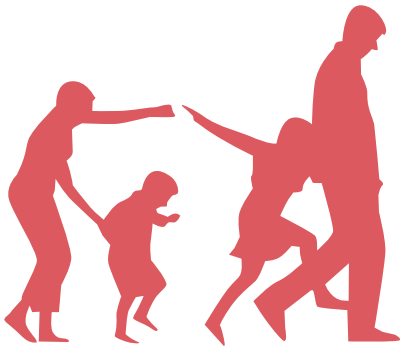
Continued collaboration with stakeholders

Many of the actions recommended in the Pedestrian and Cycling Strategies simply direct the Winnipeg public Service to begin or to continue collaborating with stakeholders on specific issues. It is the intention of the strategies that the existing Active Transportation Advisory Committee (ATAC), which was approved by Council on February 26, 2007, be the forum by which this is accomplished.

The mandate of ATAC is to provide advice and recommendations on pedestrian and cycling related policies, programs, priorities, facilities and standards to the Director of Public Works. Inform the public about Active Transportation and, where possible and appropriate, provide opportunities for public input. And to provide a forum in which AT issues can be discussed among the various stakeholder groups with the intent of reaching consensus on these issues. The role of the ATAC is both strategic and responsive. It advises the Director of Public Works on the strategic direction of the AT program as well as makes recommendations on unexpected issues.

Through each of these implementation principles, the City can continue to improve transportation choices for people of all ages and abilities and work towards the vision and goals of the Pedestrian and Cycling Strategies.




PART 1 Setting The Stage

1.1 Study Purpose

1.2 Planning Process

1.3 Report Overview

1.4 Communications and Engagement





The City of Winnipeg is a vibrant and growing community in the heart of the Canadian prairies. As the largest city in Manitoba, the 660,000 residents who currently call Winnipeg home represent 60% of Manitoba's total population. Incorporated in 1873, Winnipeg's growth and development patterns were originally shaped by the railway, which supported the farming and agricultural industry of the region. Situated in the fertile Red River floodplain, the highly productive agricultural lands of the area have long defined the local character and economic life of Winnipeg, and as such, farmland has historically influenced the settlement pattern and growth of the community. Today, Winnipeg has many natural and economic assets that attract many people to live in and visit the City, and to enjoy its services, amenities and distinct culture.

The City's land use and development patterns are shaped by its major road and rail transportation networks that are critical to support the local and regional economy. However, the City also recognizes the importance of developing a multi-modal and sustainable transportation system, and has continually sought improvement opportunities for transit and active modes of transportation such as walking and cycling. Promoting walking and cycling as attractive and convenient transportation choices can help reduce automobile dependence, increase physical activity levels, improve public health, reduce infrastructure demands, and create more livable and vibrant communities.

Enabling walking and cycling is a key part of the vision and directions to increase transportation choices in a number of the City's plans, including OurWinnipeg and the Transportation Master Plan. The Transportation Master Plan calls for the development of comprehensive Pedestrian and Cycling Strategies.

The City's unique physical geography provides several opportunities and challenges for promoting walking and cycling. The city's flat topography, compact and vibrant Downtown, large educational institutions, and scenic and well-developed pathway system present exceptional opportunities for supporting walking and cycling in many areas of the community.

However, development in Winnipeg has historically followed a pattern of outward growth, creating many neighbourhoods and destinations that favour automobile use over walking, cycling, or transit. There are also notable gaps in the walking and cycling networks that make active modes less attractive to connect to certain areas of Winnipeg. In addition, the Red and Assiniboine Rivers, several highways and major streets, as well as the numerous rail corridors present significant barriers to walking and cycling within Winnipeg.

In fact, the 2011 National Household Survey reports that 77% of daily trips to work are made by automobile while approximately 15% of daily trips are made by transit. Walking and cycling only account for approximately 6% and 2% of all daily trips, respectively.



The City has made significant investments in recent years in pedestrian and bicycle infrastructure and support measures, which have resulted in increases in walking and cycling activity in many areas of the city. However, there remains a significant opportunity to create a balanced and multi-modal transportation system that provides more transportation options for both residents and visitors to Winnipeg. The City of Winnipeg is committed to providing greater transportation options resulting in improved quality of life, attractive neighbourhoods and vibrant city streets. Guided by Our Winnipeg, and supporting Directions Strategies, including the Complete Communities Direction Strategy (CCDS), as well as the Transportation Master Plan, the Pedestrian and Cycling Strategies will support the City's goals of ensuring travel options and creating a sustainable transportation system to meet the needs of all residents and visitors.





1.1 Study Purpose

The purpose of the Pedestrian and Cycling Strategies is to increase transportation choices in Winnipeg, and to establish a long-term vision for walking and cycling. The Pedestrian and Cycling Strategies are intended to directly complement and build on the directions in OurWinnipeg, the CCDS and the Transportation Master Plan. The Transportation Master Plan contains a goal of ensuring that a range of mobility options are available to Winnipeg residents, visitors, and employees. In order to achieve this, the Transportation Master Plan contains directions that call for the development of comprehensive Pedestrian and Cycling Strategies to provide guidance on the City's efforts to support mobility and connectivity as it relates to walking and cycling.

Ultimately, the Strategies seek to maximize transportation options by ensuring accessibility, comfort, and safety of walking and cycling in Winnipeg, and by establishing directions for walking and cycling policies, infrastructure, and programs over the next 25 years and beyond. By doing so, the Strategies are intended to provide a detailed implementation plan with short, medium, and long-term priorities for walking and cycling improvements throughout the city.

More detail regarding the Policy framework in Winnipeg can be found in **Part 2 Shaping Influences**.

1.2 Planning Process

Over the past year, the City has been working with the community to develop these comprehensive 'made in Winnipeg' strategies that will serve as the overall guide for planning and implementing walking and cycling improvements in Winnipeg over the next 25 years and beyond. The development of the Pedestrian and Cycling Strategies evolved over a four phase process with check-in points with community stakeholders and the general public. The Strategies were also guided by a Stakeholder Advisory Committee.

The four-phase process moved from discussions about the walking and cycling issues and challenges facing the City today and in the long-term through to more in-depth conversations about the vision for walking and cycling in Winnipeg, along with specific goals and directions to enable walking and cycling. These aspirations formed the foundation for the process to identify and develop transportation possibilities for the long-term to be considered in the Strategies.

The sequencing of the phases, and the process for the development of the City's Pedestrian and Cycling Strategies is described below:

1

Phase 1: *Launching* *(Winter / Spring 2013)*. In this initial phase, the project team gathered information about existing policies and programs, the state of current infrastructure, trends in local pedestrian and cycling travel behaviour, as well as best practices in pedestrian and bicycle planning. During this first phase, key stakeholder groups were identified for participation in the Stakeholder Advisory Committee.

2

Phase 2: *Create the Vision* *(Fall 2013)*. We consulted with stakeholders and the community at large about their needs, values, and priorities. Feedback and input received during this phase informed the formation of a study vision, goals, and strategic directions.

3

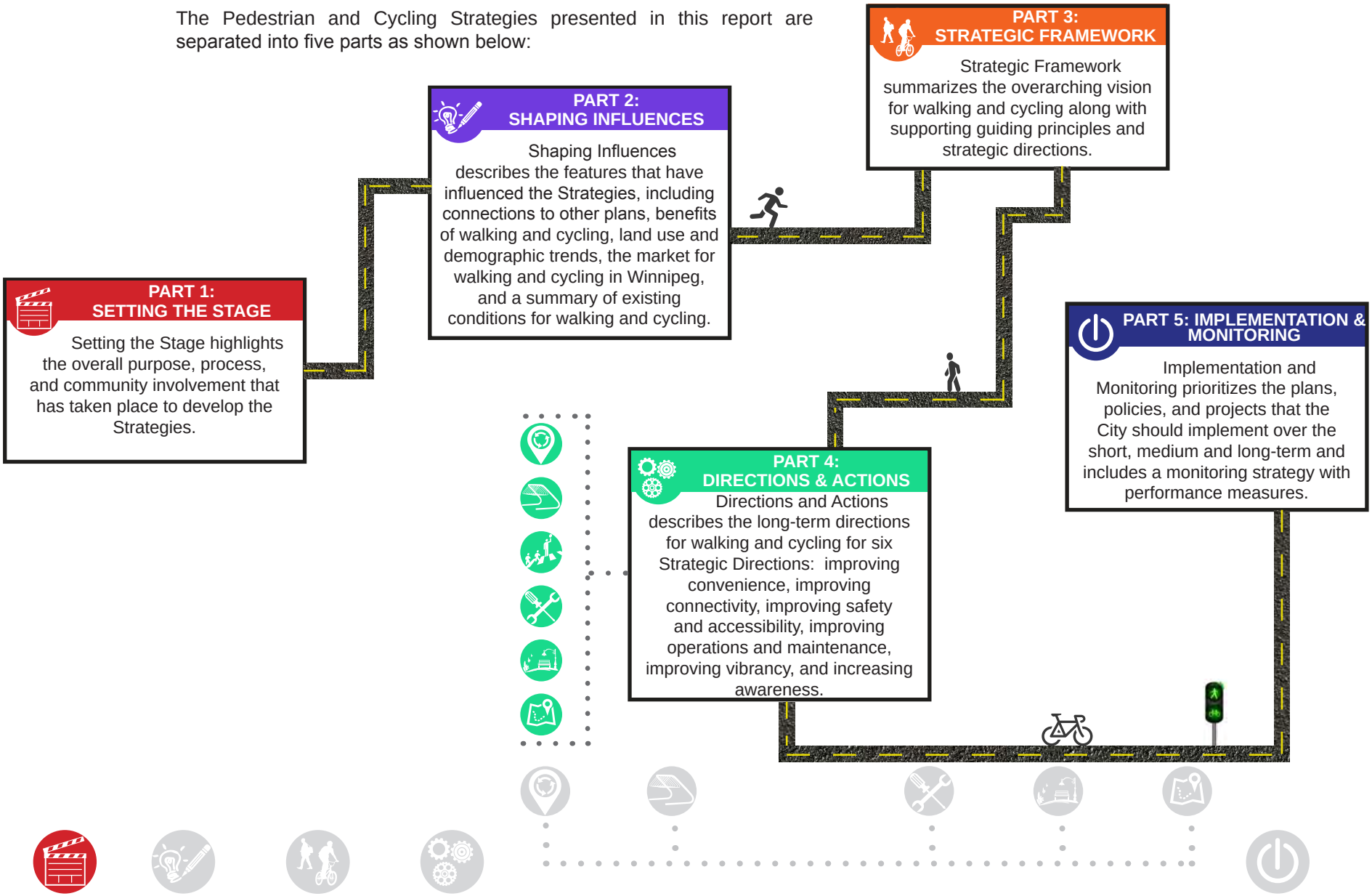
Phase 3: *Develop the Draft Strategies* *(Winter 2013 / 2014)*. Based on the analysis of information gathered, as well as the articulated vision, goals, and objectives from previous phases of work, a series of draft recommendations and actions were developed related to the walking and cycling networks, along with support, policies, standards, programs, and partnerships.

4

Phase 4: *Final Strategies* *(Spring/Fall 2014)*. With public and stakeholder input gathered throughout the process, this last phase involved fine tuning the draft recommendations and actions, as well as preparing the final document for Council approval. This final document presents the final recommended actions, along with an affordable, practical and prioritized implementation plan.

1.3 Report Overview

The Pedestrian and Cycling Strategies presented in this report are separated into five parts as shown below:





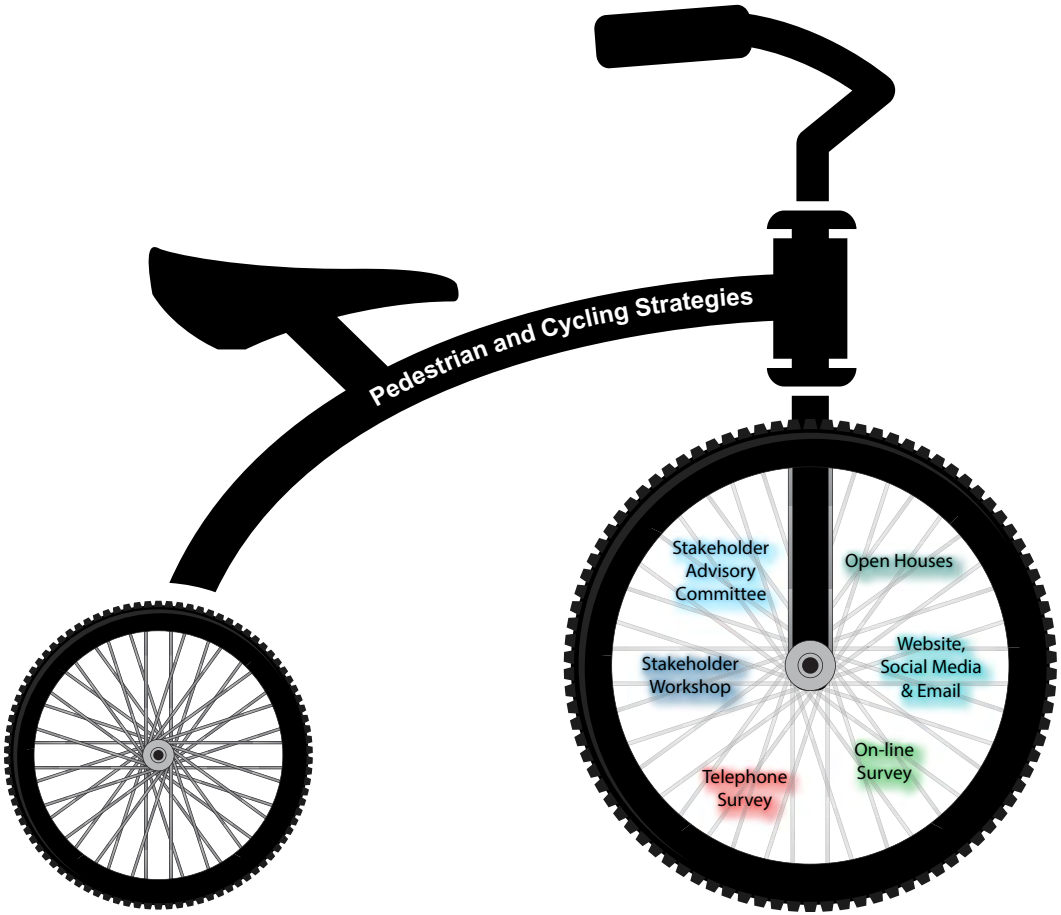
Through the planning process, we have heard from over three thousand Winnipeggers, including:

- *600 telephone survey responses*
- *Over 1,600 on-line survey response*
- *Nearly 100 participants at a stakeholder workshop*
- *Over 500 open house attendees*
- *Over 300 completed open house questionnaires*

1.4 Communications and Engagement

The Pedestrian and Cycling Strategies have been developed with the broad participation of Winnipeggers. Community involvement was key in ensuring that the Strategies reflect the values and interests of residents and key stakeholders. In total, the City heard from over 3,000 Winnipeggers during the development of the Pedestrian and Cycling Strategies. There were several opportunities for public input through various forums, including an on-line survey, telephone survey, stakeholder workshop, and open houses. The Strategies were also guided by input and feedback received from City Staff and a Stakeholder Advisory Committee that represented a variety of key stakeholders and sectors. **Figure 1.1** shows the range of public consultation activities where feedback and input was collected to inform the Pedestrian and Cycling Strategies, each of which are described in further detail in the next few pages.

Figure 1.1:
Range of Public Consultation Activities That Informed the Plan.



- A **Stakeholder Advisory Committee (SAC)** was formed to provide an advisory group that would collaborate with the City and project consultants. Fifteen sectors, with a variety of interests, were represented on the SAC, including:

  - Cyclists
  - Environment
  - Health Promotion
  - Inner City Communities
  - Land Development
  - Local Business
  - New Canadians
  - Trails Groups
  - Persons with Disabilities
  - Post-Secondary Students
  - Road Safety
  - School Aged Children and Youth
  - Senior Active Living
  - Suburban Communities
  - Tourism & Economic Development

  Multiple meetings with the SAC were held throughout the project to gather input and feedback to develop a project vision and goals, and on walking and cycling needs and interests, to identify walking and cycling network improvements.

- A **Stakeholder Workshop** was held on November 30, 2013 at the Millennium Library in Downtown Winnipeg from 10 a.m. to 4 p.m. Over 90 stakeholder participants participated. The workshop began with a keynote presentation on best practices for walking and cycling, followed by a presentation on key issues and opportunities heard to date through the on-line survey. The majority of the workshop was used for stakeholder discussion on a number of topics related to walking and cycling. Topics for both walking and cycling included: snow removal, infrastructure maintenance, safety & security, wayfinding & signage, education & encouragement, site design, children & youth, seniors, transit integration, bicycle parking, enforcement, accessibility, and rest areas & amenities.



“Winnipeg has a large number of green spaces - small parks, trees etc. I like seeing the green in the summer.”

To discuss these topic areas, participants gathered at a table for a 20 minute facilitated discussion on a particular topic. The format of the workshop allowed each participant the opportunity to discuss in-depth three walking topics and three cycling topics of their choice. At the end of the workshop, participants were asked to identify their top three priorities based on the topics discussed.

A **Telephone Survey** was conducted between October 1 and November 12, 2013 and involved a random sampling of 600 Winnipeggers in an approach that was statistically representative of Winnipeg's total population. The survey was approximately ten minutes in duration, and quotas were used to ensure that certain age demographics and neighbourhood areas were represented. Findings related to current walking and cycling habits, types of pedestrians and cyclists, obstacles to walking and cycling, and suggested improvements that would increase walking and cycling. The telephone survey questions are included in **Appendix B**.

An **On-line Survey** was available in October and November 2013 and provided over 1,600 responses. The responses provided findings on similar issues to the representative telephone survey. The on-line survey captured a more limited demographic than the telephone survey, focusing on active pedestrians and cyclists. Survey respondents were generally characterized as young professional, well educated, and high income. The on-line survey questions are included in **Appendix A**.

In addition to the on-line survey, four "**questions of the week**" were also posted on the City's website to gather community input. These questions included:

- What are some of your favorite places to walk in your neighbourhood? Why?
- If you could make three changes to biking conditions in your neighbourhood where would they be and why?
- If you could make three changes to walking conditions in your neighbourhood where would they be and why?
- What are some of your favorite places to cycle in your neighbourhood? Why?

Website, social media and email. On-line and social media initiatives included establishing a project website with relevant project materials (i.e. Open House boards, on-line survey), and information on the study process, including upcoming events. A project logo was developed to create a recognizable 'brand' for the study, and was used as a link to the project website from the City of Winnipeg homepage. A project email was established for people to submit questions and inquiries to, and platforms such as SpeakUp Winnipeg, Facebook and Twitter were used to spread awareness about the project and provide opportunities for input and feedback.



Open Houses were held in April 2014 to gain public input and feedback on the draft policies, actions, and network concepts for the Pedestrian and Cycling Strategies. Attendees were given the opportunity to review Open House boards, talk with City staff and consultants, and fill out an Open House questionnaire. In total, approximately 500 residents attended the three Open Houses. Questionnaires were provided to participants at the Open House to provide input on the draft Strategies. Over 300 completed questionnaires were received. The open house questionnaire is included in **Appendix C**. The dates, locations, and times of the open houses were as follows:

April 12, 2014 at the Manitoba Theatre for Young People, from 11 a.m. to 4 p.m.

April 15, 2014 at the Manitoba Hydro Building, from 3 p.m. to 8 p.m.

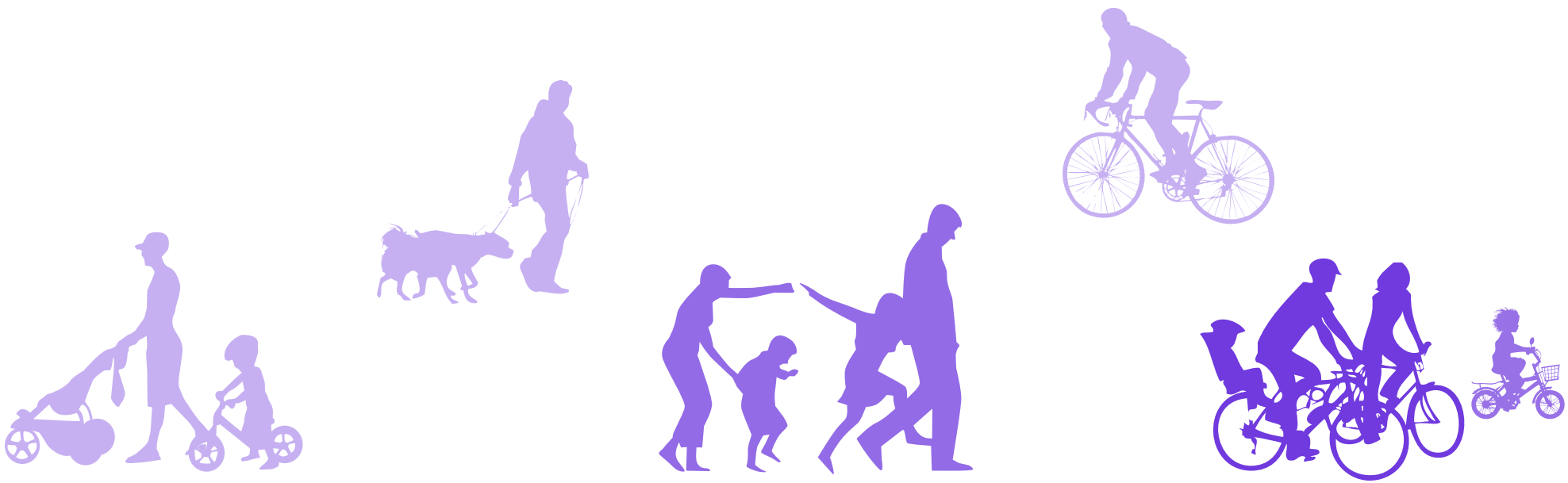
April 15, 2014 at the Sinclair Community Centre from 3 p.m. to 8 p.m.

The results of the above Public Engagement process are presented in **Chapter 2 Shaping Influences**.



“I like being able to walk by the river. I like the fresh air and exercise. I like the emotional/mental benefits. I like living within walking distance of a grocery store, liquor store, pharmacy, post office and school. We are a very green city... literally! We have a lot of parks and green spaces, and canopys of trees especially in older neighbourhoods. It is great to feel immersed in nature while walking in our city. I think some of the best walkways are along our rivers and creeks.”





PART 2 Shaping Influences

2.1 Connections to Other Plans

2.2 Benefits of Walking and Cycling

2.3 Land Use and Demographic Trends

2.4 The Market for Walking and Cycling

2.5 Walking and Cycling Facts and Trends

2.6 Walking and Cycling Network Analysis

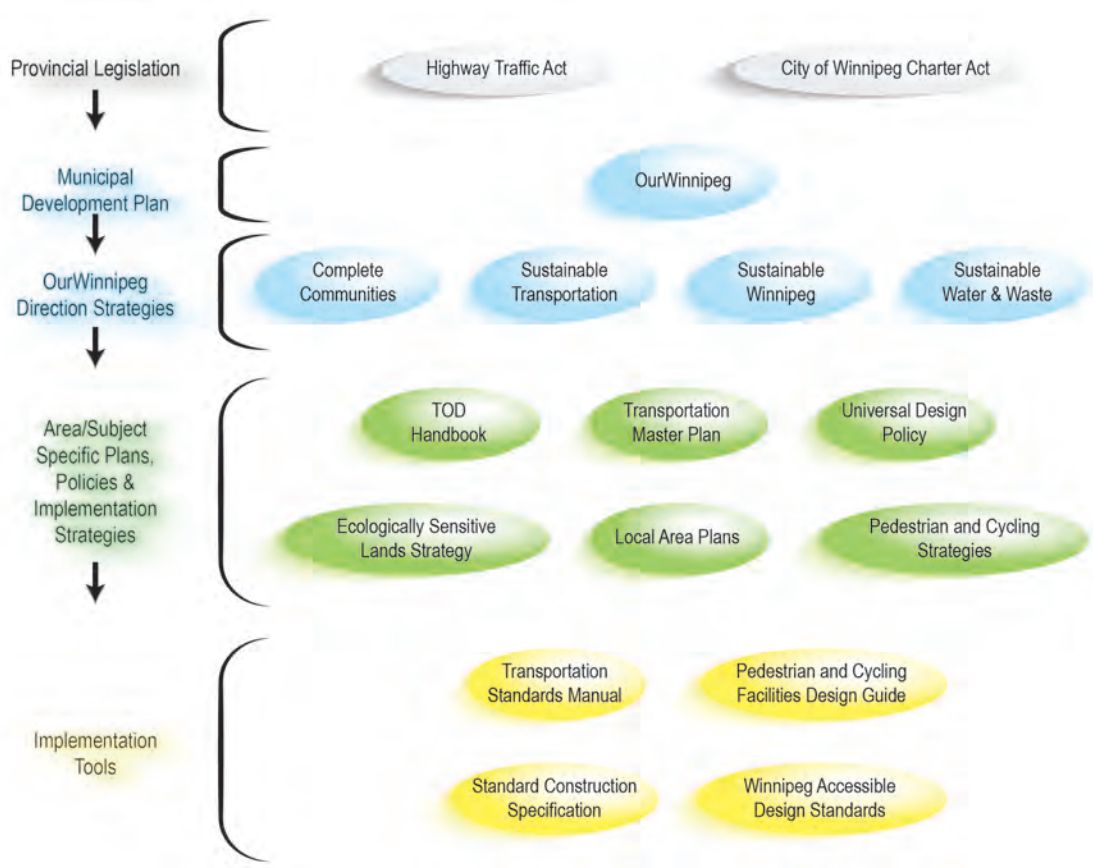


2.1 Connections to Other Plans

The Pedestrian and Cycling Strategies are explicitly linked to and informed by many of the City of Winnipeg's key planning documents that contain pedestrian and cycling-related policies and objectives, as well as broader aspirations that strongly influence transportation movements within the City. These documents provide directions on the integration of walking and cycling within the transportation landscape.

In particular, the Pedestrian and Cycling Strategies are guided by a number of key shaping influences including the City's **OurWinnipeg, Complete Communities Direction Strategy (CCDS)** and the **Transportation Master Plan**, which also help to support a number of other documents, as shown in **Figure 2.1** and described in further detail on the following pages.

Figure 2.1:
Connections to Other Plans



2.1.1 Shaping Influences

The Pedestrian and Cycling Strategies are ultimately intended to support and build on the direction of several overarching documents: OurWinnipeg, Direction Strategies (including CCDS), and the City's Universal Design Policy, as well as the Transportation Master Plan, as described below.

- **OurWinnipeg** is Winnipeg's municipal development plan, and provides the comprehensive community vision that will guide the development of Winnipeg over the next 25 years. The document provides the highest level policy context for land use and development in Winnipeg, and emphasizes the importance of increased densities and mixing of land uses in ways that are sensitive to area context for achieving Complete Communities. OurWinnipeg recognizes that current social, economic, and environmental decisions will impact present and future generations in the City, and identifies three focus areas that can contribute to increasing levels of walking and cycling:

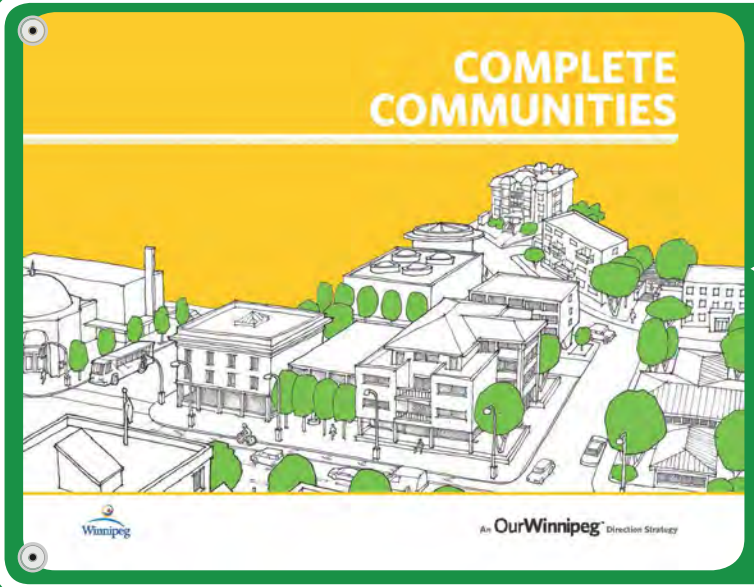


  - **A city that works** supports a variety of lifestyles and a multi-modal transportation system with mobility options for all residents.
  - **A sustainable city** links the social, economic and environmental goals throughout OurWinnipeg which includes identifying the role of transportation mode choice in supporting sustianable development.
  - **Quality of life** ackowledges the need for healty, vibrant neighbourhoods that provide equitable access for all people.

  OurWinnipeg clearly outlines the importance of enabling walking and cycling for all Winnipeg residents as a direct way to improve social, environmental and economic sustainability. To do this, OurWinnipeg identifies the importance of land use decisions and developing complete communities to ensure that destinations and

daily needs are accessible and within walking and/or cycling distance. This can be done by focusing on providing walking and cycling friendly communities, centres and corridors as well as facilitating walking and cycling for recreation. OurWinnipeg's underlying focus is to plan and develop a safe, enjoyable, active and healthy community for all residents. Both OurWinnipeg and the CCDS have been approved as By-laws. Section 235 of the City of Winnipeg Charter specifically states that any public works or development in the city must be consistent with OurWinnipeg or the CCDS. These policy documents recognize the importance of an integrated approach to land use, transportation, and infrastructure planning, and the Pedestrian and Cycling Strategies will focus on building on this direction.

Direction Strategies. As part of OurWinnipeg, the City also developed four more detailed Direction Strategies that add additional detail in key planning areas:



Complete Communities is the City's land use and development guide which outlines a number of tools and approaches that provide unique, sustainable and complete communities throughout Winnipeg. Complete Communities is based around two pillars of focus: 1) the creation of complete communities; and 2) the guiding urban structure framework. In regards to transportation, the strategies and tools for Winnipeg's urban structure support the concept of a complete community that supports numerous transportation options, where sustainable transportation options are provided as realistic travel choices. In many instances, this means enabling pedestrian, cycling, and transit-friendly environments through the integration of land use and transportation efforts.

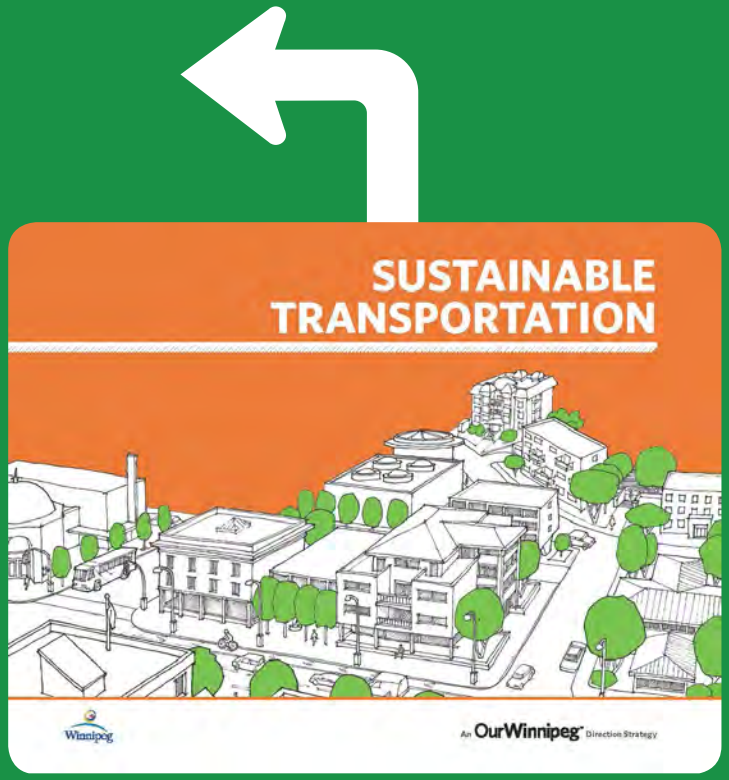
Sustainable Transportation specifically outlines the vision for the Transportation Master Plan and addresses how multi-modal transportation will be provided in Winnipeg over the next 25 years. This Direction Strategy outlines five key goals to achieving a balanced and sustainable transportation system for Winnipeg:

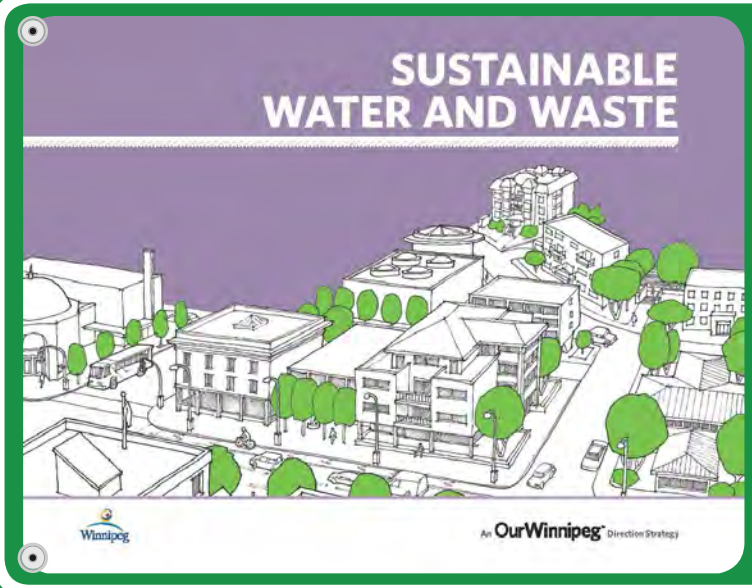
- A transportation system that is dynamically integrated with land use;
- A transportation system that supports active, accessible and healthy lifestyle options;
- A safe, efficient and equitable transportation system for people, goods and services;
- Transportation infrastructure that is well maintained; and
- A transportation system that is financially sustainable.

This Direction Strategy also includes five strategies that are specific to walking and cycling and have a direct impact on the direction of the Pedestrian and Cycling Strategies:

- Continuing to expand on-street and off-street cycling infrastructure;
- Investigating the implementation of a Complete Streets policy;
- Consider and research the feasibility of the establishment of a bike sharing program for the Downtown;
- Develop guidelines ensuring that new development contributes to the pedestrian environment; and
- Increase bicycle parking throughout the Downtown and other commercial/employment centres.

The development of the Transportation Master Plan and the Pedestrian and Cycling Strategies both emerge out of the Sustainable Transportation Direction Strategy.



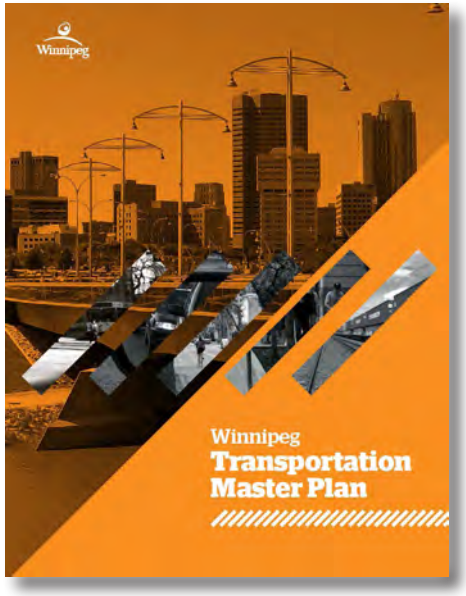


Sustainable Water and Waste is the primary vision for promoting water and waste directions, addressing how to protect and maintain the infrastructure advantages the City of Winnipeg already has and how to enhance the quality of air, water and energy resources and the built and natural environment.



A Sustainable Winnipeg sets out key directions and tools to mobilize the commitment to a sustainable City, focusing on complete communities, sustainable transportation, and water and waste water. To support the implementation of a sustainable transportation system, the direction strategy calls for key actions related to public transit, major streets, and active transportation, including the development of a Transportation Master Plan. Active transportation is supported through the implementation of a complete streets policy, guidelines for pedestrian-oriented development, increased bicycle parking, and evaluation and performance measures.

- **Transportation Master Plan (TMP),** approved by Council in November 2011, directly calls for the development of the Pedestrian and Cycling Strategies. The TMP sets out a strategic vision for transportation in Winnipeg over the next two decades, ensuring that future transportation planning includes an integrated network of highways, roads, rapid and conventional transit, cycling and pedestrian facilities.



Six strategic goals provide the basis for the TMP with an emphasis on the integration of land use and transportation planning.

The Six “Strategic Goals” from the TMP are:

1. A transportation system that is dynamically integrated with land use
2. A trasportation system that supports active, accessible and healthy lifestyle options
3. A safe, efficient and equitable transportation system for people, goods and services
4. Transportation infrastructure that is well maintained
5. A transportation system that is financially sustainable
6. A transportation system that reduces its greenhouse gas emissions footprint and meets or supasses climate change and emissions reductions goals set by the city and the province

The TMP identifies that providing more mobility choices is key to reducing reliance on automobile travel, with added benefits related to quality of life, economic vitality, and system efficiency. The TMP highlights the importance of increasing transportation options for residents of all ages and abilities with considerations for accessibility, transportation demand management, and complete streets. An important part of this is enabling active modes, and the TMP guides the development of the active transportation network in a way that facilitates year-round access and reflects the needs of many user types. In particular, the TMP enabling strategies identify the need

to ensure sound network planning for both walking and cycling to provide safe, convenient, comfortable and efficient connections for users. The TMP enabling strategies also emphasize the need to develop city-wide Pedestrian and Cycling Strategies to provide integrated guidance for City efforts to enable cyclist and pedestrian activity and connectivity.

The Transportation Master Plan supports OurWinnipeg and the Complete Communities Direction Strategy through recognizing the importance of integrated planning in reducing travel demand and through emphasizing the importance of providing meaningful options for travel.

- The City's **Universal Design Policy (2001)** guides new construction and major renovations to buildings, exterior environments, as well as purchases and new developments in services, products, or systems that are funded in whole or part by the City of Winnipeg to follow universal Design Criteria. Building on the emphasis of the universal design policy on accessibility and inclusive design, the Pedestrian and Cycling Strategies supports many directions and actions that support walking and cycling for all ages and abilities.

2.1.2 Implementation Tools

In addition to the key influencing directions for the Pedestrian and Cycling Strategies described above, the City has developed other key policies, strategies, and studies that shape future initiatives towards walking and cycling in Winnipeg. Below is a brief summary of the policies, guidelines, standards, and strategic documents, that support the plans described above. The Pedestrian and Cycling Strategies will identify required changes in these implementation tools in order to effectively implement the policy direction adopted by OurWinnipeg and the CCDS.

Development Agreement Parameters (2002) are guidelines for the City's Administration and developers to formulate development conditions for consideration by Council and its relevant committees. The parameters ensure that all parties pay their equitable share of the costs of development, and that development occurs in accordance with current City of Winnipeg construction specifications. The development agreement parameters are important as they can significantly influence infrastructure provision for walking and cycling, including walkways, sidewalks, landscaped boulevards, lighting, and access roads.



Transportation Standards Manual (Draft 2012) serves as an implementation design tool for designers and planners involved in work related to the City's transportation network. The document provides guidelines on road design, sidewalk and curb provision, and guidance on additional right-of-way widths to accommodate cycling treatments. This includes additional right-of-way requirements for shared lanes, multi-use pathways, protected bicycle lanes, bicycle lanes, and buffered bicycle lanes.

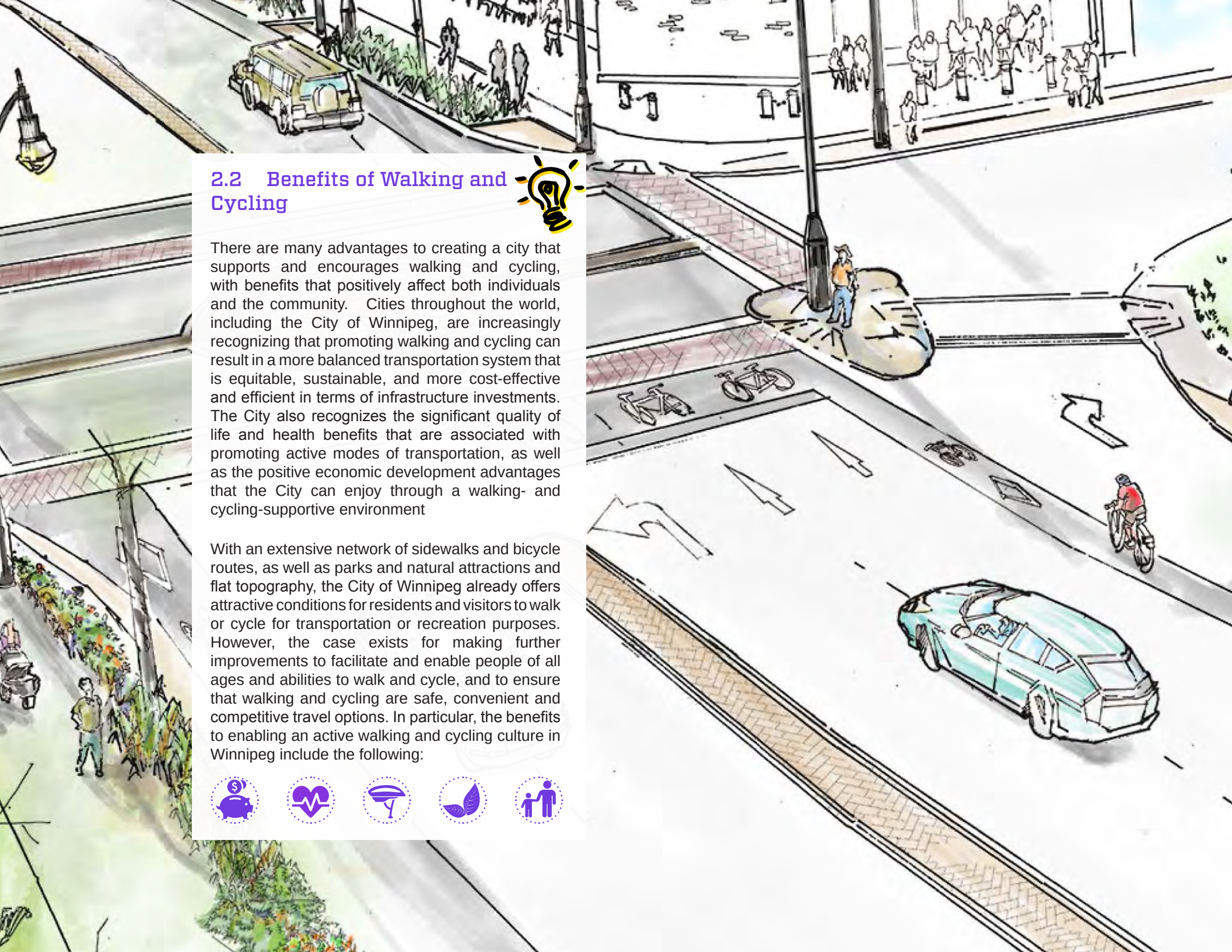
Accessibility Design Standards (2010) provide accessibility requirements for the design and construction of new pedestrian facilities, as well as the retrofit, alteration or addition to existing pedestrian facilities, owned, leased or operated by the City of Winnipeg.

Downtown Winnipeg Urban Design Guidelines (2005) focus on urban design, the public realm, and architectural design, and are intended to ensure that development proposals in Downtown Winnipeg are integrated with the local context and are consistent with standards articulated in the CentrePlan and Plan Winnipeg (the predecessor of OurWinnipeg).

Snow Clearing Policy (2011) provides Policy on maintaining the City's roadways, back lanes, sidewalks, multi-use trails, and designated park pathways in such a manner so as to provide safe and accessible operating conditions for motorists, cyclists, and pedestrians.

Active Transportation Study (2005) provided strategic direction for improving active transportation policy, infrastructure and programming in the City of Winnipeg. The primary goal of the Active Transportation Study was to update and expand the 1993 Bicycle Facilities Study.

Active Transportation Action Plans (2007 - 2009) represented annual programs of active transportation projects undertaken or supported by the City of Winnipeg. The Action Plans provided a list of projects and the proposed active transportation network, including facilities for both pedestrians and cyclists, such as multi-use pathways, sidewalks, trails, signage, bicycle lanes, sharrows, bikeways, and bicycle parking.



2.2 Benefits of Walking and Cycling

There are many advantages to creating a city that supports and encourages walking and cycling, with benefits that positively affect both individuals and the community. Cities throughout the world, including the City of Winnipeg, are increasingly recognizing that promoting walking and cycling can result in a more balanced transportation system that is equitable, sustainable, and more cost-effective and efficient in terms of infrastructure investments. The City also recognizes the significant quality of life and health benefits that are associated with promoting active modes of transportation, as well as the positive economic development advantages that the City can enjoy through a walking- and cycling-supportive environment

With an extensive network of sidewalks and bicycle routes, as well as parks and natural attractions and flat topography, the City of Winnipeg already offers attractive conditions for residents and visitors to walk or cycle for transportation or recreation purposes. However, the case exists for making further improvements to facilitate and enable people of all ages and abilities to walk and cycle, and to ensure that walking and cycling are safe, convenient and competitive travel options. In particular, the benefits to enabling an active walking and cycling culture in Winnipeg include the following:

2.2.1 *Economic Benefits*

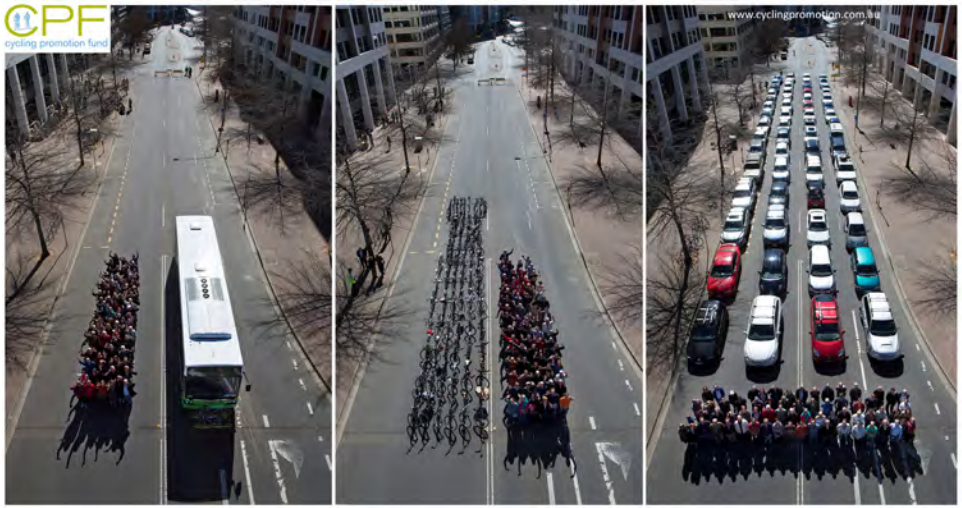
Enabling walking and cycling can contribute to the development of a healthy and diverse local economy in Winnipeg in the following ways:

- **Investing in walking and cycling infrastructure and programs can stimulate the local economy** by generating tourism revenue and supporting local business. Pedestrian and bicycle-supportive design can enable residents to take short trips to local businesses by walking or cycling, instead of driving to services further away in adjacent communities. Bicycle and walk-friendly environments can attract more visitors to neighbourhoods, who will in turn be patrons of local services and amenities. A walkable and bikeable community can encourage more livable and enjoyable places to be, with a stronger sense of place and freedom of mobility. This can attract businesses, residents and visitors (and spending dollars) to certain areas. Walking and cycling tourism in Ontario's Bruce Trail attracts an estimated $5 million annually to the local economy.

- Better opportunities for walking and cycling may allow **residents to spend less on transportation costs**, leaving them with more disposable income for purchasing other goods and services – which in turn can stimulate the local economy. Transportation costs are second only to housing costs as a percentage of household spending in North America. Spending on transportation is disproportionately high among low and moderate-income families, and walking and biking present affordable transportation options. Using walking and cycling for transportation reduces household spending on transportation and, in some cases, can eliminate the need for an extra vehicle. Various studies have examined the 'operating costs' of walking and cycling, in relation to other more cost-intensive modes such as transit and driving. For example, a study by the Sierra Club estimates that walking costs approximately $70 per year, while regular cycling incurs an annual operating cost of $350. The Canadian Automobile Association estimates that driving costs owners about $9,000 annually in operating costs, cycling costs $150 and walking costs almost zero dollars. Costs for walking and cycling can be attributed to walking and cycling gear/clothing, bicycle maintenance and equipment, while car ownership costs can include fuel, maintenance, and insurance. In comparison, a transit pass in Winnipeg averages about $1,000 per year. While these numbers may vary city to city, and depend on personal use of different transportation modes, there is clear evidence that there are great personal savings available through engaging

in more walking and cycling activity. These cost savings can result in people having larger disposable incomes, and some studies have found that cyclists are “competitive consumers” who tend to spend their money more locally than motorists, while shopping with greater frequency. These personal economic benefits thus also extend to wider socio-economic benefits.

- **Increased property values have been associated with properties located near desirable active transportation facilities** such as trail networks, and bicycle routes. For example, the presence of amenities such as neighbourhood trails, sidewalks, and bicycle routes can be highly valued by prospective homeowners, and walkable communities provide intangible benefits through healthier and active populations.



- **Walking and cycling infrastructure is affordable for cities to build and maintain.** The investment in pedestrian and cycling infrastructure and facilities are typically less expensive per kilometre than the cost of constructing many road infrastructure projects. With more residents choosing to use these facilities, roads experience less wear and tear and municipal capital budgets can benefit from a financially sustainable transportation solution that incorporates a variety of modes.

- **Space Efficiency.** Pedestrians and cyclists need less space than motor vehicles; more walking and cycling means less congestion and better overall transportation system performance. Parking becomes more efficient – ten bicycles can be stored in a single motor vehicle parking space. Each of these efficiencies helps maximize the value Winnipeg gets from its transportation system

- **Walking and cycling can incur travel time savings.** Often walking or cycling can be faster and more affordable than travelling by car or bus particularly for short local trips in congested urban environments. In particular, walking and cycling offer greater travel time savings of door-to-door trips, in comparison to transit and some driving trips, due to the additional time needed to walk to/from a bus stop and wait for the bus,

locate a parking space, or to walk to and from a parking lot, and then the final destination.

- **Competitive market for walkable and bikeable cities.** Cities that invest in pleasant and efficient pedestrian and cycling facilities attract young people who are choosing active transportation over automobile ownership. A competitive city is one that invests in active transportation to meet the market demand of the millennial generation that want sustainable transportation options and vibrant city living in urban centres.

Many of the benefits described are accrued by the individual pedestrian or cyclist. Yet most of the individual benefits of active transportation also have societal elements. For instance, more walking and cycling can lead to decreased personal health care costs (in the form of fewer prescriptions, reduced emergency room visits, fewer sick days, etc.) and can help to ease the burden on the health care system as a whole. This results in a cost savings to society in the form of reduced taxes and/or premiums for health care.

2.2.2 Health

Walking and cycling are effective ways to support mental and physical health and build a healthier and happier community. The World Health Organization has identified physical inactivity as one of the main leading risk factors for global mortality, and as an underlying factor for many chronic diseases. Walking and cycling for daily activities, such as trips to work or to grocery stores, can increase physical activity levels, which can reduce the risk of cardiovascular disease, Type 2 diabetes, some cancers and improve mental illness and mood. Improved strength and bone density can also lead to an enhanced ability to do daily activities and avoid falls. With many families living in Winnipeg, the health benefits of walking and cycling can be experienced by residents of all ages and abilities. Regular physical activity even at a moderate intensity, which includes walking briskly or cycling for 30 minutes five or more days per week, reduces the risk of early death and numerous chronic diseases. Physical activity has been proven to improve psychological well-being, and prevents weight gain and obesity. Walking and cycling are some of the most affordable and accessible ways to add exercise to a daily routine.



2.2.3 Safety

Streets that support high levels of walking and cycling are slower and safer. Walkable and bikeable environments contribute to a safer transportation system by making walking and cycling more visible and viable modes of travel, resulting in reduced risk of collisions. Streets that are designed for slower vehicle speeds feel safer for both pedestrians and cyclists. Studies have shown that slower motor vehicle speeds exponentially increase survival rates for both pedestrians and people riding bicycles involved in collisions with vehicles. When walking and cycling rates increase, rates of collisions with motor vehicles decrease. This is known as the “safety-in-numbers” principle. Places with the highest levels of pedestrians and cyclists are also the safest places to walk and cycle.



2.2.4 Environment

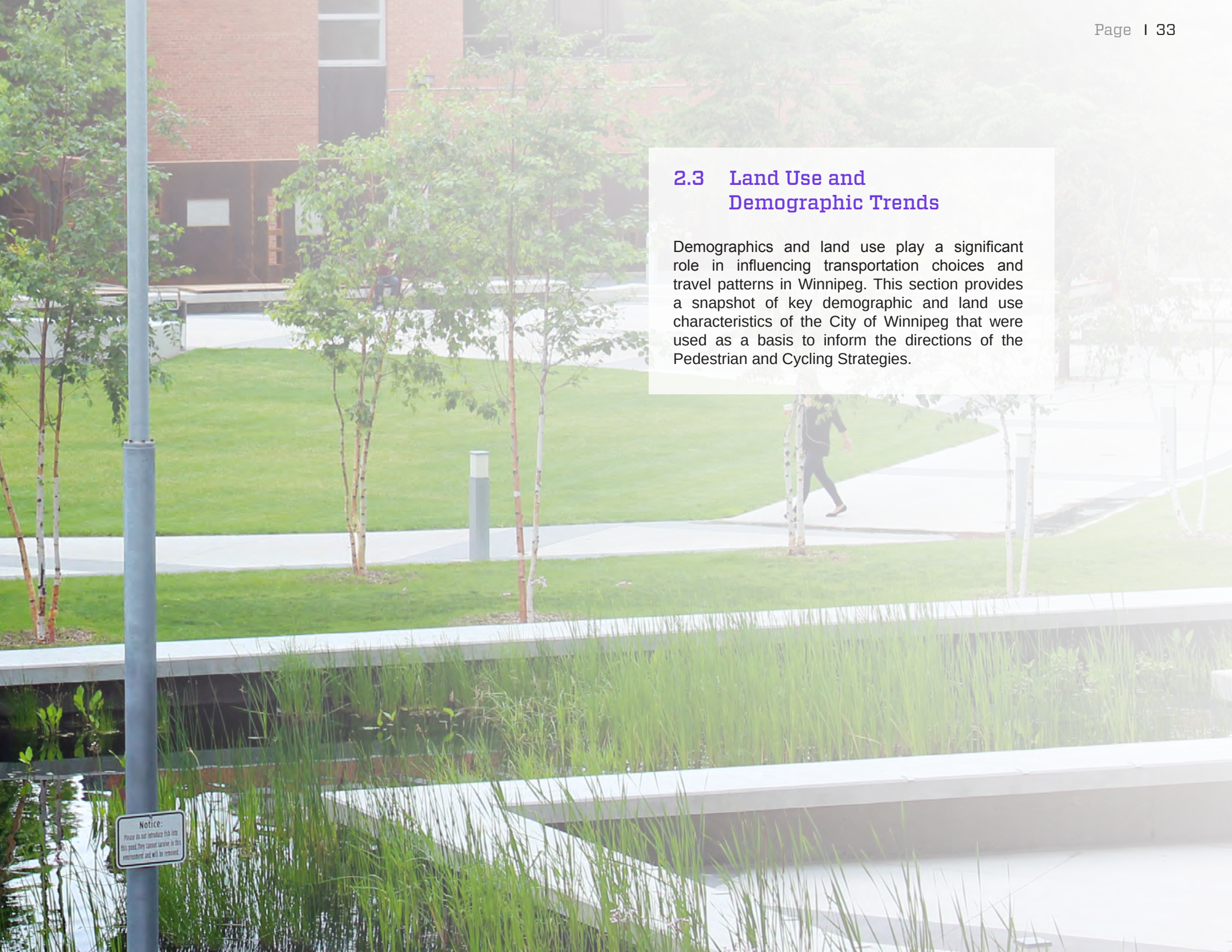
Walking and cycling are considered a sustainable form of transportation and an alternative to the personal vehicle as they generate no greenhouse gas emissions, create no air or water pollution, cause minimal noise and/or light pollution, and reduce the demand for streets and parking lots by making more efficient use of existing road space. As walking and cycling reduce vehicle trips, the reduced congestion, and air pollution can help to reduce greenhouse gas emissions. Promoting walking and cycling can also help in the City’s efforts towards climate change mitigation. Supporting sustainability is a priority of the City and supporting walking and cycling can protect and improve Winnipeg’s natural environment.

2.2.5 Societal Benefits

A pedestrian- and bicycle-friendly community can encourage a more livable and enjoyable place to be, with a stronger sense of place and freedom of mobility. Communities that support walking and cycling can also contribute to safer streets and improved social interactions. All these qualities can enhance the high quality of life that Winnipeg residents enjoy today and hope to into the future.

- **The younger generation of 'millennials' prefer walkable and bikeable communities.** A major societal shift is taking place among individuals born between 1981 and 2001, which finds this demographic increasingly choosing walking and cycling over driving. Peak vehicle ownership coincided with the baby boomers, and studies have found that millennials are not purchasing motor vehicles at the same rates as previous generations. Other factors contributing to this trend are significant growth in women employment rates, rising wages, higher fuel prices, and concerns for climate change.
- **Creating active communities for both the young and old in society.** Building safe and comfortable bicycle and pedestrian facilities for all ages and abilities provides affordable and accessible transportation choices for all residents. Youth and seniors require transportation alternatives as they may not have access to an automobile and are more reliant on walking, cycling and transit. Additionally, enabling sustainable travel patterns at an early age can continue later in life.
- **Gender considerations are important in planning our communities.** Lower levels of female cyclists have been linked to greater safety concerns. Women are often responsible for transporting children to and from school, therefore building safe and comfortable facilities for all ages and abilities can create more equitable transportation options for both children and adults. The level of female cyclists has recently emerged as an important indicator of how safe local conditions are for cycling in a community. Well-designed bicycle facilities can lead to an increase in female ridership, which is considered a sign of a bicycle-friendly city.





2.3 Land Use and Demographic Trends

Demographics and land use play a significant role in influencing transportation choices and travel patterns in Winnipeg. This section provides a snapshot of key demographic and land use characteristics of the City of Winnipeg that were used as a basis to inform the directions of the Pedestrian and Cycling Strategies.

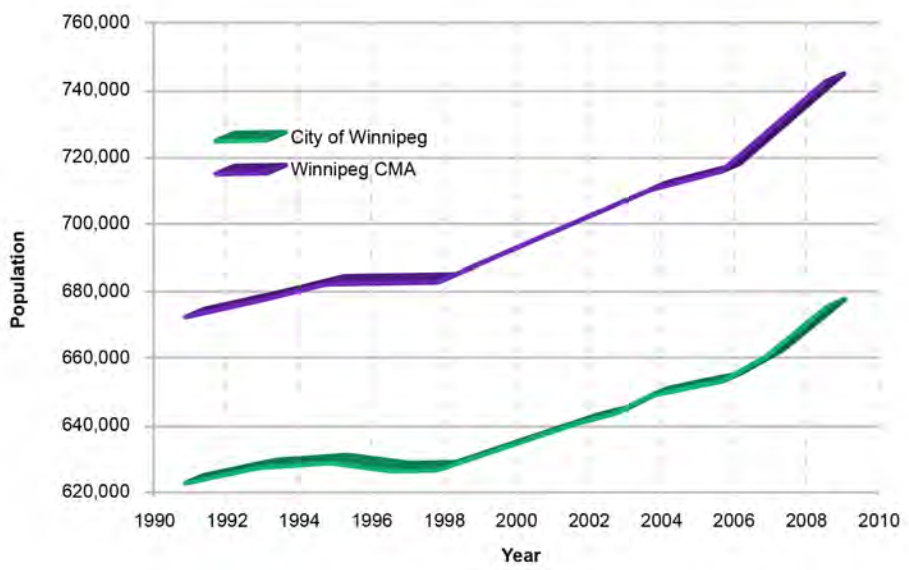
2.3.1 Demographics

- **The City is rapidly growing, and this is expected to continue in the future.** In 2011, Winnipeg's population was approximately 660,000 residents. This had increased from 630,000 in 2006 – an increase of 4.8% over this period. Over the next 20 years, the City's population is expected to grow by an additional 180,000 residents and 67,000 jobs. This growth is driven primarily by increased levels of immigration and a combination of fewer people leaving and more people coming from other parts of the country. This is an important opportunity to direct development patterns towards the goals identified by the CCDS.

  In 2011, the broader Winnipeg metropolitan area's population was 730,000, an increase of 5.1% from 2006. Close to 90% of the region's population resides in Winnipeg.

- **The City has relatively low population density but this is increasing with the recent levels of population growth.** Currently, Winnipeg has a population density of approximately 1,430 persons per square kilometre, or approximately 14.6 persons per hectare. This figure is low compared to other Canadian cities, although neighbourhood density varies throughout the city. Higher population density is linked to higher rates of walking and cycling as destinations are closer together. With a projected increase in population growth, population density in Winnipeg is projected to increase to approximately 1,800 persons per square kilometre, or 20 people per hectare. This increase in density represents the ability to have more people in walking and cycling proximity to services and amenities.

Figure 2.2:
City of Winnipeg Historic Population Trends
Source: City of Winnipeg Transportation Master Plan, 2011



- **Winnipeg has a higher than average youth population and this balances the future increase in the aging population.** The age distribution in the City of Winnipeg is similar to many Canadian cities. Young people aged 15-24, make up 17.1% of Winnipeg's population, which is slightly higher than the national average for this age group (16.7%). Young people predominantly rely on transit, walking and cycling to access school and services. Winnipeg's population is aging and residents over the age of 65 make up 14.1% of the population. The needs and travel patterns of older Winnipeggers are unique and a range of mobility options is important to ensure that an aging population can participate meaningfully in work and in their communities at all stages of their lives regardless of ability. This is best achieved by providing complete, walkable communities with multiple housing options, communities where people can be close to various employment opportunities and remain as connected and independent as possible.



- **Winnipeg is historically a city of immigrants, which remains true today.** The City is home to a significant population of new immigrants, as the newcomer population has doubled in the last fifteen years with an average 9,000 new immigrants per year moving to the City. New comers often rely on public transit, walking and cycling more as they get settled in a new city.

- **Winnipeg has one of the largest Aboriginal populations in Canada.** According to the 2011 Census, 10% of Winnipeg's urban population is reported as Aboriginal. The median age of the Aboriginal population in Winnipeg is 26 years old compared to 40 years of age for the non-aboriginal population, indicating a strong youth population among this demographic. As previously noted, young people, pre– and post-driving age, increasinly use transit, walking and cycling to travel across the city.

- **The City maintains a robust employment rate through large local employers in the agriculture and manufacturing industry.** In 2006, there were approximately 350,000 jobs in Winnipeg, which represented approximately 96% of total employment in the Winnipeg metropolitan area. As Manitoba's capital, Winnipeg is also home to a high proportion of civil service jobs, in addition to major health care centres and post-secondary education facilities. Key industries in the City include manufacturing, trade, health care and transportation. Winnipeg is a key intermodal and freight hub with major transportation employers including Canadian National Railway, Canadian Pacific railway, Burlington Northern Santa Fe Railway and three of the largest trucking industry companies in Canada. Winnipeg is also home to major aerospace and transportation-related manufacturers including Boeing and New Flyer. With a rich employment base across the city, it is important from a Transportation Demand Management perspective to understand the travel patterns, travel demand and trip generation for major employers or industry in order to offer multi-modal transportation options to their employees.

- **The City is made up of a collection of neighbourhoods with distinct character, needs and challenges.** The City of Winnipeg is made up of a collection of unique residential areas divided into 23 "neighbourhood clusters". Population and employment density varies across the neighbourhoods based on geographic location, development patterns and amenities. Knowing the population characteristics for Winnipeg's neighbourhoods can help shape investments in these "neighbourhood clusters" and present opportunities to improve the pedestrian and cycling environments in the neighbourhoods with the highest potential for more active trips. For example, the neighbourhood profile of Fort Gary South reveals that young people age 15 to 25 make up 19% of the population, yet only 4.7% of the total population walks (and 2.2 % cycles). This may indicate an opportunity to increase walking and cycling levels in this area.

2.3.2 Land Use

The City's land use and development patterns are shaped by its major road and rail transportation networks which are critical to supporting the local and regional economy. Other factors such as the Assiniboine and Red Rivers and land availability have also had an impact on how the City of Winnipeg has developed. An abundance of affordable land outside of the downtown has led to predominantly low density single-family residential, commercial and industrial developments. In the past, the manufacturing and industrial sectors were in the heart of the City and residents lived close to these employment districts. Winnipeg, like other Canadian cities, experienced the post-industrial trend of manufacturing and industrial sectors moving out of the inner city to the periphery as urbanization demanded prime industrial land for residential and commercial development. The original drivers of urban growth – manufacturing and industry – relocated to the edges, and as a result travel patterns within the City changed significantly. The streetcar and trolley bus transportation system, which met the needs of the central city population, were soon superseded by the private motor vehicle.

Generally, the city's land use and development pattern has been partially influenced by automobile-oriented design. Suburban land development is characterised by large lot, single family residential





development. Today in the City of Winnipeg, there is a renewed focus on higher density mixed land-use developments that enable multi-modal transportation, walking, cycling and transit use. While currently the majority of Winnipeggers use a vehicle to travel around the City, the City recognizes the importance of developing a multi-modal and sustainable transportation system and has committed to finding improvement opportunities for active modes of transit, including walking and cycling, as well as public transit.

There are opportunities and challenges associated with promoting and encouraging walking and cycling in Winnipeg. The City's flat topography, the compact and vibrant Downtown, large educational institutions, and scenic and well-developed pathway system all present exceptional opportunities for promoting and supporting walking and cycling in many areas of the community. Some challenges to increasing trips made by walking and cycling are the historical development patterns of outward growth. This has created many neighbourhoods and destinations that favour automobile use. There are also notable gaps in the walking and cycling networks that make active modes less attractive to connect to certain areas of Winnipeg. In addition, the Red and Assiniboine Rivers, as well as, regional streets and the rail corridors present significant barriers to walking and cycling within Winnipeg.

Land development and community design has a significant direct and indirect impact on transportation behaviours. In terms of the pedestrian and cycling environment within a neighbourhood, the layout of the street network varies significantly, which in turn influences where sidewalks and bicycle facilities are located. The land-use and design of a community also helps to determine if walking and cycling is possible. Well-known factors that contribute to a walkable and bikeable community are design, density, diversity, destinations, and distance, also known as the 5 D's. The siting or location of buildings and streets, the density and mix of uses in an area, and lastly how far or how much time it takes to access the destinations all influence the decision to walk. Land use and transportation are interconnected, and creating a multi-modal transportation system relies on thoughtfully planned and well-connected built environments.

There are key destinations throughout Winnipeg that attract and generate pedestrian and cycling trips (as well as transit and driving trips). Key land uses and destinations that act as significant trip generators for pedestrians and cyclists are described in further detail below.

- **Downtown as a major destination.** Winnipeg's compact urban core is a major trip generator, as high residential and employment densities and land use mixtures are found in the Downtown, Osborne Village, South Osborne, Point Douglas, River Heights, and the Burrows / Inkster neighbourhoods. Within Downtown, most residents are in close proximity to services, amenities and transit connections, with the close distances making walking and cycling a competitive mode with driving and transit.

- **Commercial and Industrial Areas.** Employment is distributed across the City within key commercial areas and corridors, and major employers are significant trip generators – largely influencing travel patterns and characteristics across the City. Pockets of employment include the Downtown, Health Sciences Centres, University of Manitoba, University of Winnipeg, Red River College, St. James industrial area and the airport industrial lands. Examining travel demand by sector or areas enables the City to improve conditions for walking and cycling through planning, policy and programing. Appropriate Travel Demand Management strategies can be employed to reduce vehicle trips.

- **Community Facilities.** Many of Winnipeg's important cultural and civic facilities are located in Downtown, including City Hall, the Art Gallery and the Forks National Historic Site which all attract significant walking and cycling activity year round. Many other key civic spaces and recreational facilities across Winnipeg generate many walking and cycling trips in Winnipeg's neighbourhoods. These key civic destinations present easy opportunities for the City to enable non-motorized transportation when visiting these locations. A short term strategy is to pay attention to the amenities at these facilities, such as benches, water fountains and bicycle racks. These are indicators of the City's encouragement for walking and cycling. Long term strategies can be land use and transportation improvements and transit scheduling. An example of linking a major civic destination with active transportation is the bicycle valet at Winnipeg Blue Bombers football games at the new Investors Group Field.

- **Schools.** Winnipeg has 6 school divisions and sub-districts. The Winnipeg School Division alone has a total of 56 elementary schools and 28 secondary schools. Winnipeg has numerous post-secondary institutions including the University of Manitoba, University of Winnipeg, Canadian Mennonite University, Université de Saint-Boniface, and Red River College, which has four campuses in the city. A variety of strategies support active trips to school, such as student transit passes, school travel planning and active and safe routes to school initiatives. Enabling walking and cycling at schools is an important strategy as young people develop lifestyle habits of walking and cycling that can carry on into adult life. Challenges exist between the municipal and provincial jurisdictions around schools, and opportunities to improve the safety and comfort at the neighbourhood scale can conflict with local traffic operations. For example, the Province of Manitoba recently changed the Highway Traffic Act to enable lower speed limits around school zones.

- **Major Transit Nodes.** Public transit ridership in Winnipeg makes up roughly 8.3% of daily trips. Winnipeg Transit operates 89 bus routes with a fleet of 505 low-floor accessible buses throughout the city. The major transit centres are located at regional commercial shopping centres, rapid transit stations; and at the post-secondary campuses. These transit nodes are major trip generators, and integration with the active transportation network is key to maintaining these as key destinations for pedestrians and cyclists. Every transit rider is a pedestrian as each transit trip starts and ends on foot. Ensuring a high quality pedestrian environment along frequent transit corridors and at transit interchanges facilitates transit ridership. Providing bus shelters, benches for resting, good lighting, and safe crossings is important. In addition, bicycle racks at transit centres can combine a bicycle and bus trip for longer distances. A multi-modal transportation system incorporates planning for walking, cycling, driving and transit.

- **Parks.** Parks are key neighbourhood-level trip generators, and Winnipeg boasts an impressive number of public parks and open spaces including large parks, community gardens, scenic trails and pathways. There are over 500 green spaces and recreational park facilities in Winnipeg and they are highly valued by residents. Many of Winnipeg's parks and green spaces are used by residents and visitors for recreational walking and cycling trips. Active transportation network maps and wayfinding help connect residents to local neighbourhood multi-use paths and green spaces. Many multi-use trails are designed based on natural settings on the periphery of the city centre. However, off-street trails and pathways can be used for utilitarian trips and incorporated into pedestrian and cycling networks.





2.4 The Market for Walking and Cycling

A telephone survey was conducted in the fall of 2013 to provide a statistical representation of Winnipeg's total population. The telephone survey included responses from approximately 600 Winnipeggers and is accurate +/- 4.0%, 19 times out of 20. This was important because there has been much debate in recent years in Winnipeg regarding what the position of the average resident was in respect to walking and cycling. It is common to hear perceptions that the increased demand for improved walkability and bikeability is because of a small number of vocal special interest groups and may not represent the ideals of Winnipeg residents in general. The telephone surveys shed light on this issue.

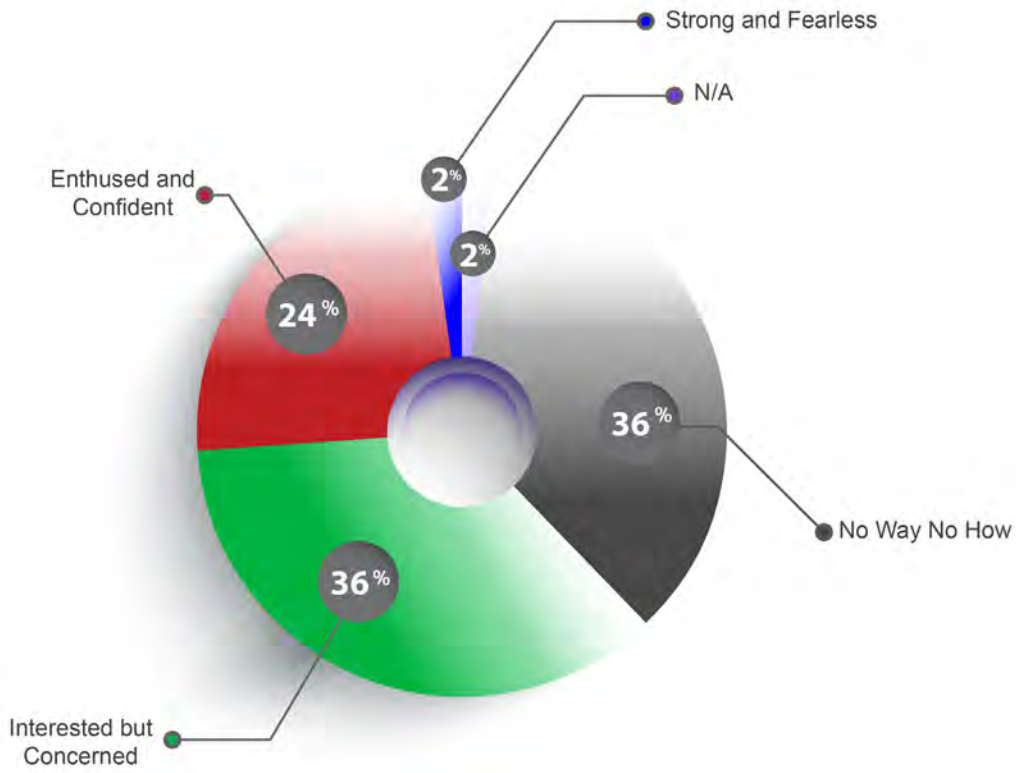
There is a significant strategic opportunity to encourage more Winnipeggers to walk and cycle throughout the year. The telephone survey conducted for the Pedestrian and Cycling Strategies helped to understand the overall market for cycling. The telephone survey found that many Winnipeggers already walk and cycle throughout the year, including in the winter months, and that a large number of Winnipeggers want to walk or cycle more. The survey also helped to understand some of the barriers to walking and cycling, and actions the City could take to encourage them to walk or cycle even more. By helping to address these barriers and strategically improving pedestrian and cycling facilities, the City can "tap into" a significant market for walking and cycling.

2.4.1 Types of Pedestrians and Cyclists

There are a wide range of different types of cyclists, in Winnipeg, ranging from those who currently cycle regularly for commuting purposes, to others who may not be comfortable cycling on bicycle routes on busy roadways. The City of Portland first categorized the cycling market based on people's willingness to use bicycles for transportation and classified the population into four groups – "strong and fearless", "enthused and confident", "interested but concerned", and "no way no how".

The telephone survey (see **Figure 2.3**) developed a similar classification and found that the first group, "***Strong and Fearless***" cyclists, are a small group of very regular cyclists, representing about 2% of the population who would cycle regardless of road conditions and throughout the year. The "***Enthused and Confident***" group is made up of 24% of Winnipeggers, and includes people who cycle occasionally in non-snow months. This group is comfortable on busy roads and transit routes without bicycle lanes, but is more comfortable if bicycle lanes are provided. The "***No Way No How***" group makes up 36% of the population in Winnipeg and would be unwilling to use a bicycle for transportation, regardless of conditions.

Figure 2.3:
Types of Cyclists in Winnipeg



What remains is the key untapped market, the "***Interested but Concerned***" group, which makes up over one-third (36%) of Winnipeggers. This group is interested in cycling more, but has concerns about safety, and is not comfortable riding on any type of busy roadway without bicycle facilities. Currently, although nearly two-thirds (63%) of Winnipeggers indicate they are interested in cycling as one of the first three types of cyclists, only approximately 2% of trips to work in Winnipeg are made by bicycle, suggesting that most current cyclists are the "strong and fearless" group. The City has not significantly tapped in to the "interested but concerned" market but could see significant benefits if cycling improvements target that group and are able to shift even a modest proportion of trips made by that group towards cycling.

Similarly, the telephone survey allowed for a classification of Winnipeggers based on their interest in walking. The survey found 31% of Winnipeggers are "***Enthusiastic Walkers***", who already walk a lot but want to walk more. These individuals walk at least once a week or more to or from work or school, or to a neighbourhood destination. "***Enthusiastic Non-Walkers***" make up 16% of the population and include individuals who do not currently walk a lot, but would like to walk more, followed by "***Unenthusiastic Walkers***", who made up 28% of the population and include people who walk several times a week but are not interested in walking more. Similar to cycling, the "***No Way No How***" group (25%) includes Winnipeggers who do not walk often, and are not interested in walking more.

These findings suggest that there is a significant untapped market for walking and cycling in Winnipeg, and that a significant number of people would be interested in walking and cycling more in conditions that made them feel more comfortable.

2.4.2 Trip Purpose

Winnipeggers are very active pedestrians and cyclists year round. In non-snow months, 93% of Winnipeggers walk and 45% cycle at least once a month to get to work, school, neighbourhood destinations, or for exercise or pleasure.

Walking and cycling are not just for getting from A to B. These modes form an important part of Winnipeggers' recreation and leisure activities. In fact, the most common reason Winnipeggers 'choose to walk and cycle is for **exercise or pleasure**. The telephone survey found that, in non-snow months, more than 8 out of 10 Winnipeggers walk for exercise at least once a month, and 4 out of 10 Winnipeggers cycle for exercise at least once a month.

Many people are walking or pedalling to **neighbourhood destinations**. The telephone survey found grocery stores are the most common destination for walking and cycling trips, followed closely by restaurants, parks, playgrounds, and community centres. Most walking and cycling trips are primarily short distance, locally based trips.

Many Winnipeggers also **commute to work** by walking or cycling in non-snow months, although this was the lower proportion of walking and cycling trips.

Figure 2.4:
Number of People Who Walk or Cycle for Different Trip Purposes in Non-Snow Months

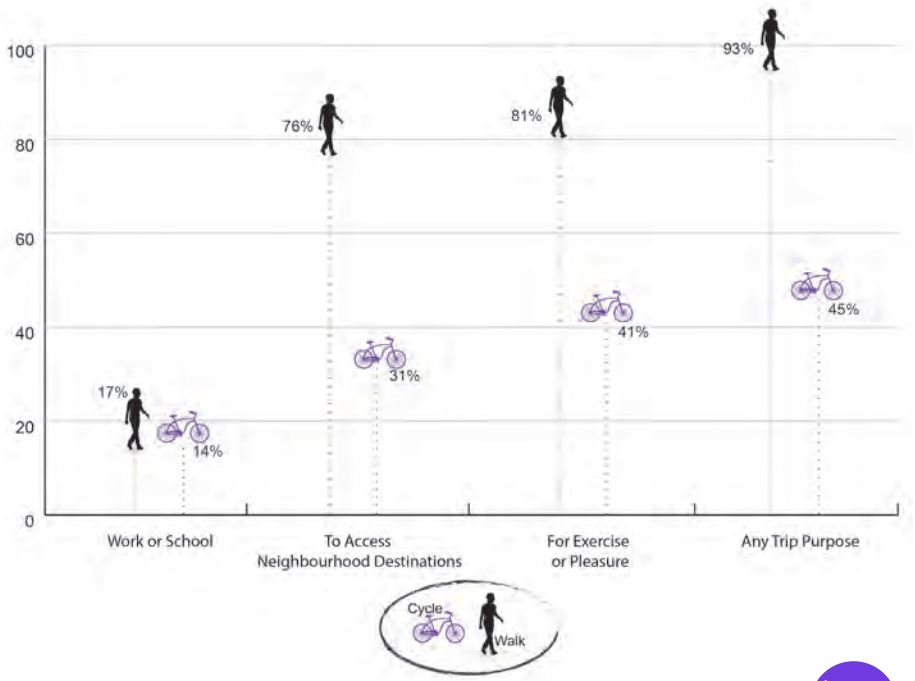
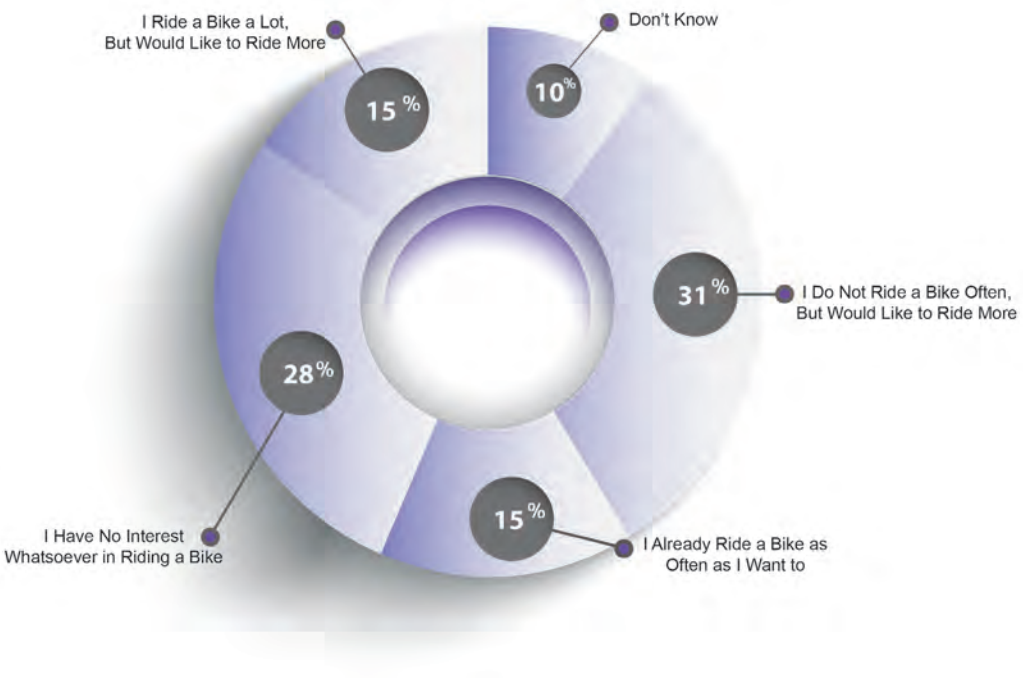


Figure 2.5:
Winnipeg's Interest in Cycling



2.4.3 Interest in Walking and Cycling

As noted above, many Winnipeggers already walk and cycle throughout the year, even in winter months. In fact, **6%** of respondents say they cycle to work or school at least once a month in the winter, while **17%** of respondents say they walk to work or school at least once a month in the winter. Even though some Winnipeggers are already active pedestrians and cyclists, many have an interest in walking and cycling even more than they already do.

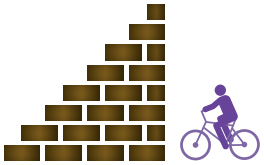
Nearly half (48%) of Winnipeggers stated that want to walk more, including 23% of Winnipeggers who do not walk often but want to walk more, and 25% who already walk a lot, but would like to walk more. Less than a tenth (8%) have no interest in walking. Altogether, the majority of Winnipegges (84%) have an interest in walking as much as they currently do or want to walk even more.

Similarly, nearly half (46%) of Winnipeggers want to cycle more, including 31% of Winnippegers who do not ride a bicycle often but want to ride more, and 15% who already ride a bicycle a lot, but would like to ride more as shown in **Figure 2.5**. Less than a third (28%) have no interest in riding a bicycle. Altogether, over six in ten Winnipeggers (61%) have an interest in riding their bicycle as much as they currently do or want to ride even more.



2.4.4 Barriers to Walking and Cycling

In order to make walking and cycling a more convenient and attractive option, particularly to the Interested but Concerned population, it is important to understand what deters people from walking and cycling. Strategies to enable walking and cycling can then focus on addressing the key barriers to walking and cycling among different types of people. While many people said that long distances, personal abilities, and time limitations can be deterrents to walking and cycling, most say **the absence of dedicated or well-connected facilities** are primarily what discourages Winnipeggers from walking and cycling more.

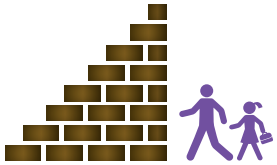


Many Winnipeggers noted they are most uncomfortable on busy streets without bicycle facilities, and said that the lack of dedicated bicycle infrastructure is one of the biggest barriers to cycling. Through the telephone survey, the most common reasons why people don't cycle more in Winnipeg include:

- Lack of bicycle lanes / don't like riding on busy street (32% of respondents identified this as a barrier)
- Don't have a bicycle (20%)
- Impractical (16%)
- Fear / don't feel safe (16%)
- Busy lifestyle / lack of time / other commitments (11%)
- Health – balance / vision / mobility issues (7%)
- Weather (7%)
- Age (5%)

For walking, many Winnipeggers pointed out the lack of sidewalks or sidewalks in poor condition, poor snow clearing, as well as safety and security concerns as key current barriers to walking. The top priority identified among workshop and survey participants was more snow removal to allow for clear sidewalks in the winter. Through the telephone survey, some of the top barriers for walking included:

- Impractical (30% of respondents identified this as a barrier)
- Busy lifestyle / lack of time / other commitments (19%)
- Health – balance / vision / mobility issues (8%)
- Prefer other modes (7%)
- Weather (7%)
- Lack of motivation (6%)
- Fear / don't feel safe (4%)



2.4.5 Improvement Opportunities for Walking and Cycling

Through the public consultation process, Winnipeggers provided many suggestions for improvements to walking and cycling that would encourage them to walk and cycle more. For pedestrians, filling in gaps in the sidewalk network and improved sidewalk maintenance were identified as critical to facilitate more people to walk more often. Safer crossings were also highlighted as needed to get more Winnipeggers to walk.

For cycling, several clear themes and priorities emerged from residents and stakeholders about how to enable cycling in Winnipeg, including developing a more complete and connected bicycle network, providing separated bicycle lanes on major streets, offering more secure bicycle parking, creating more painted bicycle lanes, and developing more bicycle routes or low volume, low speed streets. The telephone survey also asked what improvements would most encourage respondents to cycle more. The telephone survey found that the most important opportunity to make people cycle more would be adding separated bicycle lanes on

Figure 2.6:
What would make you walk more?

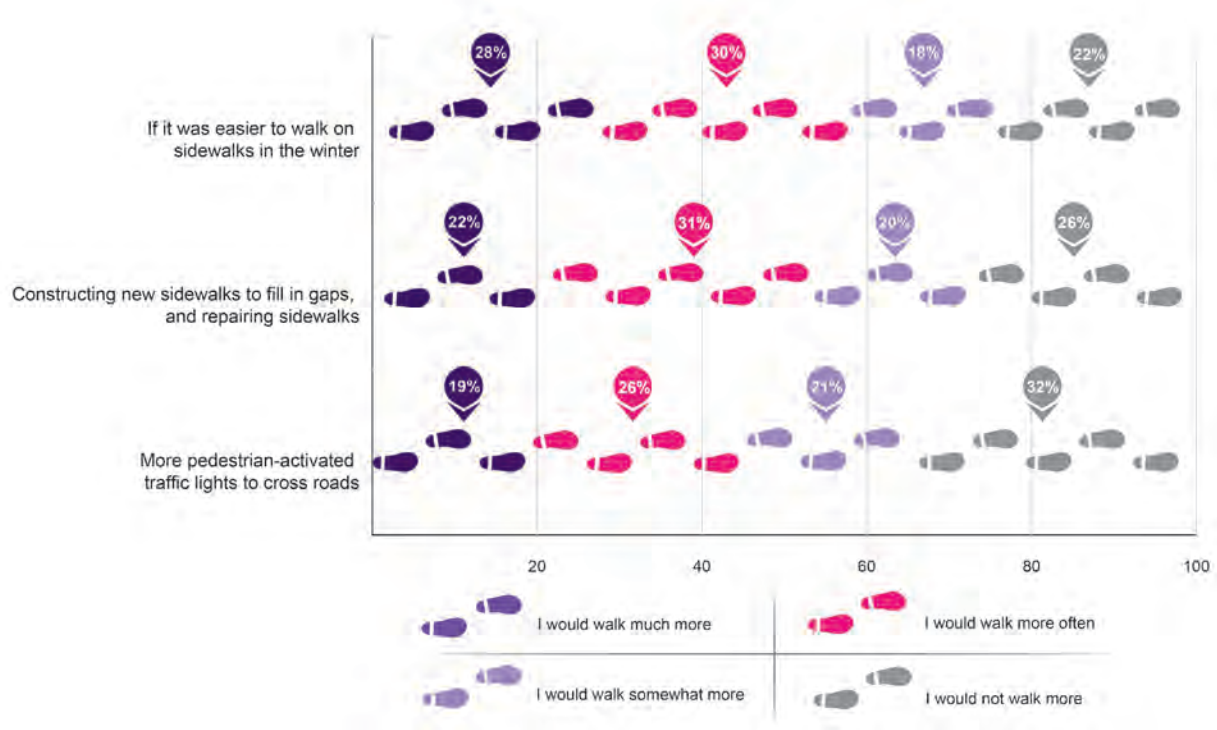


Figure 2.7:
What would make you cycle more?



major streets, with nearly half (47%) of respondents saying they would cycle more or much more if separated bicycle lanes were provided. This was followed by providing more secure bicycle parking (46% of respondents saying they would cycle more), followed by providing more bicycle routes on local street (34% of respondents saying they would cycle more).

2.5 Walking and Cycling Facts and Trends

According to the 2011 National Household Survey conducted by Statistics Canada, almost 8% of all trips to work are made by walking and cycling in Winnipeg. In fact, Winnipeg has the highest level of walking and cycling commute trips among all Canadian prairie cities, and one of the highest cycling mode shares among all major Canadian cities.

In particular, 6% of trips to work are made on foot in Winnipeg, equal to nearly 20,000 daily walks taken for commuting. Winnipeggers walk more than citizens of any other major Canadian prairie City. However, walking in Winnipeg has remained relatively stable over the past decade, with a slight decline in recent years. With more infrastructure and programming, more people will walk more.

More than 2% of Winnipeggers get to and from work by bicycle, which is one of the highest percentages in Canada, and is second only to Saskatoon among Canadian prairie cities. Cycling is also the fastest growing mode of transportation in Winnipeg. In the past ten years, bicycle use has grown faster here than in any other major city in Canada, except Toronto. Most other prairie cities have seen bicycle use decline over the past decade.

Figure 2.8:
Mode Share of Commute Trips in Winnipeg
2011 National Household Survey (Statistics Canada)

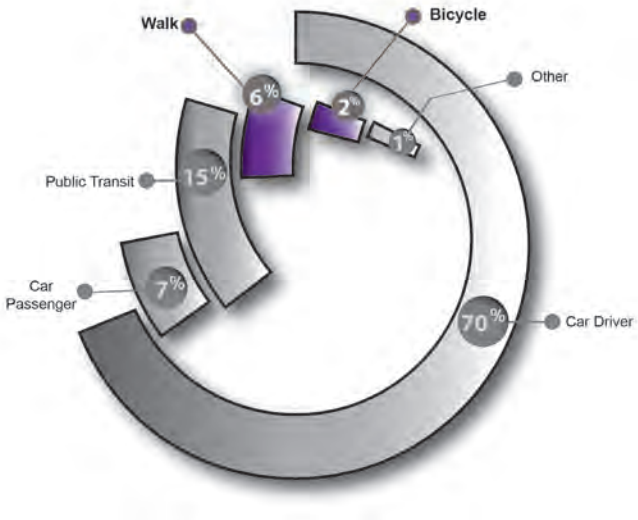


Figure 2.9:
Walking and Cycling in Winnipeg
Compared to Other Canadian Prairie Cities
2011 National Household Survey (Statistics Canada)



The following sections summarize the existing conditions, challenges and opportunities for walking and cycling in Winnipeg in further detail. The sections focus on who, why, when and where people are walking and cycling in Winnipeg.

2.5.1 Walking Facts and Trends

Walking is the simplest and most common form of transportation. Every trip begins and ends on foot, whether that trip is made by car, transit, or bicycle. If suitable conditions exist within a community – such as having a complete, connected sidewalk network, safe crossings and major destinations nearby to where people live – walking can also be a convenient alternative to the automobile for almost all short trips. Walking is a year round activity and is possible during the winter season with appropriate support. The City of Winnipeg is committed to improving pedestrian safety, creating walkable neighbourhoods, and enabling a culture of walking.

The City of Winnipeg currently has an extensive pedestrian network that facilitates walking. The City has approximately 2,500 kilometres of sidewalks, as well as numerous pedestrian/bicycle only bridges, pedestrian corridors, countdown timers, and accessible infrastructure at many major intersections.

As noted above, approximately 6% of trips to work in Winnipeg are made by pedestrians, accounting for nearly 20,000 daily trips. However, there are a number of different reasons people choose to walk other than commuting, including those that walk for recreation, utilitarian, or practical reasons including walking to the store.

The variety of types of pedestrians range from individuals who walk for recreation or utilitarian purposes, and includes joggers, individuals that depend on a guide dog, a cane, a walker or a stroller or small wheels to travel. To accommodate all types of pedestrians, it is important to recognize and enable the breadth of pedestrian needs and trip purposes.

The needs of pedestrians vary depending on age group. Young pedestrians often require adult supervision and education to increase their awareness of the dangers of the road and safety measures in place to help them. Older pedestrians have different needs based on their physical abilities. For example, some older pedestrians may require physical aids, such as hand rails and ramps.

The following section summarizes key facts and trends for walking in Winnipeg and identifies areas where the City should concentrate its efforts to facilitate pedestrian activity.

WHERE

- **Downtown attracts a higher than average portion of walking trips.** There is a high volume of walking trips among the full-time employed population. This corresponds to the downtown core area, a central employment centre which attracts 16% of daily morning peak trips. There is also a high volume of walking trips among students and retirees, which suggests that a significant number of trips will be made in the vicinity of schools, post-secondary education centers, and retirement buildings.

- **Many neighbourhoods in Winnipeg are very walkable.** Neighbourhoods with good walkability near downtown include Fort Rouge (Osborne and South Osborne) with 11,360 daily trips on foot; St. Boniface across from downtown, with 8,480 daily pedestrian trips; and the West-End Wolseley area with 7,390 daily pedestrian trips. These neighbourhoods have high residential density, sidewalks, and are employment centres attracting more travel by foot.

- **Schools and Post-secondary schools in the central city are major destinations.** Many young people live in the downtown area between Corydon Avenue and Notre Dame Avenue. The Osborne Village, Wolseley, and West Broadway neighbourhoods have many young families and a number of elementary and high schools. Depending on the local condition, such as traffic volume and safe crossings, schools generate a number of daily pedestrian trips. In addition, the University of Winnipeg and Red River College are located downtown, popular areas for post-secondary students to live, leading to a higher concentration of pedestrians.

- **Concentrations of seniors housing correlate to more walking trips.** Osborne Village and Central Park, along with River East, have the largest density of people 65 years of age or older. The older adult population pockets correlates to high levels of walking due to the high-rise residential buildings, proximity to services, and community centres. A diverse mixture of land uses is important in any neighbourhood as it creates more services and destinations. For example, the River East neighbourhood has nine senior housing sites within a six block radius. Pedestrian design for the older adult population is a priority as their physical mobility is reduced; they drive less or stop driving altogether and are more reliant on walking or transit.

- **Most walking trips are relatively short.** The average walking trip length in Winnipeg is 1.1 kilometres which is about a 15 to 20 minute walk based on average walking speeds.




CHATEAU 100

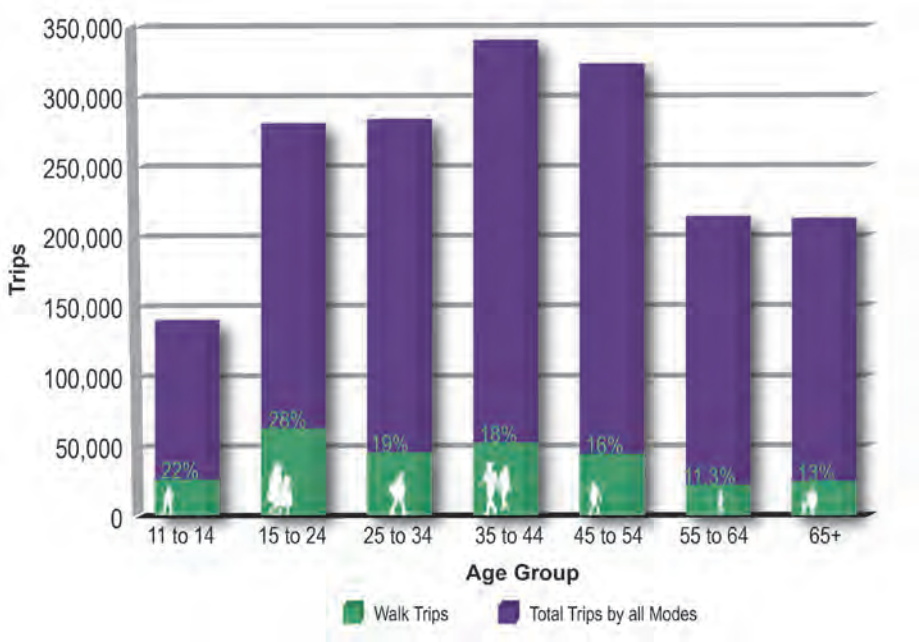

REGISTRATION

WHO

- **Children and younger adults account for half of all walking trips in Winnipeg.** Youth and young adults aged 15 to 24 account for approximately 28% of all walking trips in the City, followed by 22% of walking trips made by people aged 11 to 14. School aged children and young adults are a very important segment of the population as they often do not have access to automobiles and rely on transit, walking, cycling and carpooling. Attracting youth to sustainable modes of transportation early in their lives increase the opportunity to continue these trends into adulthood.

- **Older adults represent a significant proportion of daily walking trips.** 13% of walking trips are made by people 65 years of age and older, as well as 11% made by those in their pre-retirement years (55-64). The fastest growing population group over the next twenty years is older adults and the travel behaviour of seniors often switches from driving to more walking or transit trips at a certain age.

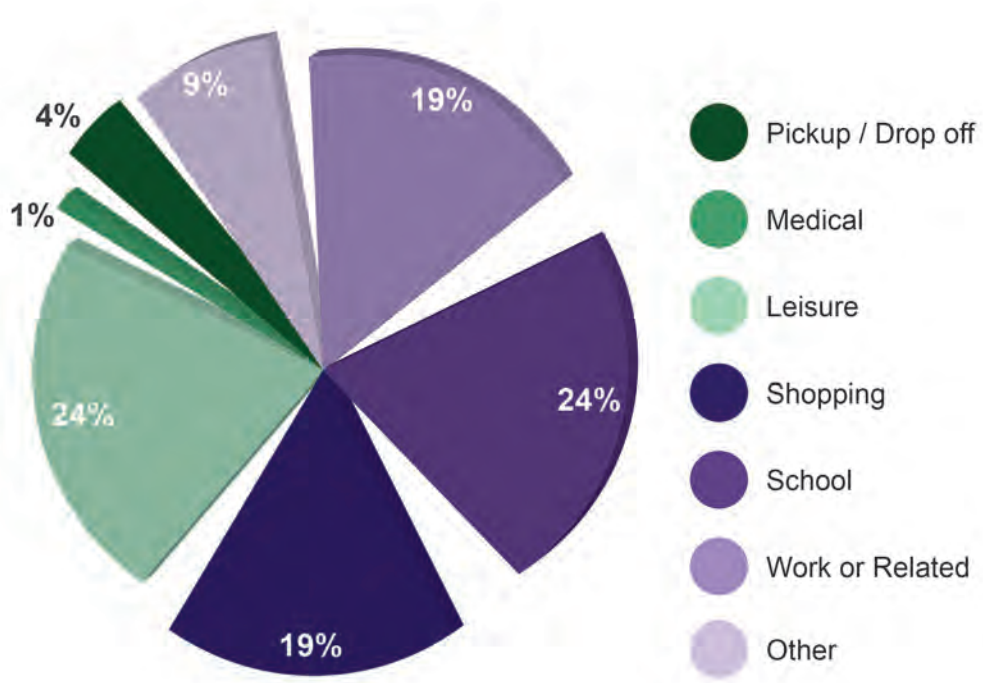
Figure 2.10:
Walking Trips vs Trips by Other Modes



WHY

- **The most common walking trip purpose is walking for leisure** (24%) **or school** (24%), followed by work (19%) and shopping (19%). When destinations are closer together, which is achieved through high density mixed-use planning, walking is possible for daily transportation.

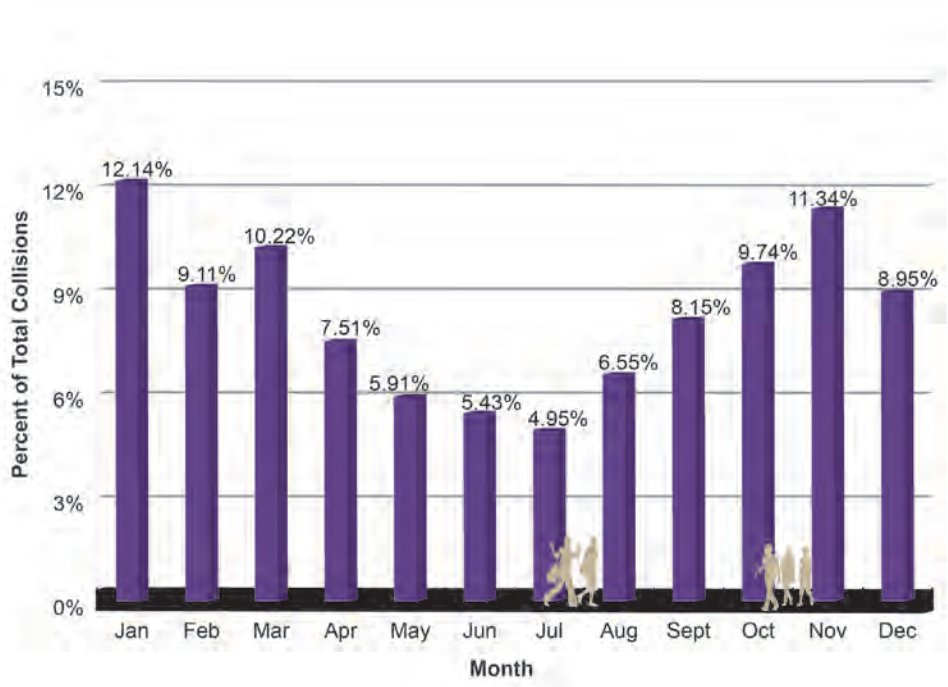
Figure 2.11:
Common Walking Trip Purpose



SAFETY

- **Pedestrians face greater exposure to traffic collisions.** Pedestrians of all ages and abilities are disproportionately impacted by traffic collisions, which most commonly occur at intersections. As found in Winnipeg from 2006 to 2010, one quarter of fatalities involving pedestrians happen at signalized intersections, with the majority of which occurred in either Downtown or the North End. The frequency of pedestrian collisions is highest during the months of November to March. Winter driving conditions are constrained by snow and freezing temperatures which further exposes vulnerable road users to risk of a traffic collision at this time of year.

Figure 2.12:
Percent of Total Collisions Involving Pedestrians



- **Well-designed infrastructure and facilities provide a comfortable, functional and safe support for walking.** Good urban design of pedestrian facilities and sidewalks plays a key role in encouraging and discouraging walking. Implementing design standards for new developments will ensure a comprehensive network of sidewalks connect residents to pedestrian destinations. Pedestrian facilities serve many different non-motorized users, such as runners, strollers, and small wheels. Overhead street lights, sidewalks, and signalized crosswalks are a few traffic engineering measures to create hospitable spaces for walking.

- **Signalized intersections are the most common site for traffic collisions.** Local police services collect data and statistics associated with reported traffic collisions and fatalities. This information can be used to make facility improvements to the road and street network to reduce traffic collisions in places noted as ‘hot spots’.

- **Pedestrian safety and security is inhibited by fear of crime and greater risk can occur in areas that have low pedestrian traffic.** Fear of crime is another aspect that has an impact on pedestrian safety and security. Some of the pedestrian access deterrents in Winnipeg include pedestrian underground walkways that are often poorly lit and have limited access points, which result in pedestrians feeling vulnerable to attack or robbery. Incorporating principles of Crime Prevention through Environmental Design (CPTED) in facility design increases security in public areas and will in turn promote walking as a transportation mode choice.





2.5.2 Cycling Facts and Trends

Cycling can be an attractive transportation option, as it is convenient, low cost and for shorter trips it is a reasonable alternative to the motor vehicle. Over the last six years, cycling has grown in popularity in Winnipeg. The city's relatively flat terrain makes the city well suited to cycling as the topography is not a major barrier as it is in many other cities. The City of Winnipeg has made investments in bicycle facilities and infrastructure, and increase in safety training and education have contributed to higher rates of cycling.

Capital investments on cycling-related infrastructure and programs has increased in Winnipeg in recent years following the adoption of the 2005 Active Transportation Study, with annual investments increasing from $300,000 in 2006 to $3 million in 2009. Much of this increase was due to stimulus funding received by the City for active transportation-related projects.

As a result of the above mentioned funding received from the Federal and Provincial Governments, currently 8% of Winnipeg streets have bicycle facilities of some form with a total of 400 kilometres of bicycle facilities and routes. The bicycle network also consists of dedicated pedestrian and bicycle bridges, a number of intersections with dedicated bicycle pushbuttons, and numerous locations with bicycle parking. The City of Winnipeg has a number of different types of bicycle facilities which are discussed in detail in Part 4.

A variety of factors influence an individuals' decision to cycle, such as neighbourhood characteristics, the quality of the bicycle facilities, distance between destinations, and personal preference. The bikeability of a neighbourhood is influenced by a variety of built environment features such as network facilities, transportation infrastructure, land-use mix, connectivity, and traffic volume. Identifying areas of the city with a high mode share of cycling can help the City understand how to prioritize investments in planning and design to support cycling activity. Commonly used descriptive terms used to distinguish between different types of cyclists and the types of trip are utilitarian (purpose based/ work commute) and recreation (leisure, pleasure).



WHERE

- **The majority of cycling trips in Winnipeg are short, local trips.** According to Winnipeg's 2009 OttoCYCLE survey, the average distance traveled by bicycle in Winnipeg's central neighbourhoods is 2.5 to 3.5 kilometres, which averages between 10-15 minutes long. The trip distance varies among Winnipeg's neighbourhoods as central neighbourhoods with closer proximity to key origins and destinations are associated with shorter bicycle trip distances.

- **A high concentration of cycling activity correlates to more compact and densely populated neighbourhoods.** There is great variation in cycling levels among Winnipeg's neighbourhoods. Cycling levels are higher in central neighbourhoods, in close proximity to downtown businesses, post-secondary campuses and other key destinations where short bicycle trips are a preferred and convenient mode of transportation. Key destinations in the downtown area that attract bicycle trips include entertainment and retail districts, as well as the Forks.

WHO

- **The majority of cyclists in Winnipeg are men** (72%), while women make up 28% of the cyclists in the City. However, these numbers vary between neighbourhoods. In River Heights East and Assiniboine South, women represent up to 43% of cyclists. In contrast in some of Winnipeg's more northern neighbourhoods, women represent less than 20% of cyclists.

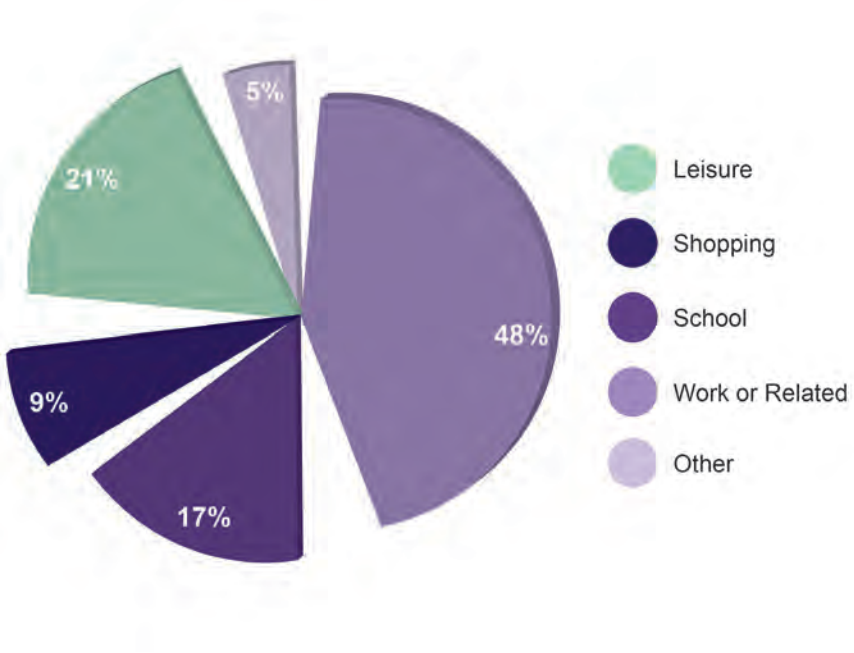
- **The highest level of cycling activity among Winnipeggers is between the ages of 25 and 54.** This age group makes up 71% of all cycling trips. There is a steady decline among cycling trips among people aged 55 and over.

- **An individual's income appears to have a relationship with how often Winnipegers cycle.** The largest group of cyclists in Winnipeg are those with incomes less than $40,000 (31% of cyclists), followed by 22% between $40,000 and $60,000, 9% between $60,000 and $80,000, 10% between $80,000 and $10,000, and 11% above $100,000.

WHY

- **The most common cycling trip purpose is travelling to work, which accounts for nearly half (48%) of all cycling trips.** This is followed by 21% of trips by bicycle made for leisure, 17% made to go to school, and 9% to go shopping.

Figure 2.13:
Common Cycling Trip Purpose



SAFETY

- Like pedestrians, **cyclists are vulnerable** and are subject to greater exposure to traffic collisions. Over the last five years, Winnipeg has averaged two fatalities and more than 200 injuries involving cyclists per year. Across Manitoba, reported claims totaled over $34 million between 2005 and 2009, with the average cost of each claim approximately $18,800.

- **The majority of collisions occur in downtown Winnipeg and are on roadways without designated bicycle facilities.** Some of the top collision locations within Winnipeg include Portage Avenue, Notre Dame Avenue, Osborne Street, and Main Street. These routes show strong desire lines for cyclists along several of the City's major arterial streets and provide direct routes into the downtown, indicating that cyclists are using direct routes to get to their destinations.

- **There are 'softer' measures that can be adopted such as education and awareness** to help improve safety. Safety training and education are critical to increasing an individual's confidence and skill level. Within Winnipeg, local organizations such as WRENCH and Bike Winnipeg teach road safety and rules of the road to individuals of all ages. In recent years, Manitoba Public Insurance has invested in safe cycling training and education through a workplace program. The Green Action Centre plays a leadership role in Winnipeg, and across the province, coordinating Active Safe Routes to School (ASRTS) programs and school travel planning. The ASRTS program components include neighbourhood walkabouts, transportation surveys, walking clubs, walking/cycling school buses for children with adult supervision, no-idling zones, and active transportation events. It is recommended that the City increase partnerships with these organizations for this purpose.

- **Bicycle Infrastructure.** The provision of comfortable bicycle infrastructure and end-of-trip facilities is crucial to increase the safety (and safety perceptions) of cycling. In particular, recent research from the Cycling in Cities Program at the University of British Columbia and other sources has found that bicycle infrastructure that provides a greater degree of separation between cyclists and vehicles is more likely to increase bicycle ridership. Separated bicycle lanes, or protected bicycle lanes (such as on Assiniboine Avenue) are often identified as a bicycle facility type with high potential to attract new cyclists, especially in high volume and speed road environments. Protected bicycle lanes provide complete segregation from motor vehicle traffic, limiting the conflict between cyclists and automobiles.



2.6 Walking and Cycling Network Analysis

This section provides an analysis of the existing pedestrian and cycling networks in Winnipeg to help understand existing conditions, issues, and opportunities for walking and cycling in Winnipeg.

2.6.1 Walking

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 in the Downtown core and mature neighbourhoods throughout the City. According to the City's sidewalk inventory, there are approximately 2,550 linear kilometres of sidewalks in Winnipeg. However, there are many gaps in the City's sidewalk network, as well as several large areas of the City that do not have sidewalks, particularly in many of the newer neighbourhoods throughout the City. The lack of sidewalks in these areas can discourage people from walking for more of their short trips within these neighbourhoods, as this forces pedestrians to walk on the street and makes walking a less desirable mode of transportation in these neighbourhoods. It is recommended that the City update its existing practices regarding new sidewalk requirements, with recommended criteria for prioritizing sidewalk construction and maintenance in Winnipeg.

Sidewalks in Winnipeg today

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 2.1**. Sidewalks are not currently required on local streets, unless certain volume, safety, or connectivity conditions are met. Sidewalks are required on both sides of residential collectors and arterials, and are required on at least one side for industrial and commercial collectors.

The Development Agreement Parameters (DAP) express the general policy of the City. The DAP state that they are guidelines for the Winnipeg Public Service and Developers in formulating development conditions for consideration by City Council and its relevant Committees. Each development will be governed by its respective development agreement, not these guidelines although experience indicates the Development Agreement parameters will be followed with few exceptions. The purpose of the DAP are to ensure that all parties pay their equitable share of the costs of development, that development agreement obligations are consistent for all developments and that development occurs in accordance with current City of Winnipeg construction specifications.

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 outlined in **Table 2.1**. As a general rule, sidewalks are not required on bays, crescents,

and cul-de-sacs. Further, this agreement may require the developer to register a caveat against all parcels of property which will have frontage or flankage along a sidewalk. This caveat serves to inform future potential property purchasers that a sidewalk will be constructed abutting the property.

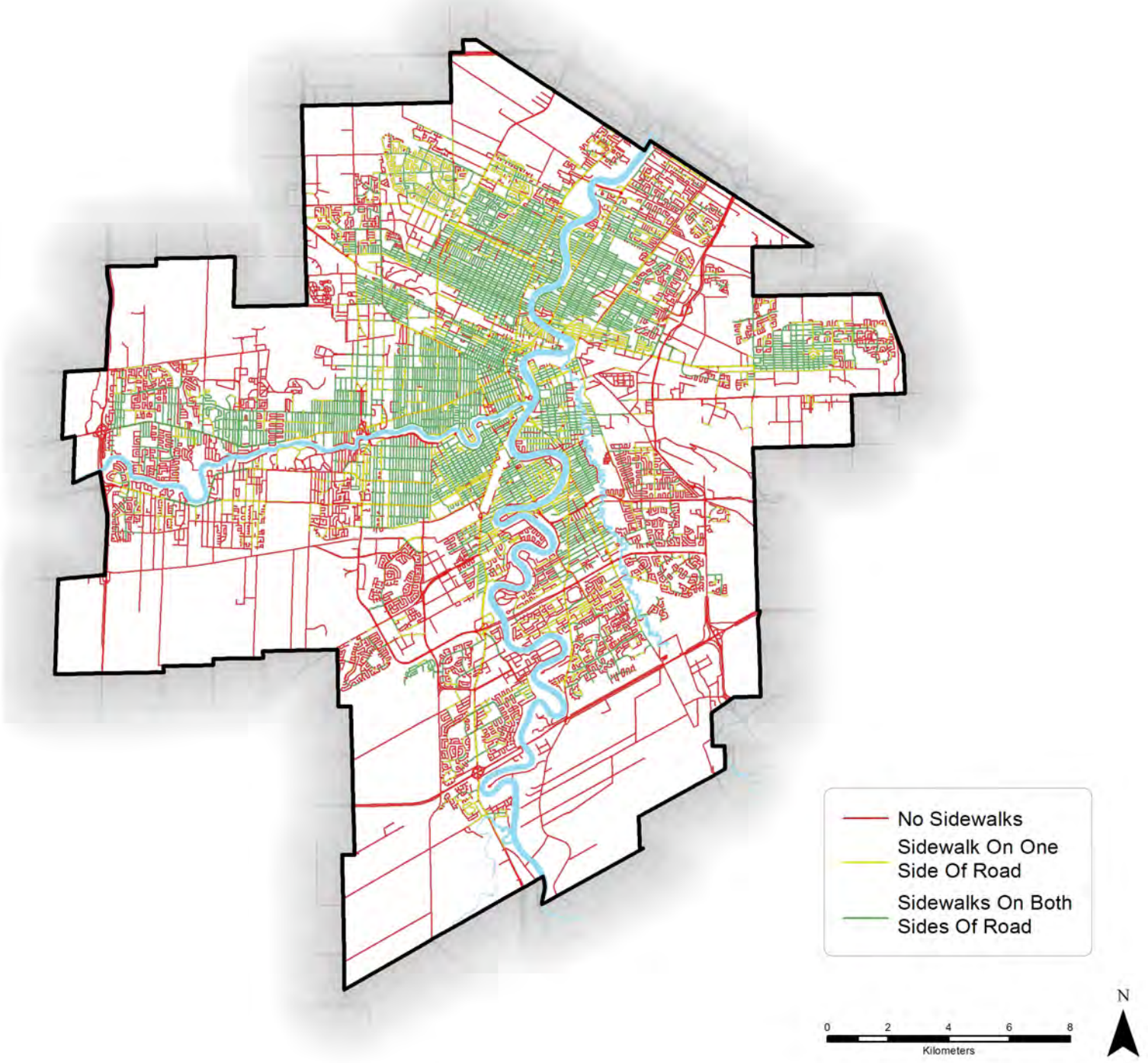
The City's existing sidewalk coverage is shown in **Map 2.1**, showing streets with no sidewalk on either side of the street, sidewalks on one side of the street, or sidewalks on both sides of the street. **Map 2.2** summarizes existing sidewalk coverage by Census Tract, and shows that the majority of 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 addition, the City of Winnipeg's 2010 Accessibility Design Standards state that sidewalks shall have a minimum clear width of 1.5 metres. The majority (93%) of the total sidewalk kilometres in the City meet this minimum required width of 1.5 metres. However, approximately 7% of sidewalks (or approximately 175 linear kilometres) are narrower than the 1.5 metre minimum requirement. As shown in **Map 2.3**, most of these 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.

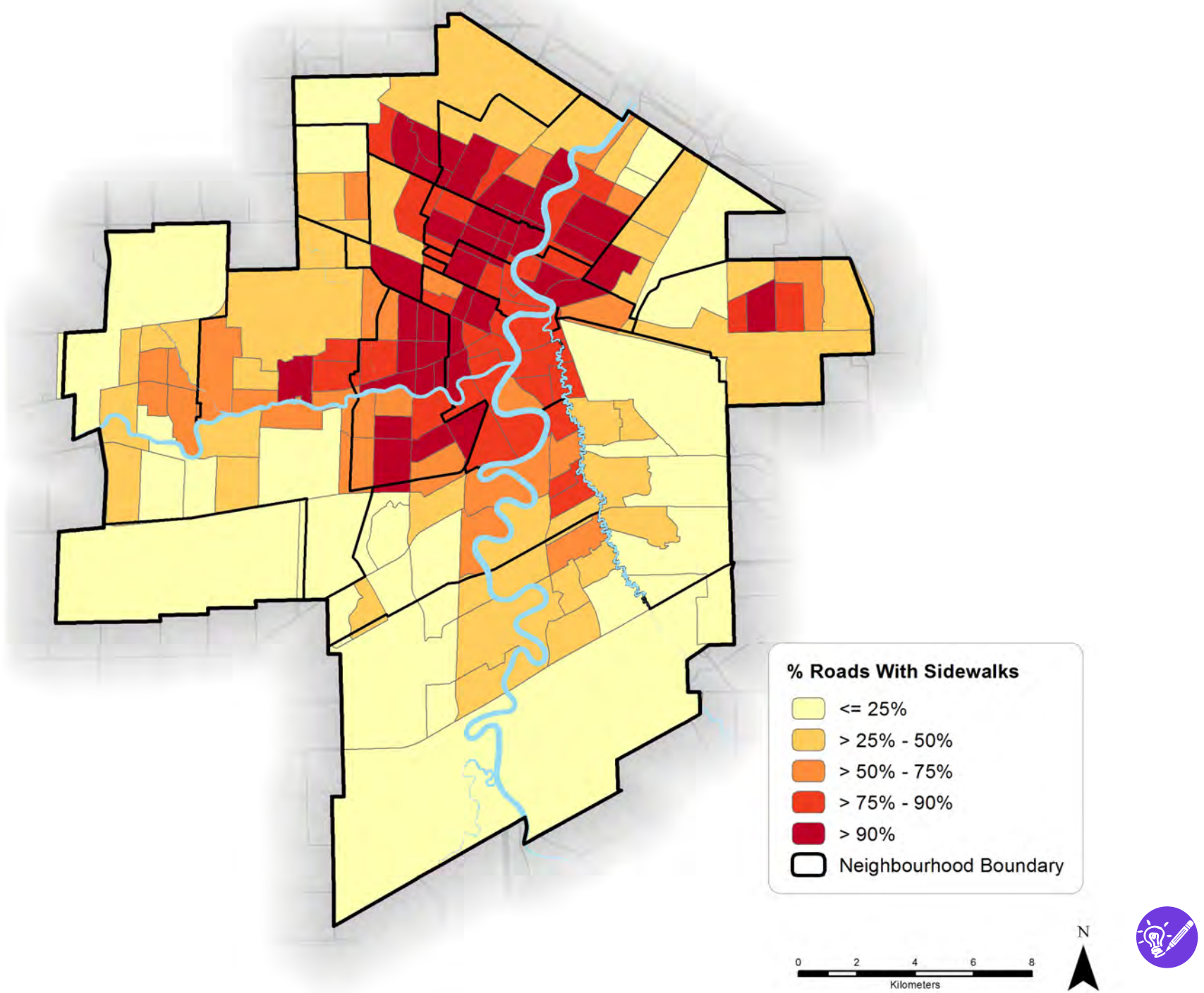
Table 2.1:
Current Sidewalk Requirements in Winnipeg

Road Classification	Sidewalk Requirement	Number of Sidewalks
Public Lane	No	None
Residential Local Industrial/Commercial Local	No, unless: • 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.	As required 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

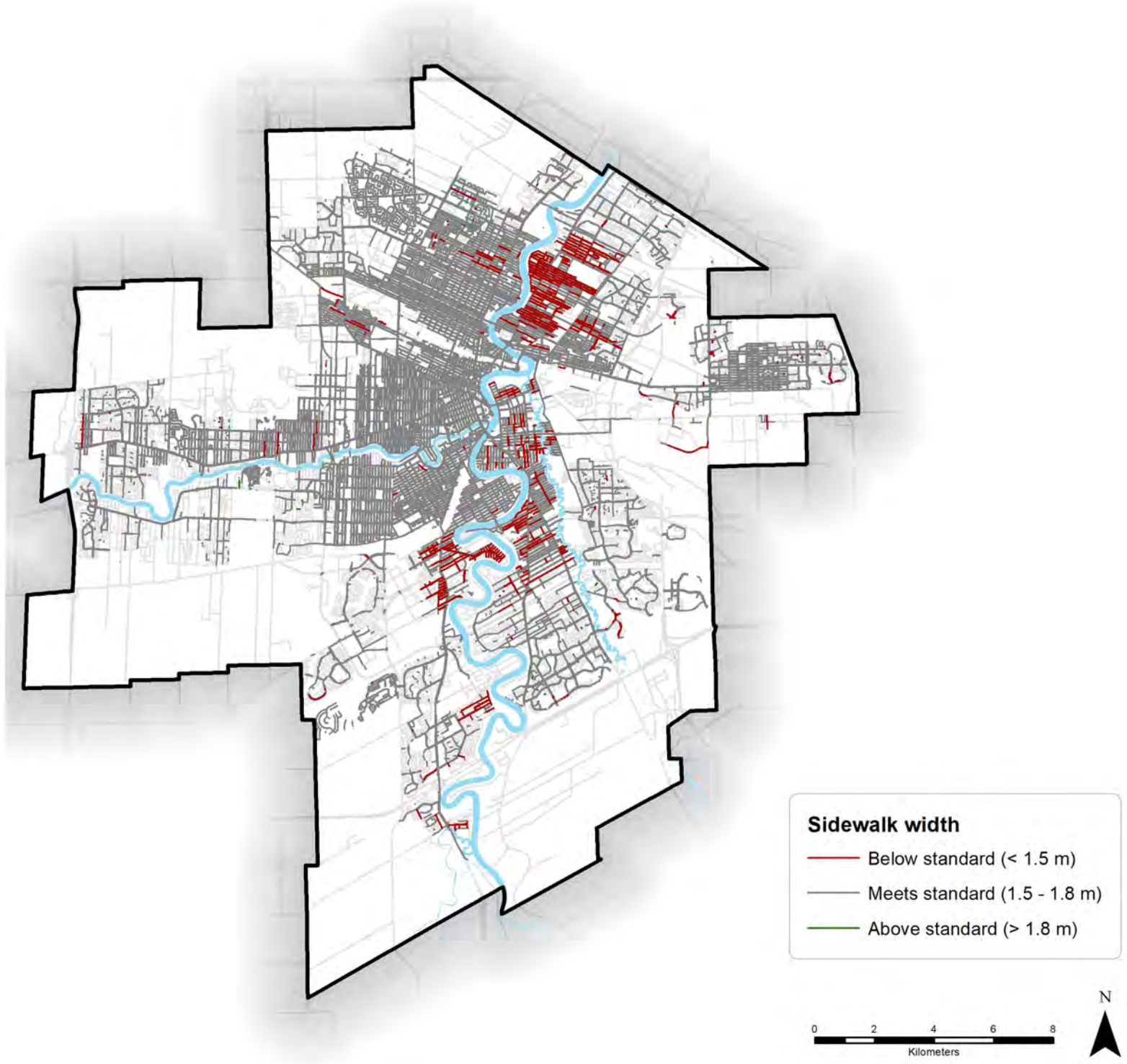
Map 2.1:
Current Sidewalk Coverage in Winnipeg



Map 2.2:
Current Sidewalk Coverage by Census Tract



Map 2.3:
Current Sidewalk Width




WATERFRONT
BANNATYNE



2.6.2 Cycling

Cities throughout North American have been investing in bicycle networks as one of the primary ways to increase cycling levels. In some ways, the City of Winnipeg has been ahead of this curve, constructing a comprehensive city-wide path network over the course of several decades. In 2010, Winnipeg became one of the first cities in North America to build a protected on-street facility with its Assiniboine Avenue protected bicycle lane. There are approximately 400 kilometres of bicycle facilities in Winnipeg. This represents roughly eight percent of the length of Winnipeg's 3,100 km of streets and roads. The distribution of bikeway facilities, by facility type, is shown in **Map 2.4** and **Table 2.2**. Winnipeg's bicycle network is characterized by a large system of off-street pathways along with bicycle lanes, neighbourhood greenways and innovative facilities such as protected bicycle lanes and buffered bicycle lanes.

Map 2.4:
Existing Bicycle Network

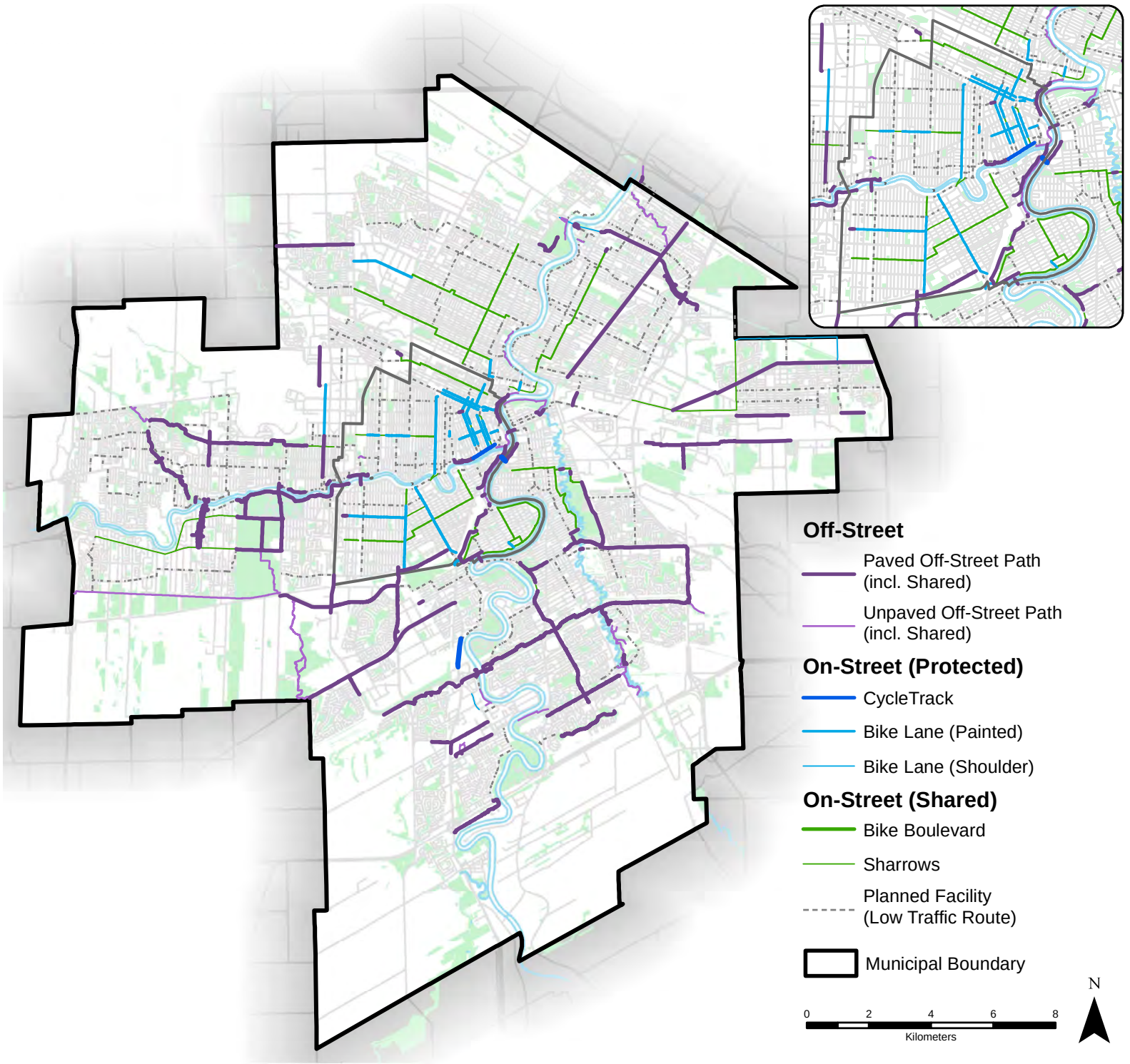


Table 2.2:
Extent of Existing Bikeway Facilities by Facility Type

Bicycle Facility Type	Percent of Network (%)
Multi-User Path (Paved)	41
Neighbourhood Greenway	14
Multi-User Path (Unpaved)	11
Shared Bus-Bicycle Lanes	10
Bicycle Lane	9
Shared-Use Lane	8
Sunday Street Closure	3
Shoulder Bikeway	3
Protected Bicycle Lane	1
Bicycle Only Path	1
All Bikeways	**100**

Creating a cycling network that attracts cyclists of all ages and abilities requires a variety of tools and bicycle facilities. In a similar way that a road network is comprised of different types of roads, a bicycle network is comprised of many different varieties of bikeways, as shown in **Table 2.2**.

Generally speaking, existing bicycle facilities in Winnipeg comprise the full range of available facilities, from neighbourhood greenways to protected bicycle lanes. However, in some cases these facilities are limited by geographic coverage (such as the Assiniboine Ave protected bicycle lane) or by a lack of consistent design treatments (such as neighbourhood greenway crossings of arterials).

To help inform the development of improvements to Winnipeg's pedestrian and bicycle networks, several different types of analyses were conducted. Together, these analyses help to answer the questions of where the current network falls short and where future network improvements should be targeted. The results of these analyses directly influenced the proposed network plan outlined in Strategic Direction 1. Three types of analyses were conducted:

- **Gap Analysis** – Exposes gaps and weak points in the existing bicycle network.
- **Walking and Cycling Potential** – Highlights areas of Winnipeg where walking and cycling has the potential to be the most convenient.
- **Equity Analysis** – Considers communities in Winnipeg that would especially benefit from increased transportation options, including access to a safer pedestrian and cycling network.

A. GAP ANALYSIS

Gaps in the cycling and walking network have a similar impact on cyclists and pedestrians as road closures have on motorists travelling the road network. A traveller encountering an unexpected gap in the network is forced to either detour to a safer route which often requires local knowledge, or to continue through substandard or potentially hazardous conditions. To the extent that traffic hazards are a major deterrent for potential cyclists, examining gaps in the bikeway network is a logical first step in developing a plan for future bikeway upgrades.

A gap analysis was conducted specifically for existing bicycle facilities. The purpose of bikeway network gap analysis is to catalogue and classify gaps in the existing bikeway system. **Table 2.3** summarizes the three types of Spot Gaps and one type of Area Gap.

Table 2.3:
Bikeway Gap Types

Gap Type	Gap Sub-Type	Description	Rationale & Notes
Spot Gap	Network Gap	Where a bicycle facility is discontinuous (“dropped”)	Facilities that terminate unexpectedly are potentially hazardous and make navigation by bicycle challenging and unpredictable
Spot Gap	Crossing Gap	Where a neighbourhood screening meets a major road without a signalized crossing	Busy arterials can represent significant barriers to movement when bicycle and pedestrian crossing treatments are not present. Cyclist-actuated signals, in addition to floating refuge islands, are a best practice at these locations
Spot Gap	Quality Gap	Where a bikeway transitions to a lower-order facility (i.e. reduction in surface quality, grade separation and/or comfort)	A cycling route is only as attractive as its “weakest link.” An unexpected reduction in facility quality (e.g. where mixing with motor vehicles occurs or where a concrete path transitions to gravel) is a disincentive to bike.
Area Gap	Area Gap	Where no bicycle facility is present in a given area, based on an analysis of network coverage using buffers	This gap type is best identified through buffer analysis of the existing network

The bikeway gap analysis considers both the on-street and off-street network, and includes facilities ranging from fully protected bikeways (e.g. on-street protected bicycle lanes or off-street paths) to shared spaces with full mixing of road users (e.g. sharrows and neighbourhood greenways). A wide range of surface types is also evaluated, ranging from smooth, paved concrete to gravel trails.



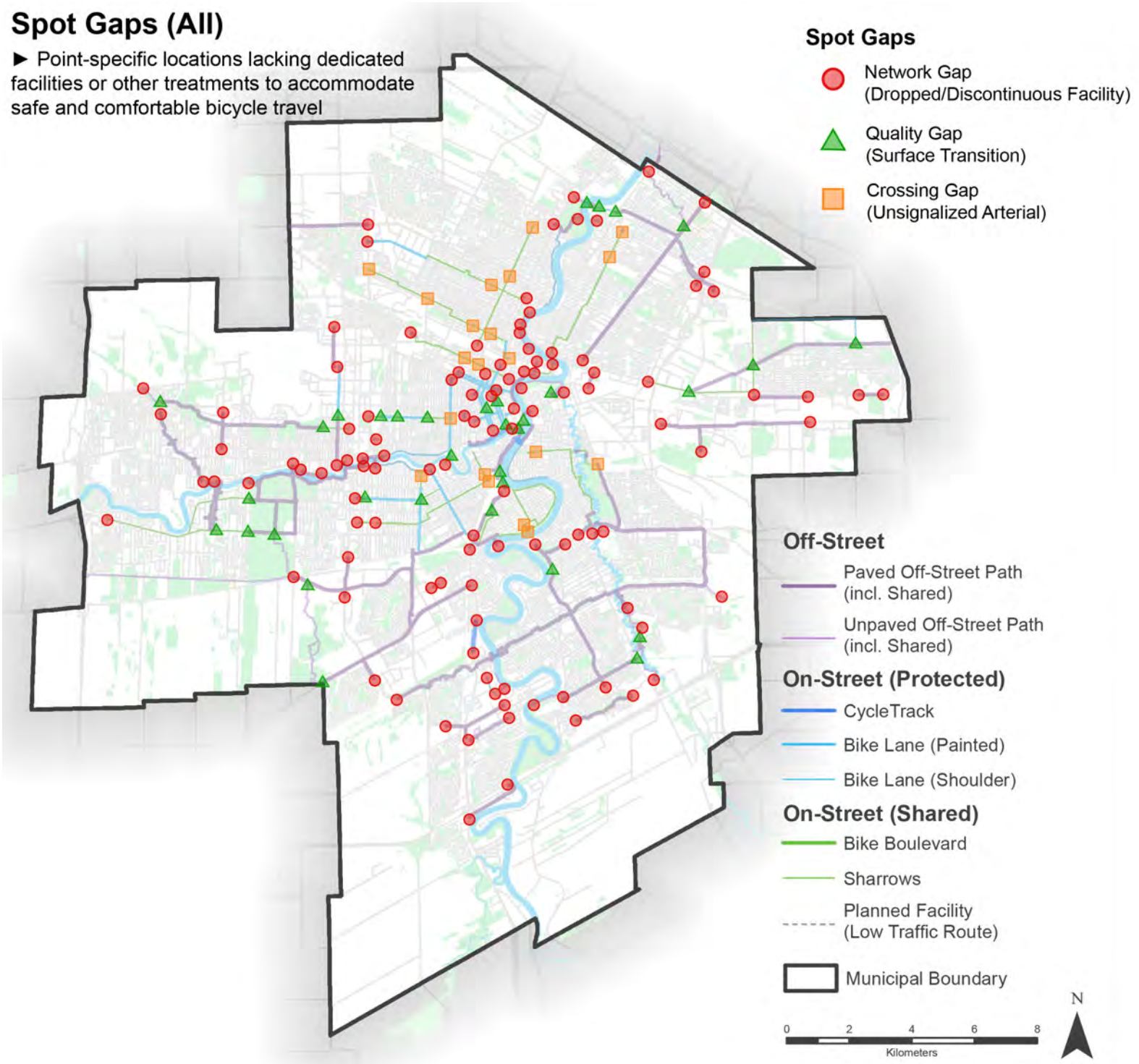
Map 2.5 illustrates Spot Gaps across the Winnipeg biking network and highlights several patterns:

- **Quality gaps** (where a bikeway transitions to a lower-order facility) are particularly common in Downtown West and River Heights (West and East). Facilities in these neighbourhoods can benefit from greater consistency.

- **Crossing gaps** (where a neighbourhood greenway meets a major road without a signalized crossing) are concentrated in Point Douglas (North and South) along several key neighbourhood greenways (e.g. Burrows Ave and Arlington St). These routes can benefit from improved intersection crossing treatments.

- **Network gaps** (where a bikeway is “dropped”) are present throughout Winnipeg, roughly in proportion to the amount of facilities in each neighbourhood. However, Downtown and Point Douglas (South and North) are hotspots for network gaps. Facilities in these parts of the city can benefit from greater continuity.

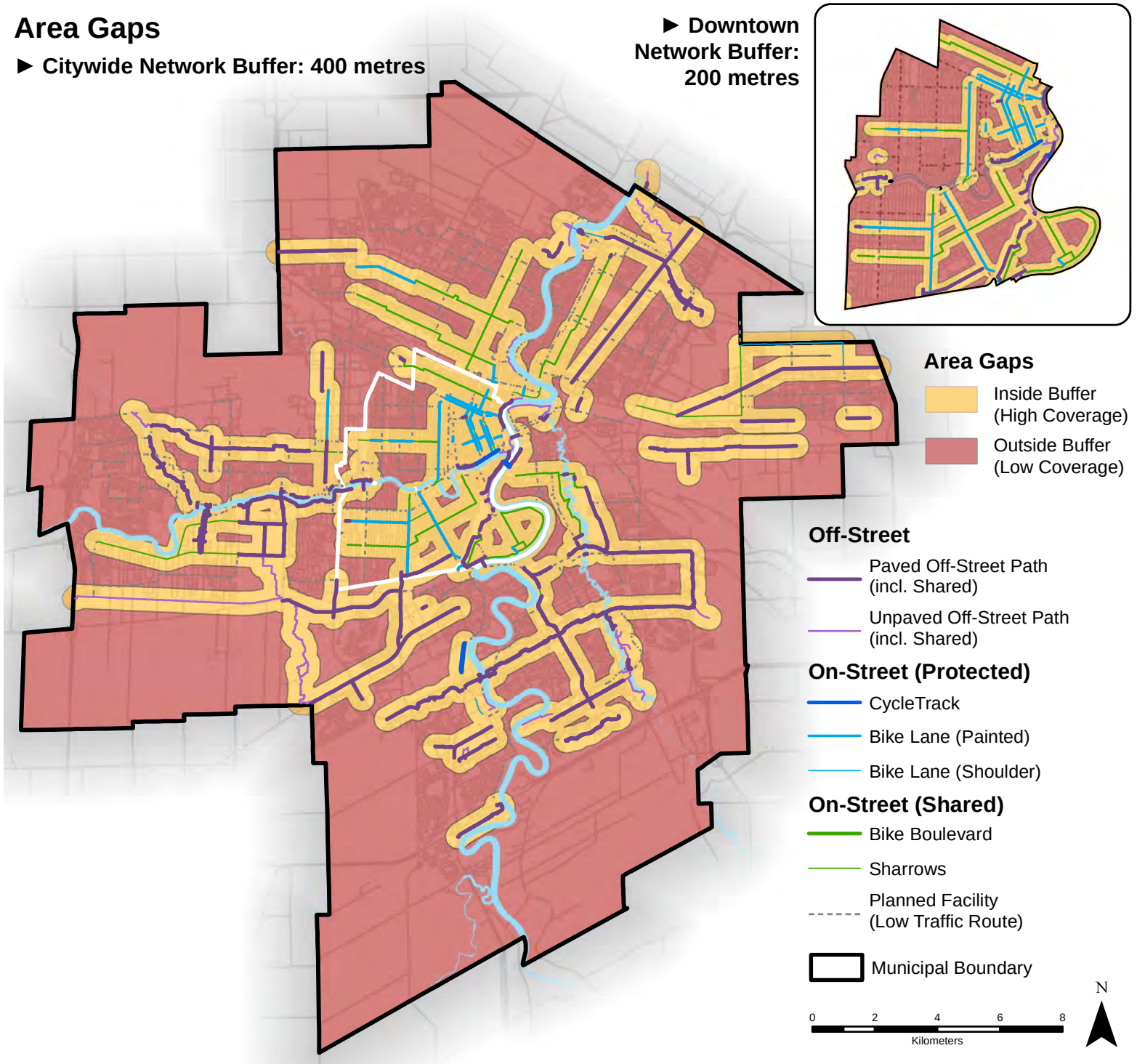
Map 2.5:
Spot Gaps





Map 2.6 identifies Area Gaps in the existing bicycle network. The map shows the existing bicycle network buffered by 200 metre zones around every route in the Downtown, and 400 metres elsewhere in the City. These buffers represent network coverage, in the sense that any location not within the buffer is more than 200 metres away from the nearest bikeway in the Downtown, and more than 400 metres elsewhere in the City. For a mature, built-out bikeway network, these buffers would overlap to cover the entire City of Winnipeg, leaving no area out of reach by bicycle. In reality, drawing these buffers reveals gaps in network coverage by highlighting the negative space between bikeway routes. These gaps in the current bikeway network are highlighted in red in **Map 2.6**.

Map 2.6:
Area Gaps



Several patterns are evident from **Map 2.6**:

- Most of the area gaps in Winnipeg are located on the outskirts of the city, where population densities are relatively low.
- There are significant areas in central Winnipeg that are not accessible by bicycle. These include pockets of the older street grid within the Downtown area.
- When a tighter coverage definition of 200 metres buffer is used for Downtown, a number of area gaps are evident. This is especially true of Downtown West.

Coverage statistics are provided in **Table 2.4** to help assess and quantify future improvements. Currently, downtown bikeways have an area coverage rate of 28% (given the 200-metre accessibility criteria). Bikeways outside of Downtown have a lower area coverage rate of 20% (given the 400 m accessibility criteria), due to this area's geographic size and relatively low development density.

Table 2.4:
Existing Bikeway Network Coverage Statistics

Location	Accessibility Criteria	Facility Coverage (km^2)	Neighbourhood Area (km^2)	Area Coverage (%)
Downtown	Within 200m	4.6	16.3	28
Outside of Downtown	Within 400m	87.1	430.7	20
Citywide	Within 200m or 400m	91.7	447.0	21

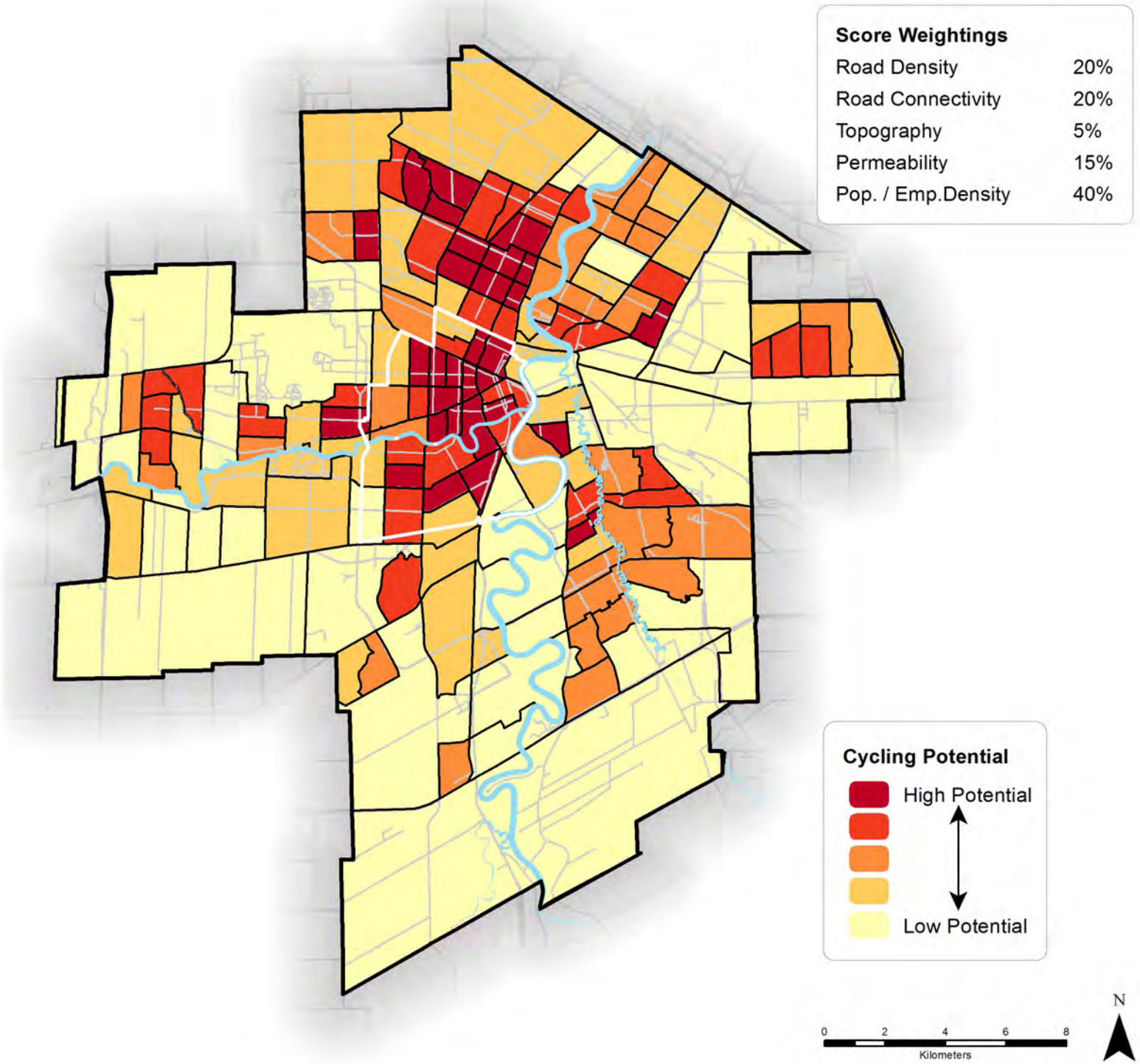

cibo
WATERFRONT CAFÉ
339 Waterfront Drive

B. WALKING AND CYCLING POTENTIAL

The City of Winnipeg is a diverse community comprising a range of different environments, ranging from the Downtown Core to major activity areas throughout the City including Regional Mixed Use Centres and Corridors and post-secondary institutions, through to residential neighbourhoods. To help understand the unique conditions for walking and cycling throughout Winnipeg and which areas of the City are most walkable and bikeable, an analysis was conducted of the walking and cycling potential throughout the City. This analysis examined a variety of factors that can help make walking and cycling more attractive, such as road network density, road network connectivity, land use mix, permeability, and topography. This analysis helped to identify unique walking and cycling issues and opportunities throughout Winnipeg, and the areas with the highest potential to increase walking and bicycle use. The findings of this analysis, known as the Walking and Cycle Zone Analysis, indicate that the area with the highest potential is the downtown core due the dense, well-connected grid street network, high population and employment densities, mixed land uses, and flat topography.

The downtown core of Winnipeg is surrounded by several other neighbourhoods in and around the Downtown Core which also have relatively high cycling potential, including St. Boniface and River Heights, each of which also has well-connected, dense grid street networks with relatively high levels of density. Moving further away from these neighbourhoods, walking and cycling potential decreases somewhat, often due to lower residential and employment densities and disconnected road networks.

Map 2.7:
Walking and Cycling Potential



C. EQUITY ANALYSIS

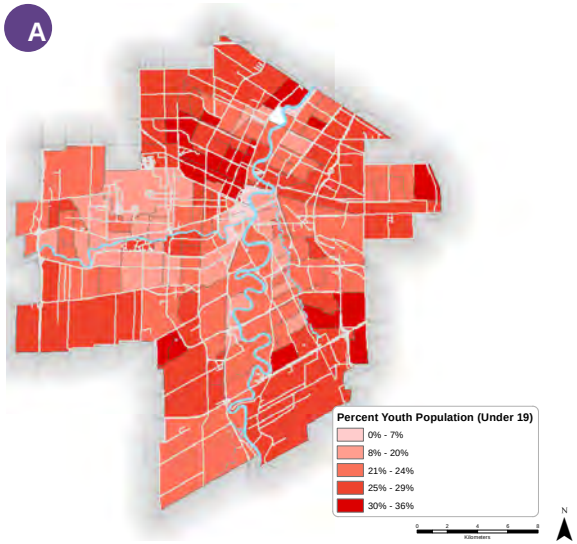
The Pedestrian and Cycling Strategies aim to develop well-connected bicycle and pedestrian networks that serve all areas of the City, including areas that have a high density of historically underserved populations and relatively low levels of existing facilities. An equity analysis was conducted to examine the distribution of pedestrian and bicycle facilities in relation to historically underserved populations. The equity analysis helped to identify those areas of Winnipeg where limited access to walking or bicycle facilities is compounded by socio-economic challenges. Promoting equitable transportation options and harnessing latent demand for walking and cycling are two important reasons to prioritize improvements to bicycle facilities in these communities.

A first step in equity analysis is the selection of equity indicators. Five indicators of equity in Winnipeg were selected, as shown in **Table 2.5**. These equity factors are based on experience elsewhere in North America, yet are customized to Winnipeg's historical context. These indicators were synthesized into an overall index of equity, which is mapped in **Map 2.8**.

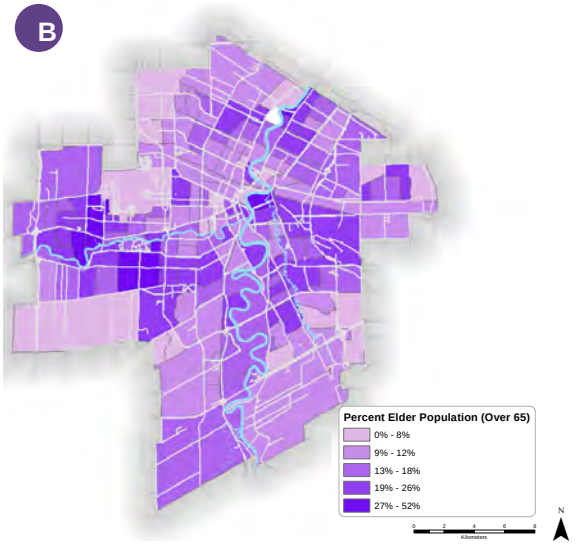
Table 2.5:
Equity Factors

	Equity Factor	Description	Data Source
A	**Youth Population**	The population aged 19 years or under, as a percentage of total neighborhood population	National Household Survey (NHS), 2011
B	**Seniors Population**	The population aged 65 years or over, as a percentage of total neighborhood population	National Household Survey (NHS), 2011
C	**Immigrant Population**	The number of immigrants (i.e. born outside Canada) as a percentage of total neighborhood population	Census of Canada, 2006
D	**Aboriginal Identity Population**	The population identifying as Aboriginal, as a percentage of total neighborhood population	Census of Canada, 2006
E	**Low Income Population**	The incidence of Low Income (i.e. below LICO threshold) among total neighbourhood households	

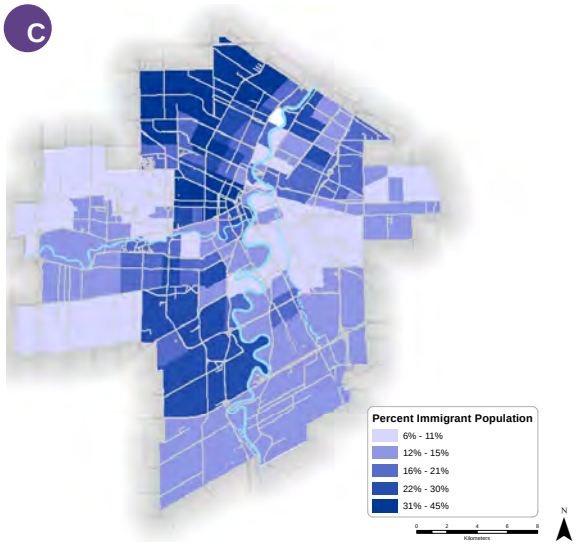
A


Percent Youth Population (Under 19)
0% - 7%
8% - 20%
21% - 24%
25% - 29%
30% - 36%
N

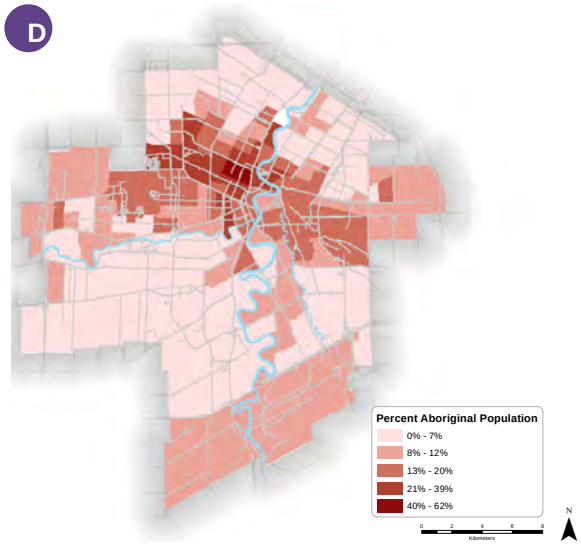
B


Percent Elder Population (Over 65)
0% - 8%
9% - 12%
13% - 18%
19% - 26%
27% - 52%
N

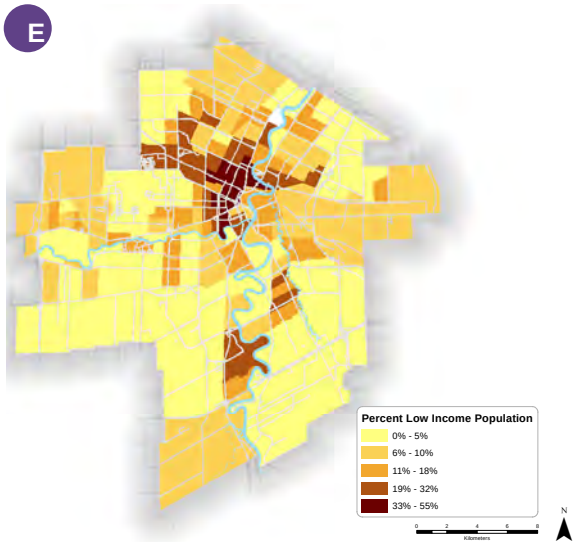
C


Percent Immigrant Population
6% - 11%
12% - 15%
16% - 21%
22% - 30%
31% - 45%
N

D

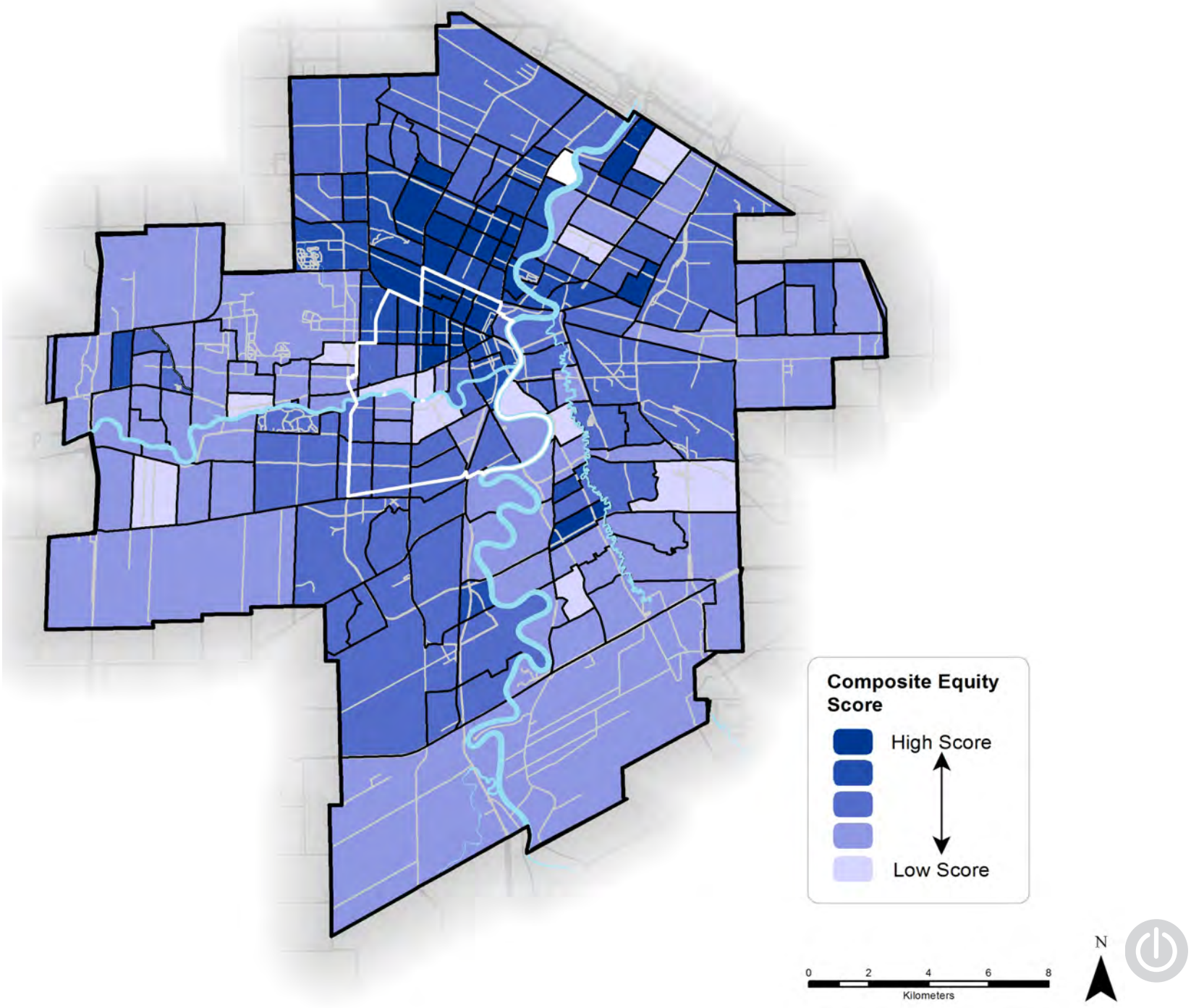

Percent Aboriginal Population
0% - 7%
8% - 12%
13% - 20%
21% - 39%
40% - 62%
N

E


Percent Low Income Population
0% - 5%
6% - 10%
11% - 18%
19% - 32%
33% - 55%
N



Map 2.8:
Equity Analysis



Several trends become apparent when analyzing the equity of the pedestrian and bicycle network. In particular it becomes apparent that Downtown West, Point Douglas North and Point Douglas South are identified as having a high equity score. In general, the northern part of Winnipeg has higher equity scores than the southern part, and central neighbourhoods have higher equity scores than outlying neighbourhoods.

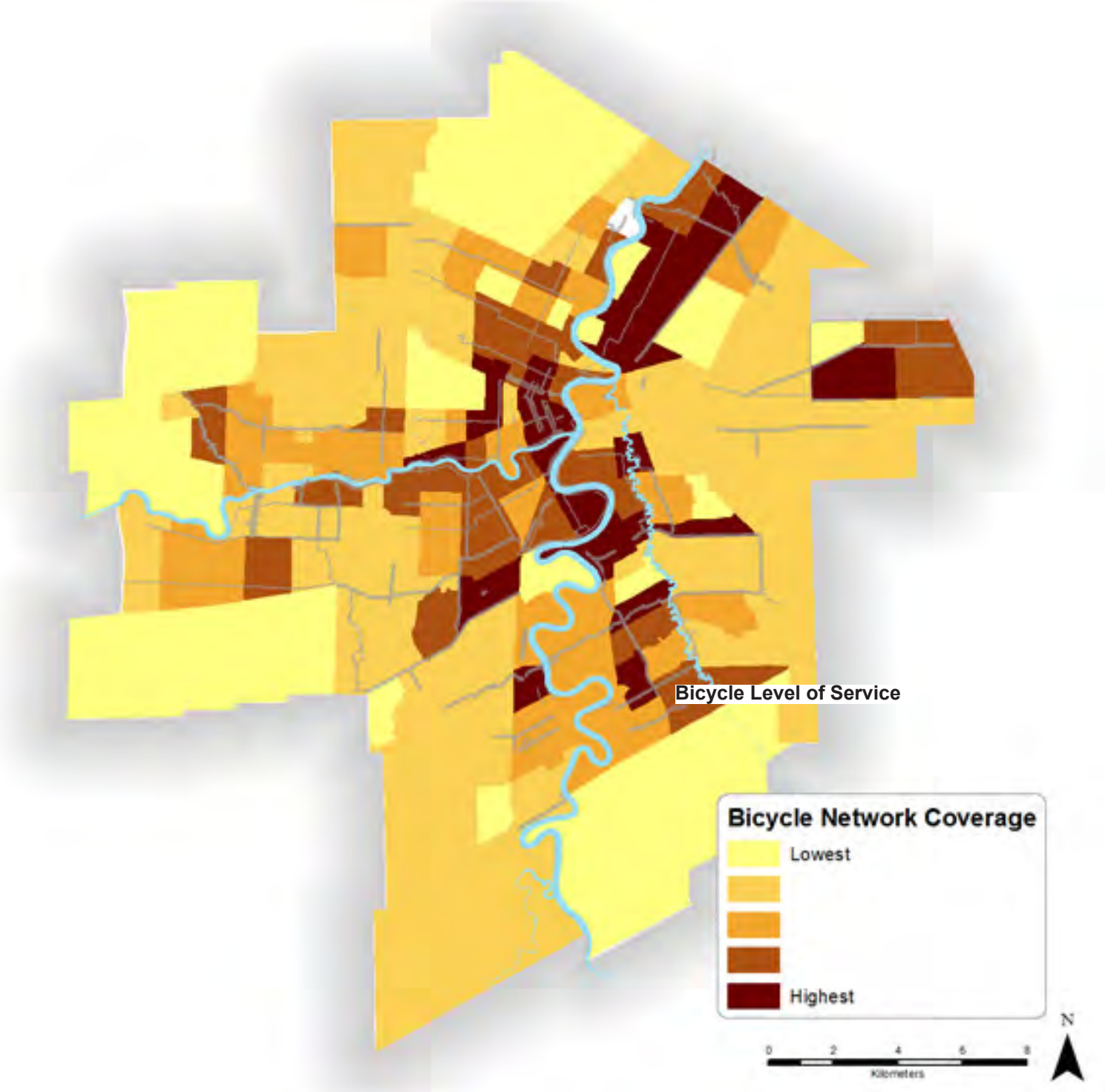


D. LEVEL OF SERVICE ANALYSIS

One way to compare the amount of facilities in different neighbourhoods is to take a simple measurement of bikeway-kilometres and divide this result by the area of the Census Tract (bicycle facility-km per km^2), which resulted in a measure of the "level of bicycle service" shown in **Map 2.9**. This analysis identified Census Tracts in the lowest quartile (bottom 25 percent) that can be considered to be low coverage (low service) areas. Census Tracts with low coverage are outlined in yellow, while Census Tracts that have both low coverage and score highest in the equity analysis are outlined in red.

The combination of low bicycle network coverage and a high equity score indicates a vulnerable community with limited access to safe bicycle facilities. This is a strong justification to connect these areas into the Winnipeg bicycle network with future infrastructure improvements.

Map 2.9:
Bicycle Level of Service

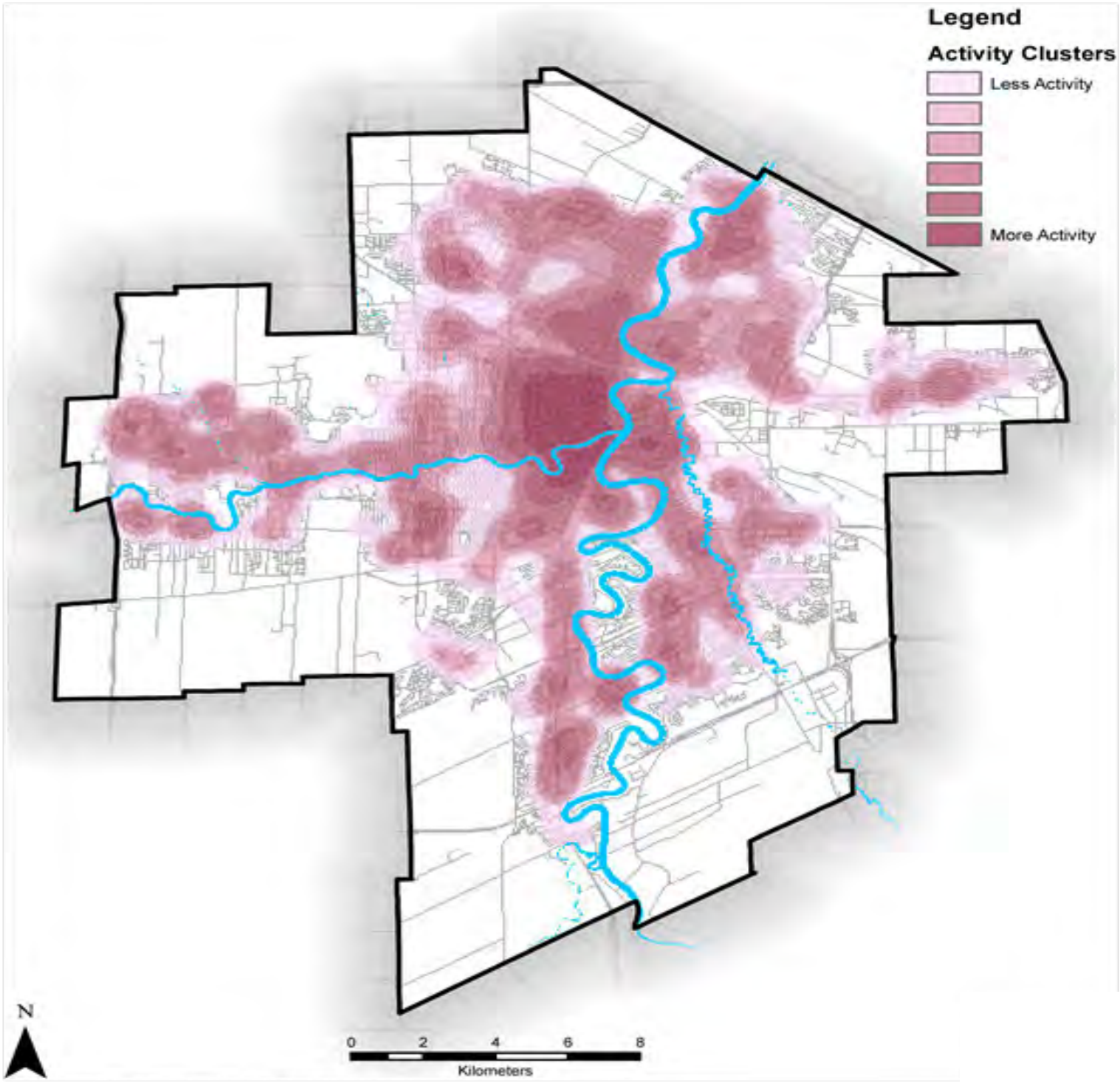




E. DESTINATION ANALYSIS

Destinations are an important aspect of pedestrian and bicycle network design. Using a dataset of all destinations in the City of Winnipeg, and weighting these destinations by demand, **Map 2.10** shows the general distribution of destinations in Winnipeg. These destinations can be thought of as “Activity Clusters”—areas that are attractive to all transportation users. A future pedestrian and bicycle network that serves Winnipeg’s activity clusters in a direct and convenient manner is a central theme of the proposed pedestrian and bicycle network.

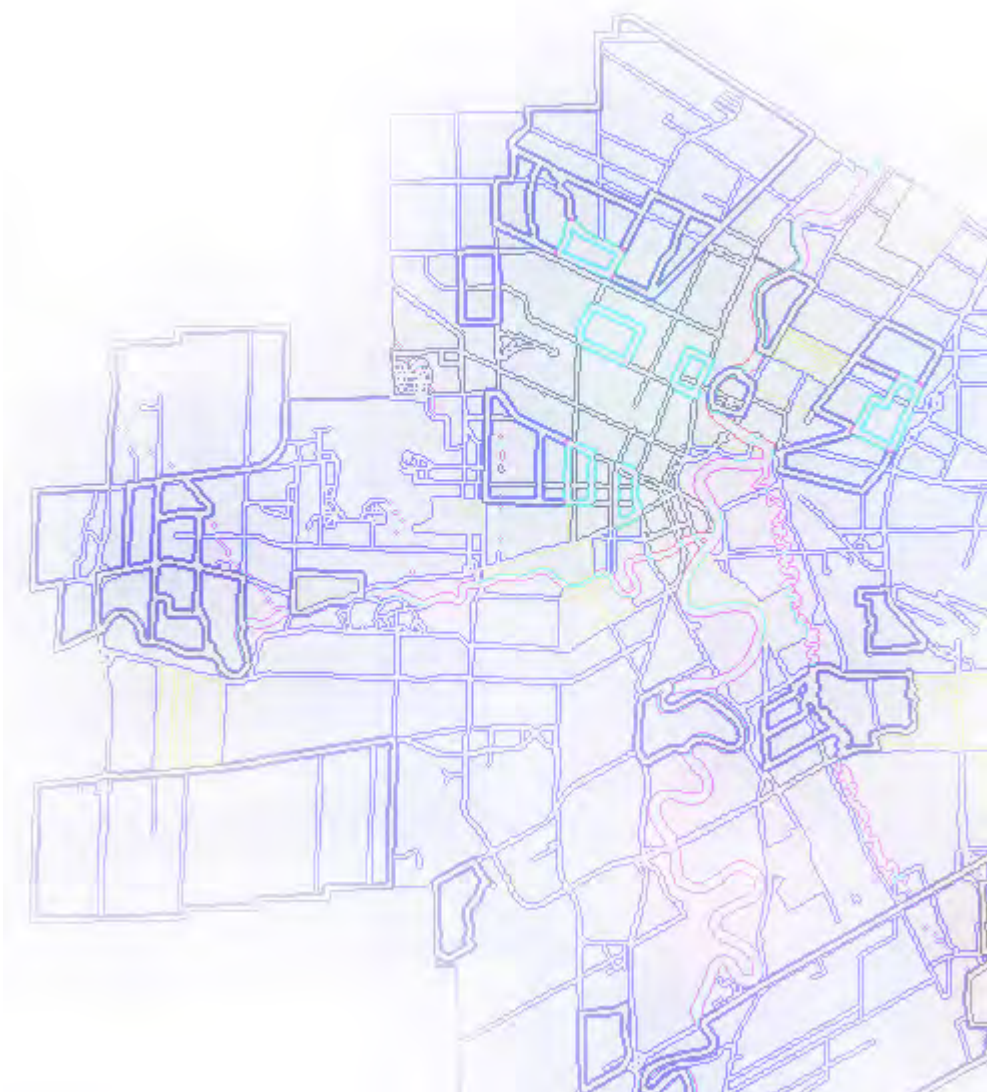
Map 2.10:
Activity Clusters



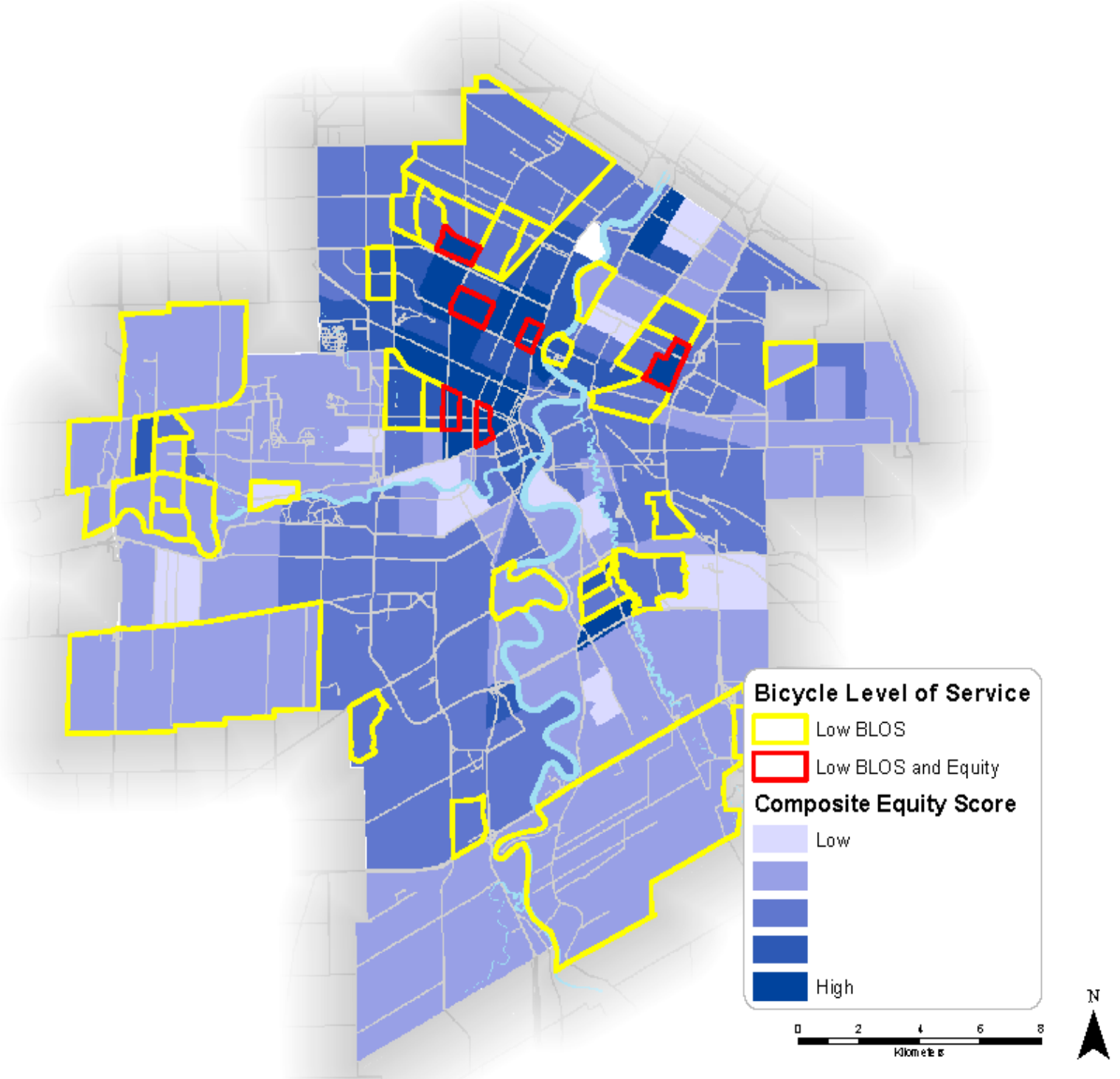
Several of the datasets were combined to see how these elements relate to one another. Several trends are noticeable in **Map 2.11**:

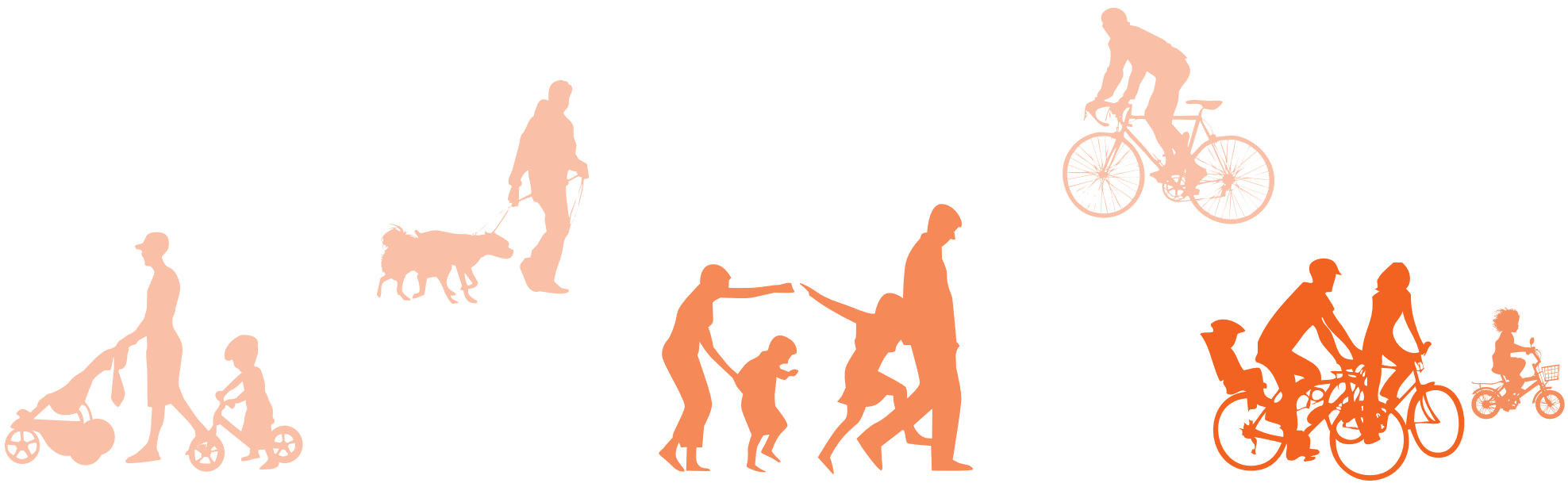
- Several of the communities with both high equity need and low bikeway coverage are located to the north of downtown
- Downtown West and East are in need of bikeway improvements
- Communities on the outskirts of Winnipeg—to the north, south, east and west—have low bikeway coverage but less immediate need in terms of equitable access

Each of the analyses conducted in this section is a key input into the proposed walking and bicycle network. By identifying current network gaps, communities of high walking and cycling potential and neighbourhoods of high equity need, this section has highlighted areas of opportunity and need.



Map 2.11:
Equity Scores with Bicycle Coverage





PART 3 Strategic Framework

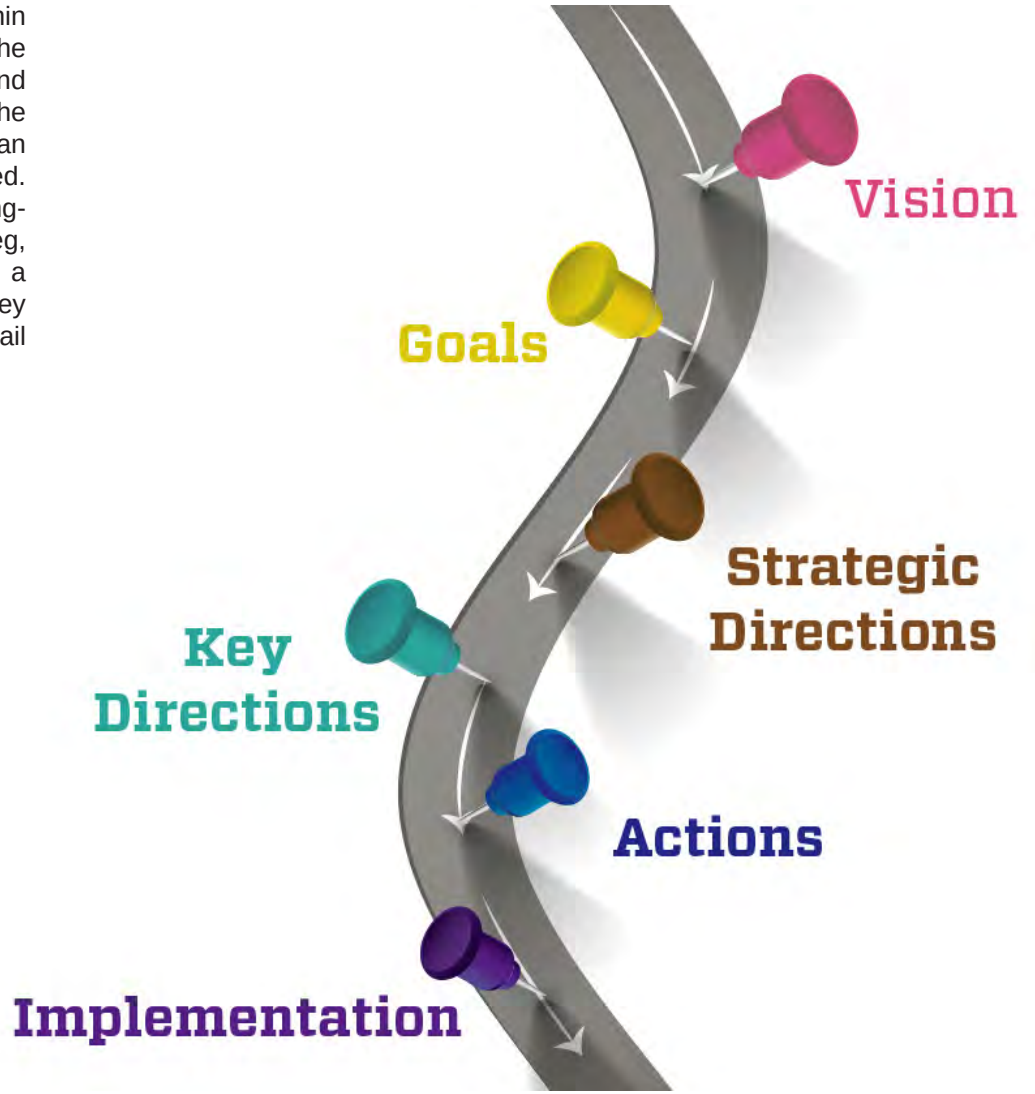
3.1 Vision

3.2 Guiding Principles

3.3 Strategic Goals



The vision and directions contained within OurWinnipeg, the CCDS and the TMP chart the course for the directions in the Pedestrian and Cycling Strategies. This section describes the overarching Strategic Framework for the Pedestrian and Cycling Strategies that has been developed. This Strategic Framework includes a long-term vision for walking and cycling in Winnipeg, supported by seven over arching goals and a series of six strategic directions with supporting key directions and actions, as described in further detail in this section.



3.1 Vision

A vision for the Pedestrian and Cycling Strategies was developed based on feedback received from the Stakeholder Advisory Committee, and also builds on the direction from key City documents such as Our Winnipeg, the CCDS and the TMP. The vision and goals of the Pedestrian and Cycling Strategies inform the overall direction of the strategies, and serve as the basis for the directions and recommended action areas.

In particular, the vision has been designed to describe the broad aspirations for the future of walking and cycling in Winnipeg. The vision consists of a series of inspirational statements that act as the framework to guide the direction of walking and cycling in Winnipeg into the future. The vision statement for the Strategies describes the future desired “end state”, or result, of implementing the Strategies.



- Walking and cycling are **safe, convenient, practical, and attractive** transportation choices for people of all ages and abilities.

- **Equitable access** to walking and cycling provides greater transportation choices for residents and visitors in neighbourhoods across Winnipeg. This will **improve personal mobility, promote healthy living, and reduce greenhouse gas emissions**, thus contributing to quality of life and community well-being.

- The community is engaged in **transparent processes** to invest in and prioritize cost-effective, progressive, and innovative infrastructure, support programs, and policies.

- Walking and cycling facilities are **strategically integrated with land use** to foster walkable and bicycle-friendly communities in existing and new neighbourhoods.

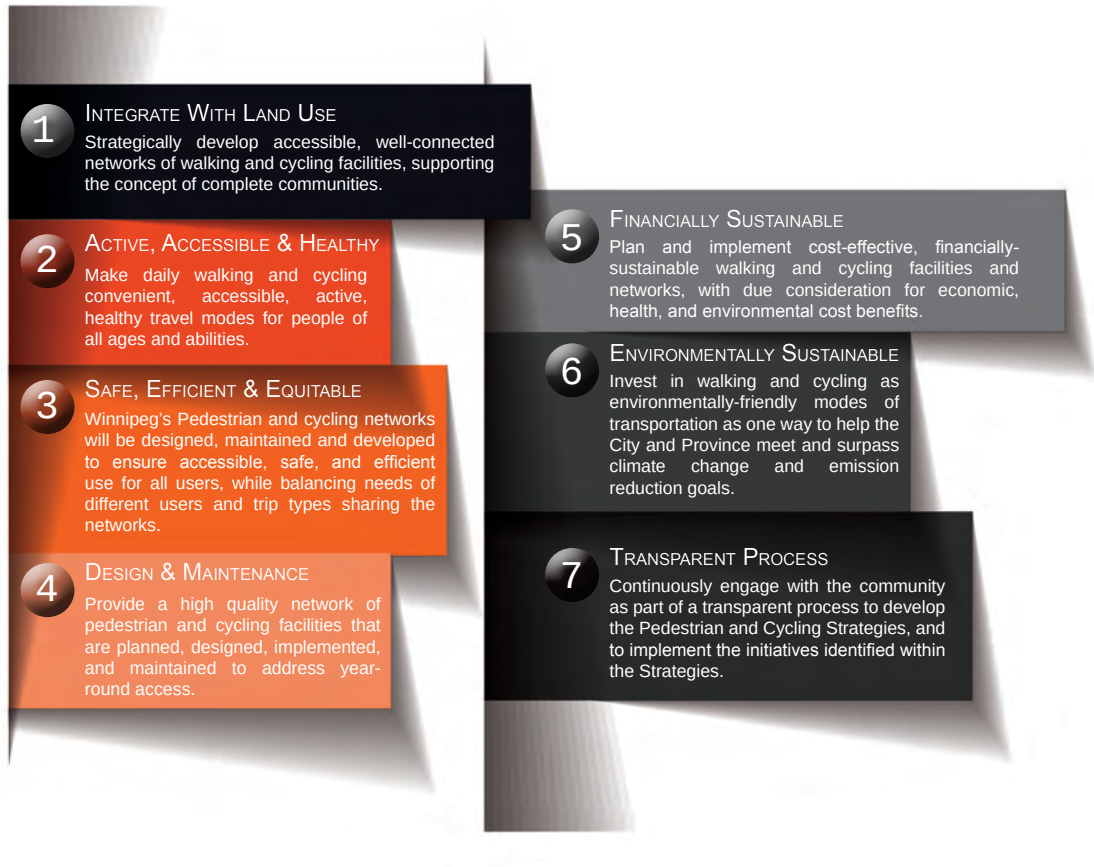
- Walking and cycling infrastructure will be **maintained in good repair, operational in all seasons**, including establishment of priority networks for winter maintenance.

- Winnipeg is recognized as a **leading Winter City** in promoting walking and cycling throughout the year.

3.2 Guiding Principles

The vision statement on the previous page is supported by seven main goals that are aligned with the City's overarching objectives as stated in Our Winnipeg, the CCDS and the TMP, and provide the foundational elements that shape the specific walking and cycling directions and actions. The goals also set the basis for the performance measures and prioritization criteria, which are outlined in Part 5.

Figure 3.1:
Goals



3.3 Strategic Goals

The Pedestrian and Cycling Strategies then include a series of six Strategic Directions along with supporting Key Directions and Actions that support the vision and goals, as described below. Each of these Directions and Actions are described in detail in Part 4.

- **Strategic Directions** provide the six overarching themes of the Strategies.
- **Key Directions** shape and categorize the more detailed action areas.
- **Actions** are more specific statements about what the City will do to enhance opportunities for walking and cycling



Improve Connectivity
A. Expand the Bicycle Network
B. Expand and Enhance the Sidewalk Network
C. Address Barriers



Improve Convenience
A. Provide Bicycle Parking and End-of-Trip Facilities
B. Increase and Improve Multi-Modal Connections



Improve Safety & Accessibility
A. Provide Accessible Infrastructure
B. Improve Pedestrian and Cyclist Safety
C. Provide Pedestrian and Cyclist Crossing Treatments
D. Provide Well Lit and Visible Pedestrian and Cyclist Facilities
E. Develop Safe Routes to School



Improve Maintenance
A. Maintain the Sidewalk Network
B. Maintain the Bikeway Network

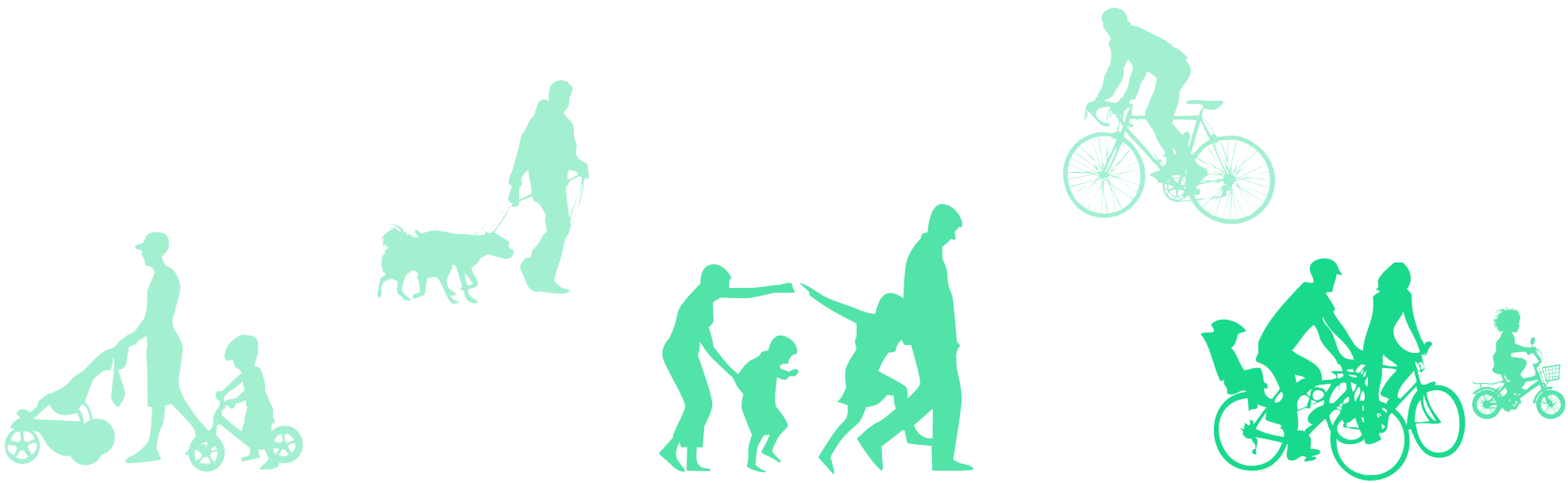


Improve Vibrancy
A. Enhance Streetscapes and the Public Realm
B. Land Development and Site Design



Increase Awareness
A. Enhance Wayfinding, Signage, and Trip Planning
B. Improve Education and Awareness
C. Increase Marketing and Communication





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

Key Directions:

1A: Expand and Enhance the Sidewalk Network

1B: Expand and Enhance the Bicycle Network

1C: Address Barriers

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.





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 intented 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.


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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 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.

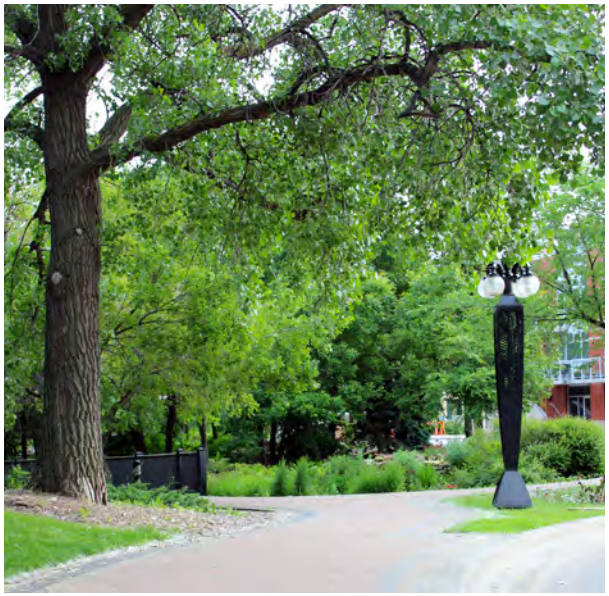
One of the key components of a walkable neighbourhood is the sidewalk, as the sidewalk essentially functions as the roadway for pedestrians. Sidewalks have many advantages, including:

- 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:

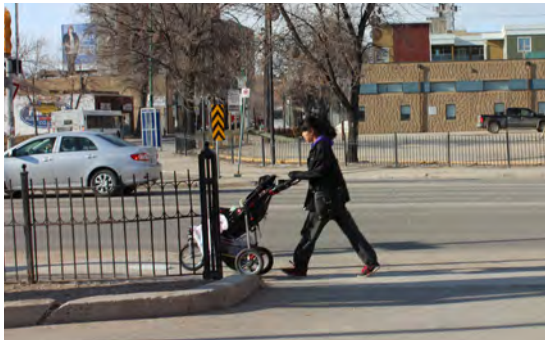
- It is wide enough to comfortably accommodate at least two adults walking side-by-side or two wheelchair users. This results in a minimum desired width of 1.8 metres. This minimum width refers to the path clear of obstructions such as garbage containers, newspaper bins, etc. However, whenever possible, 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: • 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	As Required
Industrial / Commercial Local		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

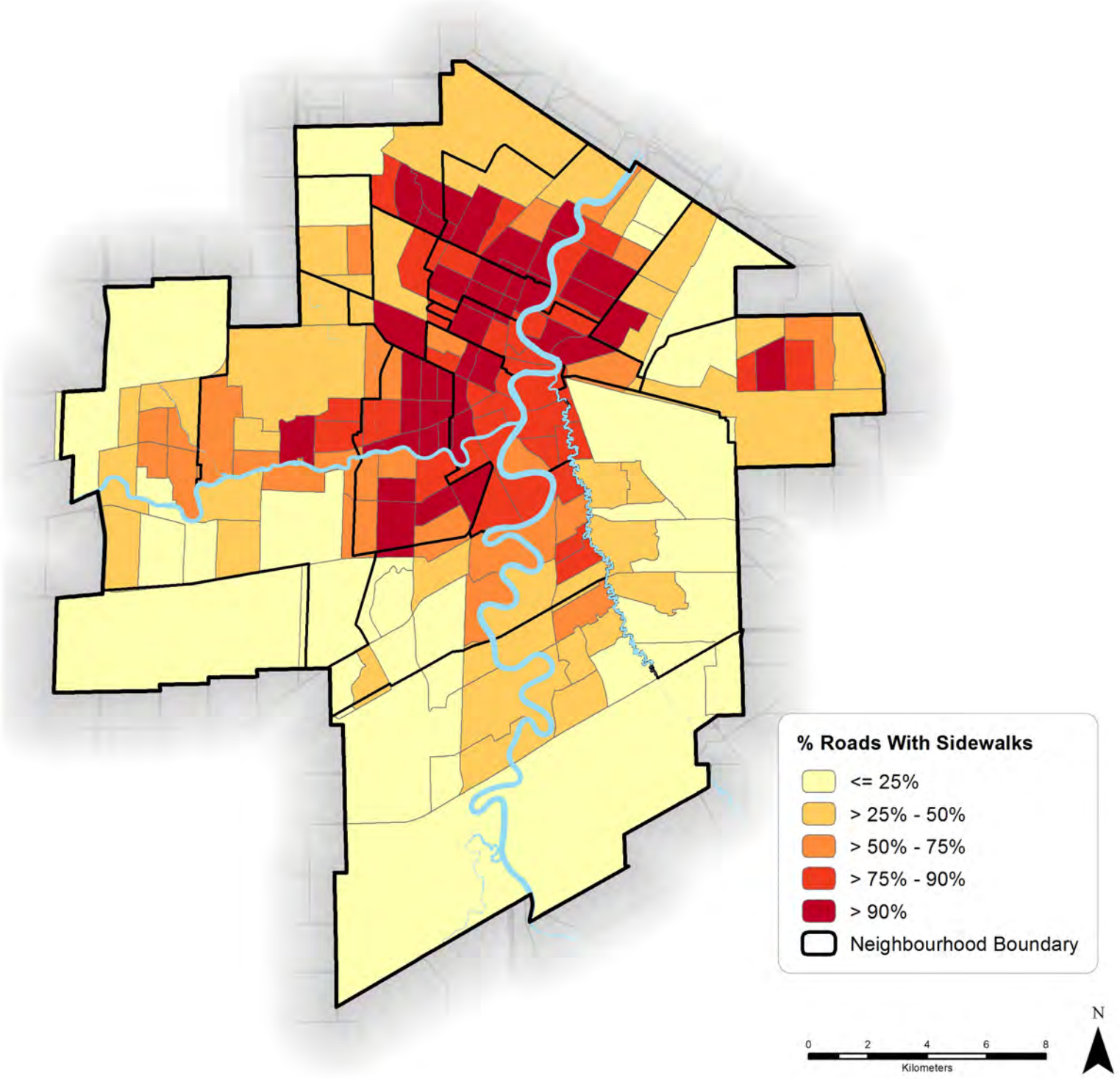
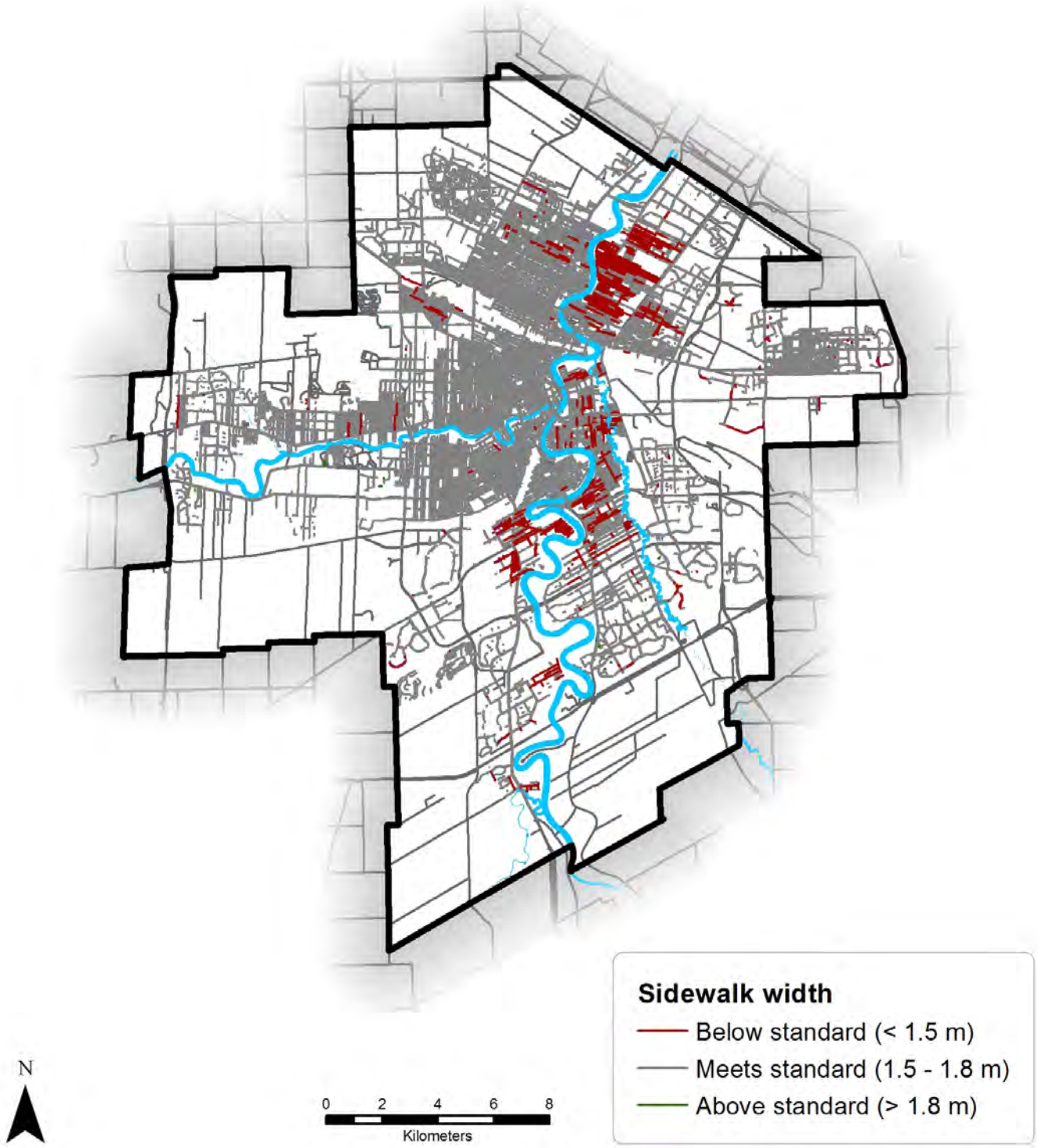


Table 4.3:
Sidewalk Requirements in Other Canadian Cities

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	• Both sides (when adjacent to multi-family, commercial and school sites) • One side (Residential Streets)	• One side (roads >240m long) • None (roads <240m long)	• 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	• 1.5 m - local and collector • 2.5 m - arterial • 3.0 m - expressway	• 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 Yes, and on both sides of the street if, • 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 No, for cul-de-sacs	2 1 (at least) 2 None
	Commercial	Yes, and on both sides of the street if, • 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, • 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 onboth 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 there inherit 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

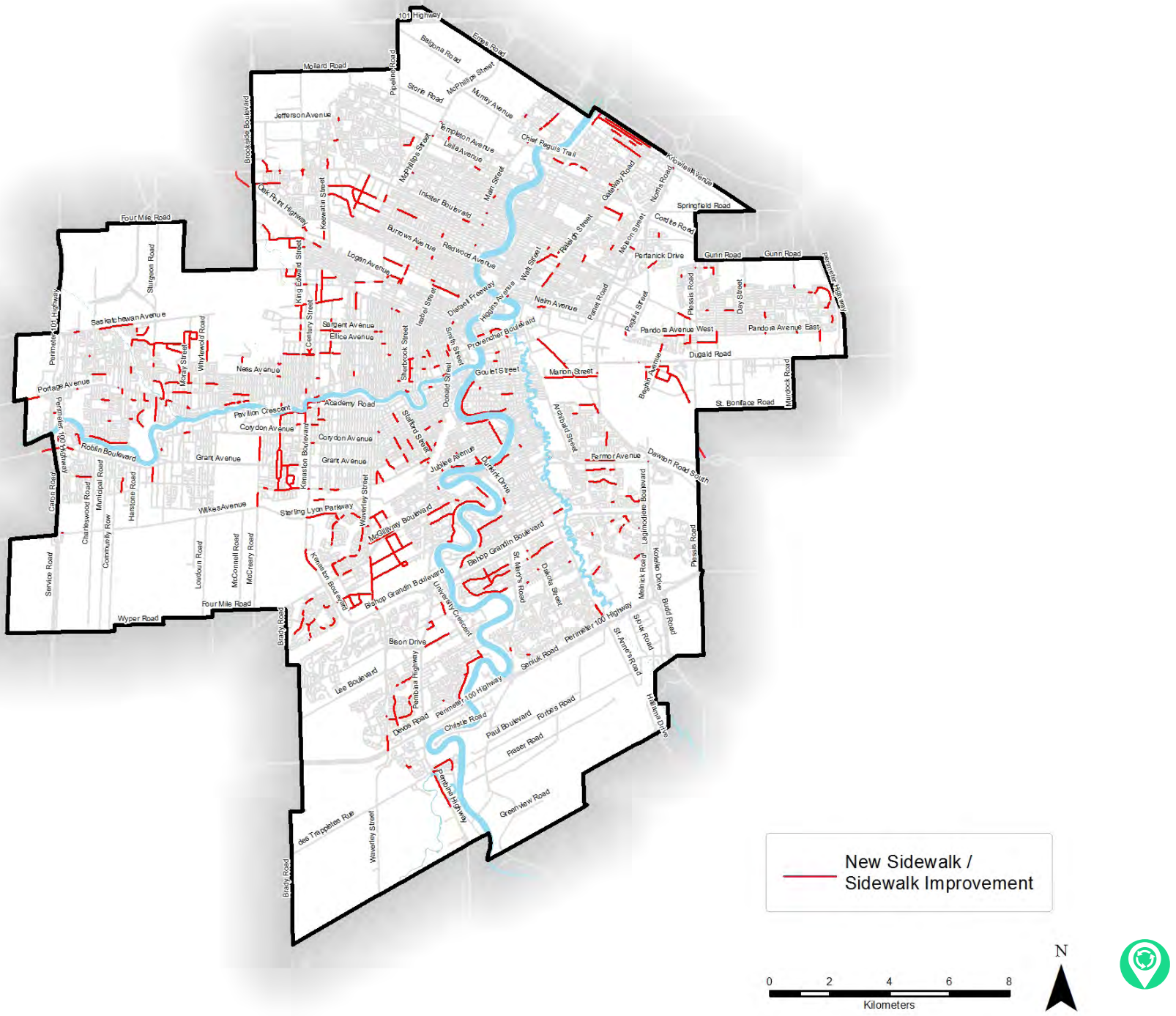
It is recommended that the City update its existing practices regarding new sidewalk requirements, in collaboration with relevant stakeholders, with recommended criteria for prioritizing sidewalk construction and maintenance in Winnipeg.

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

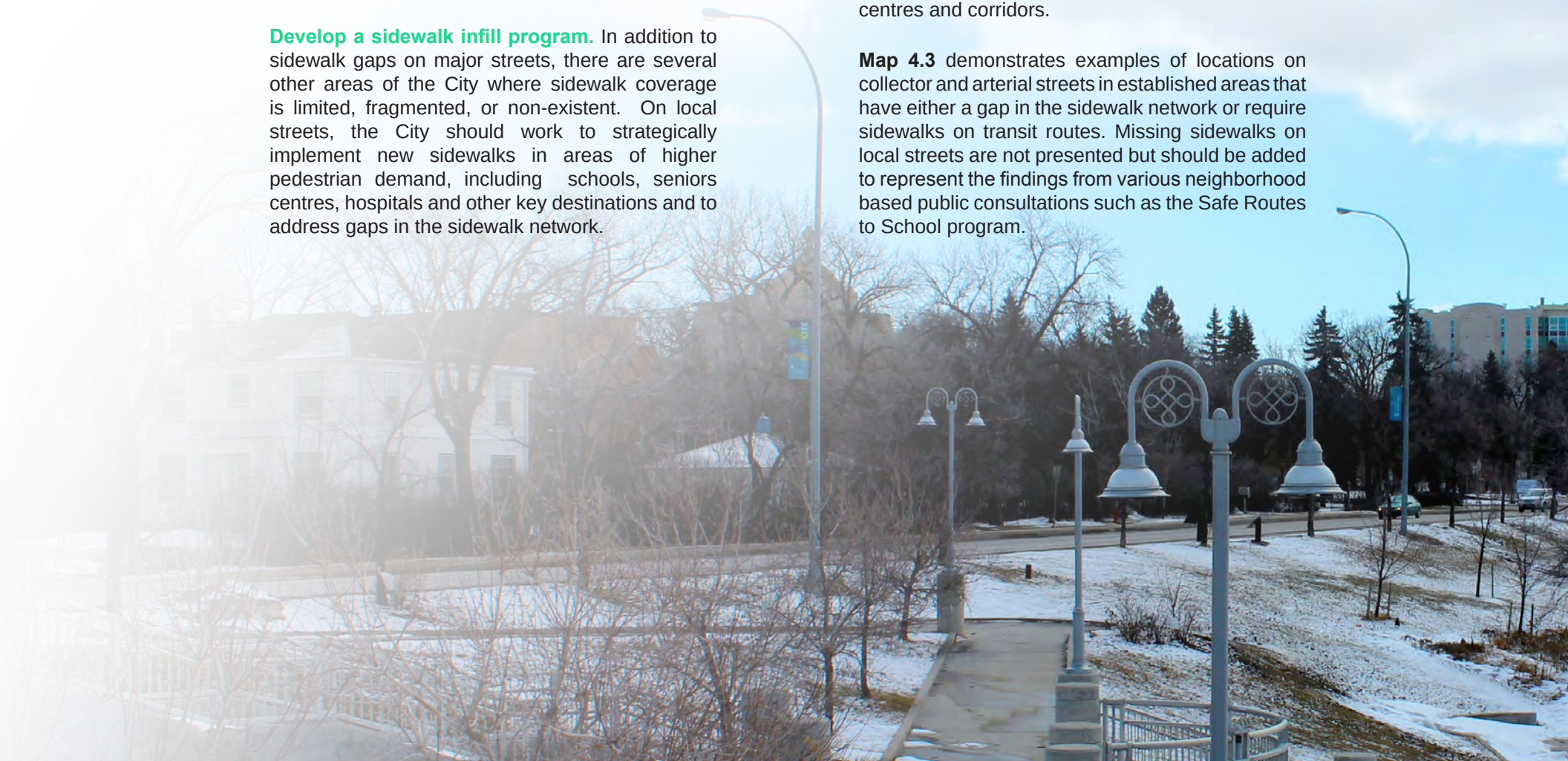


Eliminate gaps in the sidewalk network on major roads. Many major roads throughout the City do not have sidewalks on both sides of the street. From a safety and accessibility perspective, it is important to provide sidewalks on these arterial streets with higher traffic speeds and volumes. The City should 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.

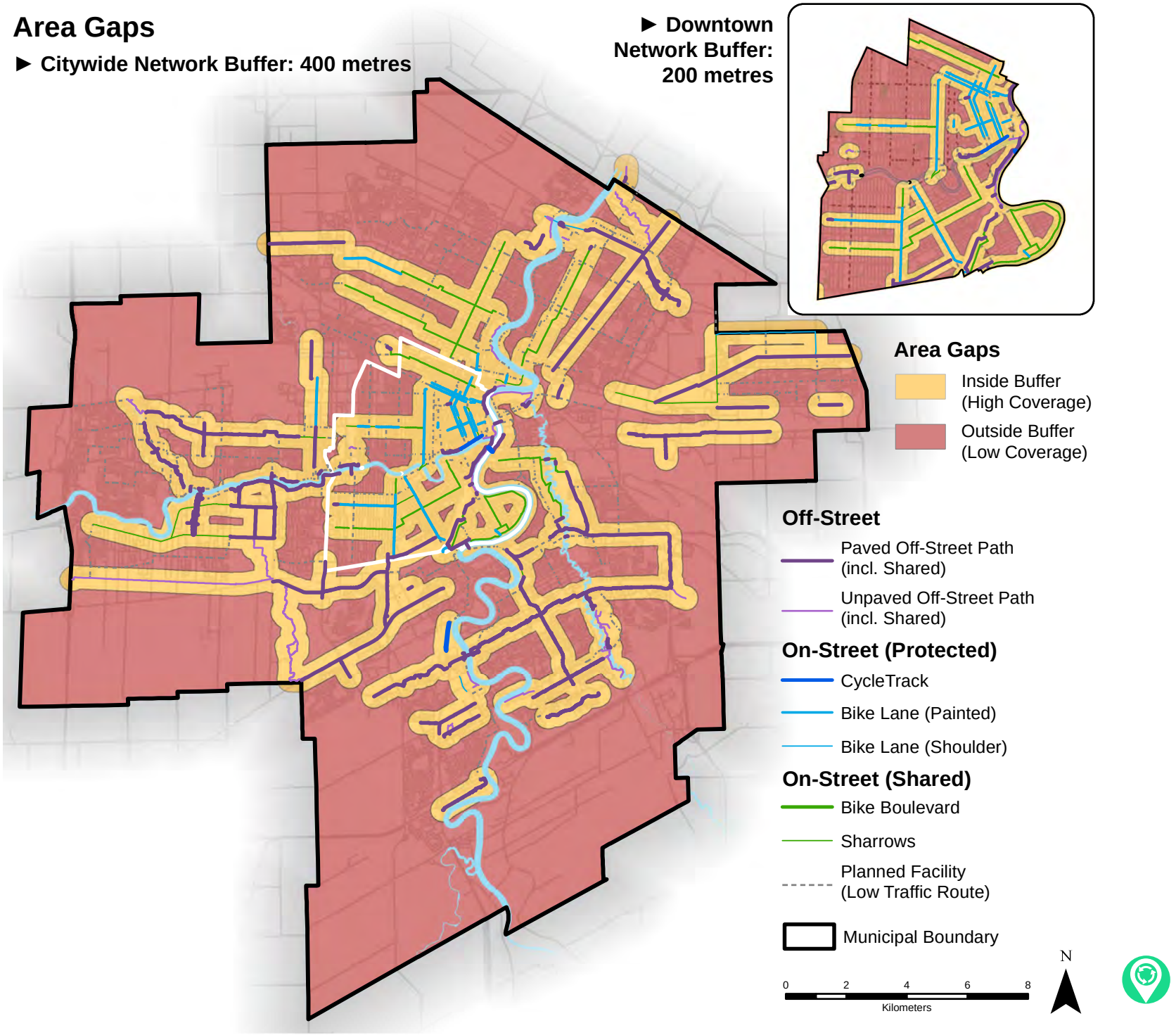




A Dense Network

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





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:

- Dowtown 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.



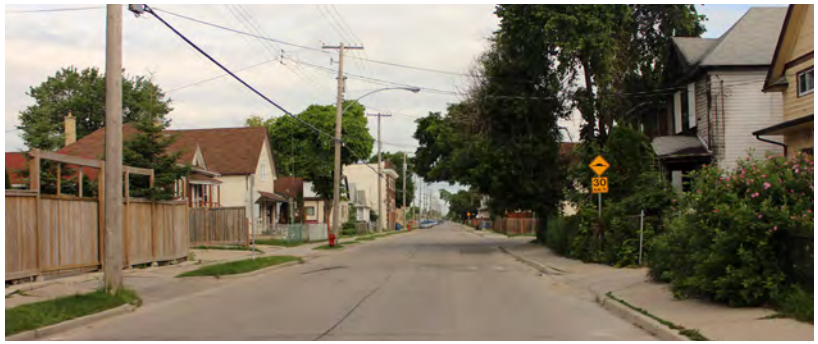
BICYCLE LANES are separate lanes that are designated exclusively for bicycle travel and also include pavement markings.



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.


ROUTE

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.



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.



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.



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.


DIPT
DIPT



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:




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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

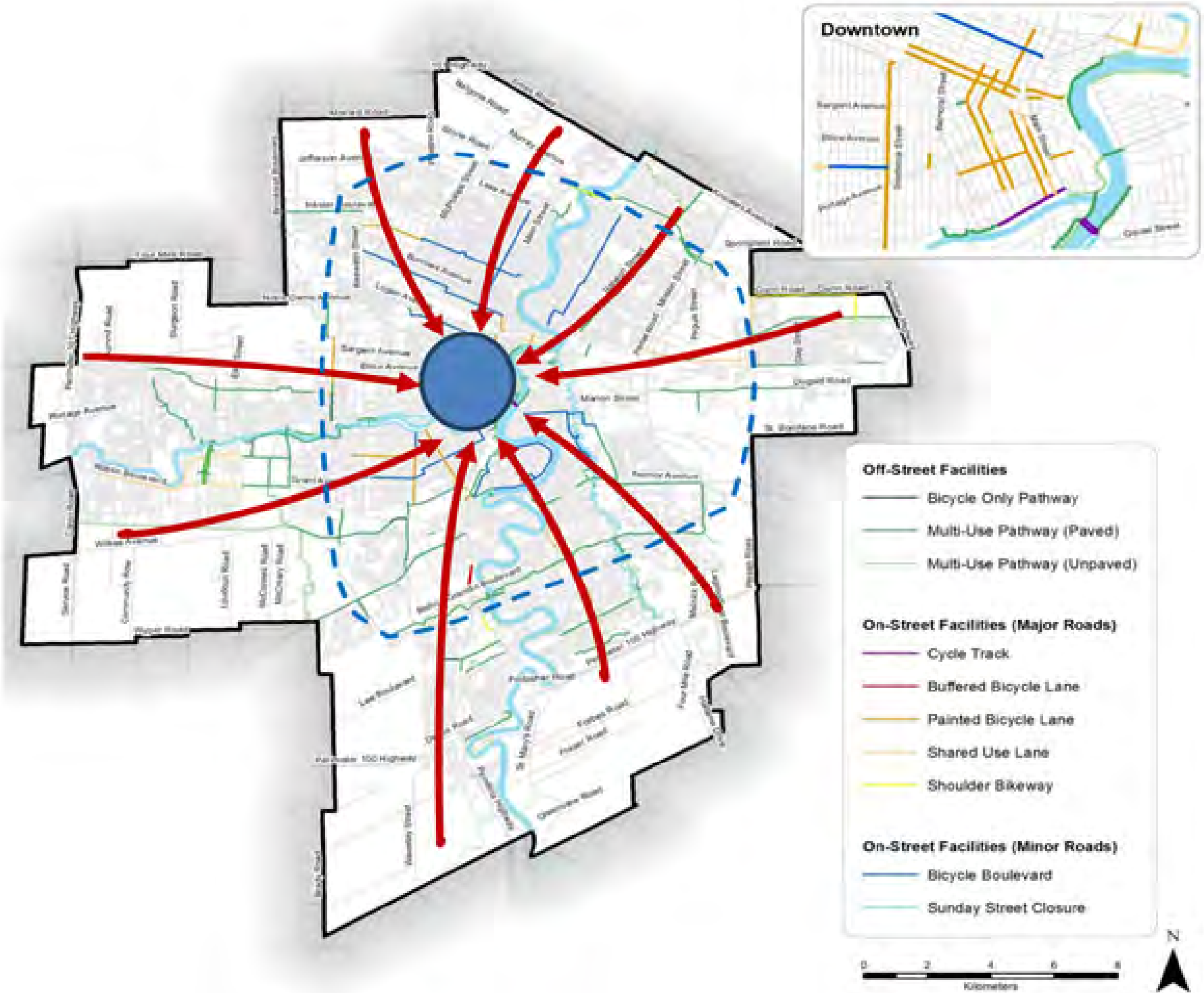
Overall Concept

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


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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 indentifies 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.

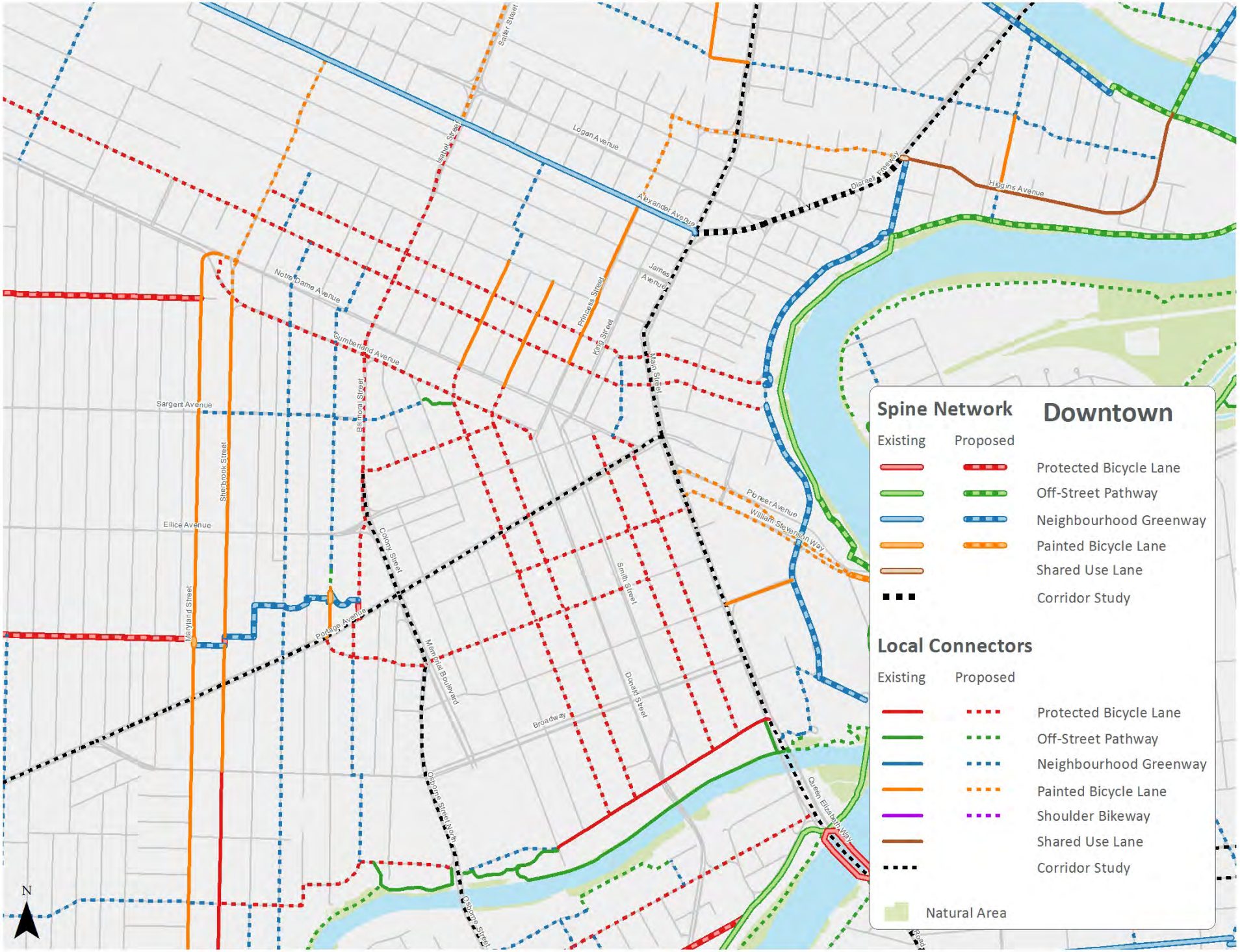
- **Develop a spot improvement program for existing bicycle facilities.** In addition to expanding the bicycle network, the City should develop a spot improvement program to improve existing bicycle facilities. Approach expansion and upgrades of the network in a consistent manner, closing gaps where 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.

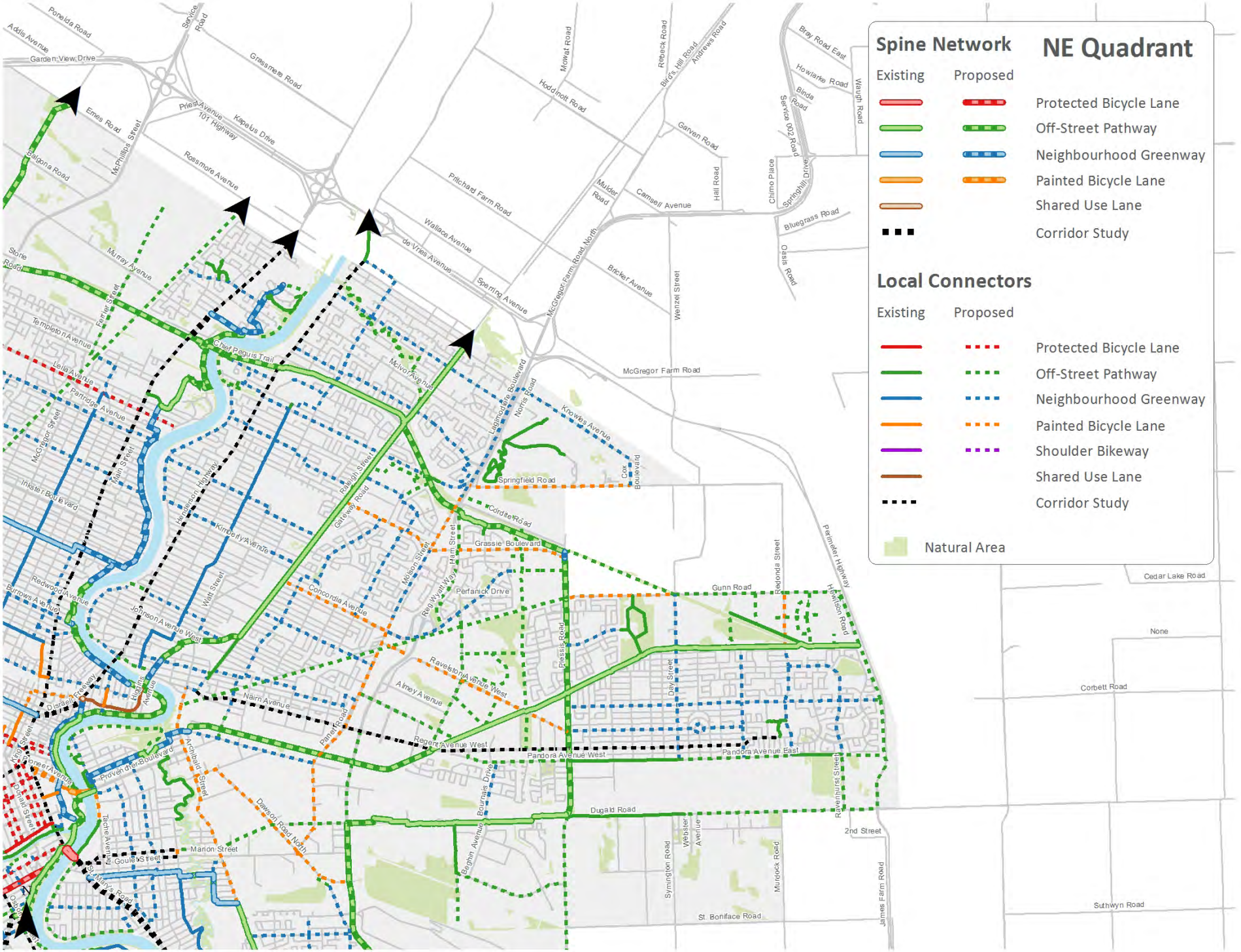
- **Update the City's Transportation Standards Manual (TSM) to incorporate cycling facilities.** The TSM is intended to serve as a design aid for designers and planners working on construction or rehabilitation of transportation facilities in the City of Winnipeg. By incorporating bicycle facilities 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.

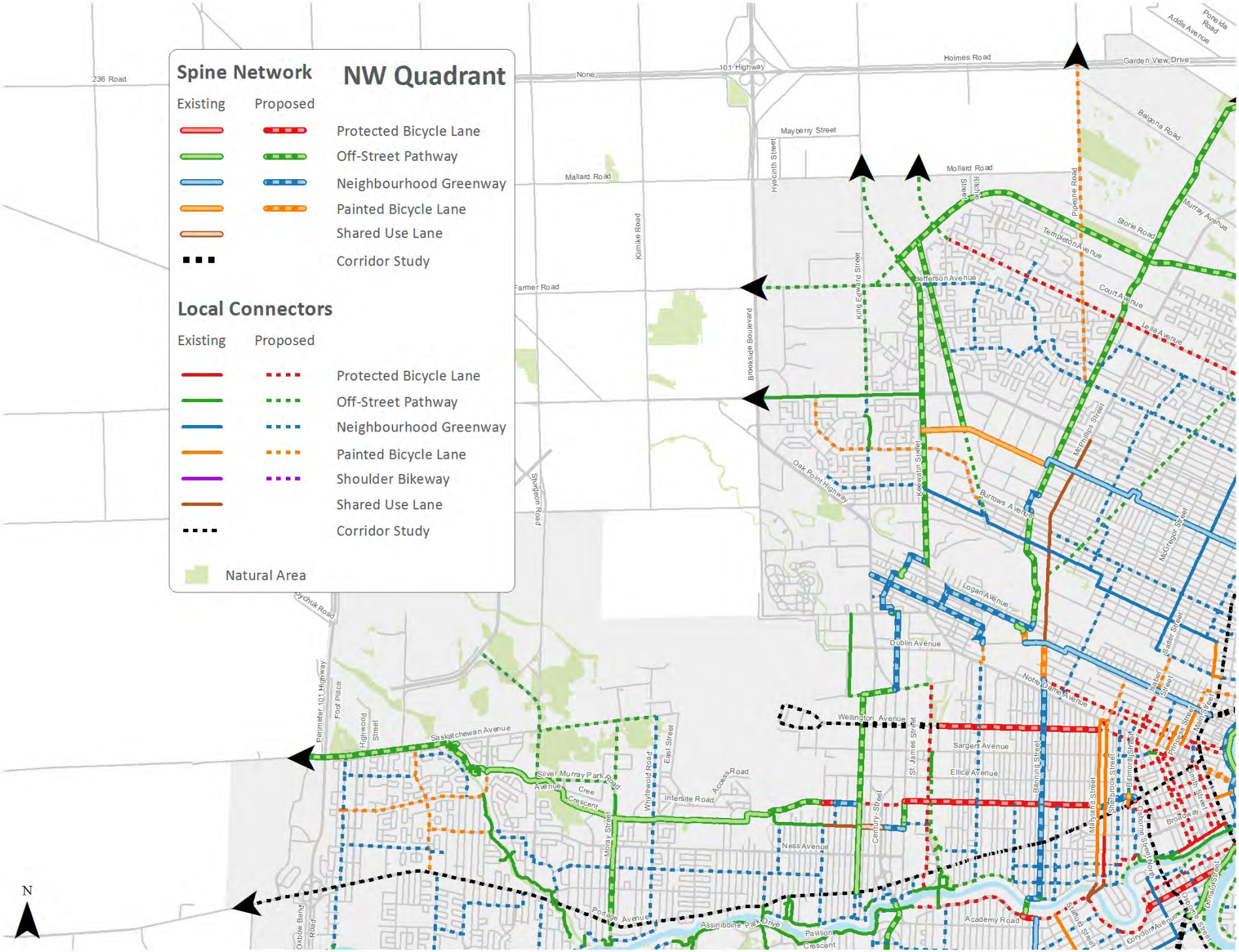
Map 4.6:
Downtown Neighbourhood Map



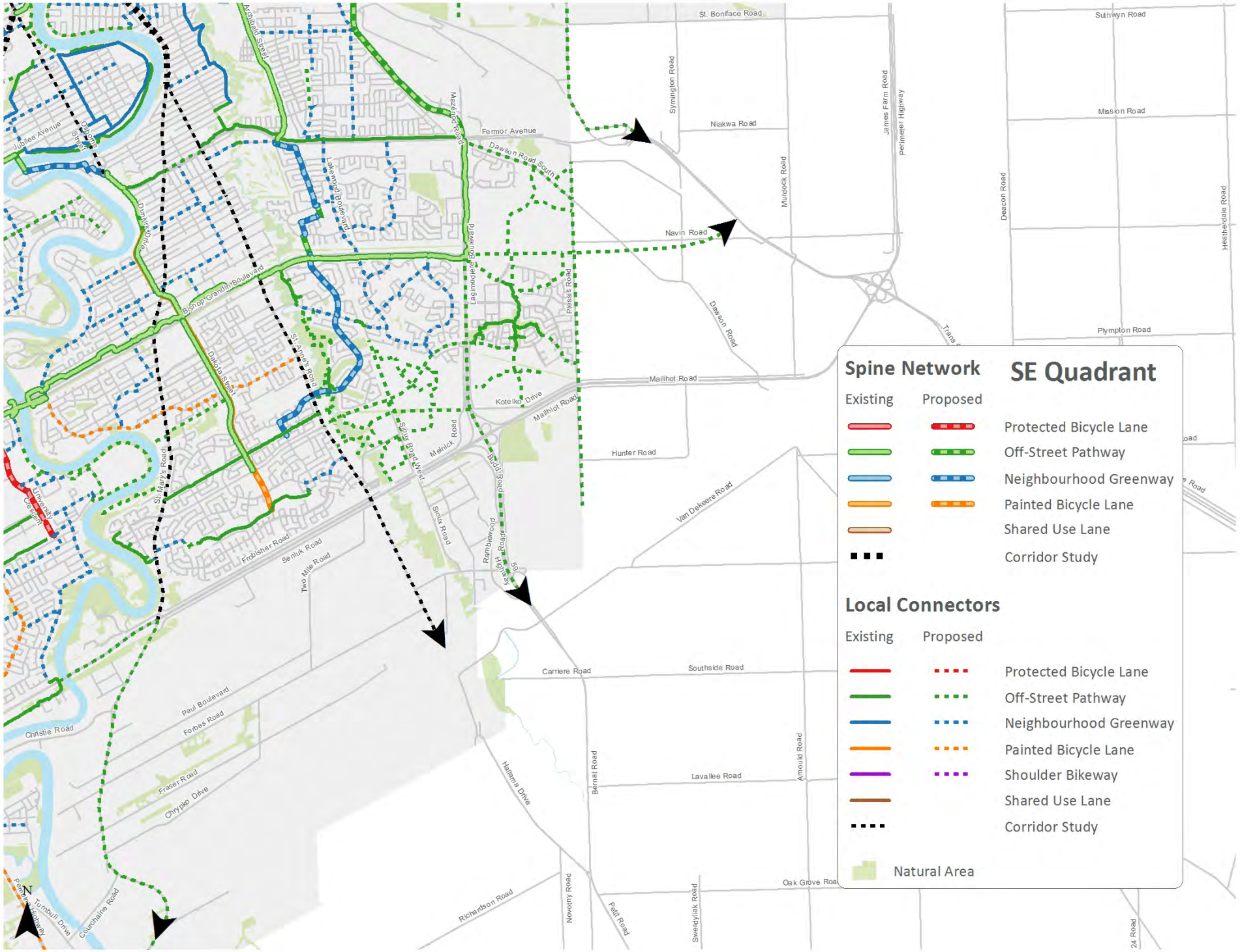
Map 4.7:
North-East Neighbourhood Map



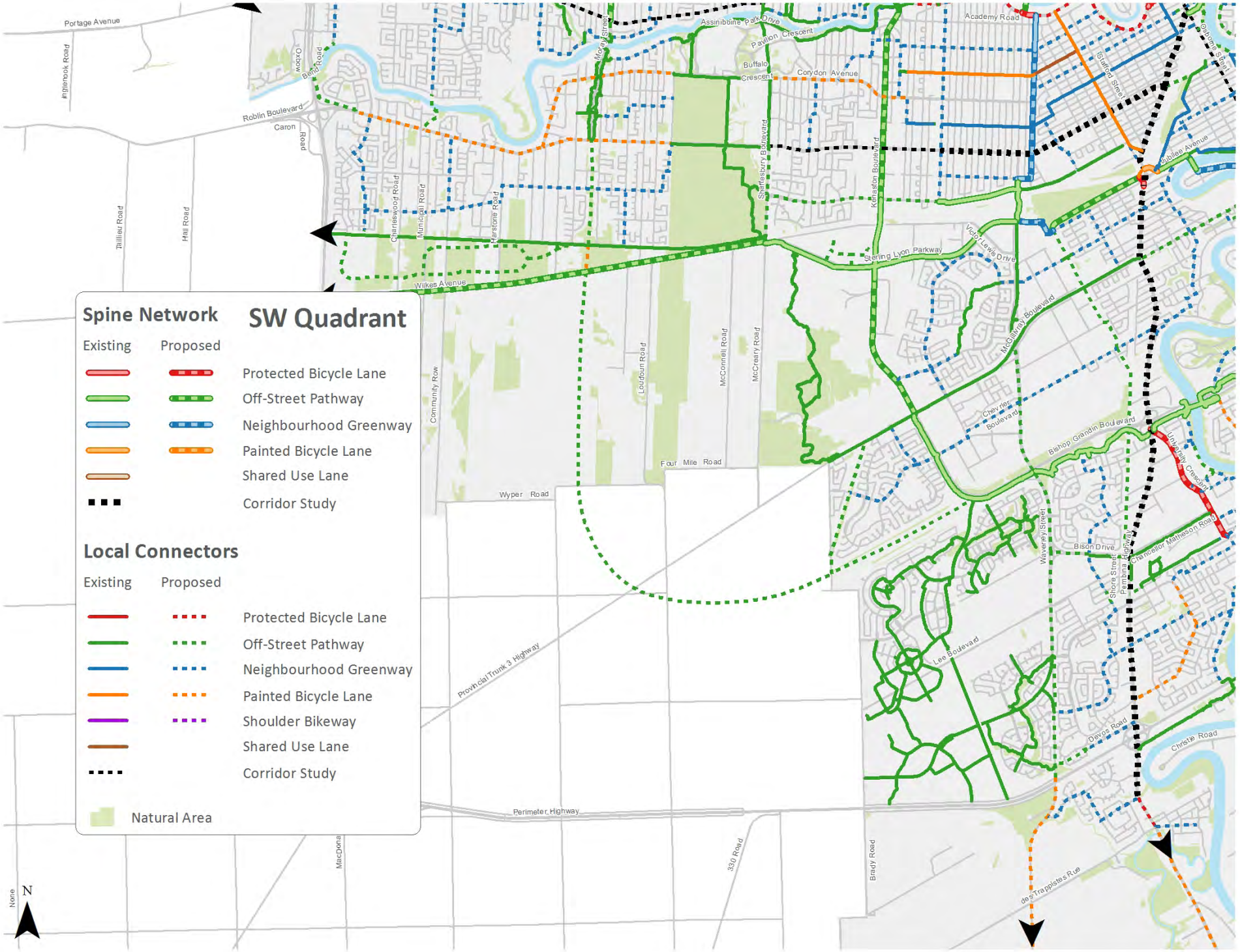
Map 4.8:
North-West Neighbourhood Map



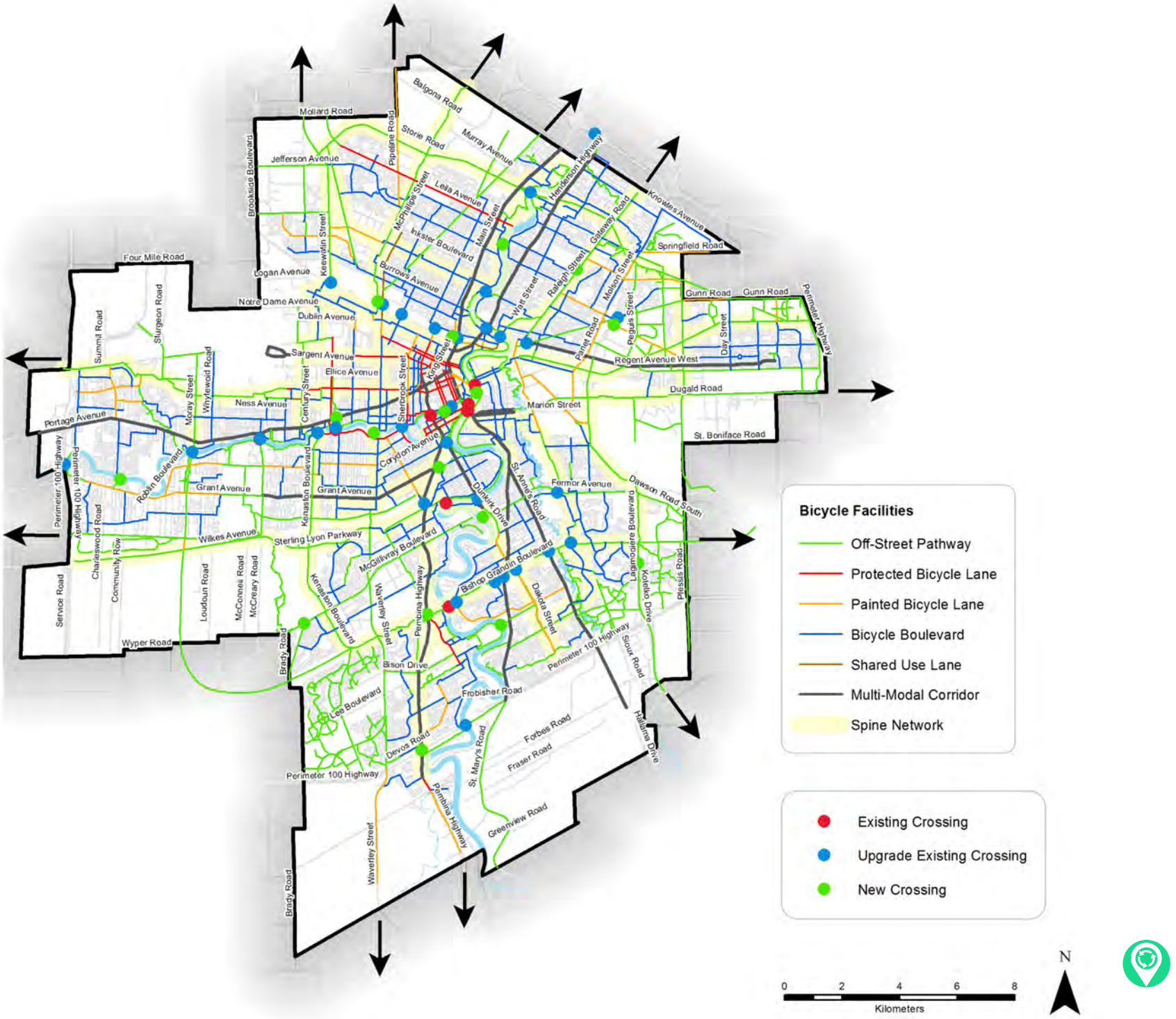
Map 4.9:
South-East Neighbourhood Map



Map 4.10:
South-West Neighbourhood Map



Map 4.11:
City-Wide Long-Term Bicycle Network




strobel
MEIJI SUSHI
ROOSTER
MEIJI SUSHI
Bangkok
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.

continued on the following page...

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.

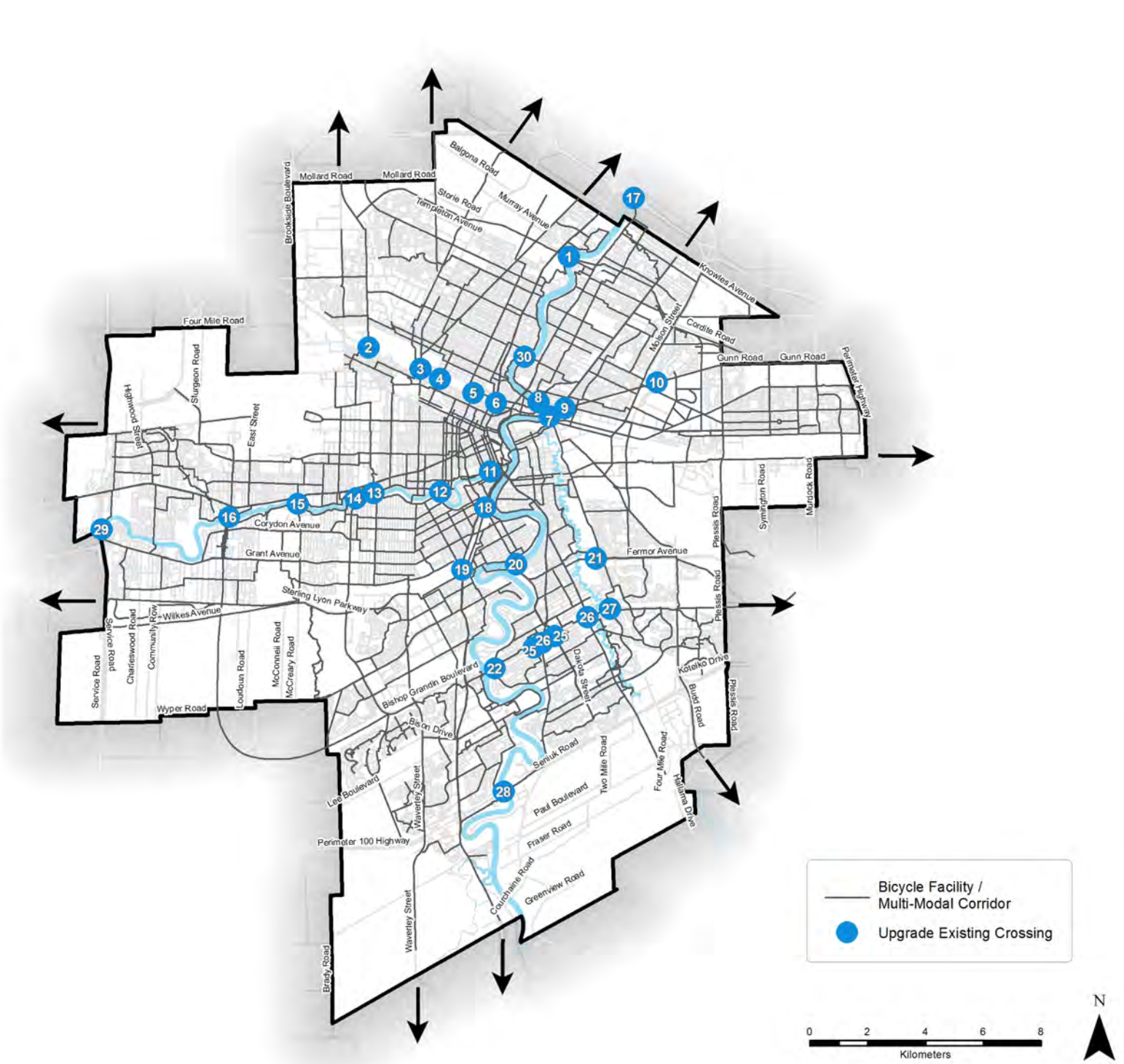
The recommended bicycle network recommends the locations in the following table be considered for crossing upgrades to better support people walking and cycling in Winnipeg.



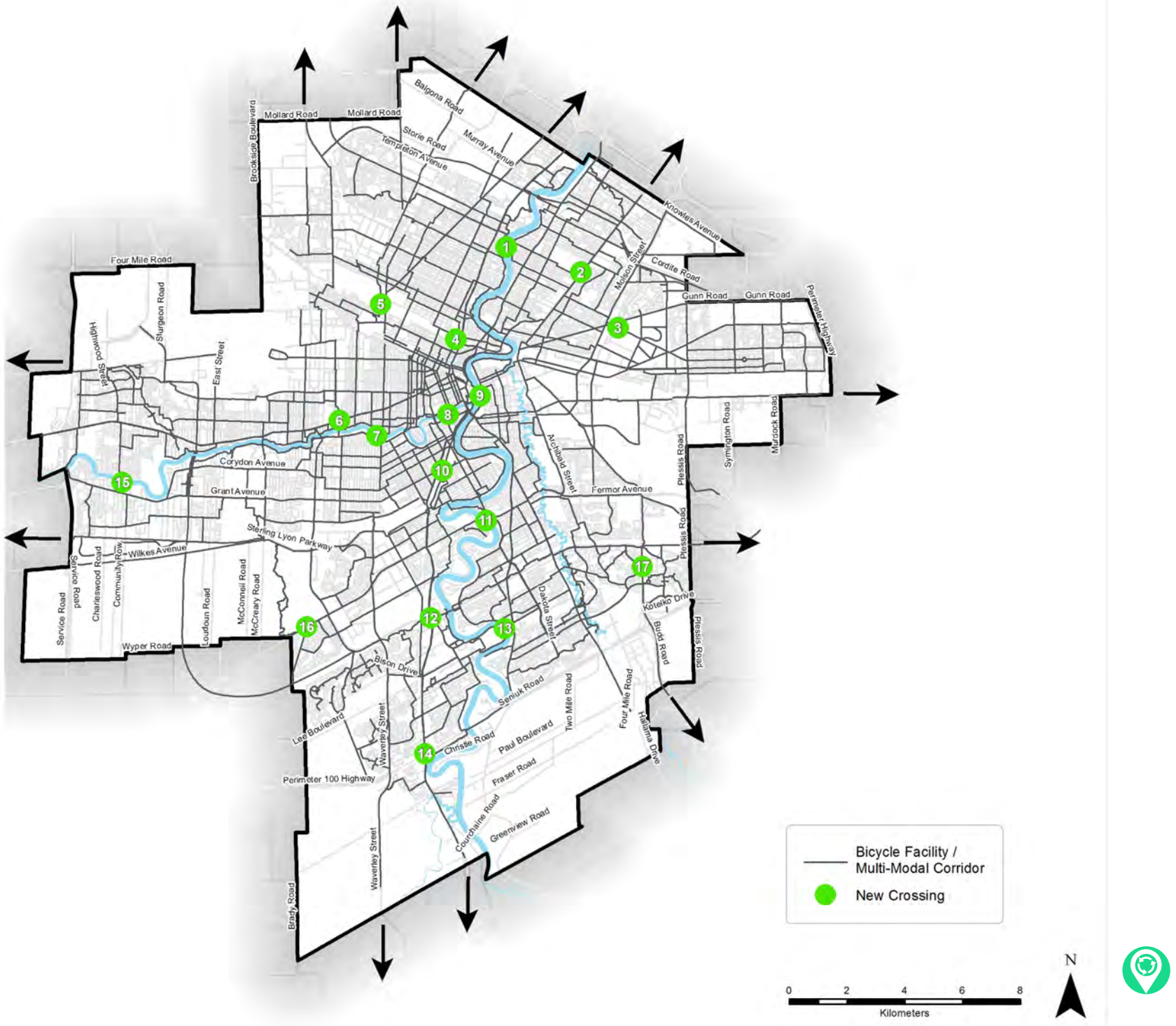
Table 4.5:
Recommended Crossing Upgrades

	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



Map 4.13:
New 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	❍		



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		Actions
1C. Address Barriers	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

Key Directions:

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

2B: Increase and Improve Multi-Modal Connections

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.

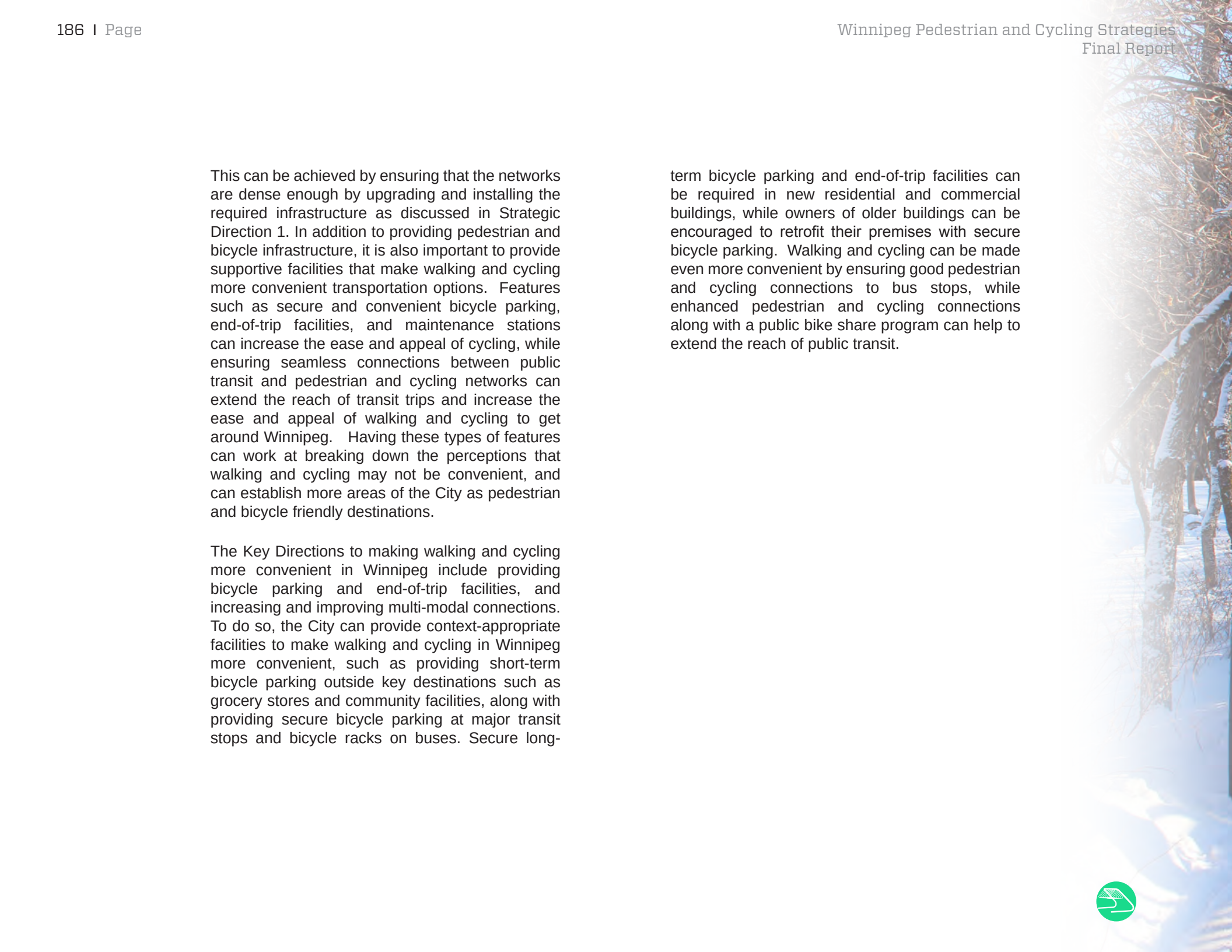
In order for walking and cycling to be attractive and competitive transportation choices, they need to be as convenient as possible. The most important factor in the convenience of walking and cycling is that distances between destinations be appropriate for these transportation modes.





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.

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.

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	

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 motor 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	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.
	ii	Update the Downtown Zoning Bylaw to require bicycle parking in new developments.
	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.
	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.
	v	Continue to expand partnerships with BIZes and individual businesses to implement short-term bicycle parking in the public right-of-way.
	vi	Develop a program to support businesses in existing developments to retrofit existing buildings to provide bicycle parking.
	vii	Require that all event coordinators provide adequate temporary bicycle parking to serve corporate-sponsored and large community events.
	viii	Continue to work with BIZes and individual businesses to expand the bicycle corral program

continued on the following page...

Key Direction		Actions
2A. Provide Bicycle Parking and End-Of-Trip Facilities	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

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

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.

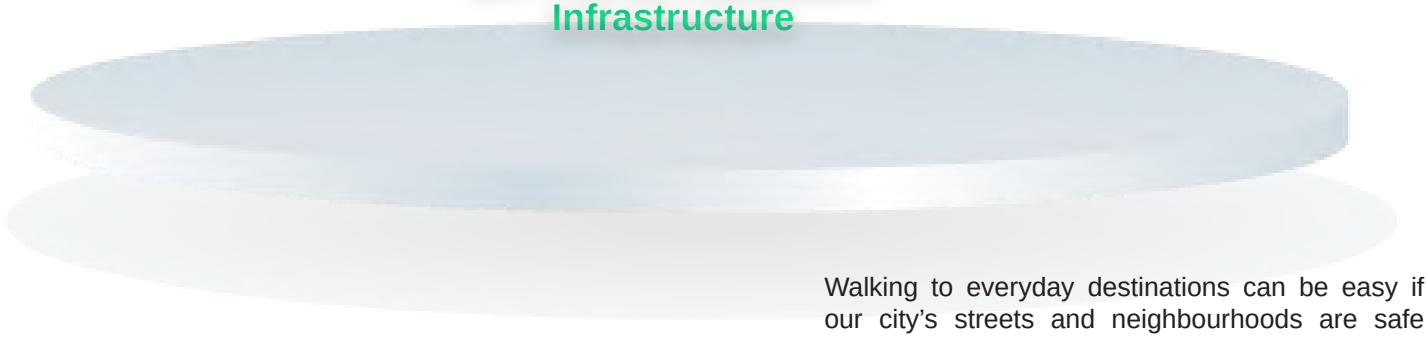
Safety and accessibility is also influenced by the prevalence of automobiles and automobile-oriented street design, which can feel threatening to vulnerable road users. Automobile-dominated spaces impact the perceived walkability and bikeability of an area, and no matter the extent of infrastructure, 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 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 curb ramps, 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.



ACCESSSIBLE 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		Actions
3A. Provide Accessible Infrastructure	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		Actions
3B. Improve Pedestrian and Cycling Safety	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		Actions
3D. Provide Well-Lit and Visible Pedestrian and Cycling Facilities	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

i

Action

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

Key Directions:

4A: Maintain the Sidewalk Network

4B: Maintain the Bikeway Network

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 apear 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 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	Propoerty 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 oweners	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 km^2 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		Actions
4A. Maintain the Sidewalk Network	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.

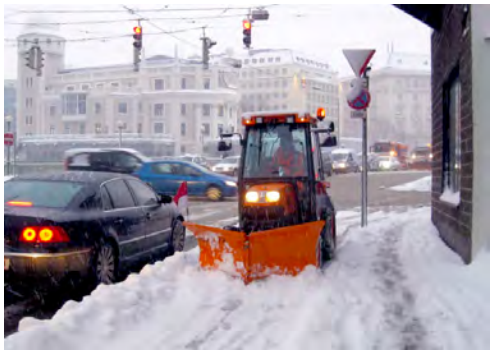
- **Design bicycle routes to facilitate snow removal.** One of the best ways to facilitate the removal of snow from bicycle routes is thoughtful roadway and bicycle facility design. Unfortunately, with roadways that include typical, unprotected bicycle lanes at the edge of the roadway, the bicycle lane 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	i	Coordinate bicycle facility maintenance with Operating Programs, refine the sweeping program, and continue to invest in annual pathway resurfacing.
	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.
	iii	Designate and prioritize a Winter Cycling Network for snow removal.
	iv	Design bicycle routes to facilitate snow removal and snow storage.
	v	Continue to develop a pedestrian and bicycle counting and monitoring program.
	vi	Maintain the asset management program for bicycle facilities and prioritize maintenance and improvements within the Downtown and along the spine network.

Strategic Direction 5 - Improve Vibrancy

Key Directions:

5A: Enhance Land Development and Site Design Tools

5B: Enhance Streetscapes and the Public Realm

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.




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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

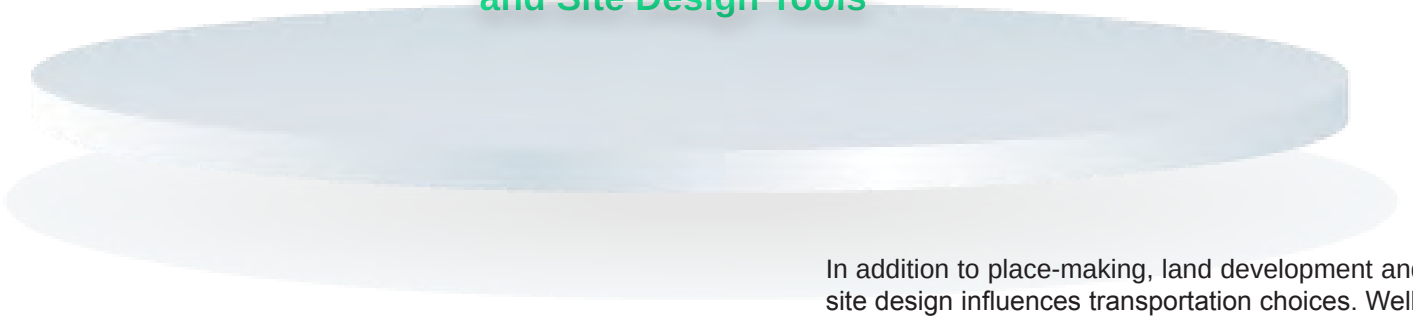
walk and cycle. This presents a unique opportunity to reinforce the City's overarching land use vision as articulated in OurWinnipeg and the CCDS. These documents seek to make more sustainable and vibrant neighbourhoods throughout Winnipeg, through more dense and clustered developments, more mixed use 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		Actions
5A. Land Development and Site Design	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.

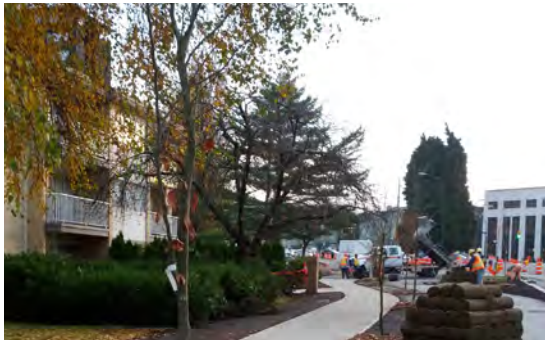
- **Accommodate cyclists to travel through and within mixed use corridors and centres,** so that cyclists can easily access and enjoy the services and amenities within areas, and effectively contribute to the local vibrancy. By ensuring that people can access mixed use corridors and centres throughout 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.



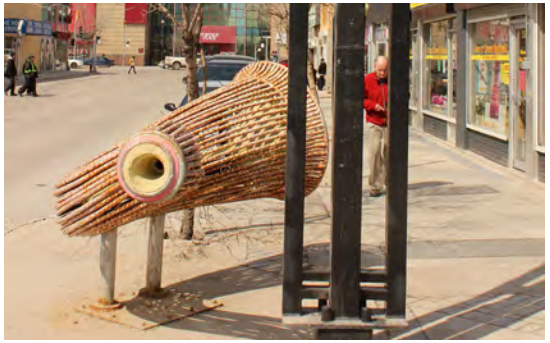
PLANTERS & STREET TREES can be placed within the public realm on planting strips, medians, and along sidewalks. Street trees can benefit an area by providing shade and rain protection, creating a safer and more interesting walking environment, and also by absorbing precipitation and producing less water 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, an 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		Actions
5B. Enhance Streetscapes and the Public Realm	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

Key Directions:

6A: Enhance Wayfinding, Signage, and Trip Planning

6B: Improve Education and Awareness

6C: Increase Marketing and Communication

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.




ROUTE
EXCEPT
CYCLISTS
ROUTE

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.

Visual Summary

Wayfinding



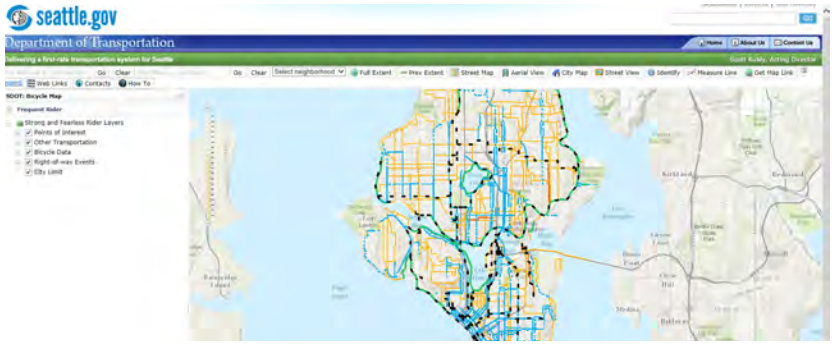
WAYFINDING GUIDELINES The City of Minneapolis has developed Pedestrian Wayfinding Sign Guidelines to provide guidance on the type of signs to use, locations of where to install, and additional wayfinding applications to use in high pedestrian activity areas. In Metro Vancouver, TransLink developed guidelines in 2013 to provide design guidance for municipalities and agencies to implement bicycle wayfinding on a consistent basis across the region.



BICYCLE ROUTE BRANDING Many cities (including Vancouver, Chicago, and Portland) have 'branded' their bicycle routes with route names or logos to create a recognizable identity for their bicycle routes. Wayfinding signs help users find the best bicycle route to their destinations, while passively marketing the network throughout the region. Bicycle wayfinding signs also visually cue motorists that they are driving along a bicycle route and should use caution.



PEDESTRIAN WAYFINDING programs can help residents and visitors better navigate through high activity areas of the community. Philadelphia's Walk!Philadephia wayfinding system organizes navigation in its five distinctive downtown districts using simple two-color branded logos. Portland's wayfinding system provides a system of free-standing, ground-mounted signage that combine location identifying text, directional signs and maps to help pedestrians navigate.



INTERACTIVE MAPPING The City of Seattle has an interactive bicycle map available online which allows users to plan their trip based on their level of comfort. Users are asked to choose if they are a frequent, average, or occasional rider, and bicycle route recommendations are provided based on the identified cycling level of comfort.

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	i	Develop Pedestrian and Cycling Wayfinding Guidelines.
	ii	Enhance and Expand Pedestrian Wayfinding Information in the Downtown as well as community and neighbourhood mixed use centres and corridors.
	iii	Continue to produce and annually update the City-Wide Cycling Map.
	iv	Develop Neighbourhood-Based Walking and Cycling Maps.


LE VIEUX
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 cyclovia 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 cyclovia.



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		Actions
6B. Improve Education and Awareness	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.

continued on the following page...

Key Direction		Actions
6B. Improve Education and Awareness	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.



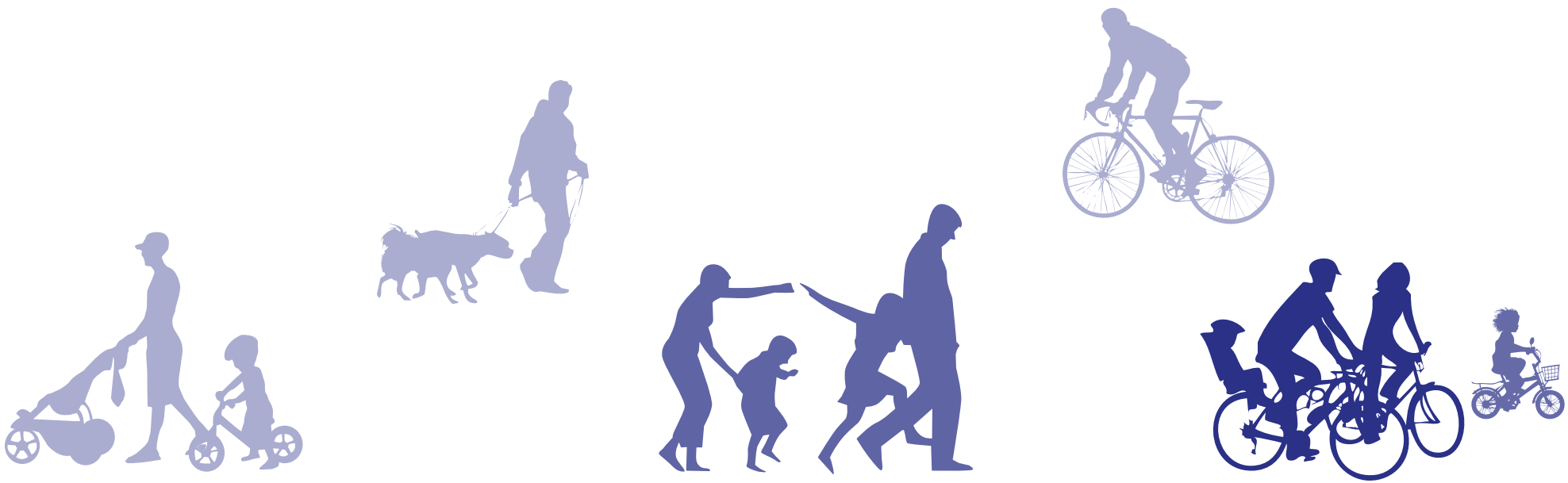
CITY OF COPENHAGEN, SHOP BY BIKE Shop by Bike aims to reduce energy used in urban goods transport by replacing unnecessary cars with bicycles. Shop by Bike offers easy possibilities to reach beyond the established population willing and able to bicycle to work/school. The majority (80%) of shopping trips 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		Actions
6C. Improve Marketing and Communications	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.



PART 5 Implementation and Monitoring

5.1 Implementation Plan

5.2 Monitoring Plan



5.1 Implementation Plan

5.1.1 Introduction

The Pedestrian and Cycling Strategies provide a framework for making walking and cycling more safe, convenient, and comfortable modes of transportation in Winnipeg. This framework includes a series of Strategic Directions, Key Directions and Actions that together provide a comprehensive package of solutions to enable walking and cycling, including engineering, programming, and education initiatives.

The Actions of the Strategies are organized under each of the six Strategic Directions. The comprehensive package of Actions is intended to guide Winnipeg's planning and capital investment decisions as well as on-going operations and maintenance activities to enable walking and cycling. In order to provide the City with clear directions and priorities, the Pedestrian and Cycling Strategies provide the City with a vision for the future of walking and cycling over the long-term. However, recognizing that the long-term vision will require significant investment, an implementation strategy is required to prioritize improvements and identify short-term, medium-term, and long-term improvements.

Based on this, this chapter presents an implementation and phasing strategy, identifying priority actions over the short-term (0 to 5 years), medium term (5 to 10 years), and long-term (10 years and beyond). In addition to the short-term initiatives, the implementation and phasing strategy also identifies a number of 'quick win' initiatives that the City should begin within the next two years.

This chapter presents an implementation strategy for the Pedestrian and Cycling Strategies, which includes guiding principles, cost estimates, priorities, and a phasing approach.





5.1.2 Implementation Principles

The implementation strategy for the Pedestrian and Cycling Strategies is based on a number of principles that the City should consider as it moves forward with implementing the Strategies.

- **The Pedestrian and Cycling Strategies are the first step, not the last step.** The Pedestrian and Cycling Strategies are the first strategies of their kind developed for Winnipeg and represent a comprehensive package of engineering, programming, and education initiatives to enable walking and cycling. However, the Strategies are intended to lay the foundation for implementing the plan over the short, medium and long-term. In that regard, the Strategies should be seen as the first step in a long-term commitment to enabling walking and cycling. Implementation of the Strategies will required sustained and dedicated financial and staff resources over the long-term.

- **The Pedestrian and Cycling Strategies is a flexible and living document that should be reviewed and updated frequently.** The Pedestrian and Cycling Strategies recommend a wide range of short-term initiatives to be implemented over the next five years. As such, the City should monitor progress implementing the Strategies on a regular basis, and should commit to reviewing and updating the Strategies every five years to update changing priorities and needs and to reflect completed projects.

- **The City should develop a yearly Pedestrian and Cycling Action Plan** to identify upcoming projects and initiatives as part of its efforts to keep the Strategies a living document on an annual basis.

- **The City should engage in Neighbourhood-Based Public Consultation to implement many recommendations of the Strategies.** Many of the initiatives in the Strategies require more detailed input and technical work, and the City should work closely with its partners and with neighbourhoods as it works to move forward with priorities in the Strategies.

- **Successful implementation of the Strategies require**

  - *Increased funding levels*
  - *Increased staff resources*
  - *Improved monitoring*
  - *Continued collaboration with stakeholders*



Many of the actions recommended in these strategies simply direct the Winnipeg public Service to begin or to continue collaborating with stakeholders. It is the entintion of the strategies that this collaboration be conducted through the existing Active Transportation Advisory Committee (ATAC).

The Active Transportation Advisory Committee (ATAC) was approved by Council on April 25, 2007. The role of the ATAC is both strategic and responsive. It advises the Director of Public Works on the strategic direction of the AT program as well as makes recommendations on unexpected issues.

The mandate of the Active Transportation Advisory Committee (ATAC) is to provide advice and recommendations on Active Transportation policies, programs, priorities, facilities and standards to the Director of Public Works; Inform the public about Active Transportation and, where possible and appropriate, provide opportunities for public input; And to provide a forum in which AT issues can be discussed among the various stakeholder groups with the intent of reaching consensus on these issues.





5.1.3 Priorities

This section groups and prioritizes each Action identified under each of the six Strategic Directions. The tables on the following pages summarize the priorities for each Action and include the following information:

- **Priorities.** Each Action is identified as either a short-term (0 to 5 years), medium term (5 to 10 years), and long-term (10 years and beyond). In addition, many Actions will be implemented an on an on-going basis, in which case they are shown under each category. It should also be noted that these priorities may change over time. If an opportunity should arise to implement an Action identified as a medium or longer-term priority in the Strategies over the short-term, such as through a redevelopment opportunity or other capital project, the City should seek to maximize these opportunities as they arise.

- **Support Guiding Goals.** Although each Action is categorized based on their corresponding Guiding Goal, many Actions can help achieve multiple goals of the Strategies. Those initiatives that help to achieve multiple goals will help the City to achieve many of its overarching goals outlined in OurWinnipeg and the Transportation Master Plan.

- **Opinions of Cost.** The implementation strategy includes order-of-magnitude cost estimates for each Action based on typical unit costs and recent pricing in Winnipeg. Cost estimates have been provided to identify the relative cost for planning purposes, but should not be used for budgeting purposes. Wherever possible, the City should work with other agencies and levels of governments to establish cost sharing agreements or to seek grant opportunities in order to off-set total project costs. Estimates are provided both for capital costs and for annual operating costs.

- **Primary Responsibility.** This implementation strategy outlines the primary and secondary responsibility of each of the key strategies in the Pedestrian and Cycling Strategies. Many of the Actions of the plan are the primary responsibility of the City (including Property, Planning & Development, Public Works, Winnipeg Transit and other departments), while others are the primary responsibility of other agencies or organizations, such as Manitoba Infrastructure and Transportation, Manitoba Public Insurance, the Capital Region, Winnipeg School Divisions, or the private sector.

The tables on the following pages summarize each of these four criterion for each identified Action in the Pedestrian and Cycling Strategies.

Directions		Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
			Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
Strategic Direction 1: Improve Connectivity																
1A	**Expand and Enhance the Pedestrian Network**	i. Update sidewalk requirements for new developments in consultation with relevant stakeholders.	✓			✓									Public Works	PP&D
		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.	✓	✓	✓	✓							$5M		Public Works	PP&D, Winnipeg Transit, External Stakeholders
		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.	✓	✓	✓	✓	✓	✓					$30M		Public Works	PP&D
		iv. Develop a sidewalk improvement program to widen sidewalks that do not meet the minimum standards. Ensure all sidewalk meet the City's minimum width standards.	✓				✓	✓					$35M		Public Works	
		v. Provide wider sidewalks where feasible in areas of high pedestrian activity, including the downtown; regional, community and neighbourhood mixed use centres and corridors.		✓				✓							Public Works	
		vi. Seek strategic opportunities to implement new sidewalks through partnerships, other capital projects and programs and development opportunities on non-regional roads.	✓	✓	✓				✓						Public Works	PP&D
		vii. Develop a process to identify priorities for sidewalk implementation based on walking potential, equity, connectivity, comfort and cost.	✓				✓	✓		✓					Public Works	

Directions	Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
		Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
1B Expand & Enhance the Bicycle Network	i. Develop a complete, connected, and dense bicycle network throughout the City.	✓	✓	✓	✓							$125M	$1.4M	Public Works	PP&D, Winnipeg Transit
	ii. Develop a Downtown separated bicycle lane network.	✓	✓	✓	✓		✓					$7M	$100K	Public Works	
	iii. Develop a spine network to provide high quality connections to Downtown from each area of the City.	✓	✓		✓		✓					$4M	$100K	Public Works	
	iv. Develop local bicycle networks for each neighbourhood that connect to the spine network and to the Downtown.	✓	✓	✓	✓		✓					$25M	$200K	Public Works	PP&D
	v. Identify and prioritize gaps within the bicycle network.	✓				✓			✓					Public Works	
	vi. Continue to expand the off-street pathway network.	✓	✓	✓	✓		✓					$50M	$1M	Public Works	PP&D
	vii. Support the extension of the City's bicycle network to surrounding communities.		✓	✓	✓									External Stakeholders	Public Works
	viii. Develop and implement bicycle facility design guidelines that include a bicycle facility selection tool based on traffic speed and volumes.	✓					✓							Public Works	
	ix. Update the Transportation Standards Manual to incorporate bicycle facilities.	✓						✓						Public Works	
	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 .	✓	✓	✓	✓			✓				$50M		Public Works	
	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.	✓	✓	✓	✓		✓							PP&D	Public Works
	xii. Continue to provide, where appropriate and where suitable opportunities exist, bicycle infrastructure in conjunction with transit infrastructure such as rapid transit corridors.	✓	✓	✓	✓	✓								Winnipeg Transit	Public Works
	xiii. Design new neighbourhoods to include bicycle routes that are well integrated with the existing bicycle network.	✓	✓	✓	✓									Public Works, PP&D	
	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.	✓	✓				✓		✓			$26M	$100K	Public Works	PP&D, External Stakeholders
	xv. Maintain the asset management program for bicycle facilities and prioritize maintenance and improvements within the Downtown and along the spine network.	✓	✓	✓				✓					$25K	Public Works	
	xvi. Develop a process to identify priorities for bicycle network implementation/improvements based on cycling potential, equity, connectivity, comfort, and cost.	✓							✓					Public Works	

Directions	Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
		Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
1C Address Barriers	i. Improve existing grade separated crossings over major roads, rivers, and rail.	✓	✓	✓	✓									Public Works, External Stakeholders	PP&D, External Stakeholders
	ii. Develop new pedestrian and cycling grade separated crossings of rivers, rail, and major road corridors.		✓	✓	✓							$100M	$500K	Public Works	PP&D, External Stakeholders, Winnipeg Transit
Strategic Direction 2: Improve Convenience															
2A Provide Bicycle Parking and End-of-Trip Facilities	i. Demonstrate leadership in provding short-term bicycle parking for visitors to the City of Winnipeg facilities and secure long-term parking and end-of-trip facilities (showers, change rooms, etc) for employees at municipal buildings.		✓		✓	✓	✓						$50K	Winnipeg Transit, Public Works, PP&D	
	ii. Update the Downtown Zoning Bylaw to require bicycle parking in new developments.	✓			✓	✓	✓							PP&D	Public Works
	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.	✓			✓	✓	✓							PP&D	Public Works
	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.	✓			✓	✓	✓							Public Works	
	v. Continue to expand partnerships with BIZes and individual businesses to implement short-term bicycle parking in the public right-of-way.	✓	✓		✓	✓			✓			$200K		Public Works	Private Sector
	vi. Develop a program to support businesses in existing development to add retrofit existing buildings to provide bicycle parking.		✓		✓	✓						$50K		Public Works	PP&D, Private Sector
	vii. Require that all event coordinators provide adequate temporary bicycle parking to serve corporate-sponsored and large community events.		✓		✓	✓								Public Works	PP&D
	viii. Continue to work with BIZ groups and individual business to expand the bicycle corral program.	✓			✓	✓	✓					$10K		Public Works	PP&D, Private Sector, BIZ Associations
	ix. Facilitate development of publicly-available full-serve bicycle parking stations in downtown and other areas of high cycling activity.		✓		✓	✓	✓							Public Works	
	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.	✓	✓	✓	✓	✓	✓							Public Works	
	xi. Work with community groups or bicycle shops to create a program to store, repair, and redistribute abandoned bicycles.		✓		✓	✓	✓							Public Works	
	xii. Work with partners to provide amenities such as public bicycle pumps, bicycle maintenance stations, and bicycle parks		✓		✓	✓	✓							Public Works	
	xiii. Continue to support Winnipeg's community bike shop network	✓	✓	✓	✓	✓	✓							Public Works	

Directions	Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
		Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
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 shelter where conditions meet Transit's established criteria.	✓	✓	✓	✓	✓								Winnipeg Transit	Public Works
	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.	✓			✓	✓								Public Works, Winnipeg Transit	
	iii. PWD will supply Transit with information such as bicycle routes, bicycle parking, walking paths, key destinations within five-minute walking distance, wayfinding information, etc.. PWD 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.	✓	✓	✓	✓	✓								Public Works	
	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.	✓	✓	✓	✓	✓								Public Works	
	v. Continue to look for opportunities to maximize connectivity between the pedestrian and bicycle networks and transit network.	✓	✓	✓	✓	✓	✓							Public Works, Winnipeg Transit	
	vi. Continue to work towards a universally accessible transit system.	✓	✓	✓		✓								Winnipeg Transit	PP&D
	vii. Conduct a Bike Share Feasibility Study		✓				✓					$100K		Public Works	PP&D

Directions	Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
		Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
Strategic Direction 3: Improve Safety & Accessbility															
3A Provide Accessible Infrastructure	i. Continue to provide accessible curb ramps with trunicated dome detectable warning surfaces at intersection locations within City Standards.	✓	✓	✓		✓	✓							Public Works	PP&D
	ii. Continue the current plan to upgrade all existing traffic signals with APS by 2023.	✓	✓			✓	✓							Public Works	
	iii. Continue to add pedestrian countdown timers at all traffic signals.	✓	✓	✓		✓	✓							Public Works	PP&D
	iv. Increase connectivity to adjacent pedestrian infrastructure for transit stops	✓	✓			✓	✓							Public Works	PP&D, Winnipeg Transit
	v. Ensure 100% of all bus stops are accessible.	✓	✓			✓	✓							Public Works	Winnipeg Transit
	vi. Continue to upgrade existing infrastructure to meet Universal Design Standards	✓	✓	✓		✓	✓							Public Works	PP&D
	vii. Review pedestrian crossing times in areas with high concentrations of children, seniors, and people with disabilities.	✓	✓			✓	✓							Public Works	PP&D
	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.	✓	✓	✓		✓	✓							Public Works	PP&D
3B Improve Pedestrian and Cyclist Safety	i. Conduct a pedestrian and cycling safety study to identify pedestrian and bicycle collision hotspot, identify where, when, why and with whom collisions involving pedestrians and cyclists are occurring, and to monitor collision trends over time.	✓					✓							Public Works	
	ii. Conduct road safety audits on existing facilities with identified safety issues at strategic locations and for major capital projects	✓	✓				✓					$50K		Public Works	
	iii. Continue to support research programs to improve pedestrian and cyclist safety innovations.	✓	✓	✓			✓					$50K		Public Works	
	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.														

Directions	Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
		Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
3C Provide Pedestrian and Cycling Crossing Treatments	i. Maintain the inventory of all pedestrian crossing locations.	✓	✓	✓			✓	✓						Public Works	
	ii. Identify additional pedestrian crossing control locations where warranted.	✓					✓	✓						Public Works	
	iii. Implement pedestrian crossing control in accordance with guidelines approved by Standing Policy Committee in January 2013.	✓					✓	✓						Public Works	
	iv. Provide bike box treatments at intersections with high cycling activity and high collisions. Create a warranting process.	✓	✓				✓							Public Works	
	v. Provide bicycle activated traffic signals on neighbourhood greenway where they intersect arterial street intersections.	✓	✓				✓							Public Works	
	vi. Continue to provide bicycle activated pushbuttons or detection at all traffic signals where required.	✓	✓	✓			✓							Public Works	
3D Provide Well Lit and Visible Pedestrian and Cycling Facilities	i. Improve visibility of underpasses with lighting and/or open design concepts.		✓			✓	✓							Public Works	
	ii. Provide illumination along sidewalks and bicycle routes and pathways where deemed appropriate.	✓	✓			✓	✓					$200K	$50K	Public Works	
	iii. Continue to follow standards to ensure CPTED principles are followed in pedestrian and bicycle facility design.	✓	✓	✓										Public Works	PP&D
3E Develop Safe Routes to School	i. Support and facilitate the development of Active and Safe Routes to School plans and provide appropriate infrastructure and operational improvements.	✓	✓				✓					$150K		Public Works	External Stakeholders, PP&D
Strategic Direction 4: Improve Maintenance															
4A Maintain the Pedestrian Network	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.	✓	✓	✓				✓						Public Works	
	ii. Develop a pedestrian facility maintenance categorization system.	✓						✓						Public Works	
	iii. Refine the asset management program for sidewalks and prioritize improvements for areas around schools, seniors centres, hospitals and other key destinations.	✓	✓					✓						Public Works	
	iv. Develop a separate snow clearing priority system for sidewalks to achieve a higher level of service for sidewalk clearing.	✓						✓						Public Works	
	v. Develop a strategy to snow clear residential sidewalks within 24 hours.	✓						✓						Public Works	
	vi. Refine the priority network of off-street pathways for snow removal.	✓						✓						Public Works	
	vii. Develop and encourage support programs to encourage resident sidewalk snow removal on residential streets.	✓						✓						Public Works	

Directions	Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
		Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
4B Maintain the Bikeway Network	i. Coordinate bicycle facility maintenance with Operating Programs, refine the sweeping program, and continue to invest in annual pathway resurfacing.	✓	✓			✓	✓	✓					$1M	Public Works	
	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.	✓						✓						Public Works	
	iii. Designate and prioritize a Winter Cycling Network for snow removal.	✓				✓		✓					$500K	Public Works	
	iv. Design bicycle routes to facilitate snow removal and snow storage.	✓	✓	✓				✓						Public Works	
	v. Continue to develop a pedestrian and bicycle counting and monitoring program.	✓	✓	✓		✓	✓						$20K	Public Works	
	vi. Maintain the asset management program for bicycle facilities and prioritize maintenance and improvements within the Downtown and along the spine network.	✓	✓	✓				✓						Public Works	
Strategic Direction 5: Improve Vibrancy															
5A Land Development and Site Design	i. Improve interdepartmental efficiency in identifying pedestrian and cycling requirements for development agreements	✓			✓	✓								PP&D, Public Works	
	ii. Work with the development industry and other stakeholders to support the practical implication of walkable and cyclable communities.	✓			✓	✓					✓			Public Works	
	iii. Develop a checklist with provide land development guidance regarding bicycle and pedestrian network design, and pedestrian, bicycle and transit supportive site planning.	✓			✓	✓					✓			Public Works	Winnipeg Transit
	iv. Incorporate minimum pedestrian, bicycle and transit network requirements into the Plan Approval Process.	✓									✓			Public Works	
	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.	✓	✓	✓	✓	✓								Public Works	PP&D
	vi. Continue to support downtown development by upgrading sidewalks where required as redevelopment occurs.	✓	✓	✓	✓	✓								Public Works	PP&D

Directions	Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
		Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
5A Land Development and Site Design	vii. Ensure site design in redevelopment sites to enhance pedestrian and bicycle connectivity within mixed use centres and corridors.	✓			✓	✓								PP&D, Public Works	Private Sector
	viii. Ensure that the bicycle network and sidewalk network provide connections to all Mixed Use Centres and Corridors	✓			✓	✓								Public Works	
	ix. Upon completion, new subdivisions should have a collector road network that strives to place all residents and employees within 400 metres of a bus stop.	✓	✓	✓	✓	✓								Public Works	PP&D, Winnipeg Transit
	x. Ensure that an internal street and pathway network within the development site together provide an acceptable level of pedestrian and cycling connectivity.	✓	✓	✓	✓	✓								Public Works	PP&D
	xi. Achieve pedestrian and cycling connections from new development site to surrounding existing and anticipated networks.	✓	✓	✓	✓	✓								Public Works	PP&D
	xii. Develop flexible parking standards to reduce motor vehicle parking requirements if pedestrian and bicycle facility requirements are met or exceeded.	✓	✓		✓	✓								Public Works	
	xiii. Work with developers at the time of development to accommodate transit supportive neighbourhood design, and to place all residents and employees within 400 metres walk of a bus stop.	✓	✓	✓	✓	✓								Public Works	PP&D, Winnipeg Transit
	xiv. Work with transit at the time of new development to enhance transit service to meet demand.														
5B Enhance Streetscapes and the Public Realm	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.	✓	✓	✓	✓	✓								Public Works	PP&D
	ii. Ensure the bicycle network provides access to mixed use corridors and centres.	✓	✓	✓	✓	✓								PP&D, Public Works	
	iii. Ensure bicycle parking is provided in the public right-of-way at destinations in mixed use centres and corridors	✓	✓	✓	✓									PP&D, Public Works	


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Directions	Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
		Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
Strategic Direction 6: Increase Awareness															
6A Enhanced Wayfinding, Signage and Trip Planning	i. Develop Pedestrian and Cycling Wayfinding Guidelines.	✓				✓	✓							Public Works	
	ii. Enhance and Expand Pedestrian Wayfinding Information in the Downtown as well as community and neighbourhood mixed use centres and corridors.	✓	✓	✓	✓	✓	✓					$300K		PP&D	Public Works, BIZ Associations
	iii. Continue to produce and annually update the City-Wide Cycling Map.	✓	✓	✓		✓	✓					$50K		Public Works	
	iv. Develop Neighbourhood-Based Walking and Cycling Maps.	✓	✓	✓		✓	✓					$50K		Public Works	PP&D
6B Improve Education and Awareness	i. Make bicycle and pedestrian trip planning information widely accessible through an interactive trip planning tool and mobile application.		✓		✓	✓								Public Works	
	ii. Support and encourage targeted community outreach programs for vulnerable populations.	✓	✓	✓			✓				✓	$10K		PP&D	Public Works, External Stakeholders, Residential Association
	iii. Continue to support Active and Safe Routes to School programming.	✓	✓	✓		✓	✓					$50K		Public Works	PP&D, External Stakeholders
	iv. Support providing bicycle education and skills training for students in elementary, middle, and high school	✓	✓	✓	✓	✓	✓							Public Works	
	v. Support the development of Bicycle-Friendly Business Districts.	✓	✓	✓	✓							$10K		Public Works	BIZ Associations, Private Sector, PP&D
	vi. Support the development of a bicycle tourism initiative.	✓	✓	✓					✓	✓		$10K		External Stakeholders	PP&D
	vii. Work with partners to develop and deliver information materials outlining the benefits of walking and cycling.	✓	✓	✓						✓	✓	$10K		PP&D, Public Works	Business Associations, External Stakeholders/ Community Groups (ie. Bke Winnipeg, Green Action Centre)
	viii. Support the development of a road safety awareness campaign for all road users.	✓					✓					$50K		Public Works, External Stakeholders	External Stakeholders
	ix. Work with partners to develop an education campaign targeted towards motorists.	✓					✓							Public Works, External Stakeholders	
	x. Work with the Province and Manitoba Public Insurance to include information about cycling as part of driver education and included in driver's license test.	✓				✓	✓							Public Works, External Stakeholders	
	xi. Support the provision of adult education and cycling skills training throughout the City year-round.	✓	✓	✓		✓	✓							Public Works	

Directions	Action	Timeframe			Support Guiding Goals							Opinions of Cost ($2014)		Primary Responsibility	Secondary Responsibility
		Short	Medium	Long	1	2	3	4	5	6	7	Capital	Annual Operating		
6B Improve Education and Awareness	xii. Continue to support and advertise special events and programs to promote walking and cycling.	✓	✓	✓		✓	✓							Public Works	
	xiii. Support events that encourage on-going neighbourhood-level walking and cycling.	✓	✓	✓		✓	✓							Public Works	
	xiv. Integrate walking and cycling information into existing resources.	✓	✓	✓		✓	✓							Public Works	
	xv. Support the development of a Bicycle Tri-it Library.		✓				✓					$50K		Public Works	PP&D
6C Increase Marketing and Communication	i. Develop a comprehensive branding strategy and visual identity for all walking and cycling related communications from the City of Winnipeg.	✓	✓	✓		✓	✓					$10K		PP&D, Public Works	
	ii. Work with vulnerable groups and find out what their key issues are in order to better communicate with them.	✓	✓	✓		✓	✓				✓	$50K		PP&D, Public Works	Public Works, External Stakeholders/ Community Groups
	iii. Develop a campaign using positive messaging to promote walking and cycling.	✓	✓	✓		✓	✓			✓		$50K		Public Works, PP&D	External Stakeholders
	iv. Develop and provide community based travel marketing programs to encourage people to walk, cycle and use transit	✓	✓	✓		✓	✓							Pubilc Works	External Stakeholders

5.1.4 Network Prioritization

The Pedestrian and Cycling Strategies include a network of recommended pedestrian and bicycle facilities over the long-term. The implementation priorities identified in the previous section identify developing a complete, connected and dense bicycle network and eliminating gaps in the sidewalk network as on-going priorities. This section provides the City with a prioritization process to identify priorities to improve the pedestrian and cycling network over the short-term (0 to 5 years), medium-term (5 to 10 years), and long-term (10 years and beyond).

An objective, systematic, GIS-based prioritization methodology was developed for the Pedestrian and Cycling Strategies. The prioritization methodology incorporates the guiding principles identified earlier in this report and includes a Multiple Account Evaluation (MAE) that assesses each pedestrian and bicycle facility on each individual criterion. The MAE methodology includes eight criteria:

1. Network Connectivity
2. Generators
3. Access to Transit
4. Level of Protection
5. Walking & Cycling Potential
6. Equity
7. Safety
8. Network Spine

Each criterion contains scoreable information about a facility's ability to address an existing or future need in the City of Winnipeg. Each criterion was scored on a five-point scale, and the results were combined to generate an overall score for each new or upgraded pedestrian and cycling facility in the City. By combining these scores into an aggregated, a ranked project list can be developed that reflects each project's relative priority level for implementation. The results of the analysis are not intended to be cast-in-stone, but rather to provide a flexible tool to assist the City in its on-going decision making. Each of the criteria are described in further detail below:

Network Connectivity

This criterion measures the degree to which the proposed improvement addresses gap in the sidewalk or bicycle network. This assessment was based on the Gap Analysis that was completed for this study, and is based on the identification of Area Gaps and Spot Gaps. This criterion included two separate analysis. An Area Gap Analysis was conducted to identify areas beyond a 200 metre buffer from an existing facility in the downtown core, and beyond a 400 meter buffer outside of the downtown area. The Area Gap score was generated by calculating the percentage of the proposed facility that was located within the area gap buffer. The Spot Gap Analysis was conducting by assigning cumulative scores for each type of Spot Gap. The scoring for Network Connectivity is shown below:

Area Gap	2 points
Network Gap	3 points
Quality Gap	2 points
Crossing Gap	1 point

Generators

This criterion measures the number of pedestrian and cycling generators in close proximity to the proposed pedestrian or bicycle facility. Improvements with a greater number of generators are likely to generate a higher demand for walking and cycling. Pedestrian and cycling generators included the Downtown, Regional Mixed Use Centres and Corridors identified in OurWinnipeg, as well as schools and parks. The Generators score was determined by calculating the percentage of the proposed facility that was located within each buffer area. The scoring for Generators is shown below:

Within the Downtown Area	5 points
Within 500m of Multi-Use Centre	4 points
Within a Multi-Use Corridor	3 points
Within 500m of Multi-Use Corridor	2 points
Within 500m of a School or Park	1 point

Access to Transit

Every transit trip begins or ends by foot of on a bicycle. One of the key directions of the Pedestrian and Cycling Strategies was improved access to transit. This criterion measures the degree to which the proposed improvement improves access to transit facilities. Improvements that were within close proximity of high activity bus stops received the highest scores. This analysis was based on daily transit boardings and alightings as shown in **Map 5.1**.

- High volume bus stop = > 1000 total daily boarding and alightings
- Moderate volume stop = 500 – 1000 total daily boarding and alightings
- Low volume stop = <= 500 total daily boardings and alightings

The Access to Transit score was determined by calculating the percentage of the proposed facility that was located within each buffer area. The scoring for Access to Transit is shown below:

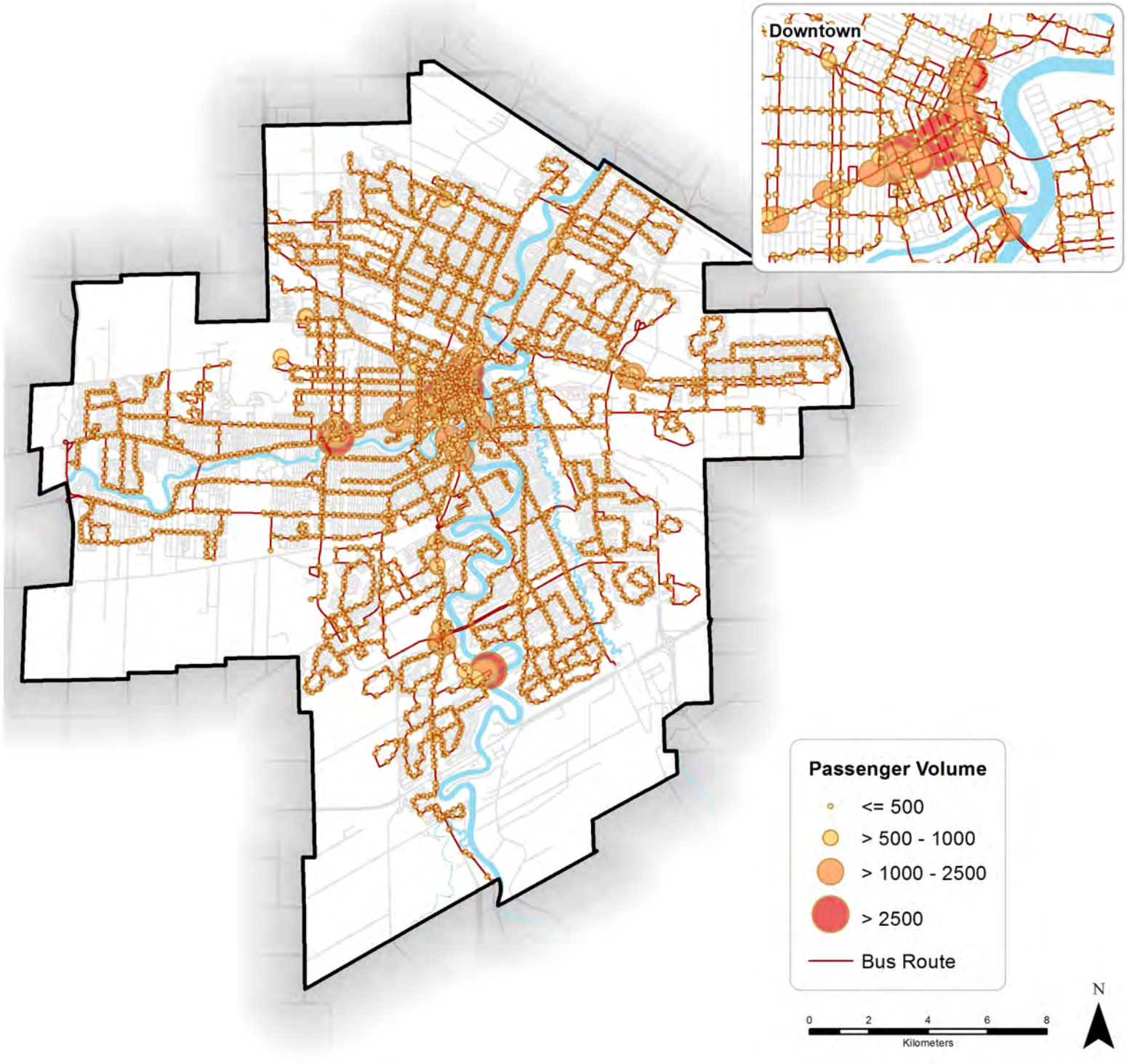
Within 500 metres of high volume bus stop	5 points
Within 500 metres of moderate volume bus stop	4 points
Within 500-1,000 metres of high volume bus stop	3 points
Within 500-1,000 metres of moderate volume bus stop	2 points
Within 500 metres of low volume bus stop	1 point

Level of Protection

The Pedestrian and Cycling Strategies focus on developing pedestrian and cycling networks that are comfortable for people of all ages and abilities. Facilities that provide a greater level of protection for pedestrian and cyclists were assigned the highest scores. The scoring for Level of Protection is shown below:

Separated bicycle lane & Bicycle-only pathway	5 points
Off-street pathway	4 points
Buffered bicycle lane & Sidewalk	3 points
Neighbourhood greenway	2 points
Painted bicycle lane	1 point

Map 5.1:
Access to Transit



Walking & Cycling Potential

The Pedestrian and Cycling Strategies focus on strategic investment areas in areas of highest potential. This criterion assesses the greatest potential to increase walking or cycling based on land use patterns, population density, and transportation infrastructure. The scoring for Walking & Cycling Potential is shown below:

Located in Highest Potential Cycle Zone	5 points
Located in Higher-Moderate Potential Cycle Zone	4 points
Located in Moderate Potential Cycle Zone	3 points
Located in Moderate-Lower Potential Cycle Zone	2 points
Located in Lowest Potential Cycle Zone	1 point

Equity

The Pedestrian and Cycling Strategies also focus on strategic investment areas in areas with traditionally underserved populations. This criterion assesses the greatest potential to improve access to traditionally underserved populations. The scoring for Equity is shown below:

Located in Highest Equity Zone	5 points
Located in Higher-Moderate Equity Zone	4 points
Located in Moderate Potential Equity Zone	3 points
Located in Moderate-Lower Potential Equity Zone	2 points
Located in Lowest Potential Equity Zone	1 point

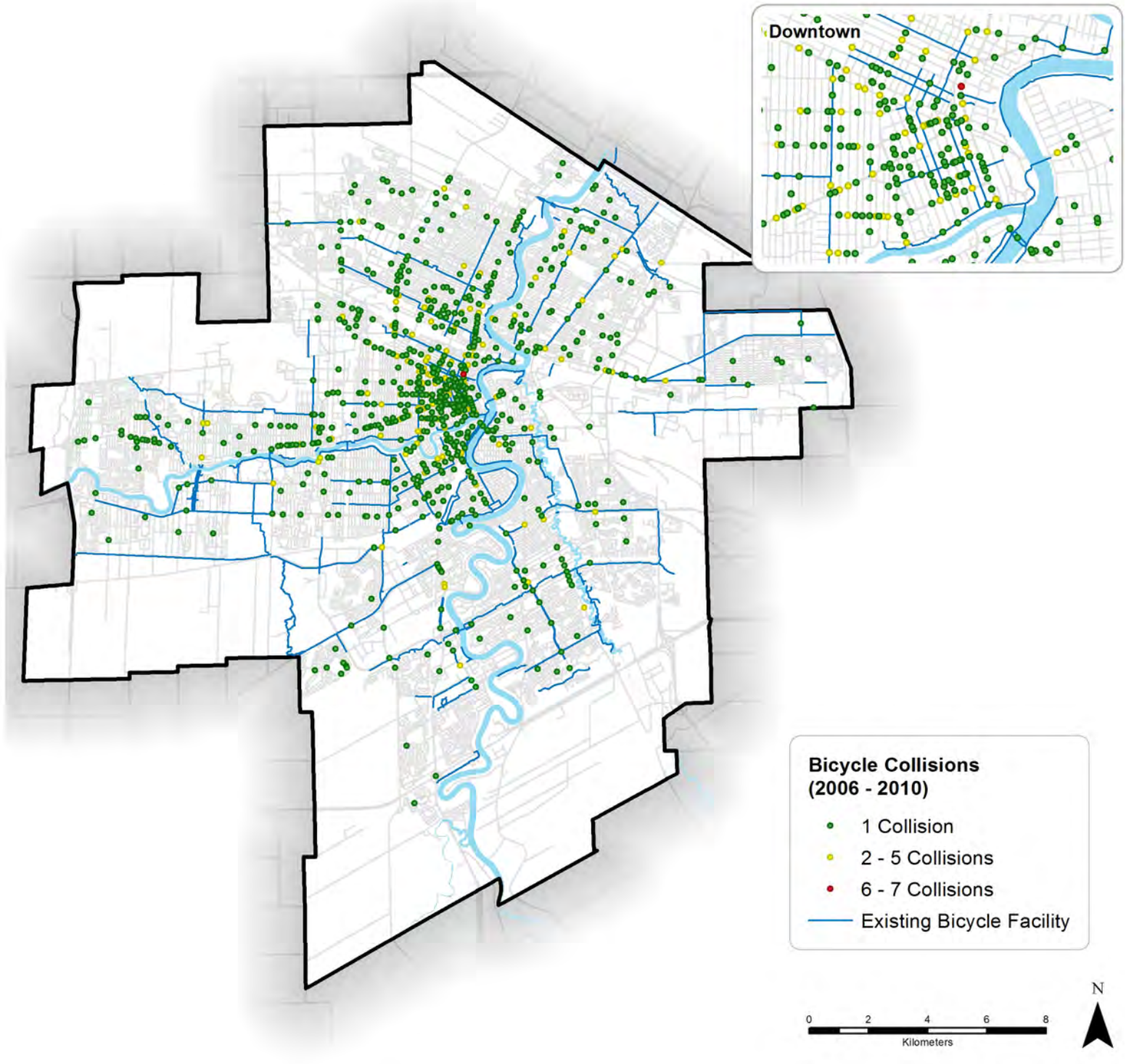
Safety

Safety is a key deterrent to walking or cycling. This criterion assesses the relative safety benefits of the proposed improvement. This analysis was based on reported collision data, and counted all reported pedestrian and cycling collisions along a segment over a five-year period. Total reported bicycle collisions between 2006 and 2010 are shown in **Map 5.2** .

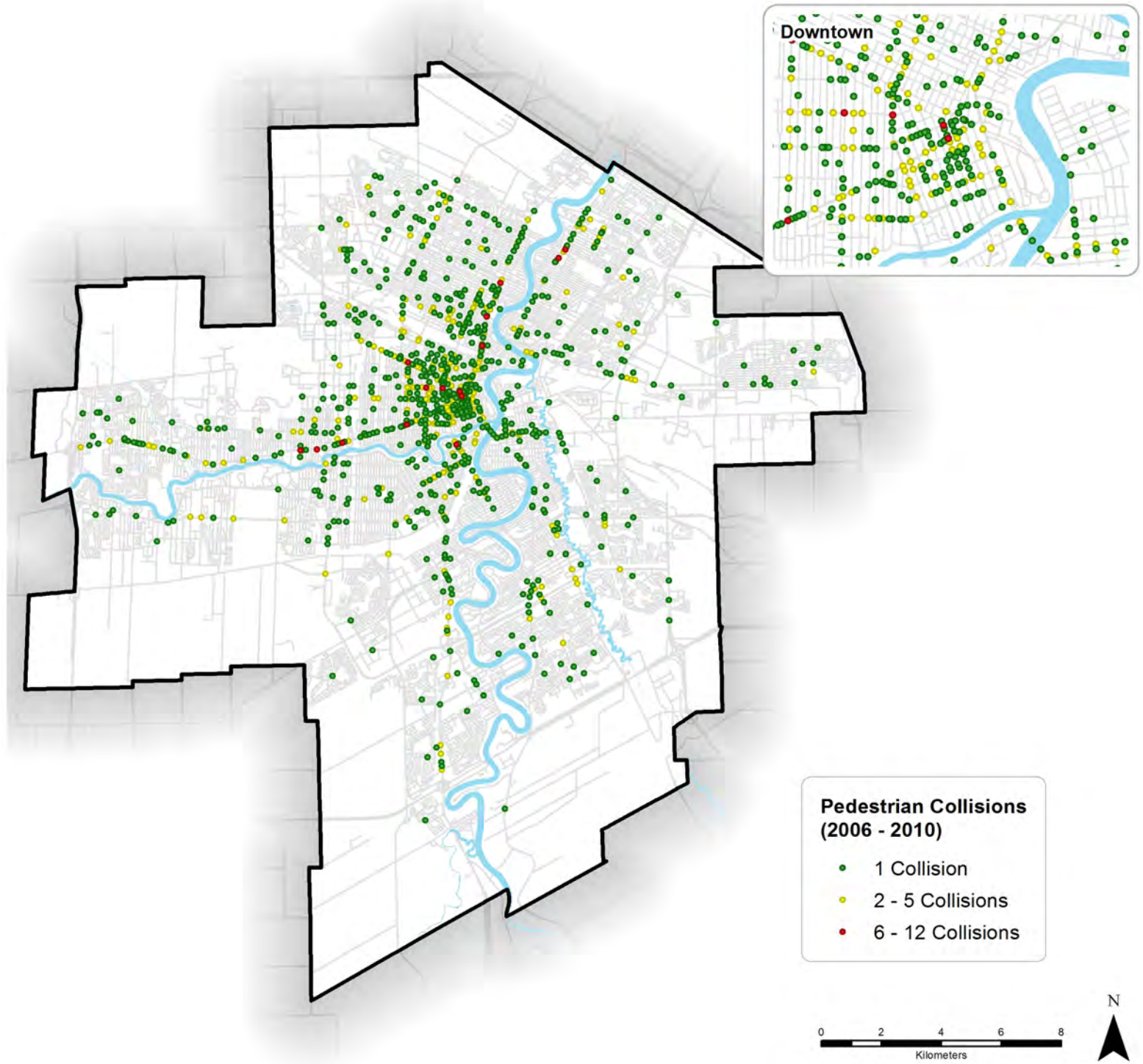
The scoring for Safety is shown below:

Highest cycling / pedestrian collisions (>8)	5 points
Highest-moderate cycling / pedestrian collisions (7 or 8)	4 points
Moderate cycling / pedestrian collisions (5 or 6)	3 points
Moderate-low cycling / pedestrian collisions (3 or 4)	2 points
Lowest cycling / pedestrian collisions (1 or 2)	1 point

Map 5.2:
Reported Bicycle Collisions Between 2006 and 2010



Map 5.3:
Reported Pedestrian Collisions Between 2006 and 2010



Network Spine

The pedestrian and cycling networks includes a spine network to provide high quality connections from various parts of the City to the downtown. The scoring for Network Spine is shown below:

Part of Spine Network	5 points
Part of Local Network	1 point

Summary

Based on the methodology described above, each potential improvement could result in a score ranging from 5 to 40, as shown below.

Criterion	Possible Score
Network Connectivity	1 - 5
Generators	1 - 5
Access to Transit	1 - 5
Level of Protection	1 - 5
Walking & Cycling Potential	1 - 5
Equity	1 - 5
Safety	1 - 5
Spine	1 - 5
Total Combined Score	**5 - 40**

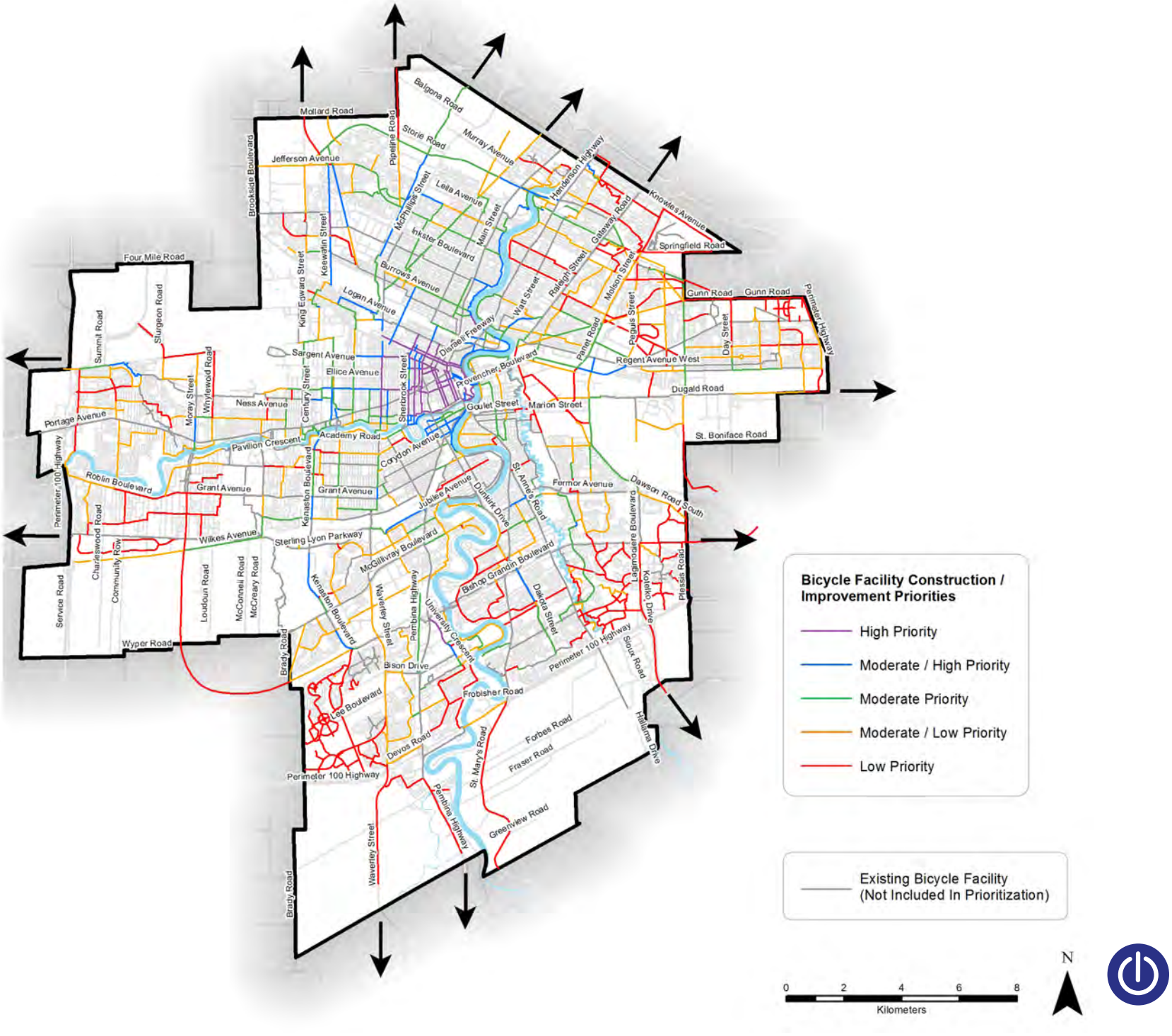
Results

The results of the bicycle network prioritization are shown in **Map 5.4**. This MAE priorization can help the City to identify short, medium, and long-term priorities based on an objective and systematic methodology. This can also be used to help identify overall priorities throughout the City, as well as relative priorities within each quadrant of the City to ensure geographic distribution of improvements throughout the City. The analysis is intended to be a flexible tool, and the results should be used as an input to help the City's decision-making based on consultation with the public as well as local priorities and needs at the time. The overall bicycle network priorities throughout the City and within each quadrant of the City are shown in **Table 5.1.**

Table 5.1:
Overall Bicycle Network Priorities

	City-Wide	Northeast Quadrant	Northwest Quadrant	Southeast Quadrant	Southwest Quadrant
Highest Priority *(km)*	32.1	5.8	25.2	0.0	1.2
Moderate-High Priority *(km)*	64.0	20.2	34.6	3.2	6.0
Moderate Priority *(km)*	136.3	48.3	50.2	16.7	21.1
Moderate-Low Priority *(km)*	226.4	80.7	47.6	30.5	67.6
Lowest Priority *(km)*	240.5	70.5	22.9	68.6	78.6
TOTAL *(km)*	699.4	225.5	180.4	119.0	174.5
TOTAL *(proportion of network)*	100.0%	32.2%	25.8%	17.0%	24.9%

Map 5.4:
Bicycle Network Priorities



5.1.5 Quick Wins

The Implementation Plan identifies a number of high priority actions and network improvements to be undertaken over the short-term. In addition to these short-term actions identified in the implementation tables and bicycle network priorities that are identified over the next five years, the City should focus on a number of "quick wins" to move forward with implementing the Strategies immediately and to build momentum. Quick wins that the City should prioritized over the next one-two years, include:

Improve Connectivity

- Update the City's **sidewalk requirements** for new developments (Action 1.A.i)
- Eliminate high priority **gaps in the sidewalk network** (Action 1.A.ii)
- Develop a **sidewalk infill program** in the capital budget (Action 1.A.iii)
- Develop a complete, connected and dense **bicycle network** throughout the City focusing on identified network priorities (Action 1.B.i)
- Develop a **downtown separated bicycle lane network**, including conducting a detailed study of the Downtown separated bicycle lane network (Action 1.B.ii)
- Develop a **spine network** to provide high quality connections to downtown (Action 1.B.iii)
- Develop and implement **bicycle facility design guidelines** (Action 1.B.viii)
- Update the **Transportation Standards Manual** (Action 1.B.ix)
- Improve high priority **existing grade separated crossings** (Action 1C.i)
- Develop **new high priority pedestrian and cycling separated crossings** (Action 1C.ii)

Improve Convenience

- Update the Downtown Bylaw and City-Wide Zoning Bylaw to **require bicycle parking and end-of-trip facilities** (Actions 2.A.ii and .iii)
- Continue to work with BIZ groups and individual businesses to **expand the bicycle corral program** (Action 2.A.viii)
- Investigate the feasibility of expanding the **bicycle rack on bus program** (Action 2.B.ii)
- Provide **bicycle parking at rapid transit stations**, park-and-rides, and high activity transit stops (Action 2.B.iv)

Improve Maintenance

- Develop a separate **snow clearing priority system for sidewalks** (Action 3.A.iv)
- Refine the **priority network for off-street pathways** for snow removal (Action 3.A.vi)
- Designate and **prioritize a Winter Cycling Network** for snow removal (Action 3.B.iii)

Improve Vibrancy

- Develop a **checklist** to provide land development guidance (Action 4.A.iii)
- Ensure **site design in redevelopment sites** to enhance pedestrian and bicycle connectivity within mixed use centres and corridors (Action 4.A.vii)

Improve Safety and Accessibility

- **Upgrade all traffic signals** (Action 5A.ii)
- Continue to **add pedestrian countdown timers** at all intersections (Action 5A.ii)
- Continue to upgrade existing infrastructure to meet **Universal Design Standards** (Action 5A.vi)
- Conduct a **Pedestrian and Cycling Safety Study** (Action 5B.i)
- Conduct **road safety audits** (Action 5B.ii)
- Support the development of **Active and Safe Routes to School Plans** (Action 5E.i)

Increase Awareness

- Continue to produce and annually update the **City-wide cycling map and neighbourhood based maps** (Actions 6A.iii and .iv)
- Support and encourage **targeted community outreach programs for vulnerable populations** (Action 6.B.ii)
- Support the development of a **road safety awareness campaign** for all road users (Action 6.B.viii)
- Develop a **campaign using positive messaging to promote walking and cycling** (Action 6.C.iii)

5.1.6 Cost Estimates

The previous section identified the estimated Capital and Annual Operating costs for each Action. When grouped together, the full cost to implement the Pedestrian and Cycling Strategies is estimated to be approximately $334 million over the long-term. In addition the Pedestrian and Cycling Strategies are estimated to require approximately $3.7 million in Annual Operating Costs. A summary of the estimated Capital and Annual Operating costs are provided in the following table.

Strategic Direction:		Capital	Annual Operating
1	**Improve Connectivity**		
	City-wide bicycle network	$125 million	$1.1 million
	Downtown separated bicycle lane network	$7 million	$100,000
	Spine network	$4 milion	$100,000
	Hydro and Rail rights-of-way opportunities	$26 million	$100,000
	Eliminate sidewalk network gaps on major roads	$5 million	
	Sidewalk infill on local roads	$30 million	
	Sidewalk widenings	$35 million	
	Sidewalk & bike facility asset management		$50,000
	Grade separated crossings	$100 million	$500,000
	Total	$332 million	$1.95 million
2	**Improve Safety & Accessibility**	$450,000	
3	**Improve Maintenance**	$230,000	
5	**Improve Convenience**	$410,000	
6	**Increase Awareness**	$870,000	
	Grand Total	$334 million	$3.72 million

5.1.7 Funding Strategy

Although the Pedestrian and Cycling Strategies are estimated to cost approximately $334 million over the long-term, these costs can be significantly reduced by pursuing external funding sources and partnership opportunities for many of the identified Actions. This section describes several funding strategies and potential funding sources that the City may consider to help leverage its investments and to maximize its ability to implement transportation improvements.

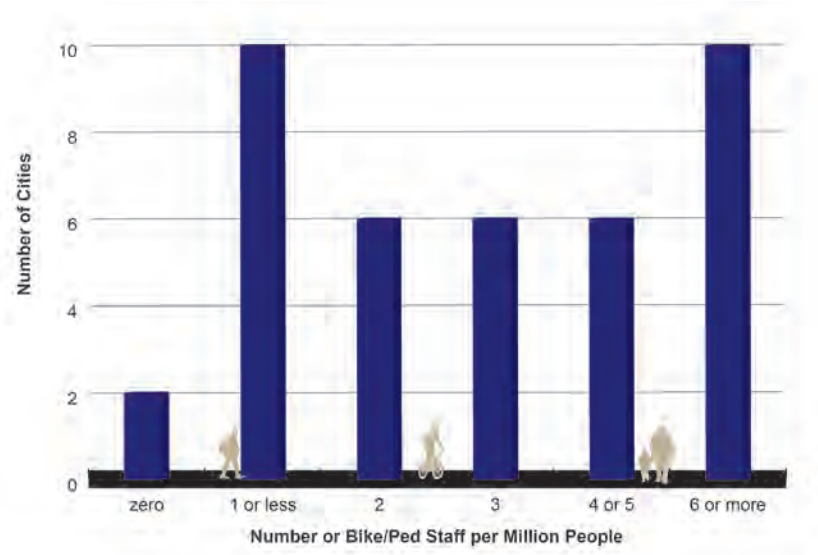
- **Capital Planning.** The City should implement the plans by incorporating the recommendations into its short, medium, and long-term financial plans to ensure that projects are accounted for in the City's capital planning process. In that regard, the City should seek changes to its Capital Budget to fund implementation of the Strategies, including:
  - Bicycle corridors – double the budget by 2017
  - Recreational walkways and bicycle pathways: triple the budget by 2017
  - New regional sidewalks on regional sidewalks: increase the budget by five times by 2017
  - Non-regional sidewalks: Establish a new budget for 2015
  - Pedestrian and bicycle crossings: Establish a reserve fund to accumulate funds for crossing improvements.
- **Integration.** The City should integrate cycling and pedestrian improvements with other plans and projects, where possible. In fact, approximately $55 million of the proposed pedestrian and bicycle networks will be funded through existing road renewal programs, development projects and major capital projects
- **Strategic Internal and External Partnerships.** To help implement the plan and leverage funding from other sources, the City should seek funding from other levels of governments, partnerships with the development industry, and integration of cycling and pedestrian improvements with other plans and projects.

- **Staff Resources.** Implementation of the Pedestrian and Cycling Strategies includes not only additional financial resources, but the City requires additional staff resources to implement the various strategies. The TMP commits to allocating sufficient funding in future capital and operating budgets to complete the pedestrian and cycling networks (Enabling Strategy (d) in the pedestrian and cycling section).

  Dedicated bicycle and pedestrian program managers are common in North American cities and, along with other transportation planners and bicycling advocates, are a critical part of creating a walkable and bicycle-friendly community. The Alliance for Bicycling and Walking recently conducted an analysis of staffing in 40 of the largest American cities, which showed that cities with bicycle and pedestrian staff had higher levels of bicycling than the cities without staff. Cities with larger staff – both in count and per capita – had higher levels of bicycling and walking than cities with smaller staffs.

  More than half of the responding cities had one or two staff spending at least part of their time on walking and cycling, while one quarter of the cities had more than four staff working on pedestrian and cycling issues. On a per capita basis, nearly three quarters of the sample cities had more than one bicycle and pedestrian staff member per million residents, with one quarter of the cities employing six or more staff per one million residents as shown in **Figure 5.1**. The study also found that the cities with the largest dedicated pedestrian and cycling staff members are not always the largest cities. For example, Minneapolis, MN is the 46th largest city in the United States, but has the largest pedestrian and cycling staff in the United States with nineteen employees. Minneapolis also has the

Figure 5.1:
Bike/Ped Staff (Per Million People) in 40 of the Largest US Cities



second highest rate of bicycle commuting in the sample with 4.3 percent. Comparing staffing levels to the commuter data shows that larger bicycle and pedestrian staffs are correlated with higher active transportation commuter levels. The cities without dedicated staff had the lowest average bicycle commuter share. As the size of a city's staff increased, the average bicycle commuter mode share also increased. Cities with more than four staff averaged a ten times greater share of bicycle commuters than cities without dedicated staff.



A survey was also conducted of staffing levels in a range of Canadian cities. Dedicated bicycle and pedestrian staff in Canadian citieis ranged from two Full Time Equivalent (FTE) staff in smaller cities such as Saskatoon and Halifax, to 10.5 FTEs in Calgary and 19 FTEs in Vancouver. A summary of the staff breakdown for a sample of Canadian cities is provided in **Table 5.2** below. Based on this, it is recommended that the City of Winnipeg's dedicated bicycle and pedestrian staff levels should be approximately 0.75 FTE per 100,000 residents in the short-term, resulting in a need for approximately 5 FTE staff in the short-term. This should increase over the long-term to be at minimum 1.0 FTE per 100,000 residents. With the City's population growth, thisi would result in a minimum of 8 FTE staff over the long-term.

Table 5.2:
Bike/Ped Staff (Per Million People) in 40 of the Largest US Cities

City	City of Saskatoon	Halifax Regional Municipality	City of Calgary	City of Vancouver
Full-Time Equivalent (FTE) Staff	2 FTEs	2 FTEs	10.5 FTEs	19 FTEs
Approximate Population	260,000	410,000	1,100,000	600,000
FTE/ 100,000 Residents	0.77	0.49	0.95	3.17
Description	• 1 engineer who directs the bicycle program (5% of time) • 1 traffic Engineer (50% of time on the bicycle program and 50% on pedestrian safety issues) • 1 engineer, Manager (20% of time on pedestrian issues) • Technologist • Drafting tech	• 1 dedicated AT coordinator (100% of time) • 1 supervisor (40% of time) • A number of engineers and techologists in the Design and Construction unit that likely uses 0.5 people per year from the unit	• 1 projects leader • 1 bicycle coordinator • 3.5 traffic engineers • 1 education/ encouragement planner • 1 EIT • 1.5 planners • 1 construction project manager • .5 designer • .5 communicator	• 1 branch manager • 5 project/senior engineers • 1 junior engineer/ EIT • 3 landscape architects/ designers • 6 engineering assistants • 3 stakeholder and community relations staff • 1 student

- In addition to maintaining a dedicated full-time Pedestrian and Cycling Coordinator position, this should include at least four dedicated full-time staff resources in the following positions:
  - Bicycle and Pedestrian Design Engineer
  - Bicycle and Pedestrian Planner
  - Bicycle and Pedestrian Education and Promotion Coordinator

As noted previously, the City should pursue all available internal and external strategic partnerships to leverage funding for pedestrian and cycling facilities and programs, including the programs identified below. As funding opportunities change regularly, the information in this section is subject to change. The City should regularly check with all levels of government to keep up to date on current funding opportunities.

- **Provincial Programs and Initiatives.**
  - The City of Winnipeg is the lead on deciding when and where to build local pedestrian and cycling and trail facilities within the city limits. However, the Province is committed to supporting safe pedestrian and cycling connections and will continue to cost-share critical infrastructure for Winnipeg in the years ahead.



- In terms of funding, the Province has a long history of supporting municipal infrastructure (including roads, bridges and active transportation) in Winnipeg and other municipalities throughout Manitoba. Since 2000, the Province of Manitoba has committed over $40M to pedestrian and cycling facilities and programming across Manitoba and Budget 2014 adds to this.

- Budget 2014 announced a five-year, $250M road improvement plan for Winnipeg. $50M will be invested in 2014 to improve existing regional streets, residential streets and back lanes, including a dedicated $1.45M investment for sidewalks, recreational walkways and bike paths. A further $22.7M will be invested in 2014 for regional streets projects. These projects can potentially include a pedestrian and cycling component due to Winnipeg's policy to consider pedestrians and cycling when rehabilitating streets that are part of the pedestrian and cycling network.

- **Infrastructure Canada** manages several programs that provide funding for environmental and local transportation infrastructure projects in municipalities across Canada. Typically, the federal government contributes one-third of the cost of municipal infrastructure projects. Provincial and municipal governments contribute the remaining funds, and in some instances, there may be private sector investment as well.

- **Green Municipal Funds.** The Federation of Canadian Municipalities manages the Green Municipal Fund, with a total allocation of $550 million. This fund is intended to support municipal government efforts to reduce pollution, reduce greenhouse gas emissions and improve quality of life. The expectation is that knowledge and experience gained in best practices and innovative environmental projects will be applied to national infrastructure projects.

- **Private sector.** Many corporations wish to be good corporate neighbours — to be active in the community and to promote environmentally-beneficial causes. Bicycle and pedestrian facilities are well-suited to corporate sponsorship, and have attracted significant sponsorship both at the local level and throughout North America.

- **Advertising.** There are several options for obtaining funding for transportation projects from advertising revenues. For example, the costs of producing and distributing a bicycle route map can be partially or fully offset by selling advertising space on the map. Advertising on

bicycle racks and transit shelters can reduce the costs of providing those facilities. There are three bill boards located on the Northeast Pioneers Greenway. The $9,000 annual revenue from these bill boards is used by the stewardship group to improve and maintain the pathway.

- **Partnerships.** The City should build on its successful partnerships with other agencies, the private sector, and the not-for-profit sector to help implement many Actions in the Pedestrian and Cycling Strategies. The City should continue to work closely with partners such as the Green Action Centre, Bike Winnipeg, Rivers West, Tourism Winnipeg, Business Associations, Community Bike Shops, and others to help implement the Pedestrian and Cycling Strategies.

5.2 Monitoring Plan

A monitoring strategy is essential to ensure that the Pedestrian and Cycling Strategies are implemented as intended, and to determine whether the plan is achieving its goals. A monitoring program will also enable City staff to appropriately allocate monetary and staff resources and to implement prioritized initiatives of the Pedestrian and Cycling Strategies. Monitoring also provides a means of identifying changing conditions which would require changes to the Strategies.

The monitoring program needs to be:

- **Meaningful.** The monitoring strategy should yield meaningful results and point to the success in achieving the vision, goals and targets of the Pedestrian and Cycling Strategies.

- **Measurable.** The monitoring program needs to establish criteria that are readily measurable and for which data or information can be readily obtained.

- **Manageable.** The monitoring program needs to take into account the resource limitations of the City and will identify measures where information is accessible or data is simple to collect.

The monitoring program will focus on identifying 'measures of success' for two components: first, the degree of progress in implementing the plan, and secondly, the outcomes of the plan. Measures of success are described in the table below, including general measures of success for the overall Pedestrian and Cycling Strategies, as well as specific measures of success related to each Strategic Direction.

General Measures of Success:

Measures of Success	Indicator
Walking and cycling mode share (work)	%
Walking and cycling mode share (all trips)	%
Walking and cycling volumes on key corridors	#
Walking and cycling funding levels	$
City staff resources	#

Strategic Direction #1 - Improve Connectivity



Measures of Success	Indicator
Total length of bicycle network (by facility type)	Total km
Total km of “All Ages and Abilities” bicycle network (need to define what this All Ages and Abilities means)	Total km
Amount of City within 400 meters of bicycle network	% of City
Total length of sidewalk network	Total km
Proportion of sidewalks at least 1.5m wide	%
Proportion of streets with a sidewalk on at least one side	% of all streets (by class)
Number of river crossings	#
Number of completed bicycle network projects	#
Number of completed pedestrian network projects	#

Strategic Direction #2 - Improve Safety & Accessibility



Measures of Success	Indicator
Number of accessible pedestrian signals	#
Number of pedestrian countdown timers	#
Number of pedestrian and bicycle activated signals	#
Number of signals with pedestrian and bicycle activated pushbuttons	#
Proportion of bus stops that are accessible	%
Number of collisions involving pedestrians and cyclists	#
Number of fatal collisions involving pedestrians and cyclists	#
Proportion of all collisions involving pedestrians and cyclists	%
Proportion of all fatal collisions involving pedestrians and cyclists	%

Strategic Direction #3 - Improve Maintenance



Measures of Success	Indicator
Proportion of bicycle network designed as Winter Cycling Network	%
Total km of pathways cleared	Km
Total km of sidewalks cleared	Km
Total number of 311 complaints	#



Strategic Direction #4 - Improve Vibrancy

Measures of Success	Indicator
Sidewalk coverage within 400m of all mixed use centers and corridors	% of streets
Bicycle network coverage within 400m of all mixed use centers and corridors	km



Strategic Direction #5 - Improve Convenience

Measures of Success	Indicator
Number of bicycle racks downtown	#
Number of secure bicycle parking spaces at transit stations	#
Proportion of buses with bicycle racks	%
Proportion of bus stops with shelters	%
Proportion of City within 400 meters walking distance of a bus stop	%

Strategic Direction #6 - Increase Awareness



Measures of Success	Indicator
Number of accessible pedestrian signals	#
Number of pedestrian countdown timers	#
Number of pedestrian and bicycle activated signals	#
Number of signals with pedestrian and bicycle activated pushbuttons	#
Proportion of bus stops that are accessible	%
Number of collisions involving pedestrians and cyclists	#
Number of fatal collisions involving pedestrians and cyclists	#
Proportion of all collisions involving pedestrians and cyclists	%
Proportion of all fatal collisions involving pedestrians and cyclists	%

To assist in monitoring these, and other, measures of success, the City should expand its current pedestrian and cycling monitoring initiatives, and should develop and implement a comprehensive **Pedestrian and Cycling Monitoring Program** within one year of adoption of this plan. This Pedestrian and Cycling Monitoring Program will help to identify baselines for each of these measures of success.

The City should follow this up by communicating the results of its Pedestrian and Cycling Monitoring Program by developing and publishing a **Walking and Bicycle Account**. A Walking and Bicycle Account is a tool to monitor the development of bicycling and walking activity in a community on a regular basis, and is used to assess if a community is achieving its cycling and walking objectives. Walking and Bicycle Accounts typically report on important public input that can be used and incorporated into the bicycle and pedestrian planning process. The Bicycle and Walking Account can also be, in itself, an opportunity to do community-wide marketing and communication on bicycling and walking.






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