assessment of regional transportation network
context report
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1.0 PROJECT DEFINITION

This context report, Assessment of Regional Transportation Networks, has been prepared as a component of Phase 1 of the Regional Growth Strategy for the Manitoba Capital Region.

This context report is a high level summary of the existing transportation facilities that exist within the communities of the PMCR. This report highlights the history and development of transportation infrastructure in the Capital Region in an attempt to understand how the various systems interrelate and were developed.

Summarizing the current transportation strategies of the Capital Region municipalities will assist with the development of the regional growth strategy by providing the context of where each of the networks stand today and where there is potential for moving forward to a more sustainable model with investment based on the Regional Growth Strategy model.

The City of Winnipeg and the Manitoba Capital Region, comprised of 16 municipalities surrounding the City of Winnipeg is expecting a growth in population and employment that will strain the existing transportation network as never before. Coupled with an estimated municipal infrastructure deficit of $11B [1] the region faces a daunting task of upgrading aging infrastructure while providing additional network capacity needed to accommodate and sustain the expected growth.

The challenge facing the regional municipal governments and their Provincial and National partners is to develop and support a planning framework and transportation network that is sustainable, affordable, and environmentally responsible, while meeting the needs of current and future users. To do so, the plan and strategies must accommodate increased goods movement that forms the basis of our economy, move workers that support our businesses efficiently and economically and provide for mode choice supporting a variety of lifestyle choices for the citizens of the region.

The City of Winnipeg has taken steps to address its long-term needs in the development of OurWinnipeg [2] and supporting documents. The Province has taken a step forward in defining regional transportation needs by supporting the Partnership of Manitoba Capital Region’s development of the Capital Region Transportation Master Plan and providing other planning Framework documents, including the issuing of a revised Planning Act [3] in 2015. These documents emphasize a commitment to long-term regional planning cooperation that breaks down interjurisdictional barriers. However, recent experience indicates that the short term planning process still tends to be done in isolation without meaningful collaboration between adjacent constituent municipalities of the Manitoba Capital Region. A framework for evaluating infrastructure investment that incorporates regional planning goals, strategic infrastructure investment becomes much harder to achieve without a regional planning focus.
This document reviews the development and current status of the various transportation networks in the Manitoba Capital Region and provides an analysis of where the Manitoba Capital Region needs to develop modern, sustainable regional strategies for meeting the transportation needs of the Manitoba Capital Region moving forward.

The recent Provincial Throne Speech [4] provides a commitment for significant infrastructure funding to address transportation needs in the City of Winnipeg and province. This includes a commitment to study the feasibility of rail relocation and rationalization in the Capital Region.
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2.0  HISTORIC DEVELOPMENT OF THE CITY OF WINNIPEG AND MANITOBA CAPITAL REGION TRANSPORTATION SYSTEMS

2.1  RAIL NETWORK

The City of Winnipeg grew rapidly as a direct result of railway expansion to Western Canada and for years was a major transportation hub with strong industrial, financial and associated transportation and shipping sectors. Manufacturing of goods and equipment, related to transportation and agriculture as well as financial sector strengths soon contributed to the economic base. The adjacent municipalities grew with a focus on agricultural development supporting residents in the region and the development of a grain export industry.

Forming the backbone of the transportation network, the railways developed a comprehensive network of yards and spur lines that supported their role, which can be seen in Figure 1. Over the years following the opening of the Panama Canal, the reliance on the railway for goods movements waned and various lines and yards were consolidated throughout the City of Winnipeg and the Manitoba Capital Region.

![Figure 1 - 1946 Map of Rail lines and Yards](image)

In recent years, rail has regained its role as a major goods mover and train movements through Winnipeg have increased. Figure 2 provides some statistics. Train movements have become a
For far too long, rail lines have divided our capital city. It is time to move the tracks and open up opportunities for urban renewal. This initiative will create opportunities to build stronger and safer neighbourhoods and communities with less rail traffic.

Discussions on the merits of rail relocation are becoming common since the Arlington Bridge replacement project was started by the City of Winnipeg. Rail and CPR Yard relocation was a hot topic during the late 1970’s and early 1980’s when a new road link was proposed across the CPR yard on the Sherbrook/McGregor alignment [8]. It continues to this day with concepts coming from many varied sources, including comments related to rail relocation in the November 2015 Throne Speech [4] and comments from various business leaders [9].

The development of Centerport Canada and its inter-modal rail yard project provides some opportunities for further rail consolidation. The CPR Yard debate is likely to continue, but the importance of good rail connections to existing industrial operations will likely forestall the removal of all railways within the City of Winnipeg. There is a desire for the advancement of the discussion with a longer term vision and with consideration for targeted relocation, timing and brownfield site development and railyard conversion.
2.2 HIGHWAY AND ARTERIAL NETWORK

2.2.1 City of Winnipeg

The road network in the Winnipeg regional context developed along historic trails that were influenced by the rivers and the River Lot Survey of early settlement patterns. A radial network of trails were established, centered on what is now downtown Winnipeg, and became the modern arterial street network we now embrace. Roads such as Main Street, Pembina Highway, Henderson Highway and Portage Avenue, all started as trails serving the settlements along the Red and Assiniboine rivers. This can be seen in Figure 3 [10].

River crossings became focal points in the transportation network. Some structures built in the early 1900s are still in service today, while others dating back to the 1880's have been replaced; some several times. One of these structures, the Maryland Bridge of 1900 is shown below in Figure 4 [11].

Figure 3 - Location and Identity of Buildings in the Village of Winnipeg in 1872 [10]

Figure 4 - Maryland Bridge in 1900 [11]
As the City grew, a more defined road network followed the development of residential and employment lands, as can be seen in Figure 5 [12]. A network of public transportation, street cars and trolley buses evolved and eventually were replaced by improved roads to accommodate the surge in automobile use. In the late 1950's a major transportation study was conducted for the City of Winnipeg by Wilbur Smith and Associates. In the report the authors noted in the context of integrated route planning, "In the case of Winnipeg, it is essential therefore, that the Provincial Government as well as local governments of the City of Winnipeg and each of the suburban cities and rural municipalities should be working as a unit, rather than as separate entities in the development of plans for new highway and traffic facilities" [13]. The Wilbur Smith study led to the development of the Winnipeg Area Transportation Study (W.A.T.S.) in 1968 [14], that identified a proposed network of highway and transit improvements. The major highlight of the W.A.T.S. study was the introduction of a freeway network serving all areas of the City and adjacent municipalities.

The impact that urban freeways have on existing development caused concern in community groups and helped create the defining moment in the development of Winnipeg’s transportation system. When City Council voted against the Northern Freeway and the Sherbrook-McGregor bridge over the CPR Yards in the late 1970's and early 1980's it seems that the unwritten rule became that there would be no “freeways” in Winnipeg. Overtime, however, sections of these earlier plans were implemented, but as expressways and arterials. Projects such as Bishop Grandin Blvd and Chief Peguis Trail developed as the replacement for the Suburban Beltway and Sterling Lyon Parkway instead of the Southern Freeway. However, for all intents and purposes, Winnipeg has embraced the development of an Arterial Road network with signalized intersections instead of a system of controlled access freeways.

This existing Arterial network now supports the role that a freeway system does in most other major urban areas. The authors of the supporting documents of OurWinnipeg, Sustainable Transportation identified the issue and provided the following comment; “Despite relatively modest population growth, this(lack of freeways) has resulted in ever increasing pressure on the arterial street system by both commuters and commercial development over the past 30 years” [2].
A strategic plan to address projected urban (City of Winnipeg) system needs was developed and published in the Winnipeg Transportation Master Plan (TMP). The TMP also touches on the need for cooperation with regional transportation planning efforts as the projected growth in the Manitoba Capital Region has significant impact on City of Winnipeg transportation infrastructure [15]. Despite the constant and strong planning support for regional cooperation and integrated planning, infrastructure projects and development parameters appear to lack a transparent focus on this key regional planning intent and would benefit from some form of Regional oversight to facilitate strategic infrastructure development and investment.

Figure 6 - Transportation Map showing Winnipeg streets in 1950 [16]
2.2.2 Municipalities in the Capital Region

A rural transportation network, based on the Mile Road Grid survey is most common in the municipalities that make up the Manitoba Capital Region. Areas adjacent to the Red and Assiniboine Rivers are influenced by the river lot survey from the initial settlement of the area and roads following the general alignments of the rivers have developed from the extension of trails originating in the City of Winnipeg. Main Street (PTH 9), Henderson Highway (PR 204), Pembina Highway (PTH 75) St. Mary’s Road (PR 200), all parallel the Red River and extend well beyond the City of Winnipeg. The alignment of Portage Avenue (PTH 1) parallels the Assiniboine River and the Portage Trail to Western Manitoba.

In more urbanized municipalities like the Rural Municipality of East St. Paul, a municipal collector and arterial road network is being developed outside the provincial network. These municipal networks are development driven, as development defines the need for additional transportation facilities.

The Rural Municipality of East St. Paul is the only Capital Region Municipality outside of the City of Winnipeg with a current Transportation Master Plan in effect. It is due for updating in the next year or so. The Rural Municipality of Springfield has a plan that remains in draft form and has yet to receive the support of Council. Other municipalities in the Capital Region have not developed current transportation plans. There is a trend for the municipalities to rely on the Provincial network of roads to meet the collector and arterial road needs of the municipality. The practice places an unsustainable burden on the Provincial Network by decreasing the provincial Network efficiencies. Municipalities are being asked to provide more infrastructure to support their local traffic needs.

2.2.3 Provincial Transportation Network

The first map [17] of the Provincial Highway network was published in 1926. The network saw major expansions through the 1950’s and 1960’s. In the Manitoba Capital Region, the development of the Perimeter Highway started in the late 1950’s with the route showing up on maps starting in 1959. The completion of the route didn’t occur until the 1990’s with the completion of the northeast section.

The Provincial Highway Network within the Manitoba Capital Region consists of a number of routes that are focused on providing access into the City of Winnipeg. Routes such as PTH 75, PTH 59 and PTH 3 are extensions of Pembina Highway, Lagimodiere Blvd and McGillivray Blvd, respectively. They provide routes for movements of people and goods to and from the City of Winnipeg to other areas of the province, Canada and vital US and Mexican markets in NAFTA (North American Free Trade Agreement) and are part of the Mid-Continent Trade Corridor. Residents living in the Manitoba Capital Region municipalities outside of the City of Winnipeg use the routes to access jobs, schools, medical and personal needs in the City and Winnipeg residents and businesses use the routes to access jobs, recreational opportunities and resources.
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such as granular material and agricultural commodities located in the surrounding municipalities.

In the Manitoba Capital Region Transportation Master Plan [18], the need for future highway expansion were identified in Figure 5.2 – Future Highway Improvements. The figure and subsequent text identified a number of significant investments in upgrading existing routes and construction of new routes to serve projected traffic volumes. Many of the new routes are intended to function as bypass routes for existing infrastructure. The reasons given for the need for bypass routes primarily focus on lack of access control based on historic development of the original routes. Routes like PTH 75 feed into the City of Winnipeg through St. Norbert along Pembina Highway. Pembina Highway from south of St. Norbert and into the City of Winnipeg functions as an arterial street, but with uncontrolled access. The numerous driveways and traffic signals contribute to ‘stop and go traffic’ and greatly increase safety concerns. They also create considerable delay and cost for moving goods to interprovincial and international markets. The proposed by-pass routes are intended to have greater access control and provide greater efficiency for goods movement.

The Provincial government has enacted policies to protect and enhance the operation of key economic routes such as PTH 1, PTH 6, PTH 75, PTH 100 and PTH 101 within the MCR. These routes are considered to be part of the National Highway Network.

2.3 PUBLIC & ACTIVE TRANSPORTATION

Public Transportation has a long history in the City of Winnipeg and surrounding municipalities. A comprehensive summary of the history of transit was compiled that details the many early transit services that served the City of Winnipeg and surrounding municipalities [19] [20]. There was transit service to and from many of the surrounding towns, such as Stonewall, Selkirk, and Springfield. As the roads improved and personal autos became more prevalent, transit ridership decreased, making provision of transit service less cost effective.

Figure 7 - Transit service for the City of Winnipeg in 1941 [21]
Services decreased as it became less possible to be profitable, resulting in further reliance on the automobile. Regional Transit services have all but disappeared as a regional transportation option. Transit services for Winnipeg in 1941 can be seen in Figure 7 [21].

Within the City of Winnipeg, there was a consolidation of a number of transit services into Winnipeg Transit. This service currently provides access to transit for the majority of the citizens of the City of Winnipeg. A variety of route types exist; local, cross-town and express services operate on set schedules throughout the year.

From the early streetcar network to the current Bus Rapid Transit (BRT) system under development, transit service in the City of Winnipeg has evolved as the City has expanded. Services have extended beyond the City boundaries periodically, but currently only serve the City of Winnipeg except for special events such as the Folk Festival at Bird’s Hill Provincial Park. One of the roadblocks preventing expansion into adjacent municipalities has recently been removed with changes to the HTA governing Public Service Vehicles.

A number of park and ride facilities have been developed to facilitate mode choice from suburban areas. The current uptake of users of the park and ride facilities in Winnipeg is unknown, as passenger traffic counts do not differentiate origin (local or from parked cars).

The following park and ride locations are listed on the Winnipeg Transit website and maps are provided:

- Charleswood Centre Park & Ride
- Club Regent Casino Park & Ride
- Garden City Park & Ride
- Grant & Cambridge Park & Ride
- Kildonan Place Park & Ride
- McPhillips Station Park & Ride
- Northgate Mall Park & Ride
- Safeway (Pembina) Park & Ride
- Southdale Centre Park & Ride
- Taylor Park & Ride
- Vista Place Park & Ride
- Whyte Ridge Park & Ride

Providing facilities to accommodate alternate modes of travel is becoming an increasingly important consideration in transportation planning since the release of the Pedestrian and Bicycle Strategy approved by Winnipeg City Council in 2015. The discussion actually started prior to the release of the 1993 Bicycle Facilities Study and a follow-up Study published in 2005; THE CITY OF WINNIPEG ACTIVE TRANSPORTATION STUDY - FINAL REPORT - FEBRUARY 2005 [22]. The 2005 report led to an active lobbying effort and the establishment of The City of Winnipeg Cycle Map which identified existing and proposed cycle routes in the City. The city also adopted a policy to include consideration of cycling facilities on all capital projects.
In 2011, the Provincial government initiated an Active Transportation Advisory Group to “provide recommendations on a provincial bicycle policy, development of multi-user recreational trails, ways to incorporate recreational and commuter trails into an overall network, improved signage, bicycle safety, cycling tourism and assessing the economic benefits of active transportation infrastructure” [23]. Two of the key recommendations from their publication Greater Strides: Taking Action on Active Transportation Recommendations to the Manitoba government from Manitoba’s Active Transportation Advisory Group were:

- Review provincially funded road projects to include provisions for active transportation within the budget of individual projects and in the goals of multi-year plans.
- Enact a policy that requires active transportation infrastructure to be considered in all future provincial road projects in Manitoba.

Within the Provincial Capital Region, where populations are concentrated and alternate modes are viable as a commuting option, or as a recreational choice, the inclusion of cycling facilities as part of strategic infrastructure investment is being managed from a safety and public health perspective as documented in Greater Strides.
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3.0 WINNIPEG AND MANITOBA CAPITAL REGIONAL TRANSPORTATION PLANNING CURRENT STATUS

While both MIT and the City of Winnipeg have a history of transportation planning, integration and coordination with other municipalities in the Capital Region and between the City of Winnipeg and MIT is not easily demonstrable and the recent conflict between East St. Paul and the City of Winnipeg over the functionality of a proposed connection along the Raleigh-Gateway corridor highlights how volatile these issues can be. Most short-term plans tend to focus on jurisdictional needs as there is no firm mechanism to consider needs beyond jurisdictional boundaries.

There are examples of interjurisdictional cooperation, often when third party funding is available. However, at times, these projects don’t necessarily coincide with planned strategic infrastructure development, or are not vetted through a regional lens. Other projects are well thought out, involve stakeholder input and support regional economic development, or traffic safety needs. A consistent, transparent approach to strategic infrastructure development would help interjurisdictional cooperation by involving impacted stakeholders.

In 2002 the Province announced the 2020 - Manitoba’s Transportation Vision [24] initiative, a process to develop a long-term transportation investment plan. The plan developed strategic directions for improving investments in the Provincial Transportation network.

In 2011 the City of Winnipeg published OurWinnipeg [2] and supporting documents that provide the planning framework for the City of Winnipeg. The document identifies the need to cooperate in regional planning efforts.

In 2014 the Partnership of the Manitoba Capital Region published the Capital Region Transportation Master Plan (CRTMP) [18]. It proposes a number of recommendations, ranging from improved governance to major highway upgrades in the Capital region. While the report deals with direct improvements to the highway network it does not directly deal with integration of the municipal transportation requirements into the highway network, nor does it address the oversight or governance of the regional planning process or the setting of regional priorities.
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The CRTMP identified three Enabling Strategies from the City of Winnipeg Transportation Master Plan that could be applicable in a regional context:

- Participate with surrounding Capital Region municipalities in the development of coordinated transportation objectives.
- Support a framework for regional multi-modal transportation service delivery.
- Explore the feasibility of developing a regional Transportation authority to plan, implement, and deliver transportation infrastructure and services.

The CRTMP also developed a series of recommendations related to transportation with a regional focus. These can be found in Chapter five of the document.

“The CRTMP recommends a number of key highway improvements to address current and projected future road capacity issues. It contains a number of policy recommendations related to land use, transit, cycling, and pedestrian initiatives that could provide options for future travel and reduce single occupant vehicle travel. It also comments on measures to protect key rail and air services within the Capital Region. It should be noted that the CRTMP, as a long-term strategic plan, does not address site-specific or corridor needs such as intersection configuration or traffic control options.”
4.0 REGIONAL TRANSPORTATION SYSTEMS ASSESSMENT

4.1 RAIL

The rail network in the Capital Region is under considerable pressure due to the increase in both rail and road traffic. At grade crossings are costly to the economy, considering delay to traffic, safety and operational requirements at the crossing themselves. Unfortunately, the alternative of building grade separations at every crossing is not financially feasible, as each grade separation costs in the neighborhood of $50M to $100M.

Rail relocation discussions have been occurring periodically since the early 1970’s, but the costs of relocating yards and main line tracks are seen as a significant barrier.

That being said, some successful relocations have occurred with interjurisdictional cooperation. The key success indicator appears to be having a vision related to the project and a champion pushing the project. The Forks area in Winnipeg is one successful project that transformed a redundant rail yard into a major community asset in downtown Winnipeg.

In the November 2015 Throne Speech relocation rail lines in Winnipeg were identified as a government priority. As part of the CPR Yard Crossing Study being undertaken by the City of Winnipeg, the cost of providing sufficient infrastructure to meet the demands of current and projected desired crossings of the CPR yard is under study. Once the cost of building new crossings and rehabilitating existing crossings are understood, they can be compared to relocation costs and redevelopment benefits.

The ability to transport goods by rail is an important economic driver for the Manitoba economy. The integration of Road, Rail and Air transport is a founding principal in the development of CentrePort Canada. The servicing of industrial lands with rail will continue to be a critical requirement of sustainable transport networks as rail transport reduces the number of trucks on local and regional roads. If more goods could be transported by rail to national and international markets, the demand on the road network would be decreased and pavement life extended. The caveat is that a considerable amount of our economy is based on ‘just on time’ delivery, requiring greater flexibility in goods movement than rail can provide.

As noted, the development of Centerport Canada as a viable inland port is contingent on the integration of Rail, Road and Air transport connections. The location of the inland port provides a situation unique to this geographic location, as there are good connections to three Class 1 Rail lines, (CN, CP and BNSF) that serve the majority of North America. Protecting and promoting the efficiency of this asset is critical to the long-term economic viability of the Manitoba Capital Region.
Consolidation and rationalization of rail infrastructure remains a worthy goal but requires a balance between efficiency and service. Consolidation and relocation of rail lines needs to be examined, but in a way that maximizes the benefit of investment in all infrastructure improvements. Planning future grade separations, rail line abandonment, yard relocations and industrial support, must consider the economic viability of rail line consolidation, urban revitalization, national and international trade routes and accommodation of sustainable transportation modes and goods movement within the urban and regional context.

4.2 TRANSIT

Winnipeg Transit is the major transit provider in the Capital Region. Local service in Selkirk has little impact on regional transit ridership and the limited service provided by Beaver Bus lines between Selkirk and Winnipeg does not accommodate significant ridership and has a very limited service market with service to the Rural Municipality of St. Andrews and the Rural Municipality of West St. Paul.

Winnipeg Transit operates on the philosophy of a single ticket single seat. The theory is that once on a bus in your local area, transfers to other routes are not required or limited. Most routes focus on providing service to the downtown from all corners of the city. A few cross-town routes provide service between nodes in the suburban areas without going through the downtown area. These routes are focused on providing services through local areas, increasing travel times between and decreasing the advantages of providing services to key transportation nodes outside the downtown.

A number of express routes are provided along major corridors leading to the downtown. Some of these route run on exclusive bus diamond lanes, at least in peak hour times. The express buses circulate through neighborhoods before engaging the express portion of their route. This results in large buses circulating in residential areas with lower ridership numbers for significant portions of their route.

Winnipeg Transit provides Park and Ride facilities in various locations around the city, but they tend to lack services for transit riders, other than parking spots. Some are located in or near shopping centers, but most seem to have no strategic value in attracting ridership, and none appear to be focused on attracting ridership from commuters originating outside of the City of Winnipeg.

Improving transit ridership numbers should be and is a goal of the Partnership of Manitoba Capital Region. There is considerable documentation about how to increase transit ridership, but it is summarized nicely in Chapter 2 of Human Transit, by Jarret Walker [25], who argues that useful transit can be understood as involving seven dimensions or elements.

1. “It takes me where I want to go.”
2. “It takes me when I want to go.”
3. “It's a good use of my time.”
4. “It's a good use of my money.”
5. “It respects me.”
6. “I can trust it.”
7. “It gives me freedom to change my plans.”

However, the 2005 report by Transportation Research Board “Elements Needed to Create High Ridership Transit Systems: Interim Guidebook” [26] also found that service adjustments “have played a significant role in recent ridership success stories”. Types of service adjustments most frequently mentioned in the survey were:

- Reallocation of service to the most productive routes
- Increased frequency of service
- Enhanced passenger amenities
- Introduction of transit center-based route structures

The report goes on to describe how suburban transit service should be approached and includes recommendations of service enhancements shown to address desire to increase transit ridership. It identifies two basic categories of actions used to improve existing suburban networks representing the first steps in mobility strategies of most suburban operators generally taken at a system level. They include the following:

- Establishing a transit centers concept and timed transfer program
- Enhancing line haul services, express buses and limited services.

Also noted are actions that create supporting/complementary services:

- Internal, local area circulators
- Shuttle links
- Subscription buses
- Vanpools.

The provision of large-scale free Park and Ride facilities are being criticized on the grounds that the cost of parking facilities are essentially taking funds that could go to improving transit services and that the “free” parking at these locations are a form of subsidy for auto users [27]. The argument says that there is no equivalent subsidy for those that walk or bike to the station. In many instances, parking stalls tend to fill up early in the day and there are not enough spaces for those that arrive later, so a significant market share is not captured.

A counter argument for implementation of the Park and Ride system would be the reduction of traffic on the roads that the transit service uses and the positive impact that reducing auto use for part of the trip has on the Green House Gas (GHG) footprint of the region. Reduced traffic demand allows for rededication of space to other modes, such as pedestrians and bicycles.

Downtown parking costs must be higher than the perceived costs of transit use (time, fares, parking). The reduced capacity on the roads and an alternate transit route that bypasses any
congestion will entice more use of transit, as long as transit service is sufficient to offset costs, (real or perceived) and the convenience factor.

The key factor for attracting more ridership to transit appears to be to increase the level of service. Increasing frequency and reliability, decreasing travel times, and providing routes that reflect demand are critical requirements. The current service does not fully address all the needs, but steps are being taken in the right direction. The next steps could include the completion of BRT routes to bypass congested streets and decrease ride times, development of transit centers/Park and Ride facilities to attract suburban to downtown and provide better access to suburban destinations. Revising suburban route service to use smaller buses, but more frequent service to bring riders to transit centers has potential to increase mode share. Regional Transit services, providing transit to outlying communities could take advantage of the transit centers to provide access to multiple destinations within the City of Winnipeg.

4.3 ROADS

The road network in Winnipeg suffers from the number of barriers to continuous traffic flow. Influenced by the two rivers and the historic development of the river lot system of survey, there was no established grid on which to follow and place roads. As a result, arterial streets were arbitrarily located along historic paths. Connections along the arterials, as they moved away from the river lot system to the grid road system sometimes became discontinuous, with overlap with intersecting routes in some locations.

The other aspect influencing the development of the road network was the independent municipal governments in place until the early 1960's and the lack of land use planning along the major corridors. Roads like Pembina Highway, Main Street and Portage Avenue were built to service the local residential and commercial development as the city grew from the center. Blessed with wide rights of ways, they were, and to a point, are still capable of accommodating significant traffic volumes. Other routes, such as Kenaston Blvd, Nairn Avenue, McPhillips Street Grant Avenue, St. Mary’s Road, etc., were not provided with the same right of way widths and were allowed to be developed with residential frontage. These routes and others now suffer from significant congestion, with no viable option for expansion.

Planning documents from the late 1950’s established a freeway network for the City, but the plans resulted in the disruption of established neighborhoods. The majority of those plans have been abandoned.

More recently, the City of Winnipeg has sold off lands that had been held for the development of express routes and interchanges. These parcels were located on routes planned in the early 1960’s and reserved for right of way for future development of important transportation network expansions. Some of the remaining reserved properties were allowed to naturalize over the past 50 or so years and now represent some of the remaining forested lands in the City. There is pressure to retain and protect these areas as naturalized areas.

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On many of the regional streets, because of the way they evolved with commercial development on the street front, parking is seen as a critical requirement. Parking provision influences the ability for the roads to carry the traffic demand, restricts transit operations and removes space from the right of way that could be used for pedestrians and cyclists. Parking is, however, important to the economic viability of the businesses located along the streets. Inconvenient parking can impact customer choice.

On a regional basis, roads connecting communities outside the City of Winnipeg to the City of Winnipeg generally fall under the jurisdiction of the Provincial government through Manitoba Infrastructure and Transportation (MIT). The mandate of MIT does not necessarily align with the needs of commuter traffic wishing to access jobs, goods or recreation in the City, being focused primarily with connections within the province supporting economic activity. The primary conflict occurs on routes, such as PTH 100 and PTH 101 (Perimeter Highway) that act as extensions of the urban traffic network. Traffic volumes are rising as the development extends to and beyond this artificial boundary. Connections across this route are seen as an impediment to its “primary function” of taking traffic around the city.

There appears to be a number of critical aspects required to improve the road network in the Manitoba Capital Region. **There is a need to refocus the efforts from building more to building smarter.** A comprehensive study of origin/destination demand was done in 2007. This study needs to be updated and a comprehensive travel demand model encompassing the capital region should be completed. Until that is done, traffic forecasting will continue to be subject to assumptions that are not necessary based on actual demand.

A transportation strategy, based on scenario development and backed up by a comprehensive traffic demand model could be structured to identify the priorities for sustainable economic investment with a positive cost benefit. The alternative is to continue to try to react to existing traffic demand and set priorities based on perceived needs and project directed funding initiatives. The existing Transportation Master Plans for Winnipeg and for the Capital Region are good documents with good presentation of needed policy directions, but they do not take into account or direct regional growth priorities. They tend to focus on improvements to existing infrastructure within their separate mandates, instead of addressing how best to invest strategically to meet future travel demands in the region and developing strategies to decrease the reliance on single occupant vehicles.

Current infrastructure programs are focusing on short term improvements of ride quality of existing roads with some congestion mitigation at rail crossings receiving the bulk of recent funding.

### 4.4 CYCLING AND PEDESTRIAN

With the recent completion of the Pedestrian and Cycling Strategy, the City of Winnipeg has made significant inroads into understanding the demographics of alternate transportation
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modes in the City. A strategic plan is now in place to address the demand for better alternate infrastructure complete with policies for incorporating cycling and pedestrian infrastructure into capital improvement plans. The plan also identifies gaps in the network and proposes a priority list for addressing the most significant gaps as identified by stakeholders. Moving forward, the City is well positioned to support desires to utilize walking and cycling as a preferred mode of short commuter trips.

Within the Capital Region, support for Active Transportation at the Provincial level is improving. However, notwithstanding the provision of an Active Transportation crossing of PTH 101 as part of the PTH 101/PTH 59 interchange project, actively incorporating active modes into infrastructure improvement works funded through the MIT capital program is still seen as a lower priority for investment. Other branches of government, such as Municipal Government, give the perception of being more aggressive in their support of alternate modes.

The challenge remains to integrate the locally focused needs that are mainly recreational, into a regional network that can support important regional connectivity that will likely see limited use, in comparison to traffic on the connecting highways. While providing choice by investing in alternate infrastructure is a strategic investment, it requires a commitment that many would see as counter intuitive. The province, in conjunction with municipal members should follow the City of Winnipeg’s example and develop a regional cycling strategy and establish policies that require integration of alternate infrastructure within all capital programs. This may require a shift in priorities for some departments or integration of multiple departments when developing and delivering the capital program in the Capital Region.

4.5 SUMMARY

The integration of infrastructure needs in the Manitoba Capital Region has experienced some setbacks over the years. Notwithstanding recent planning document improvements, (OurWinnipeg), Individual jurisdictions have not adopted the policy direction and interference from the political environment prevents true integration. Many jurisdictions have been left to plan in isolation. Efforts to integrate planning with adjacent jurisdictions have often been seen as interference into the responsibilities of those adjacent jurisdictions. This is particularly true with municipalities adjacent to the City of Winnipeg, running into opposition for using existing or establishing new routes into the City of Winnipeg to support the commute into the City of Winnipeg from beyond the City of Winnipeg boundaries. Local political interference, reacting to vocal opposition to individual projects is usually the main source of opposition.

Access to the provincial highway network is also a point of contention at times. Municipalities often interpret MIT access management plans as too restrictive. Plans developed with good cooperation and communication between senior and municipal governments tend to be more readily accepted as both parties are able to share and understand priorities and objectives.
There are many publications that review the processes in establishing Regional Transportation plans. The recent Master Plans for the Manitoba Capital Region and City of Winnipeg followed the accepted process for the most part. The issue with each plan is the focus they pay to regional issues, primarily focusing on issues related to the sponsoring road authority.

Many jurisdictions have developed Guidelines for producing Regional Transportation Planning documents and three are referenced below:

1. California

The California Transportation Commission developed State guidelines for the development of Regional Transportation Plans. In the introduction it identified the Purposes of the guidelines [28].

The purposes of these Guidelines are to:

1. Promote an integrated, statewide, multimodal, regional transportation planning process and effective transportation investments;
2. Set forth a uniform transportation planning framework throughout California by identifying federal and state requirements and statutes impacting the development of RTPs;
3. Promote a continuous, comprehensive, and cooperative transportation planning process that facilitates the rapid and efficient development and implementation of projects that maintain California's commitment to public health and environmental quality; and,
4. Promote a planning process that considers the views of all stakeholders.

These purposes can be adapted to a Manitoba Capital Region Context and should be referenced in forming the framework for future transportation planning documents.

2. New York City

In 2013, the City of New York adopted Plan 2040 [29], the Transportation Plan for the New York City area. The plan identified the following goals, all of which can be adapted for use within the Manitoba Capital Region.

- Enhance the regional environment
- Improve the regional economy
- Improve the regional quality of life
- Provide a convenient and flexible transportation system within the region
- Enhance the safety and security of the transportation system for all users
- Build the case for obtaining resources to implement regional investments
- Improve the resiliency of the regional transportation system
3. Vancouver

In July of 2013, Translink published the REGIONAL TRANSPORTATION STRATEGY Strategic Framework document [30]. The document provides the framework for strategic development of transportation infrastructure in the Vancouver area. Of particular note is the Transportation Strategies & Actions section. It identified three key transportation levers for achieving the overarching goal of moving people and goods. These were identified as:

- **INVEST** strategically to maintain and expand the transportation system;
- **MANAGE** the transportation system to be more efficient and user-focused; and
- **PARTNER** to make it happen.

The following excerpt identifies why the strategic plan is so critical to Vancouver and can easily be adapted for integration into a Manitoba Capital Region strategy.

**Moving People**

By helping to reduce trip distances and increase the opportunities for people to walk, cycle and take transit, transportation investments can support growth in Urban Centres and along frequent transit corridors. Accurate pricing for transit and driving can also help reduce congestion and increase fairness. The goal is a system that enables people to walk, cycle, take transit or drive safely, comfortably and without major congestion, crowding or delays. Ultimately, we need to take an integrated approach to mobility - recognizing that everyone is multi-modal and that each mode has a role to play in keeping the region moving and helping to achieve our outcomes.

**Moving Goods**

Given the critical nature of goods movement to the local economy and to Metro Vancouver's function as Canada's Pacific Gateway, it is critical to protect industrial land, support safety improvements for rail and trucks, help to streamline regulations, support pricing to reduce congestion on the road network and make room for high-value commercial vehicle trips, and work together to coordinate regional planning. TransLink can provide new road capacity where necessary to ensure that goods can move in a timely and reliable way, around and through Metro Vancouver.

**Achieving Regional Objectives**

The ease, convenience and affordability of transportation affect every aspect of Metro Vancouverites' quality of life. It is TransLink's responsibility to maintain and expand the system, to manage the assets optimally and work closely with partners to maximize its effectiveness. In doing so, together, we will reinforce Regional Growth Strategy goals, even while supporting the economy and safeguarding the environment - helping to ensure that this remains one of the most livable regions in the world.

Another Reference source is the Transportation Research Board. In 2015, the Transportation Research Board in the United States, released NCHRP 750, a series of six reports documenting the
Strategic issues in Transportation planning. These documents were intended to assist decision makers in developing flexible strategic directions for transportation infrastructure.

The issues raised and discussed can be adapted to the Manitoba Capital Region.

The six volumes are:

**Vol. 1 Scenario Planning for Freight Transportation Infrastructure Investment** -

NCHRP Report 750, Strategic Issues Facing Transportation, Volume 1 provides decision makers with a critical analysis of the driving forces behind high-impact economic and social changes as well as sourcing patterns that may affect the U.S. freight transportation system. A detailed discussion of the driving forces is contained in NCHRP Web-Only Document 195: Driving Forces Influencing Future Freight Flows. NCHRP Report 750, Volume 1 also introduces scenario planning as a tool that can be used in conjunction with other planning methods to improve the quality of long-range transportation infrastructure planning [31]

**Vol. 2 Climate Change, Extreme Weather Events, and the Highway System** -

NCHRP Report 750: Strategic Issues Facing Transportation, Volume 2: Climate Change, Extreme Weather Events, and the Highway System: Practitioner’s Guide and Research presents guidance on adaptation strategies to likely impacts of climate change through 2050 in the planning, design, construction, operation, and maintenance of infrastructure assets in the United States (and through 2100 for sea-level rise) [32].

**Vol. 3 Expediting Future Technologies for Enhancing Transportation System Performance** -

NCHRP Report 750: Strategic Issues Facing Transportation, Volume 3: Expediting Future Technologies for Enhancing Transportation System Performance reports on how Transportation agencies may use various options to capitalize on technology to improve transportation system performance. For instance, information and communication technology allows for enhanced traveler information, instant re-routing and mode choice, and facilitating pricing-based strategies. Future technologies offer even greater potential to improve safety, reliability, and mobility. Furthermore, this subject area can involve not only adoption of technologies by transportation agencies, but ways in which transportation agencies can anticipate and help shape research and development of various technologies that can affect that can affect transportation system performance [33].

**Vol. 4 Sustainability as an Organizing Principle for Transportation Agencies** -

NCHRP Report 750: Strategic Issues Facing Transportation, Volume 4: Sustainability as an Organizing Principle for Transportation Agencies discusses increasing awareness of the environmental, economic, and social effects of the transportation system that has already led to new demands on transportation agencies to be more responsive in providing transportation
services. Transportation agencies are challenged to build consensus around balancing short-term cost effectiveness and long-term sustainability. While the roles and responsibilities of transportation agencies differ from state to state, there are common organizational attributes and characteristics that transportation agencies need in order for their transportation systems to support the environment, the economy, and social equity [34].

**Vol. 5 Preparing State Transportation Agencies for an Uncertain Energy Future** -

NCHRP Report 750: Strategic Issues Facing Transportation, Volume 5: Preparing State Transportation Agencies for an Uncertain Energy Future discusses how growth in global energy consumption, especially within the transportation sector, is expected to increase demand for oil. Given that the entire transportation sector accounted for more than 90% of all liquid fuel consumption in 2006, it is clear that changes in energy infrastructure and energy sources will affect transportation activities. Because fossil fuel emissions and greenhouse gases from all sources are expected to continue to increase, contributing to air pollution and climate change, the push to move toward energy efficiency and alternative fuels in the transportation sector is expected to continue [35].

**Vol. 6 The Effects of Socio-Demographics on Future Travel Demand** -

NCHRP Report 750: Strategic Issues Facing Transportation, Volume 6: The Effects of Socio-Demographics on Future Travel Demand discusses how the profile of America is expected to change substantially over the next 40 years. According to the U.S. Census Bureau, current trends suggest that the U.S. population is anticipated to increase to 438 million by 2050, more than a 40% increase from the 2008 population of 304 million. This population will be more ethnically diverse; a significant percentage of the projected population increase is attributed to immigration. The population also will be substantially older; it is estimated that more than 20% of the U.S. population will be 65 years or older by 2050, compared to 12.6% currently. The sizeable increase in population will create the need for more housing, employment, and services, which may lead to substantial impacts on travel patterns and demands. It has been estimated that the majority of the U.S. population will live in mega-regions, with more than 80% of the population in metropolitan, urban, and suburban areas [36].

While these reports focus on trends in the U.S, the research and approach to addressing the issues has some relevance within the Manitoba Capital Region. The discussion on Transportation Modeling and relevancy over extended time frames is a critical concept to understand when discussing future infrastructure requirements. Figure 8 provides an overview of model relevancy and application.

The report goes on to explain “Scenario Planning”. Scenario planning is one way transportation agencies can deal with the impacts of trends on future travel demand which are to a large extent uncertain, incomplete, evolving, or conflicting. Scenarios are generally a way of thinking about the future. Scenario planning is typically defined as a process of surfacing a set of
plausible alternative futures, determining a range of possible consequences, and identifying strategies or policy options that would be robust across the set of futures.

Figure 8 - Overview of travel demand types considered [36]
6.0 MOVING FORWARD IN THE WINNIPEG AND MANITOBA CAPITAL REGION - LONG TERM NEEDS ASSESSMENT

6.1 ISSUE STATEMENTS

The issues facing regional transportation in the Manitoba Capital Region are many and varied. This short-list has been prioritized for further discussion:

1.0 Aging infrastructure

Much of the major transportation infrastructure in the region is past or near its design age. This includes bridges and other structures and this has major safety and cost implications. The region needs to focus on maintaining, rebuilding and modernizing the existing infrastructure while still increasing the capacity of the system.

2.0 Pressure from population growth and demographic change

It is expected that the population in the Manitoba Capital Region will approach one million residents within the Regional Growth Strategy timeline of 2035. This is considerable growth that will drive many decisions regarding the transportation system and other sectors. The population is also aging and becoming more culturally diverse. These pressures and challenges must be addressed as infrastructure plans are advanced.

3.0 Greenhouse gas emissions

It has recently been accepted by the international scientific community that human activities are leading to significant increases in greenhouse gas emissions around the world. These emissions are in turn causing increasing global climate change with all of the dangers that this brings to future generations. The transportation sector is the main consumer of fossil fuels in the region (uses 80 percent of the petroleum products). For this reason, reducing greenhouse emissions will be one of the major challenges over the next few decades.

4.0 Need for modal choice

Many factors will be pushing the region toward increasing the use of transportation modes other than the personal vehicle, such as transit, bicycle and walking. These include the aging and culturally diverse population of the area, high energy prices, increasing greenhouse gas emissions, the increased costs of road building and other factors. One challenge will be to identify the funding and resources to make major expansions to the transit system. Walking and cycling will be assisted by increasing density and building mixed use community clusters as the population continues to grow.
5.0 Goods movement

The region will see a huge growth in truck, rail and air shipping. There is a need for efficient movement of goods throughout the region that is supported by the success of the Asia Pacific Gateway and Mid-Continent Trade Corridor. Some of the challenges faced by commodity movers are road capacity resulting from having to share roads with personal vehicles. The CentrePort development as a major inland port will stimulate and generate a much higher level of goods movement in the Capital Region and increase integration between the air cargo movements at James Richardson International Airport, rail movements at the intermodal facility and the trucking industry.

6.2 REGIONAL NEED ASSESSMENT

Address Infrastructure Deficit

The prioritization of regional infrastructure replacement based on projected benefit to a sustainable and strategic transportation strategy is needed. While the demands for the replacement or rehabilitation are extensive, funding mechanisms are difficult to establish. A strategic approach to determine projects with the most benefit to sustainability, for instance, a transit first protocol, is needed. This would place projects that result in improvements to transit operations, and as a result, increase ridership, ahead of those that are neutral in their transit benefit. Another priority could be projects that support economic growth through improving goods movements to markets and/or access of employees to employment areas.

The six transportation elements that are necessary to support and facilitate a Regional Growth Strategy are:

1.0 Develop Land Use and Transportation Models that Incorporate Population Growth and Demographic Change

With the need to provide housing and services to support a projected population of one million residents in the Manitoba Capital Region, a regional planning model that is flexible and responsive to a variety of growth scenarios is needed. The land use and transportation models need to be integrated and be provided as a resource for development of traffic studies. These planning models should be scalable to address the variety of demands placed on municipalities as new developments are proposed and developed.

2.0 Develop Strategic Planning Framework Checklist

To facilitate the adherence to regional strategic direction at the municipal or local level, a Planning Framework Checklist should be developed. This checklist would provide local and provincial politicians and administrative staff direction in the creation and approval of development plans, ensuring compliance to regional strategies.
3.0 Strive for Greenhouse Gas Emission Reduction

Each proposed capital project should be vetted through a review that includes the evaluation of greenhouse gas reductions. Projects that can be shown to reduce congestion, that support opportunities for a shift in travel mode and decrease environmental impact should be given priority.

4.0 Promote Modal Choice

Each proposed capital project should include the development of facilities that make alternate mode choice for the same trip more attractive. The intent would be to construct transit facilities and active routes that allow a real alternative to single occupancy vehicle trips.

5.0 Goods Movement Integration

The efficient movement of goods needs to be accommodated in the development of transportation infrastructure. Routes need to be identified as primary good movement routes and designed as such. These routes would only service commuter and transit traffic as a secondary function.

6.0 Integrated Planning Governance

The Manitoba Capital Region should strive to establish a governance mechanism to oversee the development of strategic infrastructure development plans and coordinate, fund and deliver capital improvements identified in long term planning documents. To be successful, the structure of the mechanism is likely to require that it be provided the resources and mandate to oversee all regional infrastructure planning and capital project delivery. Removing the direct parochial influence of local and provincial political interference in strategic project delivery would ensure the adherence to long term planning documents. The governance structure requires the cooperation of all members of the partnership of Capital Region Municipalities and a dedicated sustainable funding mechanism.
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7.0 SUMMARY

Winnipeg and other members of the Partnership of Manitoba Capital Region Municipalities are making strides to implement strategic regional planning to foster and sustain economic growth and provide for infrastructure and services for an expected one million people in the 20 year planning horizon. Recent planning documents have touched on the need for regional cooperation in the development of the Capital Region, to ensure services meet the demands.

Although the region has a history of good planning and regional transit service going back to the early and mid-1900’s to the early 1960’s, recent dysfunctional adherence to those plans and abandonment of support for regional transit by expanding reliance and use of the automobile has resulted in the degradation of transportation infrastructure to the point where congestion and economic stagnation has become the common complaint.

Funding improvements to the transportation network falls on the municipal governments at the same time as options for raising funds at the municipal level are decreasing. Support for infrastructure projects is mired in political whim with strategic planning getting little support. Often projects are focused on narrow goals with little regard for impact on adjacent jurisdictions.

There are tools available to address some of the pressing needs in the Manitoba Capital Region, but coordination between jurisdictions and funding for interjurisdictional non-capital projects is difficult to secure. The development of a Regional Transportation Model, integrating Land use and Scenario Evaluation would be an example of a project that requires interjurisdictional cooperation.

There is a need for an integrated, well-funded planning and construction mechanism that has the authority to bypass parochial political interference on approved strategic directions and to ensure long-term requirements are integrated into any approval processes at the local level.

Infrastructure projects should require the integration of multimodal objectives with sufficient funding to accommodate real improvements in alternate mode choice. Project priority should be focused on the demonstrated ability to foster mode choice, reduce greenhouse gas emissions and align with regional strategic goals.
8.0 BIBLIOGRAPHY


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