



City of Winnipeg

Southwest Rapid Transit Corridor Stage 2 Alignment Study

Final Report

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1.0 EXECUTIVE SUMMARY

The City of Winnipeg Transit Department retained Dillon Consulting Limited (Dillon) and our sub-consultant Stevenson Advisors Group (Stevenson) to form a Working Group to examine alignment options for the future development of Stage 2 of the Southwest Rapid Transit Corridor. The Working Group, which included the City of Winnipeg, the Province of Manitoba, and the University of Manitoba, supported the assessment. This Final Report documents the background information, alignment alternatives that were developed and evaluated, alignment option land requirements, development opportunities related to future rapid transit development, and a summary of public consultation feedback.

The first phase of the Southwest Rapid Transit Corridor, Stage 1, known as the Southwest Transitway in Winnipeg's Transportation Master Plan, links downtown Winnipeg with major destinations in the southwest part of the city on an exclusive right-of-way. Prior to the completion of the Southwest Transitway, the City enhanced the transit system along "Transit Quality Corridors" by incorporating features such as diamond lanes, queue jump lanes, transit priority signals, and the implementation of Intelligent Transportation System (ITS) technology to provide real-time passenger information tools. This integrated set of improvements, in conjunction with the first stage of the Southwest Transitway, greatly improved the speed, reliability, comfort, accessibility, and convenience of transit service. An extension of Stage 2 from Jubilee Avenue to Bison Drive would complete the link between downtown Winnipeg to southwest Winnipeg that presents opportunity for access for the University of Manitoba (U of M), Investors Group Field, and residential and employment neighbourhoods, providing a one-seat trip for passengers.

Through discussions with the Working Group, four options for the future alignment of Phase 2 of the Southwest Transitway were identified:

- Concept 1A – Parker/Manitoba Hydro Lands Paralleling CN West Rail Line
- Concept 1B – Parker/Manitoba Hydro Lands Paralleling Parker Avenue
- Concept 2 – CN Letellier Subdivision
- Concept 3 – Pembina Highway Center Median

Concept 3, the Pembina Highway median option, would require extensive property, dislocate many commercial properties, require extensive reconstruction of Pembina Highway for the entire length south of Jubilee Avenue, create significant safety concerns at all 48 median openings along Pembina Highway, and is unable to cross Bishop Grandin Boulevard. For these reasons, the Working Group agreed that the Pembina Highway median alignment option is not viable and did not need to be included in the evaluation process.



The alignment options identified for Stage 2 of the Southwest Rapid Transit Corridor will require the assembly of both public and privately owned lands. The report outlines the analysis of land requirements, estimated acquisition costs associated with the various transitway concepts, and tax incentive financing for each option. The implementation of Rapid Transit provides opportunities for new development or redevelopment in areas proximate to stations. A comparative analysis summarizes development and redevelopment opportunities for each of the alignment options and quantifies the opportunities and potential for new residential units and commercial space. The study team used the City of Winnipeg's Transit-Oriented Development Handbook to develop assumptions for analysis of the corridor options. In this way, the Stage 2 alignment decision-making includes consideration of technical feasibility, capital cost estimates, and development impacts, all within the context of Winnipeg's city planning policy.

The study invited public input and feedback about alignment options. Public consultation also involved working collaboratively with the City to integrate the communication and consultation effort to prepare and share information about the Southwest Transitway project. Throughout the study process, the study team invited opinions and suggestions from various City Departments, interest groups, property owners, and the public. The study addresses issues raised. A public open house on September 19 and 22, 2012 invited further feedback.

The review and evaluation of the alignment options considered two major rapid transit technologies: Bus Rapid Transit (BRT) and Light Rail Transit (LRT). From an operational perspective, each technology can work with any of the identified alignments. Based on transit service design, transfer of ridership, flexibility of the system, walking distance to the stations, and development density, Concepts 1A and 1B are seen as being more suited to BRT while Concept 2 is seen as being more suited to LRT.

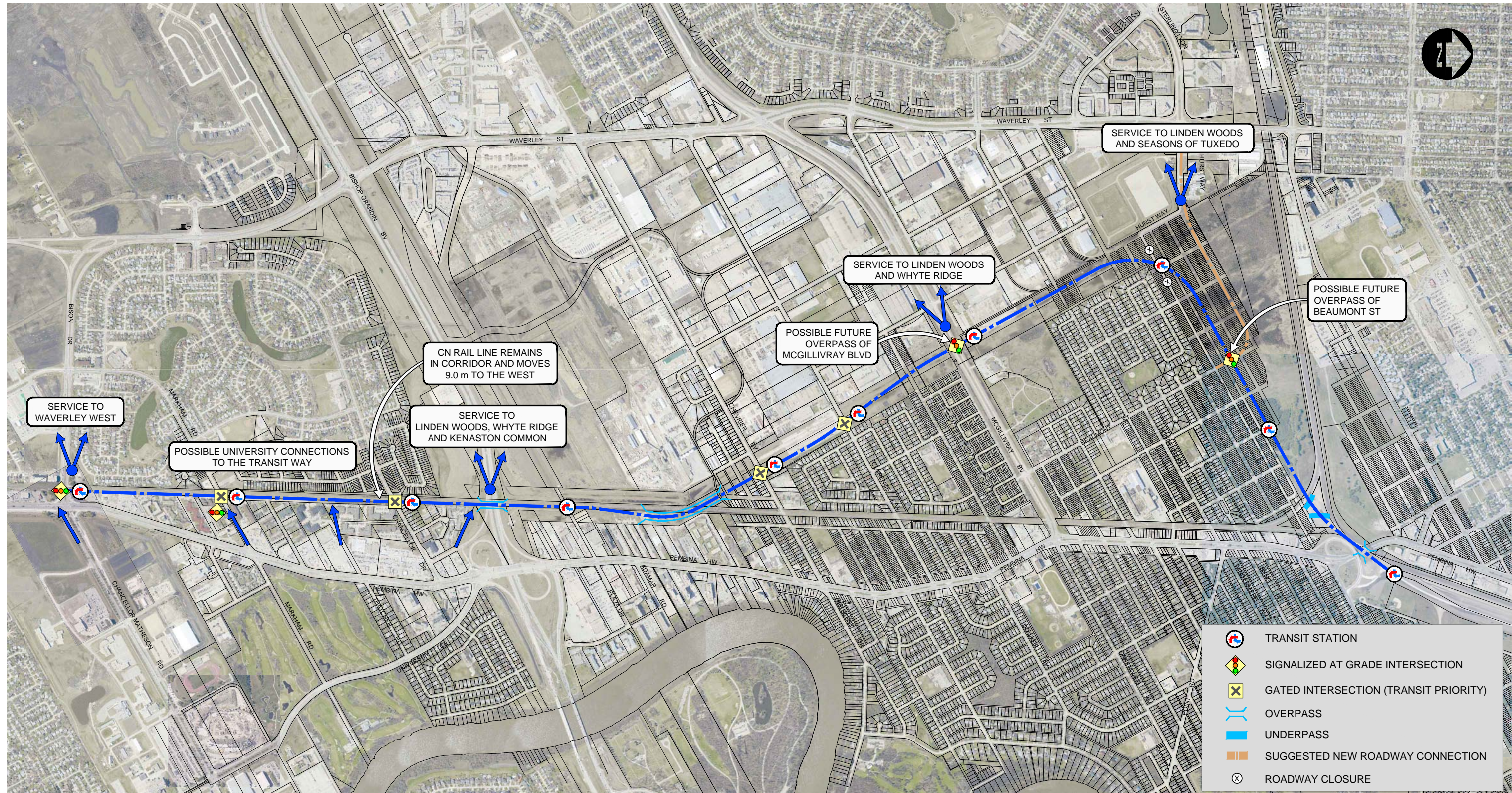
The study considers operational, implementation, environmental, community, economic (property), TOD and TIF metrics, base costs, future build-out opportunities, and public opinion. Based on this analysis, the study finds Concept 1B the best alignment for Stage 2 of the Southwest Rapid Transit Corridor provided the City maintains a high level of transit service to Pembina Highway. Concept 1B aligns through the Parker/Hydro Lands paralleling Parker Avenue and then shifts to locate within the Manitoba Hydro right-of way until it intersects the existing CN track, north of Bishop Grandin. The alignment continues south along the east side of the CN rail line to Bison Drive. This alignment would allow the U of M and Stadium Station to access the rapid transit system via multiple potential access points, along with alternate extensions of additional phases into southwest Winnipeg. Concept 1B can accommodate both the BRT and LRT transit travel modes. The following Figure illustrates the recommended alignment.

Although the main intent of this alignment study is to review possible Stage 2 alignments that extend the transitway from Jubilee Avenue to Bison Drive, it is critical that the Stage 2 main alignment permits the U of M the opportunity to connect to the transitway. The study assessed alignment options for U of M's and Investors Group Field's connection options and confirms they can be accommodated.



The U of M will explore the actual running way design, the number of stations, and their design/location, through the area master planning, phase one of their planning process, and, present their findings to Winnipeg Transit for approval. The re-zoning process will also be explored at the implementation phase. They will use their design competition and master planning process to find a context sensitive, multi-modal corridor development that adds to local neighbourhood quality of life.

Appendices to the report document existing site photos, summary of consultation meetings held with major stakeholders, public consultation and open house documentation, and a matrix evaluation of alignment concepts.



2.0 INTRODUCTION

The City of Winnipeg Transit Department retained Dillon Consulting Limited (Dillon) and our sub-consultant Stevenson Advisors Group (Stevenson) to examine alignment options for the future development of Stage 2 of the Southwest Rapid Transit Corridor, as directed by Council's approval of the Transportation Master Plan in November 2011. With the completion of Stage 1 of the Southwest Transitway from Queen Elizabeth Way to Jubilee Avenue, an extension of Stage 2 from Jubilee Avenue to Bison Drive would complete the link between downtown Winnipeg to the University of Manitoba (U of M), Investors Group Field, and southwest suburbs, providing a one-seat trip for passengers. The Working Group, including the City of Winnipeg, the Province of Manitoba, and the U of M, supported the assessment.



Dillon undertook a review of future rapid transit needs for southwest Winnipeg to examine and evaluate possible alignment options for the Stage 2 extension of the Southwest Transitway bearing in mind future growth and land use patterns consistent with *OurWinnipeg* and other related city plans. The alignment alternatives reviewed were part of a significant public consultation process as part of the Winnipeg Transportation Master Plan. They were approved by Council, as part of the Plan, in November 2011 and include an extension of the transitway from Jubilee Avenue to Bison Drive, opportunities for the U of M to connect rapid transit service from the Fort Garry Campus to the Corridor, and possible other extensions in southwest Winnipeg. Dillon, together with the Working Group, reviewed the major alignment options considering engineering, socio-economic and environmental issues, property impacts, Transit Orientated Development (TOD), tax incentives, ridership, active transportation, and expected construction costs.

The analysis considered land availability, development opportunities, corridor construction costs, and expected ridership growth.

Once the major alignment options endorsed by Council in the Winnipeg Transportation Master Plan were reviewed and re-affirmed by the Working Group, Dillon further analyzed each option to compare the relative advantages and disadvantages of each. The analysis considered land availability, development opportunities, corridor construction costs, and expected ridership growth. Although the alignments proposed and evaluated can accommodate various modes of transit, some rapid transit technology requires more land, additional services, or higher development density to function efficiently. Dillon reviewed these issues, in discussion with and direction from the Working Group, ensuring that the proposed corridor is viable and sustainable over time. To complete the evaluation, the community was invited to review the alignment options under consideration and provide additional public feedback.

TOD opportunities factored heavily in reviewing the proposed alignments. Dillon held one-on-one meetings with key stakeholders to gather information about potential residential and mixed-use development opportunities as well as potential constraints to development of the transitway. As directed in the City of Winnipeg's Request for Proposal, detailed consideration was given to the southwest Winnipeg lands designated as Major Redevelopment Sites in *OurWinnipeg*. Based on the recommended alignment options identified by the Working Group, the study team identified land parcels and ownership that comprise the potential corridor alignments and assembled a full inventory of available development lands associated with each alignment. Based on the principles of TOD and assuming a densification through a mix of land uses, Stevenson provided estimates of potential volumes and types of development that could be attracted to the available lands for each alignment option over an established time horizon.



Stevenson developed a pro-forma model for estimating potential revenues flowing from the TOD (mixed-use nodes). They conducted a comparative analysis of potential tax revenues through TOD to determine a preliminary measure of feasibility for the opportunity to finance the alternative alignment options through Tax Increment Financing (TIF).

This report documents the work undertaken as summarized above. It evaluates the alternative alignments for the Stage 2 extension of the Southwest Transitway from Jubilee Avenue to Bison Drive.

3.0 BACKGROUND INFORMATION

Since the early 1970s, the City of Winnipeg has contemplated a rapid transit system to link the suburbs with the downtown core. Stage 1 of the Southwest Rapid transit Corridor, approved in October 2008, was developed as a full featured Bus Rapid Transit facility, including a grade-separated exclusive transitway, convertible to rail technology at a later date if required. Long term planning identified several rapid transit corridors, including the Southwest Corridor, Eastern Corridor, Western Corridor, Southeastern Corridor, Northeastern Corridor, and Northwestern Corridor. To date, the City completed some minor planning work on the Eastern and Western Corridors, but focussed all functional, detailed design, and construction on the Southwest Corridor.



The first phase of the Southwest Rapid Transit Corridor, Stage 1, known as the Southwest Transitway in Winnipeg's Transportation Master Plan, links downtown Winnipeg with major destinations in the southwest part of the city on an exclusive right-of-way. This southern limit of the BRT corridor at Jubilee Avenue is bounded by Argue Avenue to the east and Fort Rouge Yards to the west. It continues north between the City of Winnipeg Fort Rouge Transit Base and VIA Rail maintenance facility, crosses under CN's rail mainline, and parallels the mainline on the west side of the

tracks to its northern limit at Queen Elizabeth Way. Three transit stations were constructed on the transitway: Harkness Station, Osborne Station, and the strategically located Fort Rouge Station, which will service a planned TOD in the former Fort Rouge rail yards.

Prior to the completion of the Southwest Transitway, the City enhanced the transit system along "Transit Quality Corridors" by incorporating features such as diamond lanes, queue jump lanes, transit priority signals, and the implementation of Intelligent Transportation System (ITS) technology to provide real-time passenger information tools. This integrated set of improvements, in conjunction with the first stage of the Southwest Transitway, greatly improved the speed, reliability, comfort, accessibility, and convenience of transit service.

As outlined in the City of Winnipeg's Request for Proposal dated May 7, 2012, this high level examination of alignment options for the next stage of the Southwest Rapid Transit Corridor includes contemplation of both Bus Rapid Transit (BRT) and Light Rail Transit (LRT). The design of Stage 1 accommodates a conversion to LRT, if required in the future. The design accommodates LRT requirements for vertical clearances and track integration; right-of-way geometry and grades; structural loading; trunk storm sewers, and; utility accommodations. Whether bus or rail is chosen for Stage 2, the alignments reviewed and evaluated in this study can accommodate the physical infrastructure requirements for either technology.

Throughout this investigation, Dillon considered the social, environmental and economic development of Winnipeg over the next 30 years. The City's vision for rapid transit in *OurWinnipeg* includes TOD that includes active transportation facilities wherever possible. Keeping in mind the City's intent to provide a dedicated Stage 2 corridor to Bison Drive with opportunities for other connection nodes from other areas of southwest Winnipeg, including Investors Group Field and the U of M, Dillon examined several alternative alignments for the extension of the Southwest Rapid Transit Corridor beyond the CN Letellier railway alignment envisioned by earlier City plans.

The City's vision for rapid transit in OurWinnipeg includes TOD that includes active transportation facilities wherever possible.

3.1 CITY OF WINNIPEG PLANNING AND POLICY CONTEXT FOR SOUTHWEST TRANSITWAY

Along with *OurWinnipeg*, Dillon reviewed several other documents to ensure the recommended alignment provides innovative and proactive transportation solutions that exemplify City policies, goals, and objectives, and consider public and stakeholder feedback, including:

- Winnipeg Transit-Oriented Development Handbook;
- Complete Communities;
- Winnipeg Transportation Master Plan;
- MMM Group Limited's May 2012 Transit Oriented Development Opportunities with the Southwest Rapid Transit Corridor, prepared for the U of M;
- Christopher Baker's 2010 practicum submitted to the U of M, Testing the Benefits of On-street Rapid Transit Alignments: Implications for Winnipeg's Southwest Rapid Transit Corridor; and,
- McCormick Rankin Memo on "Future Trips and BRT Network".

3.1.1 *OurWinnipeg*

Our Winnipeg calls for strong and dynamic integration between transportation and land use planning with a focus on accommodating growth and change in Transformative Areas including Corridors, of which the Southwest Transitway is one. The connection and expansion of Winnipeg's sustainable transportation and infrastructure networks is one of the objectives of *OurWinnipeg*'s Policy 01-1 on City Building.



OurWinnipeg directs Corridors to accommodate much of Winnipeg's growth, providing mixed-use, high-quality urban development. People and jobs will be concentrated in areas well-served by primary transit service and located close to transit stations and stops. Development must optimize existing investment, municipal infrastructure, and facilities. *OurWinnipeg* further directs that, where appropriate, Corridors will be developed in accordance with TOD principles.

OurWinnipeg designates 11 Major Redevelopment Sites as large scale opportunities to enhance Winnipeg's urban fabric by repurposing obsolete land uses as new developments. The Southwest Transitway potentially connects 5 of Winnipeg's 11 designated Major Redevelopment Sites (see Figure 1).

3.1.2 Complete Communities

Complete Communities is one of the four Direction Strategies supporting *OurWinnipeg* and Council has adopted it by Secondary Plan by-law. The policy document includes specific direction for rapid transit corridors (Policy 03-2i). The stations will be the primary focus for development along the rapid transit corridors, providing strategic opportunities for growth, intensification, and redevelopment in accordance with TOD principles. This was a primary consideration in the analysis undertaken as part of this study.



Specifically, study assumptions for evaluating the Southwest Transitway options mirrored policy direction:

- Development will be nodal rather than linear;
- Medium to high density development that is greater than the community average;
- A mix of uses;
- Compact, high quality pedestrian environment;
- An active, defined centre;
- Innovative parking strategies, and;
- Rapid transit stations.

Complete Communities includes three directions for rapid transit corridors:

- Promotion of TOD to accommodate growth and change along rapid transit corridors through integrated land use, transportation and infrastructure planning. The Transportation Master Plan will direct all specifics of planning for rapid transit corridors.
- Promotion of transit-supportive land use and urban form at centres along rapid transit corridors.
- Promotion of TOD at centres along rapid transit corridors through incentives and innovative approaches where required.

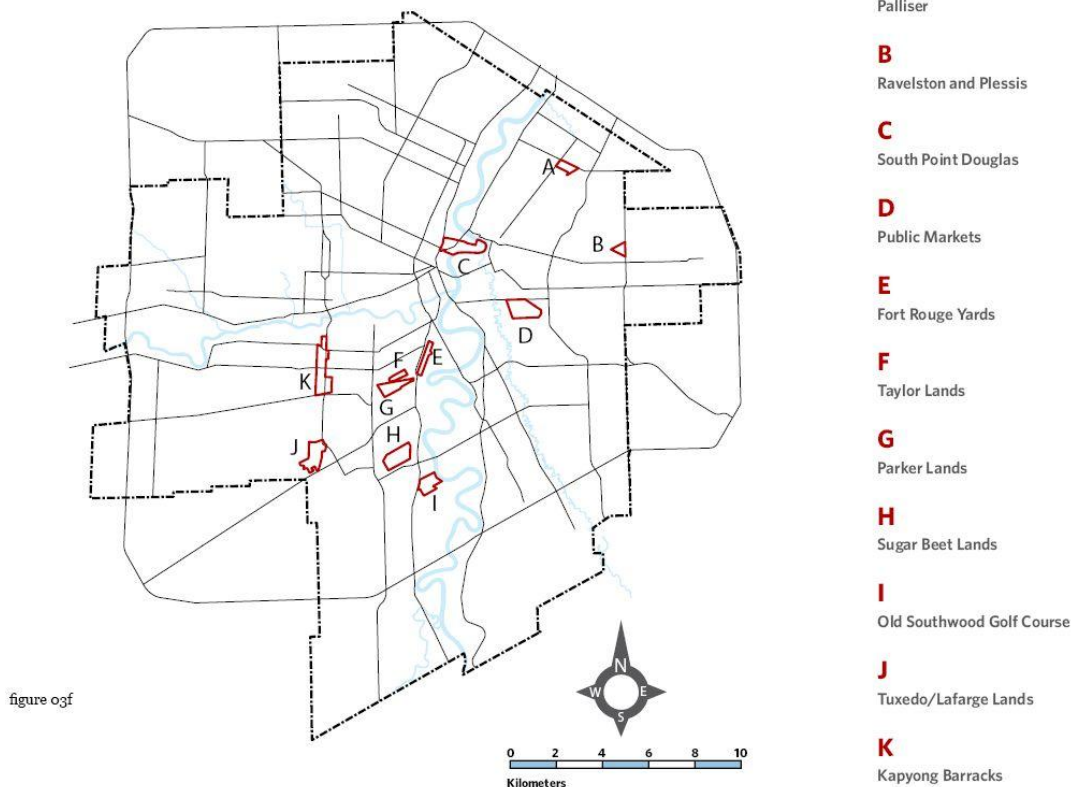
Complete Communities also presents policies with respect to Major Redevelopment Sites (Policy 03-03) of which the Southwest Transitway can potentially influence and serve up to five of the designated sites (Fort Rouge Yards, Taylor Lands, Parker Lands, Sugar Beet Lands, and Old Southwood Golf Course).

"In order to maximize the development potential of both the Major Redevelopment Sites and the viability of the transit system, these lands should be developed in accordance with the principles of Transit Oriented Development." (Complete Communities, p.66) Redevelopment Sites feature Neighbourhood Centres, including Parks, Places, and Open Spaces, that are the nodes with which to integrate public transit stations. The City's policy is to help reduce Major Redevelopment Site barriers related to the complexity of location, infrastructure, land assembly, and potential contamination.

"In order to maximize the development potential of both the Major Redevelopment Sites and the viability of the transit system, these lands should be developed in accordance with the principles of Transit Oriented Development." (Complete Communities, p.66)

Figure 1: Major Redevelopment Sites as Illustrated in Complete Communities

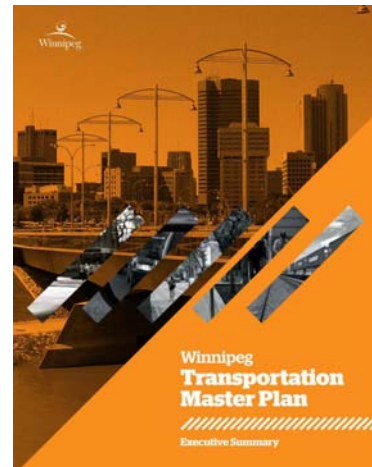
MAJOR REDEVELOPMENT SITES



One option for the extension of the Southwest Transitway has an added benefit of providing rapid transit service adjacent to designated General Manufacturing Employment Lands in *OurWinnipeg*. This has the advantage of meeting several Complete Communities policies that call for superior public transit service for employment lands that attract large numbers of employees. Over time, the infrastructure can present additional economic opportunity for higher order business development.

3.1.3 Transportation Master Plan

Council adopted the Winnipeg Transportation Master Plan in November 2011. It identifies the Southwest Rapid Transit Corridor as an initial priority, Stage 2 to be phased in by 2016. The most significant policy considered in the context of this study is the direction to align land use and transportation planning decisions to support the rapid transit network: a network of exclusive right-of-ways that become multi-modal transportation hubs, either connecting with trunk rapid transit routes or joining the rapid transit corridors from the street system, where bicycle parking and park and ride facilities are fully integrated with rapid transit service.



The Transportation Master Plan involved detailed transportation analysis as part of the overall *OurWinnipeg* planning process. It resulted in identifying, through policy, two high level alignment options for the extension of the Southwest Rapid Transit Corridor to Chancellor-Matheson to 2016 as shown on the drawing below. One option proceeds along the Letellier CN right-of-way and the other option takes advantage of a Manitoba Hydro corridor that connects two undeveloped Major Redevelopment Sites (Parker Lands and Sugar Beet Lands). This study provides the finer detail necessary to identify a preferred alignment option.

Figure 2: Southwest Rapid Transit Corridor as Illustrated in Winnipeg Transportation Master Plan



4.0 DETERMINATION OF ALIGNMENT OPTIONS

The City has discussed various transitway alignments for the Southwest Corridor since the early 1980's. However, Winnipeg's recently approved Transportation Master Plan (Council, November 2011) provides the basis for development of the alternative concepts included in this report. Dillon subsequently assessed the existing information, future development plans by key stakeholders, *OurWinnipeg* and other relevant studies/policies, and ultimately, took direction from the Working Group. All of the alignments terminate at Bison Drive. All allow for the U of M to access the rapid transit system via multiple access points, along with alternate extensions of additional phases into southwest Winnipeg. Any of the transitway alignments under consideration are also able to accommodate various transit travel modes, although some modes require more land, additional services, or higher development density to function efficiently.

Any of the transitway alignments under consideration are also able to accommodate various transit travel modes...

4.1 ALIGNMENT OPTIONS FOR EXTENSION OF STAGE 2 FROM JUBILEE AVENUE TO BISON DRIVE

This section describes the preliminary alignment concepts that Dillon developed at a level of detail to allow for their comparison in terms of operational, implementation, environmental, community, property, TOD & tax incentive financing (TIF) metrics, and overall cost perspective. Concept drawings of the various Stage 2 Southwest Rapid Transit Corridor alignments are illustrated in Figure 3, Figure 4, and Figure 5. It should be noted that for comparison and evaluation purposes the alignments are shown as similar as possible in order to compare "apples to apples" for intersections in particular, when in fact some alignments have the ability to provide additional functionality, such as transit overpasses' of busy intersections due to land availability thus providing more efficient service. This will be discussed and explained in more detail in the evaluation of the alternatives.

4.1.1 Concept 1A – Parker/Manitoba Hydro Lands Paralleling CN West Rail Line

Snapshot: Concept 1A is aligned in the Parker/Hydro Lands alongside CN's main line, then shifts and is located within the Manitoba Hydro right-of-way until it intersects the existing CN track, north of Bishop Grandin. The alignment continues south along the east side of the CN rail line to Bison Drive.



Concept 1A extends from Stage 1 of the Southwest Rapid Transit Corridor from Jubilee Avenue over Pembina Highway on a structure just north of the Jubilee Avenue Overpass. West of Pembina Highway, the transitway alignment passes under two CN rail tracks (Letellier Subdivision and switching track), at which point Concept 1A (Figure 3) continues west alongside CN's main line. At the westerly end of the Parker Lands, the alignment turns in a south easterly direction, crosses Parker Avenue and then is located within the Manitoba Hydro right-of-way until it intersects the CN Letellier rail line just north of Bishop Grandin Boulevard. This alignment provides an opportunity to use a pedestrian connection under or over the existing CN rail line to link with the developable Shindico lands on the north side of the tracks, one of the 11 Major Redevelopment Sites designated in *OurWinnipeg / Complete Communities*. However, this alignment would significantly impact the current developable GEM Equities Inc. lands north of Parker Avenue, also a Major Redevelopment Site.

As this transitway alignment would require the termination of Parker Avenue, at Hurst Way and the transitway, an extension of Beaumont Street from Parker Avenue to Hurst Way is suggested as a replacement road to accommodate travel between the residential areas west of Pembina Highway and the Sterling Lyon/Linden Woods area. Concept 1A will require a level crossing of an extension of Wilkes Avenue immediately east of Hurst Way. South of this crossing, the alignment turns south, and continues within the Manitoba Hydro right-of-way. The alignment then continues within the Manitoba Hydro right-of-way with an at-grade crossing of McGillivray Boulevard, travelling along the existing Manitoba Hydro corridor across Chevrier Boulevard up to Manahan Avenue. Due to the availability of land within the Manitoba Hydro corridor grade separations at Hurst Way and at McGillivray Boulevard are recommended. This type of infrastructure would not be possible for the Concept 2 alignment, due to restricted right-of-way, and therefore for evaluation purposes, at grade intersections are assumed for all concepts.

Just south of Manahan Avenue, this alignment crosses over two railway service tracks and the CN Letellier subdivision on an overpass structure, touching down on the east side of the Letellier Subdivision just north of Plaza Drive. From this point, the Concept 1A alignment continues south along the east side of the CN rail line, crosses Bishop Grandin Boulevard on a new overpass, and terminates at Bison Drive. Existing site photographs of the potential Concept 1A alignment are included in Appendix A.

Additional node connections to other areas of southwest Winnipeg as well as U of M's opportunities to access the transitway are discussed in more detail in further sections of this report.

4.1.2 Concept 1B – Parker/Manitoba Hydro Lands Paralleling Parker Avenue

Snapshot: Concept 1B is aligned through the Parker/Hydro Lands paralleling Parker Avenue and then shifts and is located within the Hydro right-of-way until it intersects the existing CN track, north of Bishop Grandin. The alignment continues south along the east side of the CN rail line to Bison Drive. Concept 1A and 1B have the same alignments from Parker Avenue to Bison Drive.



Concept 1B extends from Stage 1 of the Southwest Rapid Transit Corridor from Jubilee Avenue over Pembina Highway on a structure just north of the Jubilee Avenue Overpass. West of Pembina Highway, the transitway alignment passes under two CN rail tracks (Letellier Subdivision and switching track), at which point Concept 1B (Figure 4) continues west paralleling Parker Avenue. At the westerly end of the Parker Lands the alignment turns in a southeasterly direction, crosses the existing Parker Avenue and then is located within the Manitoba Hydro right-of-way until it intersects the CN Letellier rail line, north of Bishop Grandin Boulevard. The Concept 1A and 1B alignments are identical south of Parker Avenue within the Manitoba Hydro right-of-way and the CN Letellier right-of-way.

As this transitway alignment would require the termination of Parker Avenue, at Hurst Way and the transitway, an extension of Beaumont Street from Parker Avenue to Hurst Way is suggested as a replacement road to accommodate travel between the residential areas west of Pembina Highway and the Sterling Lyon/Linden Woods area. Concept 1B will require a level crossing of an extension of Wilkes Avenue just opposite Hurst Way. South of the crossing, the alignment turns south, and continues within the Manitoba Hydro right-of-way. From Hurst Way the alignment continues along the existing Manitoba Hydro corridor in a southerly direction with an at-grade crossing of McGillivray Boulevard and then across Chevrier Boulevard up to Manahan Avenue. Due to the availability of land within the Manitoba Hydro corridor grade separations at Hurst Way and McGillivray Boulevard are recommended. This type of infrastructure would not be possible for the Concept 2 alignment, due to restricted right-of-way, and therefore for evaluation purposes, at grade intersections are assumed for all concepts.

Just south of Manahan Avenue, this alignment crosses over two railway service tracks and the CN Letellier subdivision on an overpass structure, touching down on the east side of the Letellier Subdivision just north of Plaza Drive. From this point the Concept 1B alignment continues south along the east side of the CN rail line crosses Bishop Grandin Boulevard on a new overpass and terminates at Bison Drive. Existing site photographs of the potential Concept 1B alignment are included in Appendix A.

Additional node connections to other areas of southwest Winnipeg as well as U of M opportunities to access the transitway are discussed in more detail in further sections of this report.

4.1.3 Concept 2 – CN Letellier Subdivision

Snapshot: Concept 2 parallels CN's Letellier rail subdivision in a shared right-of-way with the rail line from Jubilee Avenue to Bison Drive. The CN line would be moved in a westerly direction while the transitway would be located in the easterly half of the existing rail right-of-way.



Concept 2 extends Stage 1 of the Southwest Rapid Transit Corridor from Jubilee Avenue over Pembina Highway on a structure just north of the Jubilee Avenue Overpass. West of Pembina Highway, the alignment follows the east side of CN's Letellier sub-division continuing south and crossing Byng Place, Windermere Avenue, Somerset Avenue, Waterford Avenue, Southwood Avenue, McGillivray Boulevard, Waller Avenue, Clarence Avenue, Chevrier Boulevard, Bishop Grandin Boulevard, Chancellor Drive, Markham Road, terminating at Bison Drive (see Figure 5). All street crossings within this section would be at grade and controlled by signalized gates to accommodate both transit and CN train traffic, with the exception of Bishop Grandin Boulevard which will be a new overpass structure. Existing site photographs of the potential Concept 2 alignment are included in Appendix A.

4.1.4 Concept 3 – Pembina Highway Center Median

Snapshot: Concept 3 departs from Stage 1 of the Southwest Transitway at Jubilee Avenue and follows the center line of Pembina Highway from the end of Stage 1 to Bison Drive.



Concept 3 extends Stage 1 of the Southwest Rapid Transit Corridor from Jubilee Avenue along the center median of Pembina Highway to Bison Drive. An initial investigation of this center median alignment showed the following:



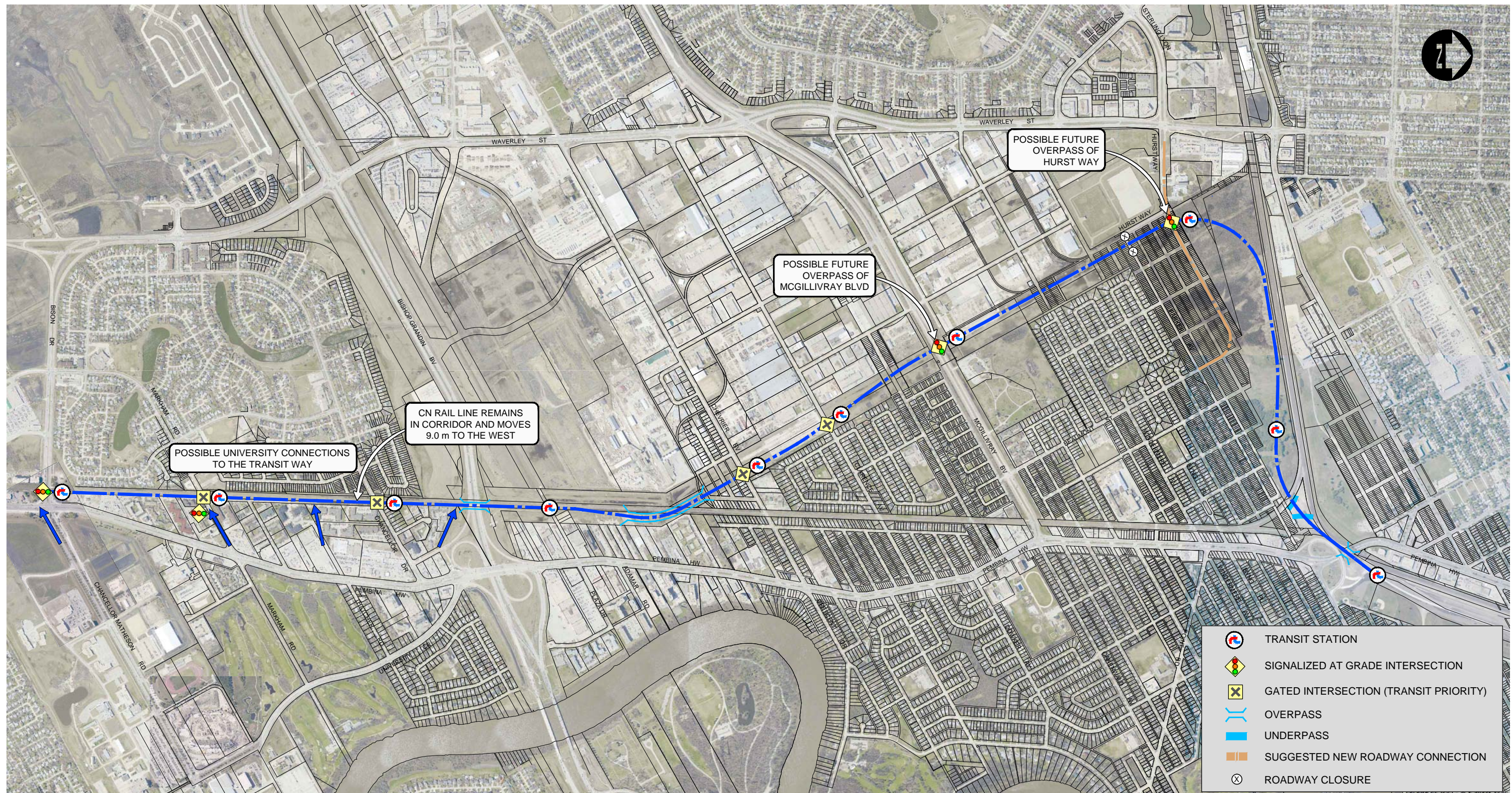
- Existing traffic counts on Pembina Highway range from 35,300 average weekday daily traffic (AWDT) north of Bison Drive/Chancellor Drive to 60,700 AWDT at Jubilee Avenue. This traffic is expected to increase as development grows in southwest Winnipeg.
- As part of Dillon's 2009 Quality Corridor Study for the City of Winnipeg Transit Department, the traffic study Synchro models determined that removing one lane of traffic in both directions along Pembina Highway was not feasible; lane removal would significantly impact the level of service, increase delay times, decrease average speeds, increase greenhouse gases including CO, NOx, and VOC emissions, as well as increase fuel consumption. This verifies that if a center median transitway is considered that new lanes would need to be constructed on Pembina Highway.
- The existing maximum Pembina Highway median width south of Jubilee Avenue is 10 m. However, the minimum width of median required to accommodate a center median transit corridor is 16 m.
- Pembina Highway would need to be widened along the total length of the alignment by a minimum of 6 m and with utility requirements would more realistically be 8-10 m. This could be accomplished by widening on either side of Pembina Highway or widening along only one side of Pembina Highway. For either option this would require significant roadway reconstruction.
- A substantial amount of commercial property must be acquired to accommodate the roadway reconstruction for both a Pembina Highway widening on one side or both sides equally. Most buildings are in close proximity to the property line and would require purchase; expropriation and/or re-location (see Figure 6). Experience indicates that, if a portion of a commercial or residential property is required, purchase of the total property in question is usually undertaken.
- The transition and access from the current Stage 1 transitway to a center media transitway option along Pembina Highway would be very difficult to accomplish.
- A center median transitway option along Pembina Highway would be a very slow and inefficient system due to the numerous median openings, pedestrian crossings and signalized intersections.
- The existing Pembina Highway Overpass of Bishop Grandin Boulevard is not able to accommodate a transitway alignment along the center median because the bridge structure's median barrier is too narrow.
- There are 48 median openings along Pembina Highway between Jubilee Avenue and Bison Drive. Most, if not all, of these openings have some form of left turn lane. A transitway along the center median results in vehicular traffic turning in front of buses which would make this option unsafe and would require complex traffic signalling.
- Local Pembina Highway businesses would be affected by closure of Pembina Highway medians that impacted their access.
- Installation of signal control at median openings to accommodate both through bus traffic and left turning vehicular traffic would be required and may not be well received.
- The current Street Renewal and Active Transportation link being constructed along Pembina Highway from Plaza Drive to Chevrier Boulevard further complicates a center median transitway alignment.

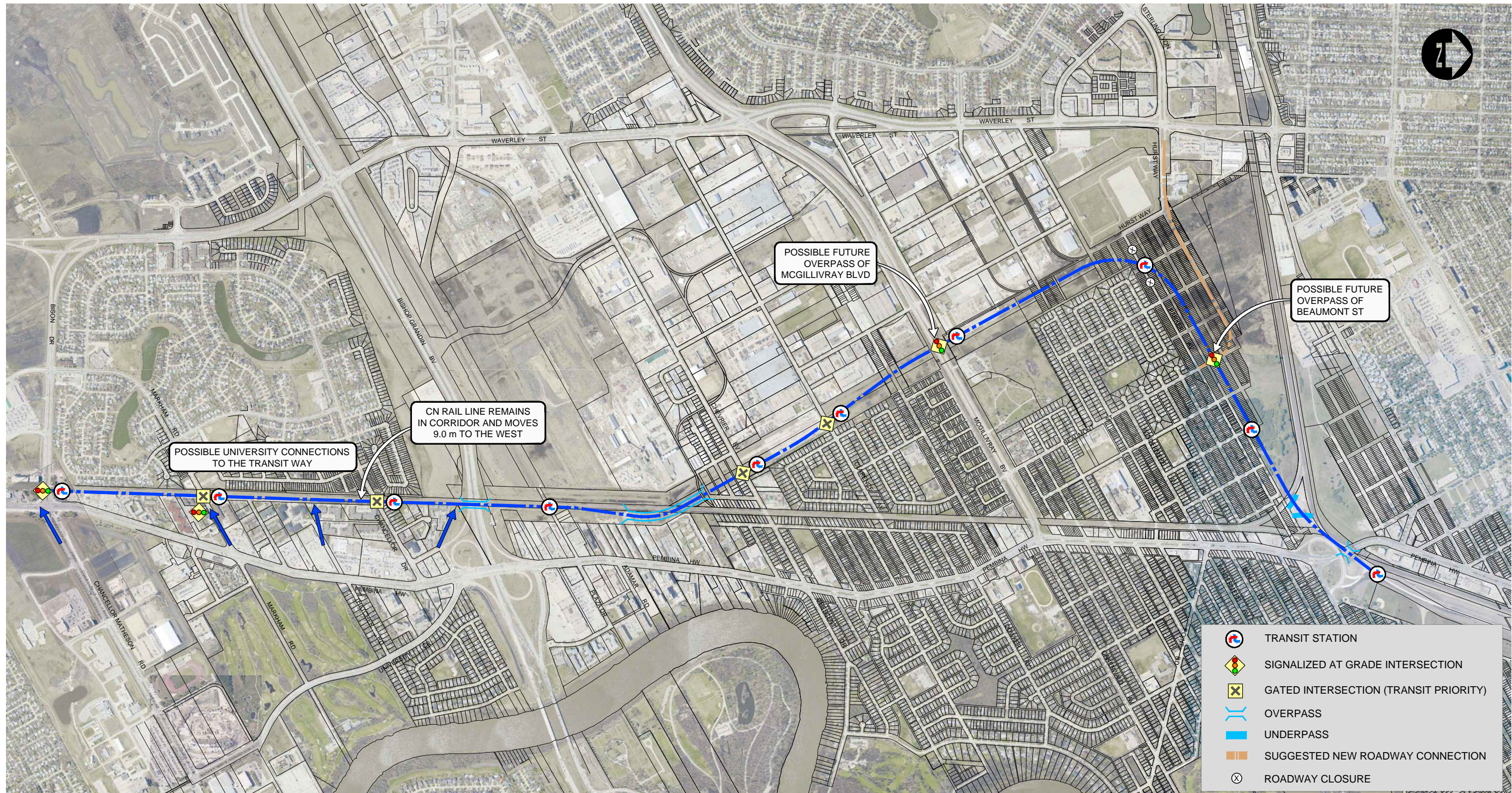
In summary, the Pembina Highway median option would require extensive property, dislocate many commercial properties, require extensive reconstruction of Pembina Highway for the entire length south of Jubilee Avenue, create significant safety concerns at all 48 median openings along Pembina Highway, and is unable to cross Bishop Grandin Boulevard. For these reasons, the Working Group agreed that the Pembina Highway median alignment option is not viable and did not need to be included in the evaluation process.

... the Working Group agreed that the Pembina Highway median alignment option is not viable and did not need to be included in the evaluation process.

4.1.5 Other Concepts Variations under Consideration

Dillon reviewed variations to the concept alignments documented above, such as elevated running ways. They were dismissed due to: extensive construction costs (in the range of \$140 – \$180 M/km), difficulty of locating stations on the elevated transitway at required nodes, inability to connect an elevated transitway to existing service and businesses at street level, and maintenance and operational complications.









4.2 ALIGNMENT OPTIONS BETWEEN CN LETELLIER AND UNIVERSITY OF MANITOBA

Although the main intent of this alignment study is to review possible Stage 2 alignments that extend the transitway from Jubilee Avenue to Bison Drive, it is critical that the Stage 2 main alignment permits the U of M the opportunity to connect to the transitway. Alignment options for U of M and Investors Group Field connection options were therefore assessed as part of this study.

In May 2012, MMM Group Limited carried out a study, "Transit Oriented Development Opportunities with the Southwest Rapid Transit Corridor". Prepared for the U of M, this study determined that in addition to the main transit terminal on Dafoe Road, a transit hub at the north end of the newly constructed Investors Group Field is the preferred location for a transit station within U of M lands. Dillon refers to this station as the Stadium Station for the remainder of this report.

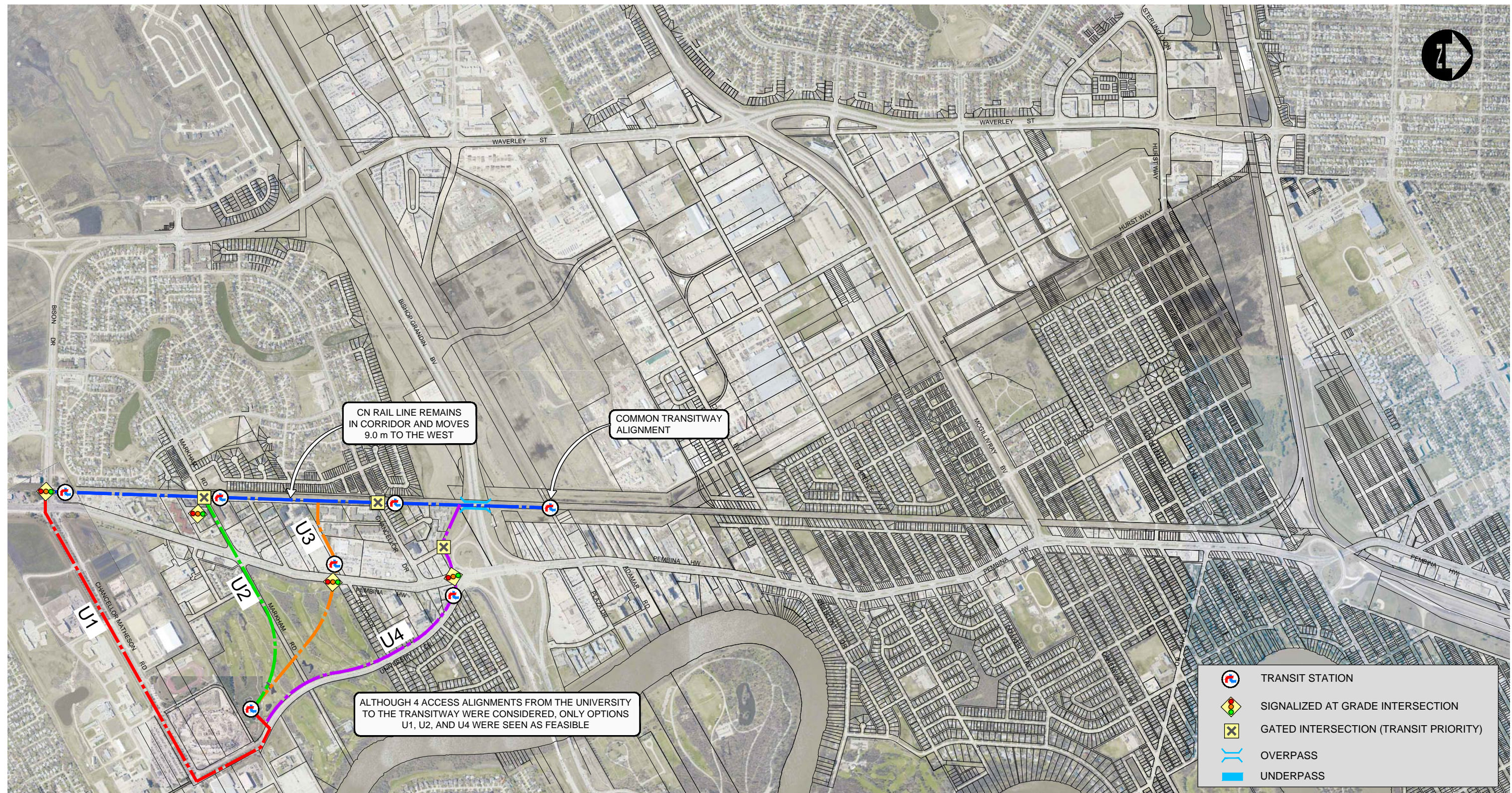
... a transit hub at the north end of the newly constructed Investors Group Field is the preferred location ...

Taking into consideration this preferred station location; Dillon investigated connections from the Stadium to the transitway and reviewed the following four alignment possibilities:

- U-1 Access - from transitway at Bison Drive along Chancellor Matheson to Stadium Station at Investors Group Field;
- U-2 Access - from transitway at Markham Road along Markham Road to Stadium Station at Investors Group Field;
- U-3 Access - from transitway at Thatcher along Thatcher Drive to Stadium Station at Investors Group Field, and;
- U-4 Access - from transitway at Bishop Grandin Boulevard via a new transitway to University Crescent Transit Station and then along University Crescent to Stadium Station at Investors Group Field.

As illustrated on Figure 7, the following is a brief description of each of these possible U of M access routes to the transitway, providing background information on the various routes investigated, impacts of these alignments on the current street system, the infrastructure required to make them functional, and approximate costs. The intention of this review is only to explore possible alignments for future U of M access to the transitway. The specifics about how the alignments fit from a context perspective forms the basis of the upcoming U of M area master planning process.

The U of M will explore the actual running way design, the number of stations, and their design/location, through the area master planning, phase one of their planning process, and, present their findings to Winnipeg Transit for approval. The re-zoning process will also be explored at the implementation phase. They will use their design competition and master planning process to find a context sensitive, multi-modal corridor development that adds to local neighbourhood quality of life.





4.2.1 U-1 Access - From Transitway at Bison Drive along Chancellor Matheson to Stadium Station at Investors Group Field

- Distance from transitway terminus at Bison Drive to Stadium Station is 2000 m.
- Two of the 12 existing transit routes already make use of this roadway to access the U of M.
- If the terminus of the transitway is at Bison Drive and access to the U of M is maintained as it currently operates, buses would be significantly impacted by being integrated with existing traffic on Chancellor Matheson, especially during game days. Compared to present, the number of buses operating on Chancellor Matheson would increase significantly.
- If this route becomes part of the dedicated transitway and the Stadium Station becomes the terminus of the transitway, a bus priority or exclusive bus lane will be required on both sides of Chancellor Matheson to accommodate buses.
- Chancellor Matheson is the main entrance and the historic and prestigious gateway to the U of M. As such, expanding this roadway would influence the sense of place that has evolved for this important Winnipeg landmark and is not viewed favourably by the U of M.
- This is the longest and most indirect route to the Stadium Station of the U of M access routes investigated.
- This route does not pass through the Old Southwood Golf Course lands, which does not support the City's policies (OurWinnipeg 01-1c and Complete Communities 3-03) and the U of M's plans to create a TOD at this Major Redevelopment Site.
- The expected overall costs to construct this busway access from the main transitway to the Stadium Station are in the range of \$20 – \$25 M, which includes land costs, but does not include any overpass of Pembina Highway if required.

4.2.2 U-2 Access - From Transitway at Markham Road along Markham Road to Stadium Station at Investors Group Field

- Distance from main transitway alignment from Markham Road to Stadium Station is 1050 m.
- For this access to the U of M, buses leave the transitway at Markham Road and use the existing Markham roadway and city street system. Buses will either operate in mixed traffic on Markham Road or priority lanes will be constructed.
- Markham Road is currently classified a City major collector from the CN tracks to Pembina Highway.
- Traffic signals already exist at Pembina Highway and Markham Road.
- This is the shortest route to the Stadium Station of the U of M access routes reviewed.
- This access route potentially provides bus service to the Old Southwood Golf Course lands, which supports the City's policies (OurWinnipeg 01-1c and Complete Communities 3-03) and the U of M's plans to create a TOD at this Major Redevelopment Site.



- The expected overall costs to construct this access from the main transitway to the Stadium Station are in the range of \$15 – \$18 M, including land costs.

4.2.3 U-3 Access - From Transitway at Thatcher along Thatcher Drive to Stadium Station at Investors Group Field

- Distance from the main transitway alignment from Thatcher Drive to Stadium Station is 1070 m.
- From the transitway, the extension will bisect two distinct and separate shopping complexes (the Safeway group from the Winners group). Between the main transitway and Pembina Highway, the extension would be located in a new right-of-way opposite of Thatcher Drive.
- This extension to the U of M creates a major barrier between the two major shopping complexes and opposition to this route from the commercial businesses is likely.
- This extension would likely require the expropriation of a major apartment block complex to allow the buses to egress from the main transitway to access Pembina Highway and then the U of M.
- Traffic signals do not currently exist at Pembina Highway at the proposed crossing site (Thatcher Drive) and therefore an additional set of traffic signals is required.
- To access U of M lands, full purchase of a recently constructed dental office located on the south side of Thatcher Drive may be required.
- This extension potentially provides rapid transit service to the Old Southwood Golf Course lands, which supports the City's policies (OurWinnipeg 01-1c and Complete Communities 3-03) and the U of M's plans to create a TOD at this Major Redevelopment Site.
- The expected overall costs to construct this access from the main transitway to the Stadium Station are in the range of \$30 – \$35 M including land costs for this option, which are significant as an apartment block complex close to the rail line needs to be expropriated.

4.2.4 U-4 Access - From Transitway at Bishop Grandin Boulevard via a New Exclusive Transitway along University Crescent to Stadium Station

- Distance from main transitway to Stadium Station is 1490 m.
- From an engineering perspective, this access presents a complex and challenging exit from the main transitway to University Crescent as it requires a new roadway be built alongside an existing embankment to access the west side Pembina Highway. Significant structural work and retaining walls are required due to the close proximity to existing apartment blocks on the south side of Bishop Grandin Boulevard and east of the CN tracks.
- This access requires a crossing of the eastbound off ramps from Bishop Grandin Boulevard.
- Current bus travel from the Pembina Highway bus stop to University Crescent is in the eastbound direction only. Major reconstruction of the Pembina Highway/University Crescent intersection would be required to accommodate full bus turning movements and westbound access to the main transitway.



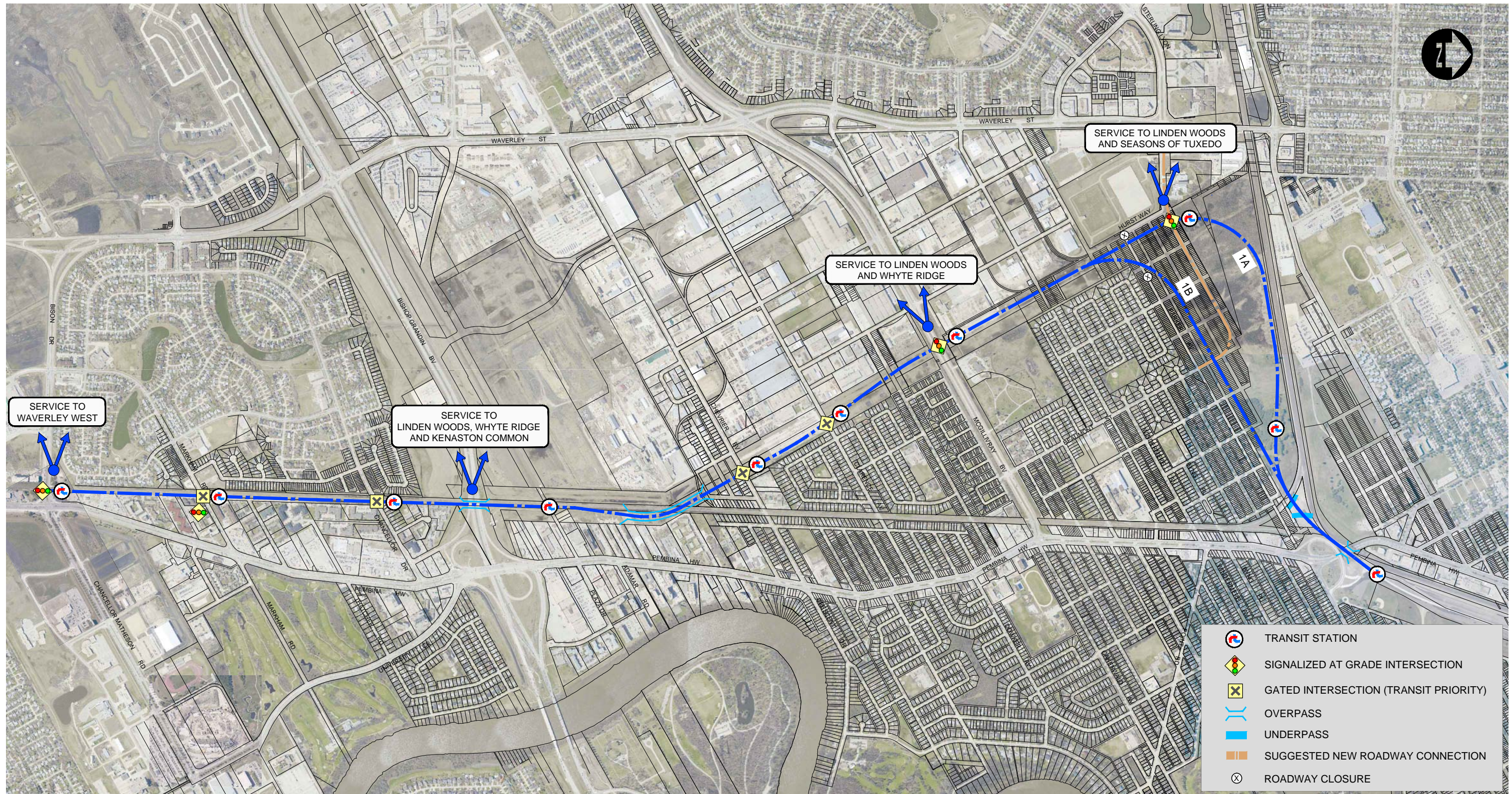
- Rapid transit buses travelling to/from the U of M would be significantly impacted by being integrated with existing traffic on University Crescent, especially during game days.
- A diamond lane would be required on each side of University Crescent necessitating the widening of University Crescent between Pembina Highway and the Stadium Station. Significant acquisition/expropriation of residential properties would be necessary.
- This access option creates considerable disruption and inconvenience to residents during construction.
- The expected overall costs to construct this access from the main transitway to the Stadium Station are in the range of \$35 – \$40 M, which includes land and infrastructure costs.

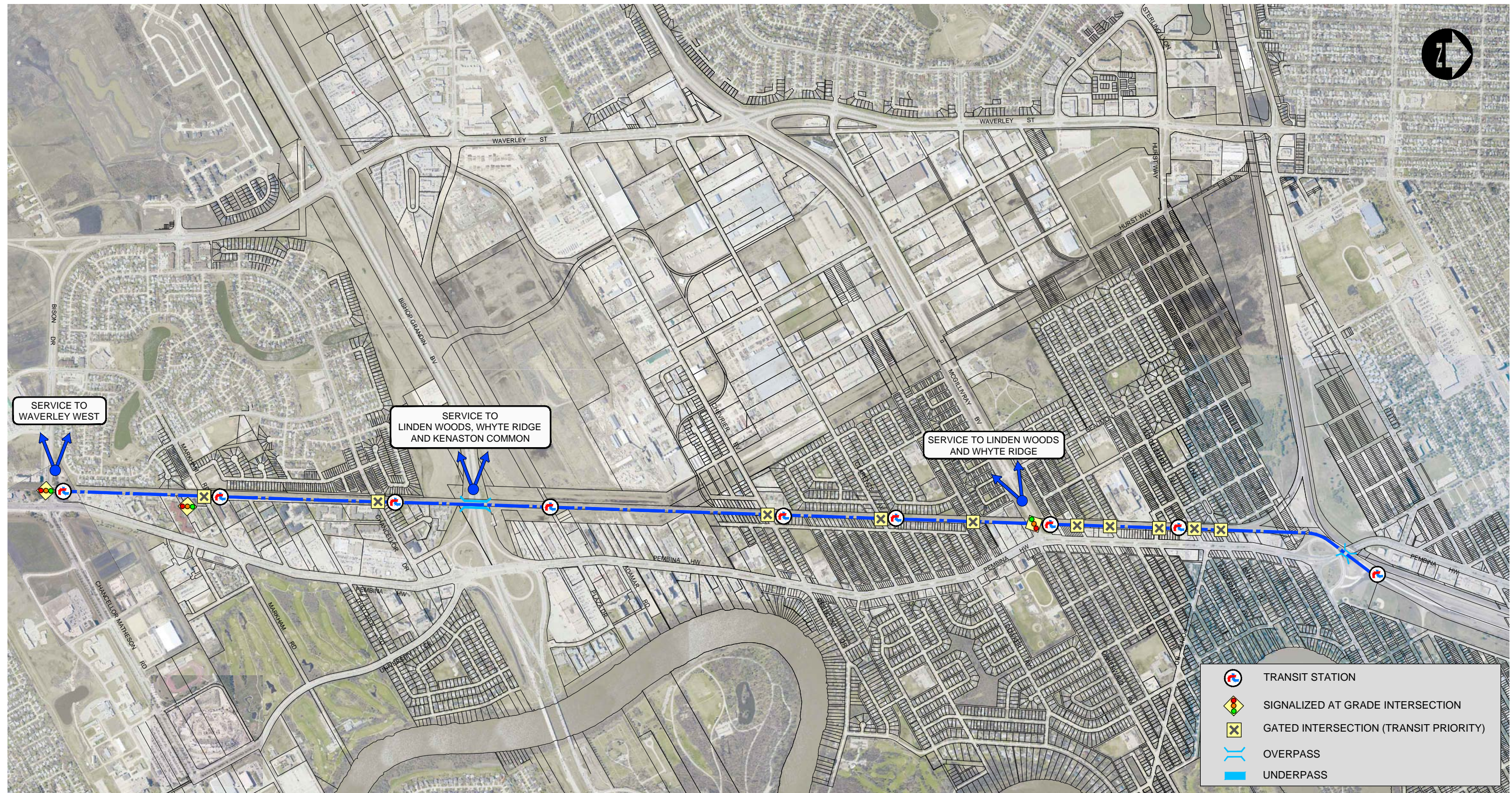
4.3 *ADDITIONAL PHASES OF RAPID TRANSIT IN SOUTHWEST WINNIPEG*

The preferred transitway alignment must provide, wherever possible, extensions for additional expansion of rapid transit to other areas of southwest Winnipeg. Figure 8 and Figure 9 illustrate how future connections and service can be provided to Linden Woods, Seasons of Tuxedo, Whyte Ridge, Kenaston Common and Waverley West. With the current and expected growth of southwest Winnipeg, this is a logical extension of rapid transit services.

- Extensions of rapid transit routes for Concept 1A/1B are available at Hurst Way, McGillivray Boulevard, Clarence Avenue, Bishop Grandin Boulevard, and Bison Drive.
- Extensions of rapid transit routes for Concept 2 are available at McGillivray Boulevard, Clarence Avenue, Bishop Grandin Boulevard, and Bison Drive.

Concept 1A/1B alignments are located closer to the aforementioned areas of southwest Winnipeg compared to the Concept 2 alignment. Concept 1A/1B therefore provides greater flexibility and can more easily accommodate the extension of rapid transit service to southwest Winnipeg.







5.0 ALIGNMENT OPTION LAND REQUIREMENTS

The alignment options identified for Stage 2 of the Southwest Rapid Transit Corridor will require the assembly of both public and privately owned lands. In this section, analysis of land requirements and estimated acquisition costs associated with the various transitway concepts will be outlined.

5.1 TRANSITWAY LAND REQUIREMENTS

Based on the alignment options identified in Section 4.0, the study team identified and analyzed land parcels required for construction of the potential corridor alignments. These lands include:

- Transportation or utility corridor lands to accommodate the corridor;
- Public right-of-way for corridor and station area development, and;
- Private lands for corridor and station area development.

The following land areas have been estimated for Concept 1A, Concept 1B and Concept 2 assuming a constant corridor width of 30 m and station areas similar to those built for Stage 1:

Table 1: Estimated Transitway Land Requirements

Jubilee Avenue to Bison Drive Transitway	Concept 1A	Concept 1B	Concept 2
Total Land Area Required For Alignment Option	239,657 m ²	226,330 m ²	220,618 m ²

5.2 TRANSIT CORRIDOR LAND ACQUISITION COSTS

The total land requirements documented above represent both public and private land holdings required for development of Stage 2 of the Southwest Rapid Transit Corridor. The study team assumed public lands to be incorporated into the alignments at zero cost. Based on preliminary discussions with the study team, CN (Concept 1A/B, and 2), Manitoba Hydro (Concept 1A/1B) and U of M (Old Southwood Golf Course) lands were assumed at nominal (and possibly zero) cost for construction of the transitway.

5.2.1 Parker Lands - Private Land Acquisition

The study team assumed that the privately owned Parker Lands (owned by Gem Equities Inc.) required for Concept 1A/1B are subject to acquisition from the current owner to facilitate transitway construction. Acquisition cost estimates for the required Parker Lands are estimated based on a model utilizing low and high compensation benchmarks.



The estimated acquisition costs associated with the privately-owned Parker Lands reflect only the lands required for the transit corridor construction. There may be privately-owned lands that are rendered undevelopable or land-locked due to the transit corridor depending on the confirmed alignment. Compensation has not been estimated for this possible impact on affected lands.

5.2.2 Other Lands Requiring Negotiated Settlement or Expropriation and Due Compensation

Acquisition of other private lands required for transitway construction will require compensation either through a negotiated acquisition or expropriation.

Expropriation requires either the taking of the property in its entirety (full taking) or a portion of the property (partial taking). Estimated compensation for the required expropriated lands has been determined through consideration of the current estimated market value of affected properties and estimated costs associated with expropriations (e.g. equivalent reinstatement, loss of business, injurious effect for partial takings, disturbance, etc.) that are typically incurred and combine to inflate *compensatory values* in excess of *market values*.

The table below presents a summary of land costs for each of the Stage 2 alignment options.

Table 2: Summary of Land Costs for Stage 2 Alignment Options

SWRTC - Stage 2 - Alignment Concept 1A		
Estimated Land Acquisition Cost		
	LOW	HIGH
1) Estimated Compensation - Takings Req'd for Station Development	\$7,630,540	\$7,630,540
2) Parker Lands - corridor acquisition (incl. Station areas)	\$428,034	\$1,605,995
Total Land Costs - Concept 1A Alignment Options (Jubilee to Bison)	\$8,058,574	\$9,236,534
SWRTC - Stage 2 - Alignment Concept 1B		
Estimated Costs Associated with Land Acquisition		
Estimated Compensation - Takings Req'd for Station Development	\$7,896,606	
Total Land Costs - Concept 1B Alignment Options (Jubilee to Bison)	\$7,896,606	
SWRTC - Stage 2 - Alignment Concept 2		
Estimated Costs Associated with Land Acquisition		
Estimated Compensation - Takings Req'd for Station Development	\$40,743,881	
Total Land Costs - Concept 2 Alignment Options (Jubilee to Bison)	\$40,743,881	

Land acquisition costs are significantly higher in Concept 2 due to the requirement to either purchase or expropriate (full or partial takings) a greater number of properties than in either Concept 1A or Concept 1B.

5.2.3 U of M Alignment Options (U1, U2, U3 and U4)

Dillon analyzed four options for the Stadium Station to connect to the transitway. Some alignment options require that private lands be acquired to allow development of either transit stations or the corridor itself. It was assumed that land requirements *within* the University Southwood Lands would not result in acquisition costs.

Land requirements for the transitway extension include:

- Transportation or utility corridor lands to accommodate the corridor;
- Public right-of-way for corridor and station area development, and;
- Private lands for corridor and station area development.



The following land areas have been estimated for the extension from the Stadium Station to the transitway, assuming a corridor width of 30 m and new on-street diamond lanes from U1 and U4:

Table 3: Extension Options to Stadium Station – Estimated Land Requirements

Extension Options to Stadium Station: Estimated Land Requirements	U1	U2	U3	U4
Total Land Area Required for Alignment Option	60,000 m ²	31,500 m ²	38,594 m ²	45,572 m ²

The same methodology as presented in the Jubilee Avenue-Bison Drive alignment analysis was used to estimate acquisition costs for the four U of M's connection options. The estimated costs are summarized in the following table:

Table 4: Extension Options to Stadium Station – Estimated Costs Associated with Land Acquisition

U of M Connection Options – Estimated Costs Associated with Land Acquisition	
U1 Access along Chancellor Matheson	\$0
U2 Access along Markham Road	\$0
U3 Access between Shopping Centres (Thatcher Drive)	\$15,388,709
U4 Access along University Crescent	\$10,704.024

As we analyzed the technical issues, property impacts/costs, and public opinion, it became apparent that the U3 option is not a feasible alignment due mainly to the fact that a major apartment complex needs to be expropriated. The study concludes with three remaining U of M access options: University Crescent (U-1), Markham (U-2), and Chancellor-Matheson (U-4).

6.0 DEVELOPMENT OPPORTUNITIES RELATED TO FUTURE RAPID TRANSIT DEVELOPMENT

The implementation of Rapid Transit provides opportunities for new development or redevelopment in areas in close proximity to stations. This section provides a comparative analysis of development and redevelopment opportunities for each of the alignment options and quantifies the opportunities the potential for new residential units and commercial space.

The potential for new development adjacent to the transit corridor creates a possible option to finance the transit project through a tax increment financing model. Both the current tax base for those areas with potential for TOD, and the future potential tax base resulting from projected TOD have been quantified. The differential represents the potential incremental tax revenues that could be utilized for project financing.

The potential for new development adjacent to the transit corridor creates a possible option to finance the transit project through a tax increment financing model.

6.1 DEVELOPMENT OPPORTUNITIES

The study team used the City of Winnipeg's Transit-Oriented Development Handbook to develop assumptions for analysis of the corridor options. In this way, technical feasibility, capital cost estimates and development impacts are considered in decision-making for the Stage 2 alignment.

The City of Winnipeg's Transit-Oriented Development Handbook defines TOD as:

Moderate to higher density compact mixed-use development, located within an easy five to ten minute (approximately 400m to 800m) walk of a major transit stop. TOD involves high quality urban development with a mix of residential, employment and shopping opportunities, designed in a pedestrian oriented manner without excluding the automobile. TOD can be new construction or redevelopment of one or more buildings whose design and orientation facilitate the use of convenient and sustainable modes of transportation, including public transit and Active Transportation.

The Project Team used both the characteristics of TOD, as described in the above definition and consideration of potential TOD typologies¹ to evaluate the advantages and disadvantages of each potential alignment for Stage 2 of the Southwest Rapid Transit Corridor.

The key components of an existing or potential development cluster to effectively integrate TOD with rapid transit include:

- There must be excellent pedestrian access between stations and TOD;

¹ A "typology" is a place type. It describes different urban environments in terms of sets of characteristics like scale of development, mix of land uses, transportation modes and future access plans. The typologies are usually identified by cluster. Certain place type clusters lend themselves better to certain kind of investments in public transportation. The TOD typologies identified in Winnipeg's TOD Handbook suggest various types and levels of transit investment. The idea of using TOD typologies marries land use planning and infrastructure planning.



- The place type cluster must provide convenient interchange between pedestrian/cyclist/park and ride users and the rapid transit service;
- The place type cluster must be located at, or incent the development of a range of active uses of land that promote ridership, and;
- The station must impart a sense of performance and be of high quality design.

Each alignment option will lend itself to opportunities for TOD; however each may present different TOD Zones, described below².

Concept 1A and 1B include the Parker Lands and could additionally accommodate a new *Neighbourhood Medium Density TOD Zone* of up to 50 units per net acre. Similar opportunities as described above are present in the portion of the alignment south of Bishop Grandin. The area is currently solely single family residential use. It has the opportunity to evolve to a Neighbourhood Medium Density Zone with new multiple family development on the Parker Lands. Some mixed use may be possible within the Fort Garry Business Park over time. This will be a significant transition for the neighbourhood and the lands subject to the potential alignment.

Concept 2 has characteristics most closely associated with the *High Frequency Transit Corridor*: highest direct access to downtown and full mix of land use opportunity. Commercial and higher density mixed residential land uses are already established along Pembina Highway and Pembina is one of Winnipeg's identified "Quality Corridors" in OurWinnipeg. The presence of rapid transit would incent additional vertical densities along the major arterial, meeting a much desired planning objective of using the full capacity of existing infrastructure.

Alternatively, the *Town Centre* type might also be applied along the Concept 2 alignment to create more significant community nodes and identity for the Beaumont/Point Road neighbourhoods (at Windermere or McGillivray Boulevard) and/or the Maybank/Crescent Park neighbourhoods (at Clarence or Chevrier Boulevard). However there are physical constraints to maintaining the high speed required for rapid transit due to the need for the transitway to cross numerous existing residential cross streets. An above grade alternative would remove the cross streets obstacles but would take the transit out of pedestrian and human scale. "Eyes" and "Life" on the street would be removed, which may eliminate the desired nature of a Town Centre.

² Reference the Winnipeg Transit-Oriented Development Handbook, City of Winnipeg, PB's PlaceMaking Group, 2011, for a thorough explanation and illustration of TOD Zones identified for the Winnipeg context.

6.2 RIDERSHIP VOLUMES AND ANTICIPATED GROWTH WITH STAGE 2

The Stage 2 Southwest Rapid Transit Corridor will increase ridership in the southwest portion of the city regardless of the alignment option selected. Data from other cities and jurisdictions concludes that there is an increase in modal split, in favour of public transportation, resulting from implementation of various forms of rapid transit, noting that the type is not as important as the level of service³. The southwest quadrant of the city experienced approximately 20,000 activities (a single boarding or alighting of a passenger is an activity) leading up to the opening of Stage 1 of the Southwest Transitway. Over time, it is expected ridership will increase in the range of 15 – 20%. This is a reasonable growth rate considering experiences in other cities.



McCormick Rankin Corporation, for the City of Winnipeg, (Source: MRC Memo to Winnipeg Transit, July 27, 2005 "Future Trip Table and BRT Network") calculated an anticipated increase in ridership of 40% by 2026 based on improvements due to reduced travel time and headways between buses. This is a result of improved modal split, commuters selecting rapid transit over single passenger vehicles. This is in addition to anticipated increases in ridership due to net population growth in the southwest quadrant of the city, namely Waverley West.

Useable ridership data since the opening of Stage 1 in April 2012 will not be available until early 2013, and a detailed estimate of ridership for Stage 2 is outside the scope of this report. However, the evaluation matrix appended to this report provides information that can be used to compare the relative impact of the alignment option on ridership. As the alignments are identical south of Bishop Grandin Boulevard, the comparison is limited to the northern portion of each conceptual alignment.

... the evaluation matrix appended to this report provides information that can be used to compare the relative impact of the alignment option on ridership.

Concept 1A through the Parker Lands may provide an excellent opportunity for TOD if there is enough net land available for development after the corridor right-of-way and the land rendered undevelopable is removed. By its very nature, TOD provides a higher mode split in favour of public transportation due to the potential for medium to high density compact mixed-use development. This type of development is not in place currently anywhere along either conceptual alignment. Concept 1A would also service the existing Beaumont and Maybank low density residential developments, the same as Concept 2, but has the benefit of serving the adjacent Fort Garry Industrial Park. A significant feature of Concept 1A is the potential to extend rapid transit routes to Linden Woods and the "Seasons of Tuxedo" commercial development via Sterling Lyon Parkway, thereby providing one-seat travel without transfer to these areas. Concept 1A also provides better

³ Winnipeg Transit-Oriented Development Handbook, City of Winnipeg, PB's PlaceMaking Group, 2011



connectivity to the south portion of Linden Woods, Whyte Ridge, and Kenaston Commons via McGillivray Boulevard. These connections to major residential and commercial developments are improved over Concept 2 due to closer proximity and ability to grade separate the rapid transit corridor at these major arterials.

Concept 1B is virtually identical to Concept 1A, except that the privately owned land is not severed and remains intact for full TOD development potential. The Parker Land stations are closer to the Beaumont neighbourhood, while still servicing a more robust future Parker development (than permitted by Concept 1A). This may increase ridership potential over 1A in the short term, and would be beneficial if no pedestrian access to development north of the CN mainline is expected in the future.

Concept 2, adjacent to the CN Letellier sub-division, aligns the transitway along established low density residential and low-medium density commercial development. The alignment services the Beaumont and Maybank neighbourhoods, plus Wildwood and Crescent Park to the east of Pembina Highway. However, it is doubtful that any of these established neighbourhoods would see an increase in densification due to the proximity of the corridor. In particular, the more affluent neighbourhoods on the east side of Pembina Highway have low potential for increased ridership. While the rapid transit corridor is over 1 km shorter than Concept 1A or 1B, travel speeds will be lower due to the numerous at grade intersections that must be crossed. Consequently, travel time on Concept 2 would be no shorter than for Concept 1A/1B.

In terms of ridership volumes and expected growth, the Concept 1A/1B option has the greater potential for increased ridership over Concept 2, mainly due to a Parker Lands TOD, connectivity to the west, and the slower expected operating speeds for the Letellier alignment. Between Concepts 1A/1B, Concept 1B better accommodates future Parker Land development and provides for better station location to serve Beaumont and Parker neighbourhoods.

The review of various Stage 2 alignments considered two major rapid transit technologies: BRT and LRT.

From an operational perspective, each technology can work with any of the identified alignments. Each of Concepts 1A, 1B, and 2 can accommodate either a BRT or LRT technology.

From a rapid transit service design perspective, fixed guide-way systems, such as LRT, work best when a large proportion of ridership is within walking distance of the stations. Those passengers outside of walking distance, however, must rely on transferring to/from feeder buses at the station or using park & ride. Such transfers inhibit ridership growth.

On the other hand, the flexibility of BRT permits rapid transit vehicles to operate on both the transitway and on the street system. Consequently, very flexible route networks can be operated that provide high frequency service at the stations and one-seat trips without transfer for passengers who are travelling to/from locations beyond walking distance of the stations.



As Concepts 1A and 1B are aligned along the Manitoba Hydro right-of-way where there is not as much opportunity for development within the Corridor, the number of potential passengers within a short walking distance of the stations is quite low. Consequently, these alignments are more suited than Concept 2 to BRT technology as buses can reach into developed areas on the street system before or after operating on the transitway.

Although BRT technology will work well for the Concept 2 alignment, the more direct route and the current development density along the Letellier subdivision of Concept 2 is higher than along the Manitoba Hydro Corridor and consequently more passengers are within walking distance of the stations. As more opportunities for denser re-development occur along Pembina Highway, the Concept 2 alignment is better suited to LRT technology than the Concept 1 alignments.

6.3 INVENTORY OF TOD LAND OPPORTUNITIES

A 400 m radius distance surrounding each of the planned rapid transit stations was plotted in order to estimate the potential for mixed-use development surrounding transit stations in adherence with the principles of TOD. The report presents illustrations of the plotted TOD development areas for each of the alignment options on the following pages.

Once Stevenson identified the land areas offering potential for TOD, they developed the following methodology to forecast potential for TOD:

- Identify properties with potential for development, redevelopment or densification that are located within a 400 m radius of rapid transit stations, using a basic assumption that single-family residences or neighbourhoods would not be displaced or impacted by the potential development.
- Land areas identified for TOD have been factored at a rate of 75 percent to reflect the presence of roads and public spaces, but also to acknowledge the higher density form of TOD. By way of example, the Corydon-Osborne neighbourhood area is estimated to have an approximate development coverage ratio (developed area divided by total land area) of 78.5 percent.
- Project residential TOD opportunities by using an average development density of 40 units per acre. Densities may be higher (60 - 70 units per acre) in closest proximity to transit stations, but typically would decline to lower densities (20 +/- units per acre) on the periphery of the areas.
- Project potential population increases due to TOD using an average household size of 1.8 persons per unit. This figure is the average population density found in the River-Osborne neighbourhood, an area with a similar market capture to a TOD zone.
- Project commercial TOD opportunities using a potential of 2.5 m (27 square feet) per capita, which approximates the average Winnipeg commercial development inventory.
- Adopt a 25 year development horizon with a 5 year lag period before TOD is assumed to initiate.

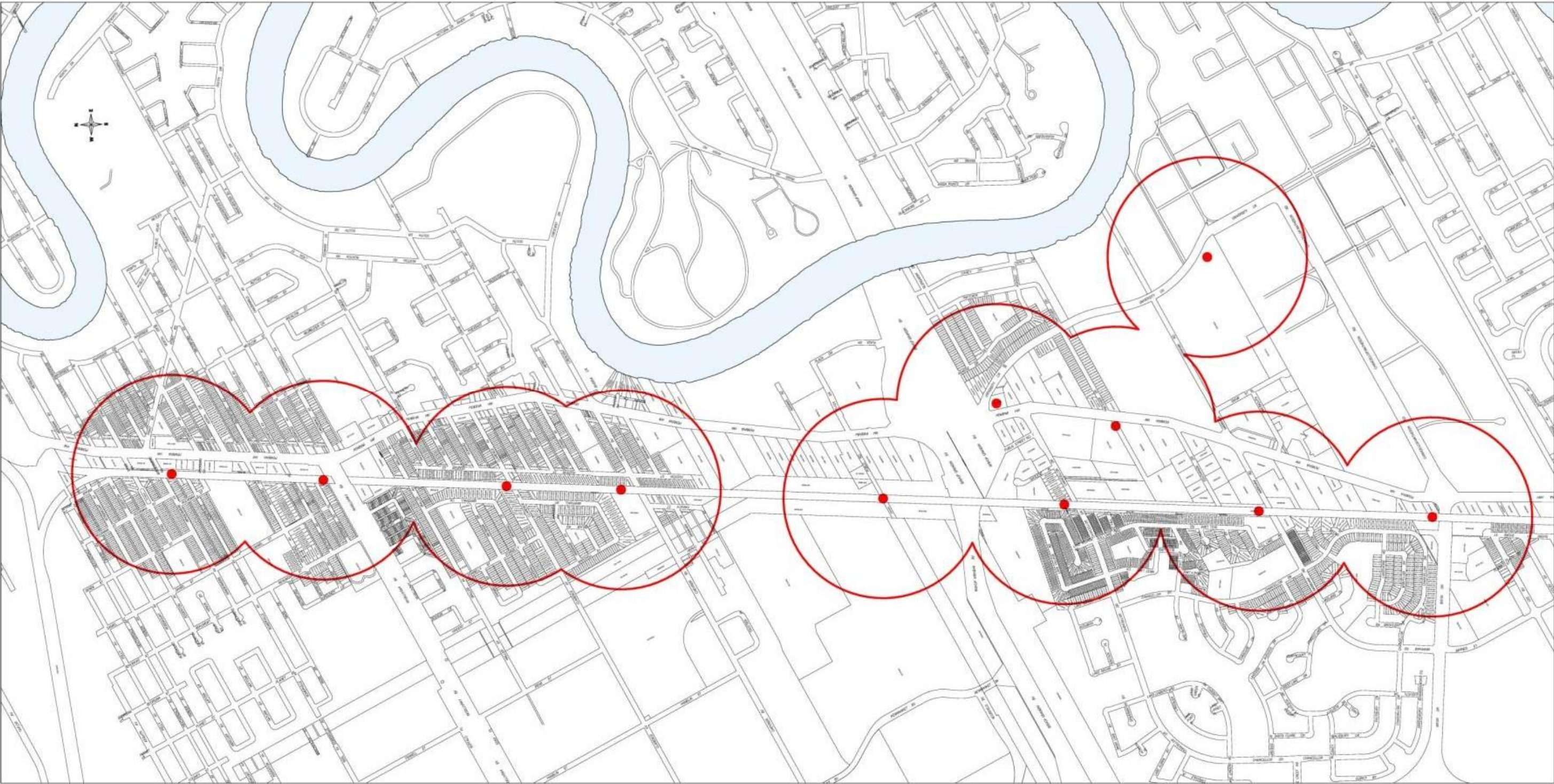


Figure 10: SWRTC Stage 2 - Concept 1A/1B TOD Area Delineation





Figure 11: SWRTC Stage 2 - Concept 2 TOD Area Delineation



The following table summarizes the estimated potential for TOD for the Southwest Rapid Transit Corridor Stage 2 alignment options considered based on the analysis carried out.

Table 5: Estimated Potential for TOD: Jubilee Avenue/Bison Drive Alignment Options

SWRTC Stage 2 - Transit Oriented Development Land Area Estimates		
A) JUBILEE TO BISON ALIGNMENT AREA		
	Alignment Concept 1A/1B	Alignment Concept 2
Measure of Land Area for TOD (sq. ft.)	23,824,797	16,099,826
Measure of Land Area for TOD (sq. m.)	2,213,396	1,495,718
No. of properties for redevelopment within TOD area	139	158
2012 Assessed Value of TOD area properties	\$175,246,000	\$204,180,800
Estimated Existing Tax Revenue (2012) from TOD lands	\$3,581,604	\$3,951,006
Measure of Potential Mixed-use Development		
Potential Residential Dev (no. of units)	16,408	11,088
Potential new residents - TOD	29,535	19,958
Potential Comm Dev - TOD (sq. ft.)	797,442	538,878
Potential Comm Dev - TOD (sq. m.)	73,837	49,896

Table 6: Estimated Potential for TOD: U of M Alignment Options - U1, U2, U3 & U4

B) U of M ALIGNMENT AREA		
	Alignment Concept 1A/1B	Alignment Concept 2
Measure of Land Area for TOD (sq. ft.)	5,523,871	5,523,871
Measure of Land Area for TOD (sq. m.)	513,185	513,185
No. of properties for redevelopment within TOD area	6	6
2012 Assessed Value of TOD area properties	\$11,371,400	\$11,371,400
Estimated Existing Tax Revenue (2012) from TOD lands	\$152,183	\$152,183
Measure of Potential Mixed-use Development		
Potential Residential Dev (no. of units)	3,804	3,804
Potential new residents - TOD	6,848	6,848
Potential Comm Dev - TOD (sq. ft.)	184,890	184,890
Potential Comm Dev - TOD (sq. m.)	17,119	17,119

6.4 CURRENT AND POTENTIAL PROPERTY TAX REVENUES FROM TOD LANDS

Tax Increment Financing (TIF) is a form of government incentive that uses the increase in property taxes anticipated from a particular development or redevelopment to subsidize the cost of a project. TIF zones are popular across North America as a viable option to finance various projects, and TIF legislation was introduced by the Province of Manitoba in 2009 as a means to finance community revitalization projects. This legislation also appears as an amendment to the City of Winnipeg Charter, where its use parameters are defined:

Establishing tax increment financing programs 222(1)

Council may by by-law establish tax increment financing programs in designated areas of the city for the purpose of encouraging investment or development in those areas.

Provisions re tax increment financing programs 222(2)

A tax increment financing program may provide:

- (a) that some or all of the incremental taxes coming from the designated area be placed into a reserve fund;*
- (b) that money in a reserve fund is to be used*
 - (i) to give financial assistance to persons who invest in developing or constructing property in the area,*
 - (ii) to fund a grant, loan or tax credit program in the area for persons who invest in developing or constructing property, and*
 - (iii) to benefit the area by acquiring, establishing, constructing, improving, maintaining, operating, providing and equipping works, services, facilities and utilities of the city; and*
- (c) for any other matter that council considers necessary or advisable.*

TIF legislation provides an opportunity to finance a dedicated rapid transit corridor due to the development potential that lies within the TOD radius of each transit station. As discussed in section 6.1 of this report, TOD can involve new construction or redevelopment of one or more buildings whose design and orientation facilitate the use of convenient and sustainable modes of transportation, including public transit and active transportation. The legislation defines a maximum 25 year period for TIF programs from the date of implementation to the date of conclusion.

6.4.1 Jubilee Avenue/Bison Drive Alignment Options - Concept 1A, 1B and Concept 2

Current Property Tax Base. A current tax base must be established in order to estimate incremental tax dollars stemming from the development potential that lies within the TOD lands. The current property tax base (including education taxes) for the TOD opportunities (identified in Section 6.1) for each alignment option is estimated based on the City of Winnipeg's 2012 property assessments and established mill rates. The existing tax base calculation acknowledges current property classifications and portion percentage variances between property classes (i.e. commercial assessments portioned at 65 percent, residential at 45 percent, golf course at 10 percent, etc). Tax exempt properties are included in the assessment base but do not contribute to the existing property tax base.

Table 7: Estimated Current Property Tax Base

Jubilee to Bison Alignments - Existing Tax Base	Alignment Concept 1A/1B (Jubilee to Bison)	Alignment Concept 2 (Jubilee to Bison)
Measure of Land Area for TOD (sq. m.)	2,213,396	1,495,718
No. of properties for redevelopment within TOD area	139	158
2012 Assessed Value of TOD area properties	\$175,246,000	\$204,180,800
Estimated Existing Tax Revenue (2012) from TOD lands	\$3,581,604	\$3,951,006

With the current property tax base of the TOD lands defined for each of the alignment concepts, the Present Value (PV) of the current property tax base can be determined by projecting it out over a 25 year TIF horizon and applying the following parameters:

- Inflation Factor = 2.5% annually (consistent with the Conference Board of Canada long-term outlook).
- Present Value Factor/Discount Factor = 3% (approximates the long-term bond rate as defined by the Bank of Canada).

Based on these parameters, the PV of the current property tax base for each of the alignment concepts is presented:

Table 8: Present Value of Current Property Tax Base

Present Value of Existing Tax Base	Alignment Concept 1A/1B (Jubilee to Bison)	Alignment Concept 2 (Jubilee to Bison)
2012 Assessed Value of TOD area properties	\$175,246,000	\$204,180,800
Estimated Existing Tax Revenue (2012) from TOD lands	\$3,581,604	\$3,951,006
Inflation Factor	2.5%/yr	2.5%/yr
Present Value Factor (Discount Rate)	3%	3%
Present Value of Current Tax Base (25 yrs)	\$84,513,204	\$93,229,790



Potential Property Taxes Resulting From TOD - Section 6.1 of this report discusses TOD opportunities in detail. Stevenson developed conclusions using a consistent set of logical assumptions and methodologies. Using those conclusions, we estimate the potential impact of TOD on property taxes. First, we must expand on the methodology used in Section 6.1 by developing a timeline of build-out for the TOD lands. The following TOD development potential conclusions from Section 6.1 are carried forward in the TIF analysis:

Table 9: TOD Development Potential

A) JUBILEE TO BISON ALIGNMENT AREA		
	Alignment Concept 1A/1B	Alignment Concept 2
Measure of Potential Mixed-use Development		
Potential Residential Dev (no. of units)	16,408	11,088
Potential new residents - TOD	29,535	19,958
Potential Comm Dev - TOD (sq. ft.)	797,442	538,878
Potential Comm Dev - TOD (sq. m.)	73,837	49,896

A set of property tax metrics is applied to these conclusions based on the measurement of potential mixed-use development in the TOD areas. The analysis considers two types of development: multi-family residential and commercial. Stevenson used the following methodology to estimate the property tax potential of the TOD build-out:

- For multi-family residential development, a property tax rate of \$1,500 per unit was applied based on the observed tax rate for newly constructed apartments in the City of Winnipeg.
- For commercial development, an estimated assessed rate of \$250 per square foot or \$2,690 per square metre is based on the actual assessments of newer commercial developments within the City of Winnipeg was used. The assessed value is then portioned at 65% and the actual 2012 mill rate has been applied.
- A 25 year development horizon was adopted with a five year lag period before TOD is assumed to initiate.
- Build-out is phased in with the highest rates of development occurring in years 11 to 15.
- Inflation Factor = 2.5% annually (consistent with the Conference Board of Canada long-term outlook).
- Present Value Factor/Discount Factor = 3% (approximates the long-term bond rate as defined by the Bank of Canada).



The following table summarizes the Present Value (PV) of potential property tax revenue stemming from TOD using the methodology described above:

Table 10: Present Value of Potential Property Tax Revenue Stemming from TOD

TOD Property Tax Potential (25 Year Horizon)	Alignment Concept 1A/1B (Jubilee to Bison)	Alignment Concept 2 (Jubilee to Bison)
New Residential Units	16,408	11,088
New Commercial Development (sq. m.)	73,837	49,896
Estimated Property Tax Revenue From Residential Dev.	\$376,192,482	\$254,214,730
Estimated Property Tax Revenue From Commercial Dev.	\$77,602,036	\$52,440,124
Estimate of Total New Property Tax Revenue (25 yrs)*	\$399,050,863	\$246,265,007
Present Value of TOD Property Tax Revenue	\$237,326,709	\$146,460,252

* The estimate of total new property tax revenue (25 yrs) is determined by summing the estimated property tax revenue from residential development and the estimated property tax revenue from commercial development, and then subtracting the existing tax contribution to each unit of development.

Incremental Property Tax Value From TOD – Stevenson calculates the Incremental Property Tax Value as the difference between the Present Value of the *existing property tax base* and the Present Value of the *TOD property tax potential*. The table below summarizes the Incremental Property Tax Value for each alignment concept:

Table 11: Incremental Property Tax Value from TOD (TIF Potential)

Incremental Property Tax Value (TIF Potential)	Alignment Concept 1A/1B (Jubilee to Bison)	Alignment Concept 2 (Jubilee to Bison)
Present Value of TOD Property Tax Revenue	\$237,326,709	\$146,460,252
Present Value of Current Tax Base	\$84,513,204	\$93,229,790
Present Value of Incremental Property Tax Revenue	\$152,813,505	\$53,230,462
Rounded	\$152,810,000	\$53,230,000

6.4.2 U of M Alignment Options - U1, U2 & U4

After an evaluation of four alignment options, the study team narrowed this down and considered three alignment options for U of M campus access to the corridor. The opportunity for TOD is provided by rapid transit station(s) to which each of the three alignments converge. Based on current plans, this proposed station will be located at the northeast corner of the new football stadium (Investors Group Field), and adjacent to future development lands owned by the U of M.

Table 12: U of M Alignment Area - Estimated Existing Tax Revenue (2012) from TOD Lands

U of M Alignment Area - Existing Tax Base (U1, U2 & U4)	Alignment Concept 1A/1B	Alignment Concept 2
Measure of Land Area for TOD (sq. m.)	513,185	513,185
No. of properties for redevelopment within TOD area	6	6
2012 Assessed Value of TOD area properties	\$11,371,400	\$11,371,400
Estimated Existing Tax Revenue (2012) from TOD lands	\$152,183	\$152,183

The current tax base, the property tax potential stemming from TOD, and the incremental property tax value from TOD can be calculated for the U of M alignments using the same methodology as presented in the Jubilee-Bison alignment analysis.

The following table presents the Present Value calculation also using consistent methodology from the Parker Avenue to Bison Drive Alignment Options:

Table 13: U of M Alignment Area – Present Value of Current Tax Base (25 yrs)

U of M Alignment Area - PV of Existing Tax Base (U1, U2 & U4)	Alignment Concept 1A/1B	Alignment Concept 2
2012 Assessed Value of TOD area properties	\$11,371,400	\$11,371,400
Estimated Existing Tax Revenue (2012) from TOD lands	\$152,183	\$152,183
Inflation Factor	2.5%/yr	2.5%/yr
Present Value Factor (Discount Rate)	3%	3%
Present Value of Current Tax Base (25 yrs)	\$3,590,991	\$3,590,991

Potential Property Taxes Resulting From TOD -Stevenson used the same general principals in determining the TOD area for the potential U of M alignments as those that were applied for the Jubilee Avenue to Bison Drive alignment options. The only difference considered in determining the potential property taxes stemming from the TOD is the time period associated with TOD build-out. For the Jubilee to Bison Drive alignments, Stevenson assumed that no development would take place for a period of five years. This assumption remains true for the U of M alignment options as it is highly unlikely that TOD would occur prior to the completion and operation of the second phase of rapid transit. However, for the U of M TOD area, Stevenson shortened the build-out period by concluding it in year 19. This was done due to the existence of only one transit station, where build-out would likely take place at a higher rate due to the short supply of TOD opportunity within the U of M campus. The analysis still runs the TIF model out over 25 years.

Table 14: U of M Alignment Area - Estimated Present Value of TOD Property Tax Revenue

U of M Alignment Area - TOD Property Tax Potential (U1, U2 & U4)	Alignment Concept 1A/1B	Alignment Concept 2
New Residential Units	3,804	3,804
New Commercial Development (sq. m.)	17,119	17,119
Estimated Property Tax Revenue From Residential Dev.	\$101,568,041	\$101,568,041
Estimated Property Tax Revenue From Commercial Dev.	\$20,949,514	\$20,949,514
Estimate of Total New Property Tax Revenue (25 yrs) *	\$119,808,887	\$119,808,887
Present Value of TOD Property Tax Revenue	\$72,426,369	\$72,426,369

* The estimate of total new property tax revenue (25 yrs) is determined by summing the estimated property tax revenue from residential development and the estimated property tax revenue from commercial development, and then subtracting the existing tax contribution to each unit of development.

Incremental Property Tax Value from TOD - Stevenson calculated the Incremental Property Tax Value as the difference between the Present Value of the existing property tax base and the Present Value of the TOD property tax potential. The table below summarized the Incremental Property Tax Value for the U of M alignments:

Table 15: U of M Alignment Area – Incremental Property Tax Value TIF Potential

U of M Alignment Area - Incremental Property Tax Value TIF Potential (U1, U2, & U4)	Alignment Concept 1A/1B	Alignment Concept 2
Present Value of TOD Property Tax Revenue	\$72,426,369	\$72,426,369
Present Value of Current Tax Base	\$3,590,991	\$3,590,991
Present Value of Incremental Property Tax Revenue	\$68,835,378	\$68,835,378
Rounded	\$68,835,000	\$68,835,000



6.5 CONSULTATION WITH MAJOR LANDOWNERS

Dillon met individually with major landowners to discuss this study and gain insight to the following matters, from their perspective:

- Current and future use of their lands.
- Infrastructure locations and alignments that may impact on potential transitway (towers, ponds, pipes, etc.).
- Knowledge of development opportunities and constraints beyond their own property.

Meetings were held with the following major stakeholders:

- Manitoba Hydro – June 7, July 3, and July 17, 2012
- Shindico Developers – June 15, 2012
- U of M – June 18, 2012
- Gem Equities Inc. – June 21 and July 11, 2012
- CN – June 22, 2012
- City of Winnipeg Water and Waste Department – July 12, 2012
- AECOM Engineering – July 13, 2012

Documentation of the discussions with the above major stakeholders is included in Appendix B. In addition to the individual meetings, a public consultation program was carried out in the form of an Open House. This consultation process and the results are documented in the following section.

7.0 PUBLIC CONSULTATION

Dillon created and implemented an open public consultation program to support the alignment option study for the future development of Stage 2 of the SWRTC. The purpose of the consultation program was to engage the public in the study so they have the opportunity to understand the facts about the alignment options and the opportunity to provide input, opinion, and feedback about the alignment options. This effort rounds out the due diligence represented in this study to provide confidence and support to the City of Winnipeg's ultimate decision.

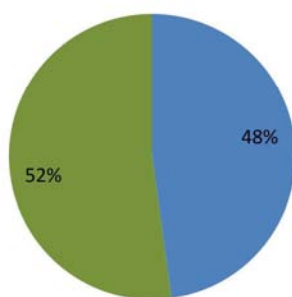
Transit hosted two Open Houses on Wednesday, September 19 and Saturday, September 22, 2012. 375 individuals signed the attendance register at the Open Houses; 237 on Wednesday and 139 on Saturday. 331 surveys were completed; 193 on paper at the public meetings and 138 online. The consultation program is described in Section 7.2.

7.1 SUMMARY OF PUBLIC INPUT, OPINION, AND FEEDBACK

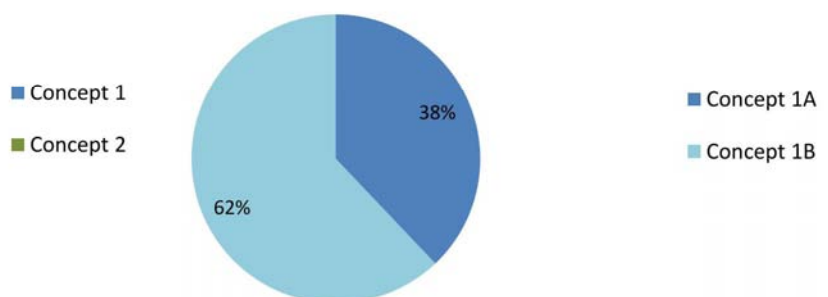
7.1.1 Hydro Corridor (Concept 1A and 1B) versus Letellier (Concept 2) in the Public Eye

Public opinion is split between the Letellier alignment options (52%) and the Hydro Corridor alignment options (48%). The Hydro Corridor alignment had two sub-options (1A and 1B) through the Parker Lands with public opinion favoring the Parker Land Concept 1B alignment that runs east-west, just north of and parallel to Parker Avenue.

**Preferred Concept
(Concept 1 vs Concept 2)**



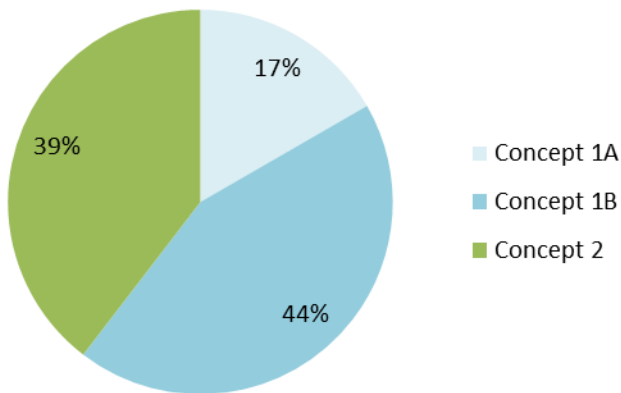
**Preferred Concept
(Concept 1A vs Concept 1B)**



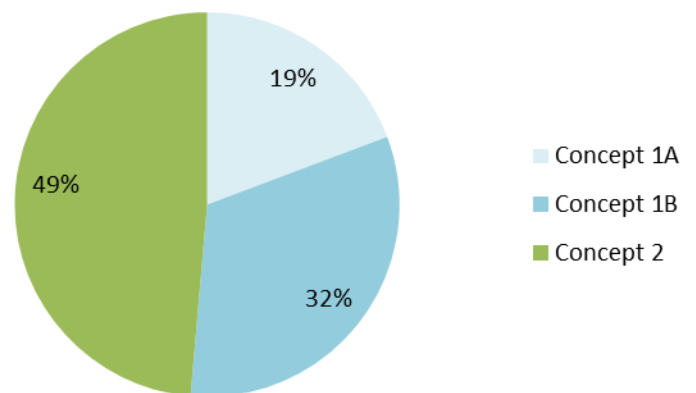
There was variation in alignment preference based on demographics. Younger respondents (30 years and under) showed a preference for the Hydro Corridor over Letellier (29 versus 19) while older respondents (age 55 and over) showed a preference for Letellier over the Hydro Corridor (63 versus 47). The 31-54 age range was split (56 choosing the Hydro Corridor and 53 choosing Letellier). 102 respondents self-declaring as residents indicated a stronger preference for the Letellier alignment. 72 residents chose the Hydro Corridor as their preferred option.

Option Preference by Age Group

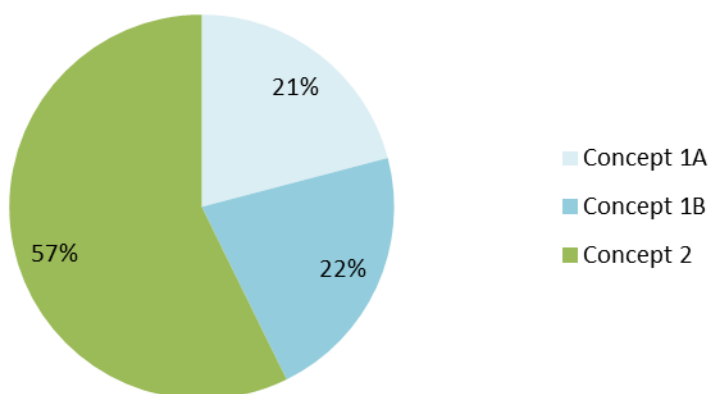
Age Group 0 - 30



Age Group 31 - 54



Age Group 55+





7.1.2 Summary of Key Issues Arising from the Public Dialogue

Due to the nature of the open-ended survey questions and the breadth of detailed response, information from the public about their perspectives could not be quantified. The following provides a qualitative summary of the primary issues and values posited by the public through the survey and discussions at the public open houses as heard and understood by the consultant.

Overall, the public debate is largely about serving existing people versus “build it and they will come”. On one hand, respondents were of the opinion that transit should be built where people live, work, and play. Transit investment should not be speculative. On the other hand, respondents saw the opportunity for the City to leverage their transit infrastructure investment to gain a better return financially as well as in the quality of infill development.

There is strong advocacy communicated through the survey about aligning rapid transit in the shortest and straightest route from point A to point B. Most respondents, favouring all alignment options, view the Parker Lands as valuable green space and emphasize the importance of the wetlands, aspen forest, dog park, and community gardens. They are concerned the environmental value will not be respected in the decision.

In summary, as one person stated, any change is challenging and the consultation is appreciated. The fact that the public remain split on the alignment options (Letellier or Hydro Corridor) substantiates this modest point. The eight primary issues debated through the public process are summarized below.

Active Transportation: Many participants in the public process emphasized the importance of the City's commitment to active transportation (AT) infrastructure. They emphasized the exceptional need for a safe and efficient active transportation connection between Jubilee and Bishop Grandin. Views about how to accommodate this connection are diverse.

Building AT within the Pembina right-of-way is a favoured option, many noting that it could be done similarly to the recent cycling facilities installed along the portion of Pembina just north of Bishop Grandin. Supporting this sentiment, one respondent mentioned that AT should not be part of this discussion as none of the transitway options adequately accommodates AT for commuter purposes: the Letellier options does not have enough room for rail, transitway, and AT cross-sections, and the Hydro corridor option is too far west to meet the needs of north-south cycle commuters.

Several responses advocated AT pathways alongside all rapid transit routes to ensure Winnipeg builds multi-modal opportunities into all infrastructure investments. Even recreational active transportation and a growing number of works trips the Fort Garry business park lands would be part of the Hydro corridor option.

Pembina Highway: The current and future of Pembina Highway was the subject of most responses to the survey and discussions at the public open houses. Pembina Highway was designated a Transit Quality Corridor in Winnipeg's Sustainable Transportation Strategic Direction related to the recent *OurWinnipeg* planning process.



Regardless of rapid transit, full and sustained transit service along Pembina Highway is an important asset to the community. One stated that “Transit’s priority should be to strengthen Pembina as a vibrant corridor”. The respondents shared strong views about supporting the investment in business and apartments along Pembina Highway as well as the residential neighbourhoods of East Fort Garry and Wildwood Park. Businesses have established on Pembina Highway that service adjacent neighbourhoods as well as those travelling down Pembina Highway. Vincent Massey High School is highly dependent on Pembina Highway Transit service. The provision of local services is an important part of making these communities complete.

Several respondents who self-declare as transit-riders state they have experienced reduced Pembina Highway transit service north of Jubilee since Stage 1 of the Southwest Transitway opened in April. They fear that rapid transit west of Pembina will further reduce existing Pembina Highway transit service south of Jubilee. Some believe that the loss of service to Pembina Highway may be greater with the Letellier alignment than with the Manitoba Hydro Corridor alignment. The Letellier alignment would capture a similar ridership geography as Pembina Highway and the Manitoba Hydro Corridor alignment would capture a new ridership geography thus maintaining the pressure for full Pembina Highway transit service.

A high level of transit service along Pembina Highway was also mentioned as a key ingredient of increasing investment and development density along Pembina Highway. A few stated their belief that TOD opportunities along Pembina have been downplayed in the study.

Green Space: Almost all who responded in favour of Concept 2 included the rationale that the green space, known as the Parker Lands, is a fundamental consideration in their opinion and this decision. They supported Concept 2 on the basis that it does not impact anything that is not already polluted by the railway activity. Some comments included: the need to give equal consideration to the environmental voice as the developer voice. They view disruption of the Aspen forest and wetlands as unnecessary. Others suggested the need for a commitment to replace the loss of all open space with new green space development.

Neighbourhood: The majority of respondents who prefer the Manitoba Hydro Corridor alignment include, as one of their reasons, that the Letellier alignment involved too much neighbourhood disruption. Residents adjacent to the Letellier line mentioned the noise and vibrations from the trains that would be worsened with the train 9 metres closer to their homes (west side) and a new transitway within 9 m of their backyards (east side). They noted their concern about the safety for local daycares, pre-schools, and community centres that would be close to high traffic volumes and high-speed transit service. Residents of Beaumont, Maybank and Waverley Heights requested consideration of sound attenuation and buffering of any new adjacent rapid transit facility.

Another popular reason for supporting the Manitoba Hydro Corridor option is the opportunity to better serve more neighbourhoods, including those further west (Lindenwoods, Whyte Ridge), the Fort Garry business park for employment, and the commercial nodes (Ikea, Kenaston/McGillivray).



Many of the respondents who prefer the Letellier alignment argued that transit service should be provided to established neighbourhoods where people currently “live, work, and play” and not to future, potential, or speculative new developments and neighbourhoods. They see support of the Manitoba Hydro Corridor option as “taking the course of least resistance” and appeasing a few residents instead of building the shortest and most direct route.

Several concerns arose about ignoring service to East Fort Garry, the high school, and several other schools.

Some respondents have opposing viewpoints about the desire to close Pembina Highway street access to and from the Beaumont neighbourhood versus others’ desire to maintain easy and multiple access points from the neighbourhood to Pembina Highway realizing that either view will impact traffic movements at these crossings. Several note calling for the City to make the decision based on improved traffic flow and not about developers.

Specific suggestions to improve neighbourhood quality included: an AT underpass between Morley and Grant so the Earl Grey community can access rapid transit; cul-de-sacs to cut off Southwood, Waterford, Rockman, and Byng to facilitate Letellier rapid transit; and, direct a Markham U of M entry away from residences to make use of the former golf course. One participant criticized the study for seeming to ignore an evaluation of the safety impacts related to conflicts between buses, bikes, pedestrians, and vehicles.

Transit Service: The most emphatic survey responses wanted transit service to prioritize existing transit-users using the most direct route with the least stops providing the shortest time between downtown and the university. They just want to make it as accessible as possible to the greatest number of people and to just “get it done”. One commented that, regardless of the option chosen, Transit must maintain frequent local bus service between downtown and the U of M. Others want to ensure the investment is for “rapid transit” and not “Pembina Express”.

Many view the Manitoba Hydro Corridor alignment as alienating current transit users. They believe that future populations should be serviced after they have established. This viewpoint relates to many of the comments summarized about Pembina Highway transit service.

Individuals commenting on this topic want: limited stops so rapid transit is high speed; stations at convenience nodes (shops); access for residential and commercial (the two-way trip); and, service to areas with high foot traffic.

A few comments promoted rail over bus rapid transit. Most respondents suggested the need for flexibility and support of feeder bus routes. One suggested grade separated rail along Letellier could alleviate the need to move the train and provide the additional space for an AT pathway.

City-wide Connections: From a city-wide perspective, the direct downtown/U of W to Stadium/U of M rapid transit and AT routes is a primary desire of most respondents. Other issues of connectivity include; a high desire for more park and ride options to access rapid transit; feeder routes off Letellier to serve lands to the west; the need for an over/underpass at McGillivray; and, more east-west connections (i.e. Jubilee to Sterling Lyon and southwest Winnipeg to St Vital).

A primary reason respondents indicated for their support of the Manitoba Hydro Corridor alignment is the importance of wider City transit connections. Many consider the investment more worthwhile if several areas of southwest Winnipeg can be served by the infrastructure. They mention Lindenwoods, Linden Meadows, Whyte Ridge, Fort Garry business part, Ikea, Kenaston / McGillivray, and Charleswood. They see that the Hydro Corridor option allows rapid transit to serve more than just the university while maintaining the same travel time between Jubilee and the U of M.

CN received some attention at the Open Houses and through the survey. Several opinions indicated that the future of the CN line needs to be considered on a larger scale. Some want it moved west of Kenaston, away from the neighbourhoods, or out of the City altogether. Many comments suggested that CN should have been present and part of the discussions at the public meetings.

Land Development and Real Estate: Land development and real estate was a dynamic topic at the public meetings and in the survey likely due to media attention to the City's real estate and development matters during the same time as the Southwest Transitway consultation program. Many comments expressed suspicion about a perceived real estate angle that might be driving, or at least influencing, the Southwest transitway alignment discussion. Some felt that transit development should not be driven by real estate opportunities and that there is already too much development in the area.

Alternatively, many respondents see the Manitoba Hydro Corridor option as presenting significant opportunities for Winnipeg. Many view it as representing longer term planning and larger scale service to southwest Winnipeg, including providing much needed service and opportunity to vacant land and an underdeveloped employment area with minimal neighbourhood disruption. Comments included support for the opportunities for the U of M to connect through the Southwood lands development.

Others believed the infrastructure investments should support development opportunities for Pembina Highway properties. Increased density of development on Pembina Highway with a nearby rapid transit corridor would increase the commercial viability of Pembina Highway and improve its aesthetics and service contribution to the overall Fort Garry community. Zoning restrictions could be removed to enable density and diversity around station locations.

Costs: Many respondents mentioned cost as a consideration: some from the perspective that the lowest cost option is the best and others from the perspective that the project should be built optimally at the outset, regardless of cost (i.e. why not investigate outright purchase of CN land and have the rail line moved.)



The lower overall cost was the reason several survey respondents favoured the Hydro Corridor option. Several participants from the public meeting were frustrated by the absence of actual dollar values in the cost analysis.

7.2 PUBLIC CONSULTATION PROGRAM AND PARTICIPATION

Dillon used a variety of consultation tools to communicate information about the project and solicit feedback from the public.

Letters/Information Brochure: Canada Post distributed one letter/information brochure to 8,097 mailboxes in the neighbourhoods of Parker, Beaumont, Buffalo, Maybank, Chevrier, Pembina Strip, Waverley Heights and Montcalm, during the week of September 5, 2012. The brochure provided information on the project, contact information, and served as the primary invitation to the Open Houses.

Advertisements: Dillon prepared an advertisement for the The City of Winnipeg to place in the Winnipeg Free Press on September 8 and 15, 2012. The City of Winnipeg also issued a public media release prior to the public Open House, which generated interest from local print and radio media, including CBC and Winnipeg Free Press.



Internet: Dillon prepared an informative “fact sheet”, which the City of Winnipeg used as a basis for the information posted to the Transit webpage outlining the project (winnipegtransit.com). The website included information on how the public could get involved and participate by means of the two open houses or online through the survey link. Dillon made the survey available at each Open House, as well as an online Open House. Transit posted the online Open House on winnipegtransit.com to give the opportunity to those who could not attend the open house a chance to participate and provide their feedback.

Opinion and Feedback Survey: Dillon developed one public survey for the purpose of collecting feedback about the three alignment options. The survey allowed the public to identify their preferred alternative (Concept 1A, 1B, and 2), as well as provide feedback on specific criteria relating to community linkages, property, neighbourhood, business, environmental, operations, and construction, in addition to general comments/opinions. Dillon distributed the survey at each Open House. The survey was also posted online as part of the online Open House at winnipegtransit.com.



Open House: Transit and Dillon hosted two public open houses, the first on Wednesday evening of September 19 and the second on a Saturday during the day September 22, 2012. Both Open Houses were held at the Holiday Inn Winnipeg South at 1330 Pembina Highway, near the communities and possible Southwest Transitway alignment. Information was shared about the two alignment options. Over 375 people attended the Open House (331 completed the survey, either in person or online).

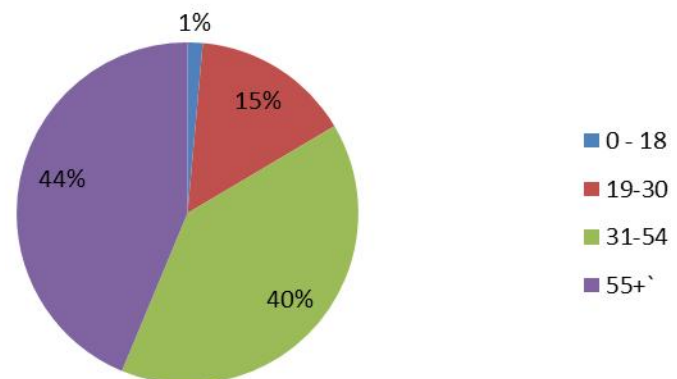
An online Open House was subsequently posted online through the survey link for study by other interested individuals (Appendix C). The discussions were informed and contributed to the final recommended option.

Documentation for the Open House which includes the Letter/Informational Brochure, Advertisement, On-Line Fact Sheet, Opinion and Feedback Survey and the Information Boards presented at the Open House are included in Appendix C

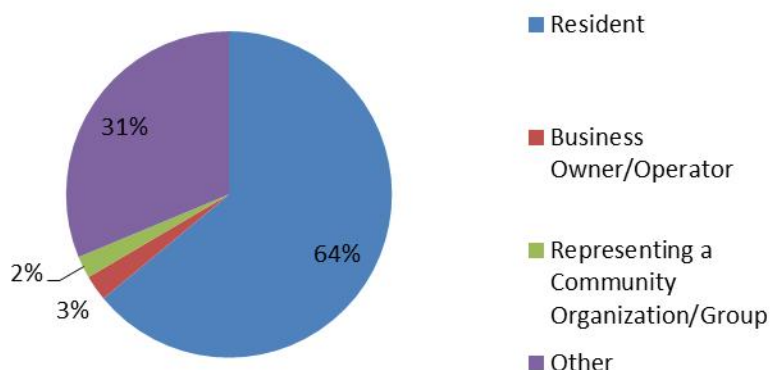
7.2.1 A Snapshot of Public Participation

Out of the 331 survey respondents, the age groups were quite mixed. Although the majority (44%) identified themselves as 55+, 40% were between the ages of 31-54, and 15% between the ages of 19-30. Only 1% of respondents were under the age of 18.

Age Groups



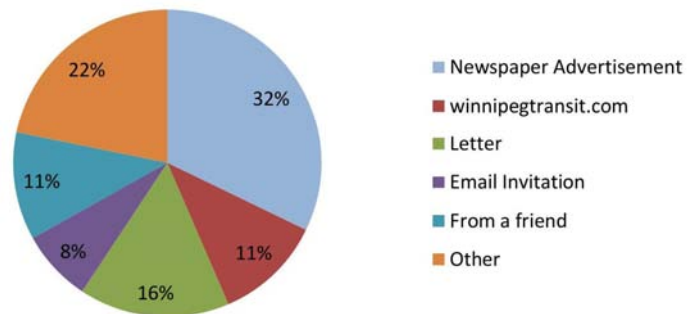
Demographics



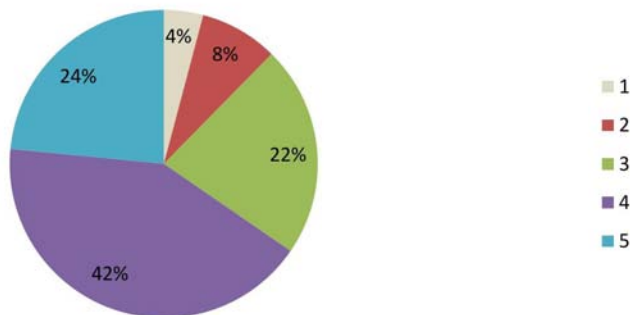
The majority of respondents indicated that they were residents in the area (66%). The "other" category, at 29%, consisted of people identifying as transit users, friends/family of residents, interested citizens, etc. Representation of business owners/operators was quite low, with only 3% identified.

Newspaper advertisements were the most successful in reaching the public about the project and the open houses. 32% of respondents indicated that they were informed of the open houses through newspaper advertisement, along with “other” (i.e. radio, TV, school, work, etc.) at 22% and the information brochure/letter at 16%.

Notice of Open House



Open House Rating



Feedback on the Open House (in-person and online) was positive. On a scale of 1 (not pleased) to 5 (very pleased), the average rating was 4.

In summary, the following points represent the main concerns by the 26 participants who rated the Open House poorly (a score of 1 or 2):

- Information was biased in favour of the Hydro Corridor alignment. One felt illogical options should not be presented.
- There was not enough information. More details are required. Evaluation requires travel time calculations, financial information, and rationale for not considering a Pembina median alignment.
- Attendees wanted more people with whom to discuss the issues. They wanted more City officials, and an opportunity to dialogue amongst themselves and Transit planners.
- Some wanted a presentation, a speaker, and to hear directly from Transit planners.
- Some wanted CN in attendance to discuss the issues and others did not think it was appropriate to have a real estate representative at the Open House.
- A couple of respondents did not know about the Open House and indicated it was not well advertised.
- Comparisons were not well done on presentation boards. More, bigger, and higher quality pictures should be used. Detailed maps should be on the web.
- The history of the project should have been presented.
- The survey should have identified “transit users” as a demographic so their voice could be distinguished.

8.0 EVALUATION OF ALIGNMENTS

The study team grouped all information collected into a detailed evaluation of all the alignment concepts was created in a matrix format. This evaluation was carried out under the following main categories:

Engineering:

- Operational
- Implementation

Community and Environment:

- Environmental
- Community (includes consultation)

Economic:

- Property
- TOD and TIF Metrics
- Costs

The documentation of this detailed evaluation is found in Appendix D. Critical issues are summarized below.

8.1 DISCUSSION ON EVALUATION

8.1.1 Engineering (Operational and Implementation)

The engineering evaluation considered a multitude of factors that were grouped into two main categories, namely Operational and Implementation. Specifically, factors evaluated under the Operational category included overall distance of corridor, total length of structures, number of at-grade intersections, drainage, accommodation of multiple modes, running speed, as well as existing and future ridership. The evaluation of items under the Implementation category included project phasing, disruption to traffic and landowners during construction, and complexity of land assembly.

Of note in the engineering evaluation are the following:

- The Concept 1A and 1B options located within the Parker/Manitoba Hydro lands have a greater availability of land than for the Concept 2 alignment that is located alongside the CN rail line. For comparison purposes, at grade intersections were evaluated and costed as the Concept 2 alignment has no future build out opportunities for these crossings. The Bishop Grandin Boulevard crossing is the only exception, as an overpass is a requirement and can be accommodated in all concepts.



Future build out of the Concept 1A and 1B alignments is expected to be possible therefore costs have been identified separately.

- As noted in Section 6.5, discussions with Manitoba Hydro have taken place regarding the Concept 1A and 1B alignments. A transitway alignment in the middle of their corridor is clearly a major undertaking as Manitoba Hydro has significant existing infrastructure within the area that needs to be maintained. Although discussions were very productive, additional discussion and work will need to be undertaken during the preliminary design of this corridor if it is selected as the preferred alignment in order to address Manitoba Hydro concerns. Items that will need to be addressed are:
 - Manitoba Hydro will be installing a fourth tower line in their corridor within a 20 year planning horizon. If either Concept 1A or Concept 1B alignment is chosen, the location of the fourth tower line alignment should be carried out with full knowledge of the City of Winnipeg as the future tower alignment could impact the location of the future transitway alignment.
 - Manitoba Hydro will be reconstructing the existing two most easterly lines within their corridor within a 5 year planning horizon if budget is available. The alignments of these two towers could be altered from existing to allow for more developable room within the corridor for a future transitway. Although the decision on the tower alignments is Manitoba Hydro's responsibility, the City should be aware of the Manitoba Hydro decisions that need to be made as there may be some synergies in altering these alignments. The challenge with the possibility of altering the tower reconstruction alignments is that this work would need to be carried out prior to any work on the transitway.
 - Manitoba Hydro's initial reaction to the construction of any bus shelters within their corridor is that a smaller shelter as currently exist on city streets is acceptable; however, a larger Transit Station as constructed in Stage 1 of the transitway would not be preferred/encouraged. Realizing the development that has taken place within current Manitoba Hydro corridors which includes larger structures, it is suggested that there needs to be additional discussion on this matter to alleviate Manitoba Hydro's concerns regarding the acceptance of a larger Transit Station within their corridor as long as all their safety requirements have been met.
 - If the relocation of any Manitoba Hydro tower is required to accommodate a future transitway, the costs of this relocation would need to be borne by the City. With new technology the existing towers can be replaced with larger single base towers which decrease offsets from other towers and increases clearance from their lines. These costs, which are very expensive, have been taken into consideration in the construction estimates; however, this cost could vary significantly depending on construction time frames and availability of material.



- Concept 1 options, if chosen, will need to cross under the existing Manitoba Hydro lines in the location of Parker Avenue in the vicinity of Hurst Way. Any crossing of the transitway under the existing hydro lines will require an induction study to verify that the clearances between any transit vehicle and the existing Manitoba Hydro line are acceptable and do not pose any danger. As Parker Avenue currently crosses under these lines this is not seen as a major item and if necessary the lines can be raised to increase the clearance.
- Manitoba Hydro has indicated that an active transportation pathway within their corridor is not a concern; however, the exact alignment and crossing locations would need to be reviewed and approved by Manitoba Hydro.
- Discussions have taken place with CN regarding both the Concept 1 and Concept 2 alignments. Although discussions were very productive and no show stoppers were noted, additional discussion and work will need to be undertaken during the preliminary design of this corridor to address CN concerns. Items that will need to be addressed are:

- The southerly portion of Concept 1 alignments and the total length of the Concept 2 alignment will require the relocation of CN tracks, and possible structures over their facilities. CN has indicated that regardless of which transitway alignment is chosen that they expect that the operation of their facility will not be negatively impacted.
- CN has indicated that any costs and maintenance associated with any transitway structures would be the responsibility of the City.
- CN has indicated that regardless of which transitway alignment is chosen significant lead time is required for them to relocate their CN Letellier main line prior to any transitway work being undertaken. An expected two year lead time should be considered.
- Discussion with CN personnel and a review of the CN/City agreement indicates that the shared right-of-way is to be used exclusively for transit and emergency purposes. Further interpretation of this agreement is suggested to determine whether this would allow for an active transportation pathway. Initial indications are that the agreement does not allow for such a pathway.
- CN is expecting a transfer of land from the City which includes the property just west of Pembina and north of Parker Avenue. This is the triangle of land between the CN main lines (west and north) and the spur line. As the transitway would go through this area, an agreement on the use of this land for the transitway would be required.
- The CN rail overpass of Pembina Highway may need to be relocated as part of the City of Winnipeg Public Works' future upgrading of the Pembina Highway underpass. This potential rail structure relocation and the work associated with the transitway overpass structure over Pembina Highway should be coordinated to ensure this work is carried out efficiently and effectively.





- The City of Winnipeg Water and Waste Department has a 66" aqueduct and a 30"/24" feedermain located within the Manitoba Hydro right-of-way. For the Concept 1 alignments, the transitway geometry has been selected in such a manner that it does not significantly impact either the aqueduct or feedermain. For the Concept 1 alignments, only the exit and egress ramps at McGillivray would cross these facilities. Wherever a crossing of the aqueduct or feedermain takes place an evaluation of the underground infrastructure is required and mitigative/protection measures will need to be included in the transitway works.
- Discussion with City of Winnipeg Water and Waste personnel and their aqueduct/feedermain consultant have taken place and the Concept 1 alignment's that have been suggested is generally acceptable and does not significantly impact their infrastructure. It should be noted that for the overpass of the CN tracks just north of Bishop Grandin Boulevard and if a future transit overpass is considered at McGillivray Boulevard that both of these structures will require innovative design procedures or possible relocation of the feedermain to address the embankment work that is required for these structures.
- The City of Winnipeg Water and Waste Department is currently in the design stage for the Cockburn/Calrossie Storm Relief Sewer Project. This project covers a large footprint; however, any work in the Jubilee Overpass/Pembina Underpass area might impact the work for Stage 2 of the transitway extension. The design and construction of these projects should be coordinated to make sure that new construction works are carried out efficiently and effectively.
- The City of Winnipeg Public Works Department is currently in the planning stages for the widening of Pembina Highway at the Jubilee Overpass. This project would include an additional lane northbound and would require the reconstruction of the CN rail overpass of Pembina Highway. This potential reconstruction of the CN rail overpass needs to be coordinated with construction of the Stage 2 transitway overpass of Pembina Highway if either Option 1A or Option 1B is considered. The design and construction of these projects should be coordinated to make sure that new construction works are carried out efficiently and effectively.

8.1.2 Community and Environment

The specific factors evaluated under Environmental included ecologically significant natural lands, environmentally impacted lands, and green space. The evaluation of items under the Community category included disruption to community, community amenity and opportunity, and connectivity to nearby communities. The community was invited to participate in one of two open houses to review information about the project and provide input and feedback.

The following are notable from the environmental and community evaluation:

- Land adjacent to the CN tracks may be environmentally impacted through use of contaminated fill material or spills from trains, affecting all three alignment concepts to some degree.



- All known impacted sites are outside of the actual alignment Concept 1A/1B and Concept 2 properties and Manitoba Conservation indicates that all impacts are contained within the impacted properties, as identified on the Manitoba Conservation List of Impacted Sites.
- Alignment 1B goes through an active area of Community Gardens in the vicinity of Parker Avenue and would affect 10-15 gardeners who have been long term residents of the site. The alignment would miss the garden plots if it swung slightly north. Alternatively, space elsewhere in the vicinity could be used for redeveloped garden plots.
- 5 of the City's 11 Major Redevelopment Sites are located along and can potentially be served by Concept 1A and 1B while 4 sites are located along and can potentially be served by Concept 2.
- A significant feature of Concept 1A is the potential to extend rapid transit routes to Linden Woods and the "Seasons of Tuxedo" commercial development via Sterling Lyon Parkway, thereby providing one-seat travel without transfer to these areas. Concept 1A also provides better connectivity to the south portion of Linden Woods, Whyte Ridge, and Kenaston Commons via McGillivray Boulevard. These connections to major residential and commercial developments are improved over Concept 2 due to closer proximity and ability to grade separate the rapid transit corridor at these major arterials.

A Public Consultation Program was carried out to request input from the public. This was done in the form of an Open House held on 2 separate days in mid-September.

Of note in the Public Consultation evaluation are the following:

- High attendance and participation was noted for the Open House with 376 total attendees, and 331 total surveys completed.
- Public opinion was split between the Letellier alignment options and the Manitoba Hydro Corridor alignment options, with younger survey respondents favouring the Manitoba Hydro Corridor option and older respondents favouring the Letellier alignment option.
- For the Manitoba Hydro Corridor options, the public favoured the Parker Land Concept 1B alignment that runs east-west, just north of and parallel to Parker Avenue.
- The public debate was largely about serving existing people versus "build it and they will come". On one hand, respondents were of the opinion that transit should be built where people live, work, and play and transit investment should not be speculative. On the other hand respondents saw the opportunity for the City to leverage their transit infrastructure investment to gain a better return financially as well as in the quality of infill development.
- Eight primary issues emerged from the public feedback:
 - City-wide connections and opportunities (intra-neighbourhood);
 - Impact on and opportunity for local neighbourhoods;
 - Who gets transit service, where is it located, and what does it look like;



- How will active transportation be accommodated;
- The influence and potential of real estate and land development interests;
- The future of Pembina Highway, its residential and commercial viability;
- The ability to conserve ecological lands and accommodate green and open space; and,
- The costs of transit infrastructure and pressure to 'get it done'.

8.1.3 Economic (Property, TOD/TIF, and Costs)

The economic evaluation considers numerous factors which the study team categorized into three main categories: property requirements, TOD/TIF metrics, and costs. The specific factors evaluated under property impacts included commercial/industrial displacement and residential displacement. The evaluation of items under the TOD/TIF metrics category included measure of area for TOD, measure of potential mixed-use development, present value estimate of potential tax revenue from TOD, estimate of existing tax revenues from lands subject to TOD, and present value estimate of incremental tax revenue from TOD. The cost evaluation considered preliminary construction costs (not including land) and estimated overall costs (including land and escalation).

The following are notable from the review of land requirements and tax implications:

- The physical land requirements for the alignment options range from 220,618 m² (Concept 2) to 239,657 m² (Concept 1A). The overall variance in land areas required (approximately 8.6 percent) is relatively insignificant.
- In contrast, the total number of property displacements to accommodate the alignment options is much less in Concept 1A and Concept 1B, with many more property displacements required in Concept 2. Estimated costs associated with assembly of lands required for alignment options ranges from \$7,896,606 in Concept 1B and \$8,058,574 to \$9,236,534 in Concept 1A, to a high of \$40,743,881 under Concept 2.
- The large number of properties affected along Pembina Highway and the surrounding neighbourhoods, and the requirement for assemblage to accommodate the Letellier alignment option, significantly affect the costs associated with land assembly for Concept 2.
- Lands appropriate for TOD are significantly greater within the Concept 1A/1B alignment due to the opportunities for development presented by the Parker lands and redevelopment of appropriate Fort Garry industrial lands.
- Likewise, the estimated present value of incremental taxes achievable over a 25-year development horizon is significantly greater in Concept 1A/1B due to the greater opportunities for development. The PV of incremental taxes under Concept 1A/1B is \$152.8 million, versus \$53.2 million under Concept 2.

A summary of the overall costs is as follows:

Table 16: Summary of Overall Cost Evaluation

	<i>Concept 1A</i>	<i>Concept 1B</i>	<i>Concept 2</i>
Preliminary Construction Costs including: <ul style="list-style-type: none"> contingencies engineering and non-contract items no property costs 	\$196,600,000 – base \$232,700,000 – with build-out	\$194,700,000 – base \$223,200,000 – with build-out	\$176,600,000 – base No build-out* opportunities available.
Land Costs	\$8,100,000 to \$9,300,000	\$7,900,000	\$40,800,000
Estimated Overall Cost including Construction, Land and 7.5% escalation over 5 years.	\$296,400,000 – base \$348,300,000 – with build-out	\$291,700,000 – base \$332,700,000 – with build-out	\$312,900,000 – base No build-out* opportunities available.

**Build-out refers to the potential for grade separated intersections to accommodate increased and free-flowing traffic.*

Of note in the Cost Evaluation are the following:

- The *Preliminary Construction Cost* estimates are based on a BRT facility and were carried out using 2012 costs taking into consideration construction of similar projects such as the recently completed Stage 1 of the transitway, but do not include the value of the required land costs.
- These costs are preliminary only and are considered “Class D” estimates (+/- 25%) and include allowances for contingencies, engineering, and non-contract items such as CN relocation costs, Manitoba Hydro tower relocations, traffic signals, etc.
- The *Preliminary Construction Costs* document cost for a base case scenario (no transit overpasses’ at Hurst Way/Beaumont and McGillivray Boulevard) so that they can be directly compared to the Concept 2 alignment where these overpasses’ cannot be accommodated.
- Additional costs for a build out of the Concept 1 alignments is provided which includes the transit overpasses at Hurst Way/Beaumont and McGillivray Boulevard as these are seen as excellent additions to the base case to provide a better level of service.
- The *Estimated Overall Cost* includes the *Preliminary Construction Costs* as well as *Land Costs* and then escalates these values by 7.5% per year over an expected five year construction period.
- Construction and land costs are for the corridor and transitway only and do not include additional land and operation facilities like maintenance and storage yards.



8.2 SUMMARY OF EVALUATION

A summary of the evaluation that was carried out is summarized as follows:

Table 17: Summary of Evaluation

<i>Category</i>	<i>Weighting</i>	<i>Concept 1A</i>	<i>Concept 1B</i>	<i>Concept 2</i>
Operational	High	4	4	2
Implementation	Medium	4	4	2
Environmental	Low	3	3	5
Community	Medium	3	3	4
Property	High	4	4	1
TOD and TIF Metrics	Medium	4	5	2
Base Costs	High	4	4	5
Future Build Out Opportunities	Medium	5	5	1
Public Opinion	High	2	3	5
Overall Rating		33	35	27
Weighted Average Rating		77	82	62

Notes:

- The *Weighting* of a category is given either a High, Medium, or Low rating.
- The *Ratings* for each category are scored with a number between 1 and 5. 5 being excellent and 1 being poor.
- The *Overall Rating* is an addition of all the numbers for each Concept, not taking into consideration any weighting.
- The *Weighted Average Rating* multiplies the Weighting value by the actual number and the addition of these numbers provides the overall score. (A High weighting has a multiplier of 3, a Medium weighting has a multiplier of 2, and a Low weighting has a multiplier of 1).



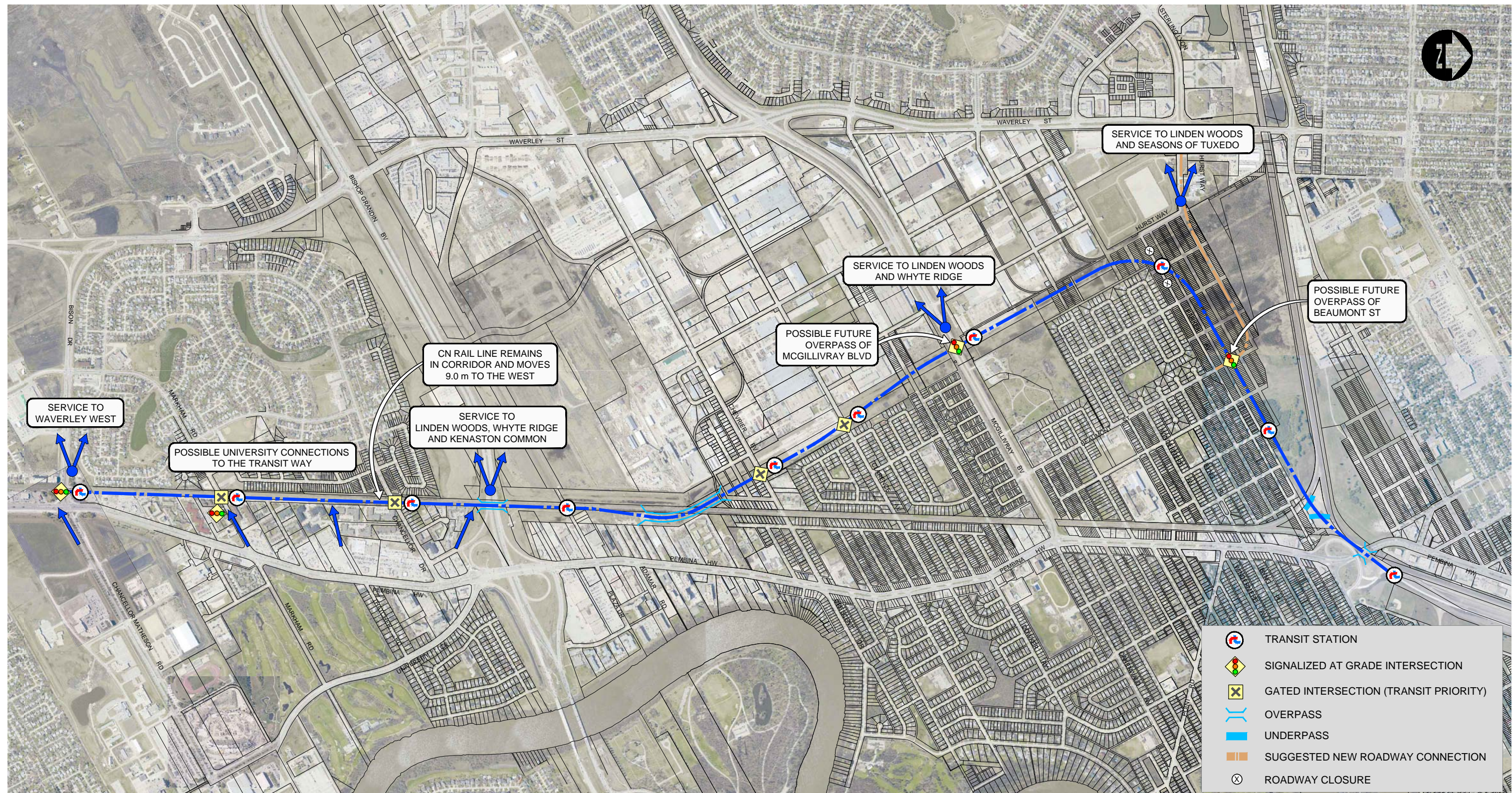
9.0 SUMMARY AND RECOMMENDATIONS

An extensive review and evaluation of various rapid transit corridors, taking into consideration operational, implementation, environmental, community, economic (property), TOD and TIF metrics, base costs, future build-out opportunities, and public feedback, indicates that Concept 1B is the preferred alignment for Stage 2 of the Southwest Rapid Transit Corridor. This alignment completes the link between downtown Winnipeg and southwest Winnipeg, and provides for access to/from the University of Manitoba (U of M), Investors Group Field, and new neighbourhoods. This alignment is shown in the following Figure 12.

Concept 1B extends from Stage 1 of the Southwest Rapid Transit Corridor from Jubilee Avenue over Pembina Highway on a structure just north of the Jubilee Avenue Overpass. West of Pembina Highway, the transitway alignment passes under two CN rail tracks (Letellier Subdivision and switching track), at which point Concept 1B (Figure 4) continues west paralleling Parker Avenue. At the westerly end of the Parker Lands the alignment turns in a south-easterly direction, crosses the existing Parker Avenue and then is located within the Manitoba Hydro right-of-way until it intersects the CN Letellier rail line, north of Bishop Grandin Boulevard. Just south of Manahan Avenue, this alignment crosses over two railway service tracks and the CN Letellier subdivision on an overpass structure, touching down on the east side of the Letellier Subdivision just north of Plaza Drive. From this point, the Concept 1B alignment continues south along the east side of the CN rail line, crosses Bishop Grandin Boulevard on an overpass, and terminates at Bison Drive.

The Concept 1B alignment allows for the U of M to access the rapid transit system via multiple access points, along with alternate extensions of additional phases of rapid transit to other areas of southwest Winnipeg, including Linden Woods, Seasons of Tuxedo, Whyte Ridge, Kenaston Common and Waverley West. With the current and expected growth of southwest Winnipeg, this is a logical extension of rapid transit services.

The review and evaluation of the alignment options considered two major rapid transit technologies: Bus Rapid Transit (BRT) and Light Rail Transit (LRT). From an operational perspective, each technology can work with any of the identified alignments. Based on transit service design, transfer of ridership, flexibility of the system, walking distance to the stations, and development density Concepts 1A and 1B are seen as being more suited to BRT while Concept 2 is seen as being more suited to LRT.





10.0 REFERENCES

City of Winnipeg, *Our Winnipeg* (2010)

City of Winnipeg, *Winnipeg Transit-Oriented Development Handbook* (2011)

City of Winnipeg, *Complete Communities* (2011)

City of Winnipeg, *Winnipeg Transportation Master Plan* (2011)

MMM Group Limited, *Transit Oriented Development Opportunities with the Southwest Rapid Transit Corridor* (2012)

Christopher Baker's 2010 practicum submitted to the University of Manitoba, *Testing the Benefits of On-Street Rapid Transit Alignments: Implications for Winnipeg's Southwest Rapid Transit Corridor* (2010)

McCormick Rankin Memo to Winnipeg Transit, "Future Trip Table and BRT Network" (July 27, 2005)

Province of Manitoba, *Community Revitalization Tax Increment Financing Act* (2009)



Appendix A

Concept 1A, Concept 1B, and Concept 2 Existing Site Photos

Photo 1: Concept 1A - View looking west alongside CN main line

GPS Coordinates: 49°51'04.065' N 97°10'08.944' W



Photo 2: Concept 1B - View looking east at Parker/Manitoba Hydro Lands

GPS Coordinates: 49°50'57.790' N 97°09'51.484' W



Photo 3: Concept 1A/1B Common Alignment - View looking north at Parker Lands Dog Park

GPS Coordinates: 49°50'43.456' N 97°10'20.161' W



Photo 4: Concept 1A/1B Common Alignment – Manitoba Hydro right-of-way at Parker Lands

GPS Coordinates: 49°50'45.706' N 97°10'19.944' W



Photo 5: Concept 1A/1B Common Alignment – ATP pathway connecting Seel Ave to Somerville Ave

GPS Coordinates: 49°50'30.129' N 97°10'10.327' W



Photo 6: Concept 1A/1B Common Alignment – Buried Manitoba Hydro cable along MB Hydro ROW

GPS Coordinates: 49°50'11.490' N 97°09'53.639' W



Photo 7: Concept 1A/1B Common Alignment – View looking west on McGillivray Blvd divided median

GPS Coordinates: 49°50'15.871' N 97°09'54.922' W



Photo 8: Concept 1A/1B Common Alignment – View looking north at Buhler Manufacturing parking lot near Clarence

GPS Coordinates: 49°49'50.310' N 97°09'35.075' W



Photo 9: Concept 1A/1B Common Alignment – Rail crossing view looking west towards Manitoba Sugar Company

GPS Coordinates: 49°49'36.320' N 97°09'24.328' W



Photo 10: Concept 1A/1B and Concept 2 Common Alignment – View looking East at Proposed Plaza Station

GPS Coordinates: 49°49'18.885' N 97°09'21.319' W



Photo 11: Concept 1A/1B and Concept 2 Common Alignment – View looking north along CN Rail Bridge Crossing over Bishop Grandin Blvd

GPS Coordinates: 49°49'05.707' N 97°09'24.546' W



Photo 12: Concept 1A/1B and Concept 2 Common Alignment – View looking East at proposed Corridor and Thatcher Dr intersection thoroughfare. This building will need to be removed for University Extension Option U3

GPS Coordinates: 49°48'40.401' N 97°09'26.249' W



Photo 13: Concept 2 – CG Power Systems rail tracks along proposed Corridor

GPS Coordinates: 49°50'41.907' N 97°09'15.321' W



Photo 14: Concept 2 – View looking North of ditch adjacent rail tracks to the east

GPS Coordinates: 49°49'32.241' N 97°09'22.164' W



Photo 15: Concept 2 – View looking East at the intersection of McGillivray Blvd and Pembina Hwy

GPS Coordinates: 49°50'28.665' N 97°09'16.946' W



Photo 16: Concept 2 – View looking North at Proposed Station at McGillivray Blvd

GPS Coordinates: 49°50'25.900' N 97°09'16.778' W



Photo 17: Concept 1A/1B and Concept 2 Common Alignment – View looking South along rail tracks just south of Chancellor Dr

GPS Coordinates: 49°48"48.250' N 97°09"26.199' W



Photo 18: Concept 1A/1B and Concept 2 Common Alignment – Hydro transformers view looking West at intersection of Markham Rd and rail crossing

GPS Coordinates: 49°48"26.678' N 97°09"27.793' W



Photo 19: Concept 1A/1B and Concept 2 Common Alignment– View looking West of potential Transit connection stop at Pembina Village Shopping Centre. This is the alignment for the U3 University Extension which has been determined that it is not feasible

GPS Coordinates: 49°48"50.682' N 97°09"08.318' W



Photo 20: Concept 1A/1B and Concept 2 Common Alignment – View looking SW of the intersection of Pembina Hwy and Markham Rd

GPS Coordinates: 49°48"33.286' N 97°09"12.217' W



Photo 21: Concept 1A/1B and Concept 2 Common Alignment – View looking East at Proposed Plaza Station

GPS Coordinates: 49°49'18.160' N 97°09'23.402' W



Photo 22: Concept 1A/1B and Concept 2 Common Alignment – View looking south at Bison Dr and rail crossing

GPS Coordinates: 49°48'05.784' N 97°09'29.892' W



Photo 23: Concept 1A/1B and Concept 2 Common Alignment – Transit bus traveling northbound on University Crescent

GPS Coordinates: 49°48'31.401' N 97°08'27.760' W



Photo 24: Concept 1A/1B and Concept 2 Common Alignment– View looking East at former Southwood Golf Course for proposed Transit Station near Investors Group Field

GPS Coordinates: 49°48'38.589' N 97°08'50.060'





Appendix B

Summary of Consultation Meetings held with Major Stakeholders
(Shindico Developments, Gem Equities Inc., Manitoba Hydro, CN Rail, and
City of Winnipeg Water and Waste)

ATTENDEES		PARKER/MANITOBA HYDRO LANDS CONCEPT 1A – CITY of Winnipeg Lands, CONCEPT 1B – GEM Equities Inc. Lands	CN RAIL LETELLIER SUBDIVISION CONCEPT 2
MANITOBA HYDRO	Glenn Gray – Manager, Property Department Transmission Distribution Communication	<ul style="list-style-type: none"> Most of the ROW is in use by Manitoba Hydro and it is unlikely that Manitoba Hydro would ever sell any of their corridor, mostly due to the difficulty in finding land for growing infrastructure. There are currently three transmission towers in the corridor and a fourth is planned. Fourth line is within the 20 year forecast and a reconstruction of the 2 easterly lines is expected within a 5 year time frame, budgets allowing. There are several Secondary Land Use Agreements on the land now, mostly paved parking lots. They are generally five years terms with a 10 year renewal option. Larger users are Buhler and Church of the Rock. New Use Agreements continue to be submitted and a new policy will need to be considered in order to cease this practice in the immediate future. The land could be shared with the transitway, but there can be no disruption of Manitoba Hydro operations, maintenance and new infrastructure requirements. All costs must be covered by the City. Large structures are not permitted in the ROW. Manitoba Hydro will always require 24/7 access to their infrastructure for maintenance. Emergency situations requiring access to Manitoba Hydro infrastructure could result in impact to transitway if locate within Manitoba Hydro right-of-way. 	<ul style="list-style-type: none"> No Manitoba Hydro land obviously impacted, but same position will apply for any Manitoba Hydro ROW.
UNIVERSITY OF MANITOBA	John Alho – VP (External) Michelle Richard – Director, Campus Planning and Real Estate	<ul style="list-style-type: none"> Do not support access from proposed transitway along Chancellor Matheson alignment as additional transportation infrastructure will jeopardize the heritage value of U of M's gateway. Also, Smart Park will continue to be low density employment lands in the future and will not create TOD opportunity. It is a circuitous route to the stadium station. Access alignments from the proposed transitway through Old Southwood Golf Course Lands with station west of stadium is a more direct route into U of M. It will facilitate TOD and set the character of the new mixed-use neighbourhood, also opening up additional station opportunity for Pembina Highway commercial intensity. It offers the unique opportunity to demonstrate a truly Complete Street and transportation system (rapid transit, cyclist, pedestrian, and roadway) designed from the outset as a fully integrated part of a new mixed use community and a new state-of-the-art entranceway to the U of M. University Crescent currently includes multiple travel modes, including high pedestrian and cycle activity, increasing potential conflicts on a ROW not designed for all modes. It is anticipated that the existing neighbourhood will not support an access from the proposed transitway to the U of M along University Crescent as traffic is already an issue. Lost opportunity costs must be a factor in the analysis. The biggest issue for the U of M is the need for a level of certainty on the access as soon as possible so that their planning for the development of the Old Southwood Golf Course Lands can be undertaken. 	<ul style="list-style-type: none"> As Concept 1 and Concept 2 have identical alignments south of Bishop Grandin Boulevard, the same comments as documented for Concept 1 apply to Concept 2
GEM EQUITIES INC.	Andrew Marquess	<ul style="list-style-type: none"> Indifferent to Letellier or Manitoba Hydro ROW alignment. Just needs to know so that the planning of their development can proceed. Prefers the south alignment (Concept 1B) through City and Manitoba Hydro land if Manitoba Hydro corridor is considered. North alignment (Concept 1A) makes much of his land unusable. Geometry of Concept 1A also removes northwest and northeast corner of Gem Equities Inc.'s land from development opportunity. The Sterling Lyon Parkway – Beaumont Street connect makes Concept 1B viable. Otherwise Gem Equities Inc.'s land is land locked. 	<ul style="list-style-type: none"> Indifferent to Letellier or Parker/Manitoba Hydro ROW alignment. Just needs to know.

ATTENDEES		PARKER/MANITOBA HYDRO LANDS CONCEPT 1A – CITY of Winnipeg Lands, CONCEPT 1B – GEM Equities Inc. Lands	CN RAIL LETELLIER SUBDIVISION CONCEPT 2
SHINDICO	Sandy Shindleman John Pearson Justin Zarnowski	<ul style="list-style-type: none"> State no interest in pedestrian/cycle connection to transitway that may be available with Option 1A. If anything, City would have to build it. 	<ul style="list-style-type: none"> Questions density opportunities along Manitoba Hydro corridor and sees better opportunities for commercial intensification along Letellier alignment. Cautions difficulty sorting through development issues with Manitoba Hydro. Took 18 years for Taylor Lands. Believes above ground LRT along Letellier is a better option.
CN RAIL	Shane McCartney	<ul style="list-style-type: none"> CN noted that the length of CN tracks affected by either Concept 1A or 1B is significantly less than Concept 2. CN indicated that a transitway alignment paralleling the Letellier line was still an option as long as their overall operation was seamless, was not interrupted, and that CN would not have any financial responsible for structures or maintenance of these structures. CN indicated that for a transitway alignment along the Letellier subdivision that their track relocation work would need to be carried out in advance of any transitway work taking place. Their operations would need to be up and running prior to any City construction work. CN has no plans to reduce their long term operations along the Letellier subdivision line. Signage/Signals at all railway/transitway crossings with public streets were discussed. Although no such crossings exist in Manitoba, other similar crossings exist at other locations across Canada. Anita Fleming is the contact at CN for property issues and agreements. A CN/City of Winnipeg agreement exists for a shared right-of-way and Anita should be contacted for this information. CN noted that they have a preference of overpasses of their tracks rather than underpasses as this is less disruptive to CN operations. 	<ul style="list-style-type: none"> CN comments for Concept 2 were identical to Concept 1 alignments with the expectation that the Concept 2 alignment would require significantly more CN track relocation and therefore more expense.
CITY OF WINNIPEG WATER AND WASTE DEPARTMENT	Ron Sorkowski	<ul style="list-style-type: none"> City confirmed that they have a 66" existing aqueduct located approximately 31m east of the west property line of the existing Manitoba Hydro right-of way (total Manitoba Hydro Corridor width approximately 126m). City confirmed that they have a 24-30" feedermain located approximately 57m east of the west property line of the existing Manitoba Hydro right-of way (total Manitoba Hydro Corridor width approximately 126m). City indicated that as long as an analyze of the existing aqueduct and feedermain was carried out at any locations were the proposed transitway was in close proximity or crossed their infrastructure and that mitigative measures were addressed that they did not see a problem with the proposed transitway works. For any fly-over or overpass within the Manitoba Hydro Corridor more protective work or innovative construction strategies would need to be investigated as an embankment located on top of these facilities is not preferred 	<ul style="list-style-type: none"> A Concept 2 transitway alignment would not impact either the City aqueduct or feedermain
AECOM	Chris Macey – Aqueduct and Feedermain Specialist	<ul style="list-style-type: none"> AECOM specializes in aqueduct and feedermain work for the City of Winnipeg. Concept 1 alignments, within the Hydro right-of-way, were reviewed with AECOM and they indicated that they didn't think that there were any major concerns in constructing a transitway as it related to protecting the City aqueduct and/or feedermain. If a 1:1 distance is maintained away from the City underground facility then construction equipment and vibratory equipment could be used for roadway works. Any crossings of the City infrastructure would require an investigation of the existing piping and possible protection works prior to any transitway works taking place. 	<ul style="list-style-type: none"> No City aqueduct or feedermain exist within Concept 2.



Appendix C

Public Consultation and Open House Documentation

September 4, 2012



INVITATION TO PUBLIC OPEN HOUSE

Re: Southwest Transitway Stage 2 Alignment

On behalf of the City of Winnipeg, we invite you to attend an Open House to review and provide feedback on the alignment options proposed for the Southwest Transitway Stage 2 Alignment. These options were identified in the Winnipeg Transportation Master Plan, approved by Council November 16, 2011 (Map 5 from the plan on reverse). You can find the full Winnipeg Transportation Master Plan at <http://transportation.speakupwinnipeg.com/>.

The Open House will be held twice, the first on Wednesday September 19 and repeated on Saturday September 22, 2012. The Open House will be a drop-in format so feel free to come any time between the times listed below and speak with the project team. The conceptual alignments and the pros and cons of each, proposed for the Southwest Transitway Stage 2 Alignment, will be displayed.

Open House 1

Open House 2

Wednesday September 19, 2012

**3:00 PM – 8:00 PM
(Drop-in Format)**

**Holiday Inn Winnipeg South
1330 Pembina Highway
Winnipeg, Manitoba**

Saturday September 22, 2012

**9:00 AM – 2:00 PM
(Drop-in Format)**

**Holiday Inn Winnipeg South
1330 Pembina Highway
Winnipeg, Manitoba**

If you are unable to attend the Open House but would like information on the project please visit www.winnipeg.ca or contact Jacqueline East at Dillon Consulting Limited (204) 453-2301 or jeast@dillon.ca.



- Potential Quality Corridors
 Airport Link
-  Rapid Transit Corridor (to 2031)
  Potential Regional Connections
-  Rapid Transit Corridor (beyond 2031)
  Transit-supportive Growth Areas

PUBLIC OPEN HOUSE

Southwest Transitway Stage 2 Alignment

We invite you to attend a Public Open House to review and provide feedback on the alignment possibilities for the Southwest Transitway Stage 2.

Where

Holiday Inn South
1330 Pembina Highway
Winnipeg, Manitoba

When

Wednesday September 19
3:00 PM — 8:00 PM (drop-in format)

and

Saturday September 22
9:00 AM—2:00 PM (drop-in format)



For more information please visit

www.winnipeg.ca
or call 204-453-2301



PUBLIC OPEN HOUSE

Southwest Transitway Stage 2 Alignment



SEPTEMBER 19 AND 22, 2012



What is the Purpose of the Study?

- To gather and analyze engineering, financial and community information about the Southwest Transitway Stage 2 alignment options identified in the Winnipeg Master Transportation Plan in order to establish the best alignment option.



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What is the Scope of the Study?

This study *is*:

- ✓ a comprehensive evaluation of the Letellier versus the Hydro Corridor alignment options and will serve as the technical, financial and community due diligence required to confirm the future alignment.

This study *is not*:

- ✗ a preliminary engineering report for any one or both alignments.
- ✗ a budgetary commitment to proceed with Stage 2 of the Southwest Transitway.



Alignment Options (Fort Rouge Yards to Sugar Beet Lands)

The study details the primary alignment options for the extension of the Southwest Transitway from the south end of the Fort Rouge Yards:

- The *Hydro Corridor* alignment runs west from Pembina through the Parker Lands then south through the Manitoba Hydro Corridor that divides the Fort Garry Industrial area from the Beaumont and Maybank residential neighbourhoods. There are two variations of this alignment, one through the north part of Parker Lands and one through the south part of Parker Lands.
- The *Letellier* alignment runs south along the west side of Pembina on the east side of the Letellier CN Rail right-of-way, behind the Pembina Highway businesses from the Pembina Underpass to McGillivray and then through the middle of the Maybank neighbourhood.



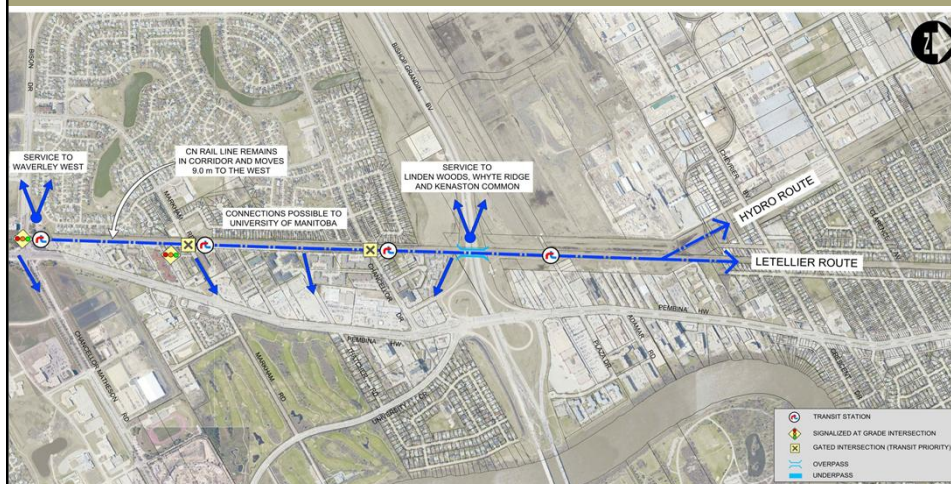
Common Alignment (Sugar Beet Lands to Bison Drive)

- Both concepts are the same where the Hydro corridor joins the CN Rail right-of-way in the vicinity of the Sugar Beet Lands.
- South of the Sugar Beet Lands, both concepts proceed south to Bison Drive along the CN Rail right-of-way.
- Either alignment opens several options to access the future station at Investors Group Field (the new Stadium at the University of Manitoba).



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Common Alignment (Sugar Beet Lands to Bison Drive)



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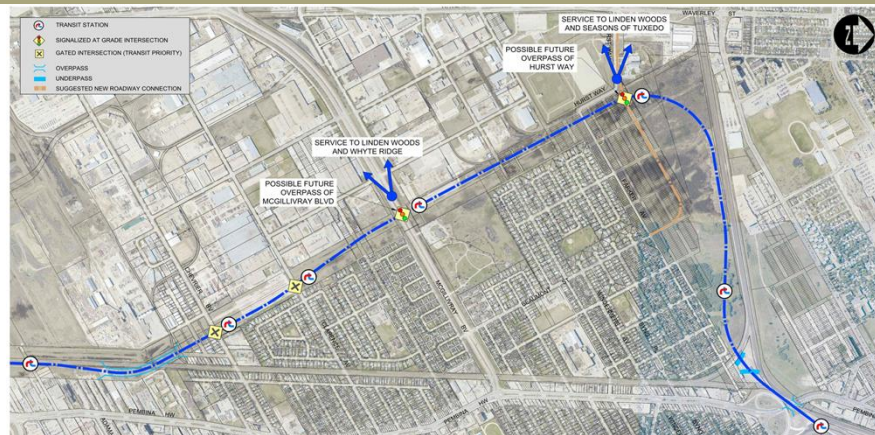
Parker Lands and Manitoba Hydro Corridor (Concept 1A)

Characteristics:

- More opportunities for transit-oriented development;
- Will require Parker Land private properties;
- Less neighbourhood impact;
- Easy to accommodate active transportation;
- Faster operating speeds (80km/hr);
- Significant positive tax implications due to future new transit-oriented development opportunities;
- Longer distance on a dedicated corridor;
- Major negotiations with Manitoba Hydro required; and,
- Potential impact on users of Parker land dog park, wetland, and hydro corridor parking lots and gardens.



Parker Lands and Manitoba Hydro Corridor (Concept 1A)



Concept 1A travels through the Parker/Hydro Lands alongside CN's main line, then shifts and is located within the Manitoba Hydro right-of way until it again meets with the existing CN track, north of Bishop Grandin with no CN track relocation required. From here the alignment continues south along the east side of the CN rail line to Bison Drive. Concept 1A and 1B have the same alignment from Parker Avenue to Bison Drive.



Parker Lands and Manitoba Hydro (Concept 1B)

Characteristics:

- More opportunities for transit-oriented development;
- Fewer private properties required therefore lower land costs;
- Less neighbourhood impact;
- Easy to accommodate active transportation;
- Faster operating speeds (80km/hr);
- Significant positive tax implications due to future new transit-oriented development opportunities;
- Longer distance on a dedicated corridor;
- Major negotiations with Manitoba Hydro required; and,
- Potential impact on users of vacant Parker land and Hydro corridor.



Parker Lands and Manitoba Hydro Corridor (Concept 1B)



Concept 1B travels through the Parker/Hydro Lands paralleling Parker Avenue and then shifts and is located within the Hydro right-of-way until it again meets with the existing CN track, north of Bishop Grandin with no CN track relocation required. From here the alignment continues south along the east side of the CN rail line to Bison Drive. Concept 1A and 1B have the same alignments from Parker Avenue to Bison Drive.



CN Letellier Alignment (Concept 2)

Characteristics:

- Shorter, more direct distance;
- More service along Pembina Highway;
- More transit access for residences in the Maybank neighbourhood;
- More at-grade intersections to cross, significantly impacting traffic on crossing streets;
- No room for co-located active transportation;
- Negotiations and relocation of CN tracks required;
- Lower running speeds (~60km/hr);
- No opportunity for future full operational build-out;
- Immediate commercial and residential property impacts with significant property costs;
- Reduced incremental tax benefits to the City due to fewer new opportunities for transit-oriented development; and,
- Higher overall cost (construction and property).



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CN Letellier Alignment (Concept 2)



Concept 2 departs from Stage 1 of the Southwest Transitway at Jubilee Avenue and follows the CN Rail Line from the end of Stage 1 to Bison Drive. This option requires the relocation of the CN Rail Line 9.0 m in a westerly direction.



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Operational Comparison

Comparison Criteria	Parker Lands and Manitoba Hydro (Concept 1A)	Parker Lands and Manitoba Hydro (Concept 1B)	CN Letellier Subdivision (Concept 2)
Distance on Dedicated Corridor	7500m	7040m	6020m
Total Length of Structures (m)	612 m – Base 753m – With Build-out	612m – Base 774m – With Build-out	172 m – Base 172 m – No opportunities for Build-out
At Grade Gate Controlled Intersections within Corridor	7 – Base 5 – With Build-out	7 – Base 5 – With Build-out	12 – Base
Drainage	<ul style="list-style-type: none"> Poor drainage Lots of land available to accommodate ditches or ponds. 	<ul style="list-style-type: none"> Poor drainage Lots of land available to accommodate ditches or ponds. 	<ul style="list-style-type: none"> Difficult drainage with limited property. Requires piped storm sewers.
Accommodation of Multiple Modes (Active Transportation, Park n' Ride)	<ul style="list-style-type: none"> AT can be accommodated Potential Park n' Rides near Fort Garry Industrial Park and Bishop Grandin 	<ul style="list-style-type: none"> AT can be accommodated Potential Park n' Rides near Fort Garry Industrial Park and Bishop Grandin 	<ul style="list-style-type: none"> AT cannot be accommodated Potential Park n' Ride at Bishop Grandin only.
Anticipated Running Speed	<ul style="list-style-type: none"> North of Bishop Grandin 80 km/hr South of Bishop Grandin 80 km/hr 	<ul style="list-style-type: none"> North of Bishop Grandin 80 km/hr South of Bishop Grandin 80 km/hr 	<ul style="list-style-type: none"> North of Bishop Grandin 60 km/hr South of Bishop Grandin 80 km/hr
Existing and Future Ridership	<p>Existing</p> <ul style="list-style-type: none"> Minimal riders Good connectivity to Linden Woods, Seasons of Tuxedo and Whyte Ridge. <p>Future</p> <ul style="list-style-type: none"> Increased riders through Parker lands development. 	<p>Existing</p> <ul style="list-style-type: none"> Minimal riders Good connectivity to Linden Woods, Seasons of Tuxedo, and Whyte Ridge. <p>Future</p> <ul style="list-style-type: none"> Increased riders through Parker lands development. 	<p>Existing</p> <ul style="list-style-type: none"> Limited connectivity to north portion of Linden Woods and Seasons of Tuxedo. <p>Future</p> <ul style="list-style-type: none"> Limited opportunities for growth along corridor. Potential for high density commercial along Pembina.

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Construction Comparison

Comparison Criteria	Parker Lands and Manitoba Hydro (Concept 1A)	Parker Lands and Manitoba Hydro (Concept 1B)	CN Letellier Subdivision (Concept 2)
Project Phasing	<ul style="list-style-type: none"> Land available for efficient phasing. Aqueduct and Feedermain evaluation and protection necessary. Manitoba Hydro clearances required. 	<ul style="list-style-type: none"> Land available for efficiency of phasing Aqueduct and Feedermain protection may be required. Manitoba Hydro clearances required. 	<ul style="list-style-type: none"> CN track relocation necessary prior to construction.
Disruptions to Traffic and Property Owners (i.e. closure and noise)	<ul style="list-style-type: none"> Limited noise and traffic impact. 	<ul style="list-style-type: none"> Limited noise and traffic impact. 	<ul style="list-style-type: none"> Increased noise and traffic impact.
Complexity/Feasibility of Land Assembly	<ul style="list-style-type: none"> Complex land negotiations. Major aqueduct and feedermain exist within Manitoba Hydro right-of-way. 	<ul style="list-style-type: none"> Complex land negotiations. Major aqueduct and feedermain exist within Manitoba Hydro right-of-way. 	<ul style="list-style-type: none"> Complex land negotiations. CN track relocation. Potential expropriation of residential properties.
LRT/BRT Compatible	<ul style="list-style-type: none"> Yes 	<ul style="list-style-type: none"> Yes 	<ul style="list-style-type: none"> Yes



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Environmental Comparison

Comparison Criteria	Parker Lands and Manitoba Hydro (Concept 1A)	Parker Lands and Manitoba Hydro (Concept 1B)	CN Letellier Subdivision (Concept 2)
Ecologically Significant Natural Lands	<ul style="list-style-type: none"> Runs through A Quality Aspen. May isolate and protect A Quality Wetland. Limited impact on natural areas at south end of plan. 	<ul style="list-style-type: none"> Runs through A Quality Aspen. Limited impact on natural areas at south end of plan. 	<ul style="list-style-type: none"> Natural areas not present along railway.
Environmentally Impacted Lands	<ul style="list-style-type: none"> Potential for impact near CN lines. Impacted sites exist outside of alignment. 	<ul style="list-style-type: none"> Potential impact near CN lines. Impacted sites exist outside of alignment. 	<ul style="list-style-type: none"> Potential impact at CN line. Close proximity to industrial property.
Greenspace	<ul style="list-style-type: none"> Existing greenspace provides amenity and connectivity to Corridor. Parker / Summerville buffer Farwell Bay Greenspace and Marshall Crescent Park Chancellor / CN buffer Couple of active Community Gardens south of McGillvray could be relocated. 	<ul style="list-style-type: none"> Parker Tot Lot could be impacted. 10 – 15 Community Gardeners may be impacted but alignment could accommodate if adjusted slightly. Couple of active Community Gardens south of McGillvray could be relocated. 	<ul style="list-style-type: none"> Waller Park west side of Letellier could be impact
Ecologically Significant Natural Lands	<ul style="list-style-type: none"> Runs through A Quality Aspen. May isolate and protect A Quality Wetland. Limited impact. 		



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Community Impact Comparison

Comparison Criteria	Parker Lands and Manitoba Hydro (Concept 1A)	Parker Lands and Manitoba Hydro (Concept 1B)	CN Letellier Subdivision (Concept 2)
Disruption to Community	<ul style="list-style-type: none"> Potential loss of service for both residential and commercial (transit diverted away from Pembina). Good connectivity (Maybank). Poor connectivity (Beaumont). Increased noise (Beaumont and Maybank). Potential relocated dog park. 	<ul style="list-style-type: none"> Potential loss of service for both residential and commercial (transit diverted away from Pembina). Good connectivity (Maybank). Poor connectivity (Beaumont). Increased noise from corridor (Beaumont and Maybank). Potential relocated dog park. 	<ul style="list-style-type: none"> Potential loss of Pembina service south of McGillvray (transit diverted away from Pembina). Increased noise to residential along corridor. Increased distance for Crescent Park access. Increased traffic through Maybank and Beaumont.
Community Amenity and Opportunity	<ul style="list-style-type: none"> Service to 5 of the City's Major Redevelopment Sites. Consumes significant land in Parker neighbourhood. Room to create Park n' Rides and mixed use development. 	<ul style="list-style-type: none"> Service to 5 of the City's Major Redevelopment Sites. Room to create Park n' Rides and mixed use development. 	<ul style="list-style-type: none"> Service to 4 of the City's Major Redevelopment Sites. Limited service to Parker Lands. Encourages redevelopment along Pembina. Better connectivity to residential, commercial, institutional. Limited opportunity for mixed used development.
Connectivity to Nearby Communities	<ul style="list-style-type: none"> Increased service for north of Beaumont. Direct access to Fort Garry Industrial Park and employment area. Good connectivity to Linden Woods, Whyte Ridge, Kenaston Common via Bishop Grandin. 	<ul style="list-style-type: none"> Increased service north of Beaumont. Direct access to Fort Garry Industrial Park and employment area. Good connectivity to Linden Woods and Seasons 	<ul style="list-style-type: none"> Improved transit for Maybank, but limited to other residential. Excellent connectivity to Pembina. Limited opportunities for new development.

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Financial Comparison

Comparison Criteria	Parker Lands and Manitoba Hydro (Concept 1 A)	Parker Lands and Manitoba Hydro (Concept 1 B)	CN Letellier Subdivision (Concept 2)
Relative Preliminary Construction Costs	Base – Highest (Build-out* – Highest)	Base – Higher (Build-out* – Higher)	Base – High (Build-out* – not possible)
Relative Estimated Costs Associated with Land Acquisition	\$	\$	\$\$\$\$\$
Relative Incremental Tax Revenue from Transit Oriented Development (TOD)	\$\$\$	\$\$\$	\$
Relative Estimated Overall Cost	Base - Higher (Build-out* – Highest)	Base - High (Build-out* – Higher)	Base – Highest (Build-out* – not possible)

*Build out is the potential for grade separated intersections.



Next Steps

1. Confirm alignment
2. Prepare for and design future stages
 - Functional design
 - Detailed design
 - Land acquisition
 - Construction



Thank you for your time and participation.

We value your feedback.
Please complete the questionnaire.

For more information, please visit winnipegtransit.com



Southwest Transitway Stage 2 Alignment Public Open House — September 19 and 22, 2012

Please take a moment to complete this questionnaire and leave it in the folder at the registration desk (or complete online at winnipegtransit.com). We appreciate your participation and value your input.

- Please review the three concepts on the large maps displayed. Which option (Concept 1A, 1B, or 2) do you prefer? Comment based on the criteria below.

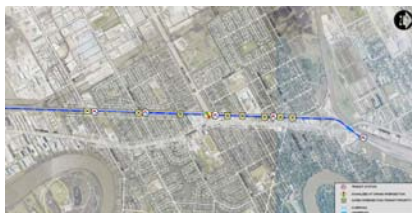
☐ Manitoba Hydro
Corridor (Concept 1A)



☐ Parker Lands and
Manitoba Hydro
Corridor (Concept 1B)



☐ CN Letellier Subdivision
(Concept 2)



Provide additional
comments on reverse

Community Linkages (*connections to multiple communities, amenities, services, park n' rides, etc.*)

Property (*impact on existing property, land acquisition*)

Neighbourhood (*impact on neighbourhoods, closures, noise, traffic, etc.*)

Business (*impact on businesses, closures, noise, traffic, etc.*)

Environmental (*greenspace, environment, wetlands, etc.*)

Operations (*speed, active transportation, drainage, at-grade controlled intersections, etc.*)

Construction (*project phasing, disruptions to traffic, feasibility, etc.*)

2. Are there any other comments or other considerations you would like to share with us?

3. How did you hear about this event (please check all that apply)?

- ☐ Newspaper advertisement
- ☐ winipegtransit.com
- ☐ Letter
- ☐ Email invitation
- ☐ From a friend
- ☐ Other: _____

4. Are you (check all that apply)?

- ☐ A resident of the area
- ☐ A business owner / operator
- ☐ Representing a community organization / group:
(Please Specify) _____
- ☐ Other: (Please Specify) _____

5. What age group best represents you?

- ☐ 0 – 18
- ☐ 19 – 30
- ☐ 31 – 54
- ☐ 55+

6. Overall, how would you rate today's open house, based on a scale of 1 (not pleased) to 5 (very pleased). 1 2 3 4 5




We appreciate any advice for future improvements.



Appendix D

Matrix Evaluation of Alignment Concepts

APPENDIX D – COMPARISON OF ALIGNMENTS

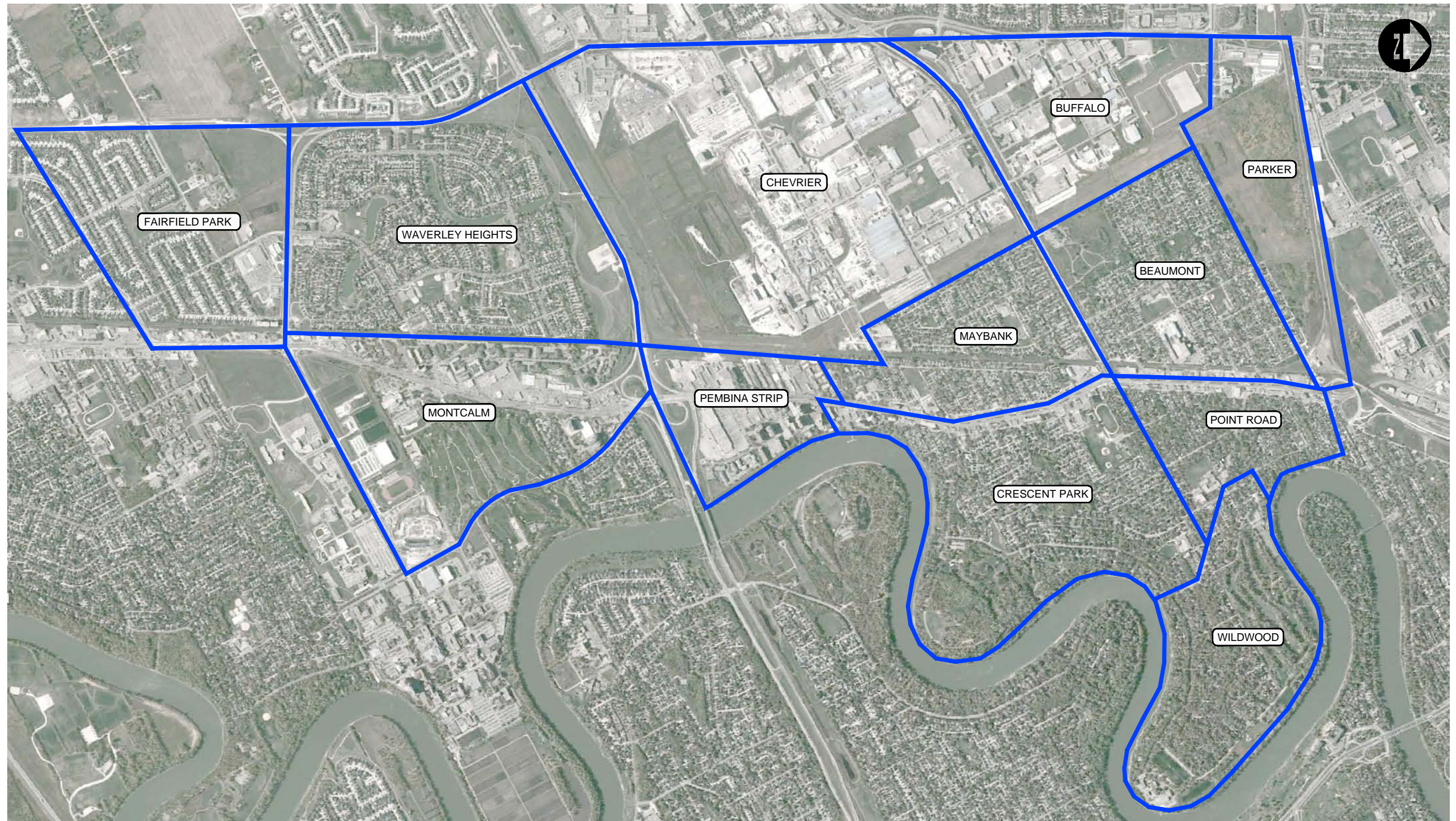
COMPARISON CRITERIA		CONCEPT 1A – PARKER/MANITOBA HYDRO LANDS PARALLELING CN WEST RAIL LINE	CONCEPT 1B – PARKER/MANITOBA HYDRO LANDS PARALLELING PARKER AVENUE	CONCEPT 2 – CN LETELLIER SUBDIVISION
Alignments	Description of Alignment	<div>A map showing the proposed alignment for Concept 1A. The alignment is highlighted in red and starts at the intersection of Jubilee Avenue and Pembina Highway. It crosses Pembina Highway on a structure just north of the Jubilee Overpass and continues west alongside CN Rail's main line within Manitoba Hydro/GEM Equities Inc.'s right-of-way. At Beaumont Street, the roadway is extended in a north and then westerly direction to tie into Hurst Way. This allows continuous access to the west as well as any potential development to the north. At Hurst Way, Concept 1A turns south and continues along the Manitoba Hydro right-of-way. It continues in a south easterly direction and crosses to the east side of the Letellier CN Rail subdivision before continuing south along the CN rail to Bison Drive. There are potential off shoots across Pembina Highway to the University of Manitoba.</div>	<div>A map showing the proposed alignment for Concept 1B. The alignment is highlighted in red and starts at the intersection of Jubilee Avenue and Pembina Highway. It crosses Pembina Highway on a structure just north of the Jubilee Overpass and continues west alongside Parker Avenue within Manitoba Hydro/GEM Equities Inc.'s right-of-way. At Beaumont Street, this roadway is extended in a north and then westerly direction to tie into Hurst Way. This allows continuous access to the west as well as any potential development to the north. East of Hurst Way, the alignment converges with 1A, turns south and continues along the Manitoba Hydro right of way.</div> <p>The remainder of the alignment follows the same path as 1A.</p>	<div>A map showing the proposed alignment for Concept 2. The alignment is highlighted in red and starts at the intersection of Jubilee Avenue and Pembina Highway. It crosses Pembina Highway on a structure just north of the Jubilee Overpass, paralleling the CN rail Letellier Sub-division on the east side south to Bison Drive.</div> <p>There are potential off shoots across Pembina Highway to the University of Manitoba.</p>

COMPARISON CRITERIA		CONCEPT 1A – PARKER/MANITOBA HYDRO LANDS PARALLELING CN WEST RAIL LINE	CONCEPT 1B – PARKER/MANITOBA HYDRO LANDS PARALLELING PARKER AVENUE	CONCEPT 2 – CN LETELLIER SUBDIVISION
Operational	Distance on Dedicated Corridor	7500	7040	6020
	Total Length of Structures (m)	612 – Base	612 – Base	172 – Base
		753 – With Build-out	774 – With Build-out	172 – No opportunities for Build-out
	At Grade Gate Controlled Intersections within Corridor	7 – Base	7 – Base	12 – Base
		5 – With Build-out	5 – With Build-out	
	Maximum Vertical Grades at Structures	4%	4%	4%
	Drainage	<ul style="list-style-type: none">Area is not well drained. Lots of land available to accommodate linear ditches or ponds with discharge to City sewer system.	<ul style="list-style-type: none">Area is not well drained. Lots of land available to accommodate linear ditches or ponds with discharge to City sewer system.	<ul style="list-style-type: none">Difficult drainage due to restricted property requiring piped storm sewers for a majority of the corridor length.
	Accommodation of Multiple Modes (Active Transportation and Park n’ Ride)	<ul style="list-style-type: none">Significant available land to accommodate ATFuture transit overpasses could be built to accommodate AT where required.Land for Park n’ Ride available near Fort Garry Industrial Park and McGillivray Boulevard.Potential for Park n’ Ride at Bishop Grandin.	<ul style="list-style-type: none">Significant available land to accommodate AT.Future transit overpasses could be built to accommodate AT where required.Land for Park n’ Ride available near Fort Garry Industrial Park and McGillivray Boulevard.Potential for Park n’ Ride at Bishop Grandin.	<ul style="list-style-type: none">CN right-of way does not accommodate westerly connection from Pembina / Jubilee interchange, as desired by Bike to the Future.Land is too constrained to accommodate AT.No significant Park n’ Ride available north of Bishop Grandin.Potential for Park n’ Ride at Bishop Grandin.
	Anticipated Running Speed	<ul style="list-style-type: none">North of Bishop Grandin – 80 km/hr based on distance between stations, grade separation from major cross streets, and generous clear zone.South of Bishop Grandin – 80 km/hr based on distance between stations, grade separation from major cross streets, and generous clear zone.	<ul style="list-style-type: none">North of Bishop Grandin – 80 km/hr based on distance between stations, grade separation from major cross streets, and generous clear zone.South of Bishop Grandin – 80 km/hr based on distance between stations, grade separation from major cross streets, and generous clear zone.	<ul style="list-style-type: none">North of Bishop Grandin – 60km/hr based on closer proximity of stations, multiple at-grade controlled intersections, and limited control of unauthorized crossings of the corridor.South of Bishop Grandin – 80 km/hr based on distance between stations, grade separation from major cross streets, and generous clear zone..
	Existing and Future Ridership	<ul style="list-style-type: none">Existing:<ul style="list-style-type: none">➤ No riders in Parker lands until development.➤ Low density residential and medium density industrial adjacent to corridor.➤ Better connectivity to Linden Woods, Seasons of Tuxedo and Whyte Ridge over Letellier.Proposed:<ul style="list-style-type: none">➤ Parker lands has opportunity of significant ridership and mode share as a TOD.	<ul style="list-style-type: none">Existing:<ul style="list-style-type: none">➤ Minimal riders in Parker lands until development.➤ Low density residential and medium density industrial adjacent to corridor.➤ Better connectivity to Linden Woods, Seasons of Tuxedo and Whyte Ridge over Letellier.Proposed:<ul style="list-style-type: none">➤ Parker lands has opportunity of significant ridership and mode share as a TOD.	<ul style="list-style-type: none">Existing:<ul style="list-style-type: none">➤ Low density residential and commercial adjacent to corridor.➤ Limited connectivity to north portion of Linden Woods and Seasons of Tuxedo.Proposed:<ul style="list-style-type: none">➤ Limited opportunity for future densification along corridor. i.e. A few vacant properties.➤ Potential for higher density commercial along Pembina Highway.

COMPARISON CRITERIA		CONCEPT 1A – PARKER/MANITOBA HYDRO LANDS PARALLELING CN WEST RAIL LINE	CONCEPT 1B – PARKER/MANITOBA HYDRO LANDS PARALLELING PARKER AVENUE	CONCEPT 2 – CN LETELLIER SUBDIVISION
Implementation	Project Phasing	<ul style="list-style-type: none">Land area available allows for efficient staging and phasing of transitway works.Aqueduct and Feedermain evaluation and protection will be needed to be carried out in advance of construction.Manitoba Hydro induction study will be required to determine line clearances from transitway.	<ul style="list-style-type: none">Land area available allows for efficient staging and phasing of transitway works.Aqueduct and Feedermain protection may need to be carried out in advance of construction.Manitoba Hydro induction study will be required to determine line clearances from transitway.	<ul style="list-style-type: none">All CN track relocation and switch-over of train traffic has to be completed before any work on the transitway can be started.
	Disruptions to Traffic and Land Owners During Construction in Terms of Closures and Noise	<ul style="list-style-type: none">Construction works are somewhat removed for residential areas therefore reducing possible noise complaints.Fewer CN street crossings therefore reducing the number of street closures during construction.	<ul style="list-style-type: none">Construction works are somewhat removed for residential areas therefore reducing possible noise complaints.Fewer CN street crossings therefore reducing the number of street closures during construction.	<ul style="list-style-type: none">Construction work would be in close proximity to existing residential dwellings limiting work hours.Numerous CN street crossings would require closure during the construction of the transitway.
	Complexity / Feasibility of Land Assembly	<ul style="list-style-type: none">Complexity of negotiations regarding Hydro lands, and in particular those which have private lease agreements in place for use (ie. Parking lots, gardens etc.)Parker lands / City ownership facilitates assembly.Major Aqueduct and Feedermain exist within Manitoba Hydro right-of-way.	<ul style="list-style-type: none">Complexity of negotiations regarding Hydro lands, and in particular those which have private lease agreements in place for use (ie. Parking lots, gardens etc.)Parker lands / GEM ownership would require additional complex land negotiations.Major Aqueduct and Feedermain exist within Manitoba Hydro right-of-way.	<ul style="list-style-type: none">Complexity of negotiations arising from the commercial properties along Pembina Highway at the point of entry to the U of M. Possible litigation arising from the closure of access points and limiting of traffic flow.CN line requires CN agreement and significant notification for track relocation.Potential expropriation of residential properties along west side of CN line.Residential Expropriation
Environmental	Ecologically Significant Natural Lands	<ul style="list-style-type: none">The northwest “bend” from W/E to N/S runs directly through the middle of <i>A Quality Aspen</i>.The “bend” might also isolate and protect the <i>A Quality Wetland</i> located in the furthest northwest corner of the Parker lands.The likelihood of long term protection would also have to be weighed with other future plans for the site.Natural areas at the south end of the plan are not of great concern within the shown alignment.	<ul style="list-style-type: none">The W/E portion of 1B runs through some <i>B Quality Aspen</i>.The likelihood of long term protection would also have to be weighed with other future plans for the site.Natural areas at the south end of the plan are not of great concern within the shown alignment.	<ul style="list-style-type: none">Natural areas are not present along the railway.Natural areas at the south end of the plan are not of great concern within the shown alignment.
	Environmentally Impacted Lands	<ul style="list-style-type: none">Some sections are on or near CN lines which may be environmentally impacted through use of contaminated fill material or spills from trains.All impacted sites are outside of the actual alignment properties and Manitoba Conservation indicates that all impacts should be contained within the impacted properties, as identified on the Manitoba Conservation List of Impacted Sites.	<ul style="list-style-type: none">Some sections are on or near CN lines which may be environmentally impacted through use of contaminated fill material or spills from trains.All impacted sites are outside of the actual alignment properties and Manitoba Conservation indicates that all impacts should be contained within the impacted properties, as identified on the Manitoba Conservation List of Impacted Sites.	<ul style="list-style-type: none">CN line may be environmentally impacted through use of contaminated fill material or spills from trains.Close proximity to industrial property between Somerset Ave and Waterford Ave.All impacted sites are outside of the actual alignment properties and Manitoba Conservation indicates that all impacts should be contained within the impacted properties, as identified on the Manitoba Conservation List of Impacted Sites.

COMPARISON CRITERIA		CONCEPT 1A – PARKER/MANITOBA HYDRO LANDS PARALLELING CN WEST RAIL LINE	CONCEPT 1B – PARKER/MANITOBA HYDRO LANDS PARALLELING PARKER AVENUE	CONCEPT 2 – CN LETELLIER SUBDIVISION
	Green Space	<ul style="list-style-type: none">• The Parker / Sommerville buffer is located on the east side of the Manitoba Hydro corridor between the Rosemount and Mars back lanes.• The Farwell Bay Greenspace and Marshall Crescent Park are adjacent to the east side of the Manitoba Hydro corridor south of McGillivray Boulevard and would provide pedestrian and cycle connections to the corridor.• Chancellor / CN buffer is along the west side of the Manitoba Hydro corridor in Waverley Heights.• The area shown as Community Gardens south of McGillivray Boulevard is largely abandoned and has only a couple of active plots which could also be easily accommodated in the width of the area.	<ul style="list-style-type: none">• The Parker Tot Lot is on the northwest corner of Parker Avenue and Daniel.• Alignment 1B goes through an active area of Community Gardens and would affect 10-15 gardeners who have been long term residents of the site. The alignment would miss the garden plots if it swung slightly north. Alternatively, space elsewhere in the vicinity could be used for redeveloped garden plots.• The area shown as Community Gardens south of McGillivray Boulevard is largely abandoned and has only a couple of active plots which could also be easily accommodated in the width of the area.	<ul style="list-style-type: none">• Waller Park is on the west side of the Letellier just south of Waller.

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Community	Disruption to Community	<ul style="list-style-type: none">• The communities of Point Road (pop 1945) and Crescent Park (pop 2520) may lose service.• Reduces redevelopment potential of public and private golf courses (Crescent Park and Wildwood).• Commercial businesses and homes along Pembina highway may lose service.• Decent connectivity to corridor from residential neighbourhoods of Maybank.• Poor connectivity to corridor from residential neighbourhoods of Beaumont except for Sommerville where AT path exists. Opportunity for AT/transit hub here.• Increased noise from corridor for residences on Heatherdale and west sides of Beaumont and Maybank Neighbourhoods.• Parking for Versatile and other businesses in corridor may be disrupted.• Potential loss of dog park.	<ul style="list-style-type: none">• The communities of Point Road (pop 1945) and Crescent Park (pop 2520) may lose service.• Reduces redevelopment potential of public and private golf courses (Crescent Park and Wildwood).• Commercial businesses and homes along Pembina highway may lose service.• Decent connectivity to corridor from residential neighbourhoods of Maybank.• Poor connectivity to corridor from residential neighbourhoods of Beaumont except for Sommerville where AT path exists. Opportunity for AT/transit hub here.• Increased noise from corridor for residences on Heatherdale, Parker and west sides of Beaumont and Maybank Neighbourhoods.• Parking for Versatile and other businesses in corridor may be disrupted.• Potential loss of dog park.	<ul style="list-style-type: none">• Increased noise to residences along corridor.• Distance to corridor may be too far for Crescent Park for convenient access (pop 2520).• Major increase in traffic through Maybank and Beaumont neighbourhoods, with single family residential development on both sides of the corridor in Maybank. (See Neighbourhood Characterization map on following page.)
	Community Amenity and Opportunity	<ul style="list-style-type: none">• 5 of the City's 11 Major Redevelopment Sites are located along and can potentially be served by the transitway.• Land for the transitway would consume a significant portion of the private development lands in the Parker neighbourhood• Any potential redevelopment adjacent to the Manitoba Hydro Corridor will evolve over the long term.• Room to create park and rides and accessory mixed use developments at stations.	<ul style="list-style-type: none">• 5 of the City's 11 Major Redevelopment Sites are located along and can potentially be served by the transitway.• Any potential redevelopment adjacent to the Manitoba Hydro Corridor will evolve over the long term.• Room to create park and rides and accessory mixed use developments at stations.	<ul style="list-style-type: none">• 4 of the City's Major Redevelopment Sites can potentially be served by the transitway but service to the Parker lands is limited.• Encourages reinvestment and redevelopment opportunities along the Pembina corridor.• Better connectivity to existing residential, commercial, and institutional development (Vincent Massey School).• Limited opportunity for station and ancillary development (mixed use) due to narrow corridor size.
	Connectivity to Nearby Communities	<ul style="list-style-type: none">• Houses in the north Beaumont neighbourhood within walking distance of rapid transit may see increased service.• Employment area (Fort Garry Industrial Park) gains direct rapid transit access between Sterling Lyon and Bishop Grandin.• Limited and/or complicated access opportunities for planned new residential area on Parker lands.• Good connectivity to Linden Woods and Seasons of Tuxedo with Sterling Lyon.• Good connectivity to Linden Woods, Whyte Ridge, Kenaston Commons via Bishop Grandin.	<ul style="list-style-type: none">• Houses in the north Beaumont neighbourhood within walking distance of rapid transit may see increased service.• Employment area (Fort Garry Industrial Park) gains direct rapid transit access between Sterling Lyon and Bishop Grandin.• Good southern connectivity for Parker lands but limited to the north by the CN line.• Good connectivity to Linden Woods and Seasons of Tuxedo with Sterling Lyon.• Good connectivity to Linden Woods, Whyte Ridge, Kenaston Commons via Bishop Grandin.	<ul style="list-style-type: none">• Improved transit access for Maybank neighbourhood.• Excellent connectivity to Pembina with existing developments and future redevelopment of Pembina frontage properties.• No connectivity to residential neighbourhood due to CN line barrier.• Limited opportunities for new development to take advantage of connectivity.



COMPARISON CRITERIA		CONCEPT 1A – PARKER/MANITOBA HYDRO LANDS PARALLELING CN WEST RAIL LINE	CONCEPT 1B – PARKER/MANITOBA HYDRO LANDS PARALLELING PARKER AVENUE	CONCEPT 2 – CN LETELLIER SUBDIVISION
Economic (Property)	Commercial / Industrial Displacements	Full takings (\$4,485,600) Partial Takings (\$610,190)	Full takings (\$4,485,600) Partial takings (\$856,571)	Full takings (\$29,867,880) Partial Takings (\$2,022,900)
	Residential Displacements	Full Takings (\$1,064,000) Partial Takings (\$1,470,750)	Full takings (\$1,064,000) Partial takings (\$1,490,435)	Full takings (\$6,434,400) Partial Takings (\$2,418,701)
	Estimated Land Area Required for Alignment Options	Concept 1A = 239,657 m ²	Concept 1B = 226,330 m ²	Concept 2 = 220,618 m ²
TOD & TIF Metrics	Measure of Land Area for TOD	2,213,396 m ² (139 Properties)	2,213,396 m ² (139 Properties)	1,495,718 m ² (158 Properties)
	Measure of Potential Mixed-use Development (residential units, square feet of commercial/retail development)	16,408 Residential Units 73,837 m ² Commercial/Retail development	16,408 Residential Units 73,837 m ² Commercial/Retail development	11,088 Residential Units 49,896 m ² Commercial/Retail development
	Present Value (PV) Estimate of Potential Tax Revenue from TOD	PV = \$237,326,709 (25 yrs.)	PV = \$237,326,709 (25 yrs.)	PV = \$146,460,252 (25 yr.)
	Estimate of Existing Tax Revenue from Lands Subject to TOD	\$3,581,604/yr PV = \$84,513,204 (25 yrs.)	\$3,581,604/yr PV = \$84,513,204 (25 yrs.)	\$3,951,006/yr. PV = \$93,229,790 (25 yrs.)
	PV Estimate of Incremental Tax Revenue from TOD	PV = \$152,810,000 (25 yrs.) (rounded)	PV = \$152,810,000 (25 yrs.) (rounded)	PV = \$53,230,000 (25 yrs.) (rounded)
Costs	Preliminary Construction Costs including Contingency, Engineering & Non-Contract Items but Not Property Costs	\$196,600,000 – Base \$232,700,000 with build out	\$194,700,000 – Base \$223,200,000 with build out	\$176,600,000 – Base
	Estimated Costs Associated with Land Acquisition Required for Alignment Options	\$8,058,574 to \$9,236,534	\$7,896,606	\$40,743,881
	Estimated Overall Cost including Land with 7.5% Escalation Over 5 Years But Not Including Incremental Tax Revenues	\$296,400,000 – Base \$348,300,000 – With Build-out	\$291,700,000 – Base \$332,700,000 – With Build-out	\$312,900,000 – Base \$312,900,000 – No Opportunity for Build-out
	Estimated Costs Associated with Acquiring Right for Long-term Use of Alignment Area (easement over Manitoba Hydro & Rail ROW)	CN Corridor Lease – 99 years @ \$1 Manitoba Hydro Corridor Lease assumed to be under similar terms as CN	CNR Corridor Lease – 99 years @ \$1 Manitoba Hydro Corridor Lease Assumed to be under similar terms as CN	CN Corridor Lease – 99 years @ \$1

COMPARISON CRITERIA		CONCEPT 1A – PARKER/MANITOBA HYDRO LANDS PARALLELING CN WEST RAIL LINE	CONCEPT 1B – PARKER/MANITOBA HYDRO LANDS PARALLELING PARKER AVENUE	CONCEPT 2 – CN LETELLIER SUBDIVISION
Public Consultation	Active Transportation	<ul style="list-style-type: none">• Emphasized the exceptional need for a safe and efficient active transportation connection between Jubilee and Bishop Grandin.• Building AT within the Pembina right-of-way is a favoured option, many noting that it could be done similarly to the recent cycling facilities installed along the portion of Pembina just north of Bishop Grandin.• None of the Transitway options adequately accommodates AT for commuter purposes.• Hydro corridor option is too far west to meet the needs of north-south cycle commuters.• Several responses advocated AT pathways alongside all rapid transit routes to ensure Winnipeg builds multi-modal opportunities into all infrastructure investments.• Recreational active transportation and a growing number of works trips the Fort Garry business park lands would be part of the Hydro corridor option	<ul style="list-style-type: none">• Emphasized the exceptional need for a safe and efficient active transportation connection between Jubilee and Bishop Grandin.• Building AT within the Pembina right-of-way is a favoured option, many noting that it could be done similarly to the recent cycling facilities installed along the portion of Pembina just north of Bishop Grandin.• None of the Transitway options adequately accommodates AT for commuter purposes.• Hydro corridor option is too far west to meet the needs of north-south cycle commuters• Several responses advocated AT pathways alongside all rapid transit routes to ensure Winnipeg builds multi-modal opportunities into all infrastructure investments.• Recreational active transportation and a growing number of works trips the Fort Garry business park lands would be part of the Hydro corridor option	<ul style="list-style-type: none">• Emphasized the exceptional need for a safe and efficient active transportation connection between Jubilee and Bishop Grandin.• Building AT within the Pembina right-of-way is a favoured option, many noting that it could be done similarly to the recent cycling facilities installed along the portion of Pembina just north of Bishop Grandin.• None of the Transitway options adequately accommodates AT for commuter purposes.• The Letellier option does not have enough room for rail, transitway, and AT cross-sections.• Several responses advocated AT pathways alongside all rapid transit routes to ensure Winnipeg builds multi-modal opportunities into all infrastructure investments.
	Pembina Highway	<ul style="list-style-type: none">• Fear that rapid transit west of Pembina will further reduce existing Pembina transit service south of Jubilee.• Alignment would capture a new ridership geography thus maintaining the pressure for full Pembina Highway transit service.	<ul style="list-style-type: none">• Fear that rapid transit west of Pembina will further reduce existing Pembina transit service south of Jubilee.• Alignment would capture a new ridership geography thus maintaining the pressure for full Pembina Highway transit service.	<ul style="list-style-type: none">• Full and sustained transit service along Pembina is an important asset to the community.• Transit's priority should be to strengthen Pembina as a vibrant corridor.• Supports investment in business and apartments as well as the residential neighbourhoods of East Fort Garry and Wildwood Park• Vincent Massey High School is highly dependent on Pembina Highway Transit service.• The provision of local services is an important part of making this communities complete.• Some believe that the loss of service to Pembina may be greater with the Letellier alignment than with the Hydro Corridor alignment.• Would capture similar ridership geography on Pembina.• A high level of transit service along Pembina was also mentioned as a key ingredient of increasing investment and development density along Pembina.• A few stated their belief that TOD opportunities along Pembina have been downplayed in the study.

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Public Consultation	Greenspace	<ul style="list-style-type: none">• Need to give equal consideration to the environmental voice as the developer voice.• Unnecessary disruption of the Aspen forest and wetlands.• Need for a commitment to replace the loss of all open space with new green space development including the dog park and community gardens, in particular.	<ul style="list-style-type: none">• Need to give equal consideration to the environmental voice as the developer voice.• Unnecessary disruption of the Aspen forest and wetlands.• Need for a commitment to replace the loss of all open space with new green space development including the dog park and community gardens, in particular.	<ul style="list-style-type: none">• Preserving Parker Lands greenspace is fundamental.• Does not impact anything that is not already polluted by the railway activity.• Need to give equal consideration to the environmental voice as the developer voice.• Need for a commitment to replace the loss of all open space with new green space development.
	Neighbourhoods and Homes	<ul style="list-style-type: none">• Beaumont, Maybank and Waverley Heights requested consideration of sound attenuation and buffering of any new adjacent rapid transit facility.• Opportunity to better serve more neighbourhoods, including those further west (Lindenwoods, Whyte Ridge), the Fort Garry business park for employment, and the commercial nodes (Ikea, Kenaston / McGillivray)• Transit service should not be provided to future, potential, or speculative new developments and neighbourhoods.• “Taking the course of least resistance”• Ignores service to East Fort Garry, the high school, and several other schools.• Specific suggestions to improve neighbourhood quality included: an AT underpass between Morley and Grant so the Earl Grey community can access rapid transit and to direct a Markham U of M entry away from residences to make use of the former golf course.	<ul style="list-style-type: none">• Beaumont, Maybank and Waverley Heights requested consideration of sound attenuation and buffering of any new adjacent rapid transit facility.• Opportunity to better serve more neighbourhoods, including those further west (Lindenwoods, Whyte Ridge), the Fort Garry business park for employment, and the commercial nodes (Ikea, Kenaston / McGillivray)• Transit service should not be provided to future, potential, or speculative new developments and neighbourhoods.• “Taking the course of least resistance”• Ignores service to East Fort Garry, the high school, and several other schools.• Specific suggestions to improve neighbourhood quality included: an AT underpass between Morley and Grant so the Earl Grey community can access rapid transit and to direct a Markham U of M entry away from residences to make use of the former golf course.	<ul style="list-style-type: none">• Letellier alignment involved too much neighbourhood disruption.• Noise and vibrations from the trains that would be worsened with the train 9 metres closer to their homes.• They noted their concern about the safety for local daycares, pre-schools, and community centres.• Beaumont, Maybank and Waverley Heights requested consideration of sound attenuation and buffering of any new adjacent rapid transit facility.• Transit service should be provided to established neighbourhoods where people currently “live, work, and play”.• Building the shortest and most direct route.• Opposing viewpoints about the desire to close Pembina Highway street access to and from the Beaumont neighbourhood versus others’ desire to maintain easy and multiple access points from the neighbourhood to Pembina Highway.• Call for the City to make the decision based on improved traffic flow and not about developers.• Specific suggestions to improve neighbourhood quality included: an AT underpass between Morley and Grant so the Earl Grey community can access rapid transit, cul-de-sacs to cut off Southwood, Waterford, Rockman, and Byng to facilitate Letellier rapid transit; and, direct a Markham U of M entry away from residences to make use of the former golf course.

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Public Consultation	Service	<ul style="list-style-type: none">• Transit users are concerned about losing their convenient access to services and businesses along Pembina Highway.• Need direct routes; less stops.• Little or no foot traffic in vicinity of Hydro Corridor. Lots near Letellier.• Service current transit riders first. The Hydro Corridor alignment alienates current transit users. Build for future populations after they've established.• Needs to be easy access for both residential and commercial.• Maintain frequent local bus service between downtown and U of M regardless of option chosen.	<ul style="list-style-type: none">• Transit users are concerned about losing their convenient access to services and businesses along Pembina Highway.• Need direct routes; less stops.• Little or no foot traffic in vicinity of Hydro Corridor. Lots near Letellier.• Service current transit riders first. The Hydro Corridor alignment alienates current transit users. Build for future populations after they've established.• Needs to be easy access for both residential and commercial.• Maintain frequent local bus service between downtown and U of M regardless of option chosen.	<ul style="list-style-type: none">• Fastest, most direct route should be option chosen.• RT should be located where it will be used by most people (instead of entering residential neighbourhoods)• Should consider “sky-train” option along Letellier line which would alleviate need to move rail line and provide additional right-of-way space for a pathway.• Move people quickly and comfortably with a route as direct as possible.• Concern about City facility on CN land• Letellier connects riders with the places people already go (homes and businesses)• Main transit station stops should connect to Pembina commercial• Needs to be easy access for both residential and commercial.• Service current transit riders first. The Hydro Corridor alignment alienates current transit users. Build for future populations after they've established.• Maintain frequent local bus service between downtown and U of M regardless of option chosen.
	City Connections	<ul style="list-style-type: none">• Important to connect to other areas of the city. Many consider the investment more worthwhile if several areas of southwest Winnipeg served (i.e. Lindenwoods, Linden Meadows, Whyte Ridge) not just the university.• Industrial park is an important connection• Connect to new development in SW Winnipeg (IKEA, Kenaston) and, eventually, Charleswood.• Value more park and ride options (common statement)• Overpass or underpass at McGillivray• Line to connect St. Norbert, Waverley West, Charleswood and St. James• Connection from Jubilee to Sterling Lyon needed.• Great for future connections to Charleswood, poor for Pembina• It is RT, not an express bus for Pembina Hwy	<ul style="list-style-type: none">• Important to connect to other areas of the city. Many consider the investment more worthwhile if several areas of southwest Winnipeg served (i.e. Lindenwoods, Linden Meadows, Whyte Ridge) not just the university.• Industrial park is an important connection• Connect to new development in SW Winnipeg (IKEA, Kenaston) and, eventually, Charleswood.• Value more park and ride options (common statement)• Overpass or underpass at McGillivray• Line to connect St. Norbert, Waverley West, Charleswood and St. James• Connection from Jubilee to Sterling Lyon needed.• Great for future connections to Charleswood, poor for Pembina• It is RT, not an express bus for Pembina Hwy	<ul style="list-style-type: none">• Concept 2 services all of Fort Garry, not just the west side• Feeder routes off the Letellier alignment could service the lands to the west• Overpass or underpass at McGillivray• Line to connect St. Norbert, Waverley West, Charleswood and St. James.• The future of the CN line needs to be considered. Several suggestions to have the line moved west of Kenaston, away from the neighbourhoods, or out of the City altogether.• Many comments about larger move of CN and getting CN to be present and accountable as part of the discussion.• One respondent sees plenty of expansion opportunity with Letellier based on additional east-west transit corridors connecting southwest Winnipeg with St Vital.• Direct connection to U of M and Downtown / U of W essential.• Need safe, direct north/south commuter bike route to U of M.

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Public Consultation	Land Development and Real Estate	<ul style="list-style-type: none">• Suspicion about real estate angle. What about service to East Fort Garry.• Transit development should not be driven by real estate development opportunities.• Integrate RT line with U of M lands.• Development cannot occur under hydro lines.• Many view the Hydro Corridor option as representing longer term planning and larger scale service to southwest Winnipeg, including providing much needed service and opportunity to an underdeveloped employment area.• Remove zoning to enable density and diversity around station locations.• Concept 1 enables significant future development with little disruption.• Concept 1 will create redevelopment pressure on Fort Garry Industrial Lands.	<ul style="list-style-type: none">• Suspicion about real estate angle. What about service to East Fort Garry.• Transit development should not be driven by real estate development opportunities.• Integrate RT line with U of M lands.• Development cannot occur under hydro lines.• Many view the Hydro Corridor option as representing longer term planning and larger scale service to southwest Winnipeg, including providing much needed service and opportunity to an underdeveloped employment area.• Remove zoning to enable density and diversity around station locations.• Concept 1 enables significant future development with little disruption.• Concept 1 will create redevelopment pressure on Fort Garry Industrial Lands.	<ul style="list-style-type: none">• Concern about the negative impact on Pembina businesses if Concept 1 supported.• Concern about the impact of a Transitway in close proximity to residential house values.• Some view significant opportunity for increased density of development on Pembina Highway with a nearby rapid transit corridor. This would increase the commercial viability of Pembina Highway and improve its aesthetics and contribution to the overall Fort Garry community.• Remove zoning to enable density and diversity around station locations.
Public Consultation	Costs	<ul style="list-style-type: none">• A few respondents emphasized the importance of considering costs and several preferred the Hydro Corridor alignments because of lower acquisition costs.• Could not understand cost analysis presented. Would like real numbers shown.• Cost is important to public opinion of the three options.	<ul style="list-style-type: none">• A few respondents emphasized the importance of considering costs and several preferred the Hydro Corridor alignments because of lower acquisition costs.• Could not understand cost analysis presented. Would like real numbers shown.• Cost is important to public opinion of the three options.	<ul style="list-style-type: none">• Could not understand cost analysis presented. Would like real numbers shown.• Cost is important to public opinion of the three options.• Why was outright purchase of CN land not investigated?

