

MMM Group Limited



ENVIRONMENT ACT PROPOSAL
FOR CENTREPORT CANADA WAY
EXPRESSWAY

Prepared for:
Manitoba Infrastructure and Transportation

Submitted by:



March 2011 | 5510107.101

COMMUNITIES
TRANSPORTATION
BUILDINGS
INFRASTRUCTURE

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1.0 INTRODUCTION

Manitoba Infrastructure and Transportation (MIT) is proposing to construct the CentrePort Canada Way (CCW) Expressway, a new four-lane, divided expressway corridor approximately 7 km in length, in northwest Winnipeg. The corridor will connect Inkster Boulevard with Provincial Trunk Highway 101 (PTH 101) and is Phase II of the overall CentrePort Canada Way (CCW) Project. The CCW Project is a major infrastructure initiative that includes multiple phases of construction over a three year time period, including provision for future infrastructure developments. This document will focus on infrastructure components associated with Phase II of the CCW project, known as the Expressway. For the purpose of context, Phase I of the CCW project is summarized below in Section 1.1.

1.1 CCW Project Phase I

Phase I of the CCW Project is currently underway with the construction of node structures at PTH 101 north of Saskatchewan Avenue, CPR Carberry at Omand's Creek, and PTH 101 at the CPR Glenboro subdivision and Saskatchewan Avenue. Phase I has already been approved by federal regulatory authorities through the CEEA screening process. Provincial environmental authorities determined that Phase 1 did not require Manitoba Environment Act approval. The node infrastructure already under construction includes the following primary components.

1.1.1 PTH 101/CCW Interchange

The PTH 101/CCW interchange component in its final operation stage will consist of a two-level interchange of the future CCW with PTH 101. Currently the north, south and east interchange legs are being constructed, with a western leg to be developed along with separate highway infrastructure west of PTH 101 by MIT in future time horizons.

The interchange will be constructed in stages: the current stage of the interchange includes widening of PTH 101 within the project area, relocation of the Sturgeon Creek box culvert, a four-lane divided twin bridge structure, directional ramps and roadways. An intermediate stage, anticipated to occur within a 10 year horizon, includes additional bridge lanes, new bridge structures, directional ramps, and roadways to provide efficient access to and from the CCW inland port while accommodating traffic flows.

1.1.2 CCW Grade-Separated Overpass of CPR Carberry/Omand's Creek

The CCW Grade-Separated Overpass of CPR Carberry/Omand's Creek overpass component consists of the construction and operation of a grade-separated overpass of CCW over the two existing CPR Carberry Mainline rail tracks, Omand's Creek, and an unnamed drainage channel. The overpass span will provide allowance for separate works not part of this project, including a future CPR Carberry track and CPR service road and provision for a future CNR Oak Point Siding track. Accommodation for additional right-of-way for a potential future relocation of the CNR Oak Point Siding beneath the overpass is provided. Any relocation of the rail siding would be the responsibility of the rail authority at that time. There will be a 14.4 m allowance between the two structures that will allow for future widening of the structures with an additional lane in each direction.

1.1.3 PTH 101 Grade-Separated Overpass of CPR Glenboro/Saskatchewan Avenue

The CPR Glenboro/Saskatchewan Avenue overpass component involves the construction of a grade-separated overpass of PTH 101 over the CPR Glenboro Subdivision and Saskatchewan Avenue. The overpass will be accomplished by widening PTH 101 for 4 km, and will include a four-lane divided twin structure, retaining walls along PTH 101, and a noise attenuation barrier along adjacent properties on PTH 101 and Saskatchewan Avenue. The western portion of the structure's design will consider a future ramp.

1.2 CCW Project Phase II

Phase II of the project is intended to connect the node structures via an expressway and the addition of several primary project roadway components which include connections, stream crossings, an upgrade of PR 221, road realignments, as well as provision of public access and service roads. Details of the CCW Expressway are described below.

1.3 Background

1.3.1 CentrePort Canada Way Roads Project

Phase II of the Project, CentrePort Canada Expressway (CCW), is a four lane divided expressway approximately 7 km in length that will utilize a 120 to 150 m wide right-of-way. The proposed project will connect Inkster Boulevard to PTH 101 north of Saskatchewan Avenue. The project will include the realignment and reconstruction of Inkster Boulevard from Roy Roche Road westward to Klempke Road. Additional

components include future widening of CCW to six lanes, realignment of Sturgeon Road and Inkster Boulevard, and a possible future connection to the airport. **Figure 1.3.1.1** illustrates a map of the CCW Expressway Project (see **Appendix A** for a high-level version of the map).

1.3.2 CentrePort Canada Initiatives

The proposed CCW Expressway is considered the backbone of the road transportation network for future inland port development. The CentrePort Canada Initiative aims to develop lands adjacent to the James Armstrong Richardson International Airport, and serve as a hub for international trade, manufacturing, distribution, warehousing and logistics. The Initiative was one of thirteen projects short-listed in the 2009 Canadian Federal Budget as a priority project to be built within the next two construction seasons. Development of the Expressway and inland port will take advantage of Winnipeg's prime central location in North America and houses the intersection of CPR and CN railways, and the mid-continent trade corridor. CentrePort Canada Way would serve to import goods from the Asia Pacific Gateway and Atlantic Shipping Lanes and distribute them throughout North America by means of rail, road and air.

1.3.3 CentrePort Canada Act

On October 9, 2008 the *CentrePort Canada Act* was assented as CentrePort Canada Inc., a non-share capital corporation to lead in the development of, investment in, and promotion of the proposed inland port, which includes the development of associated roadworks. The area in the vicinity of the airport is approximately 8,100 ha (20,000 acres) and according to the *Act* is defined as the Inland Port Area (**Figure 1.3.3.1**).

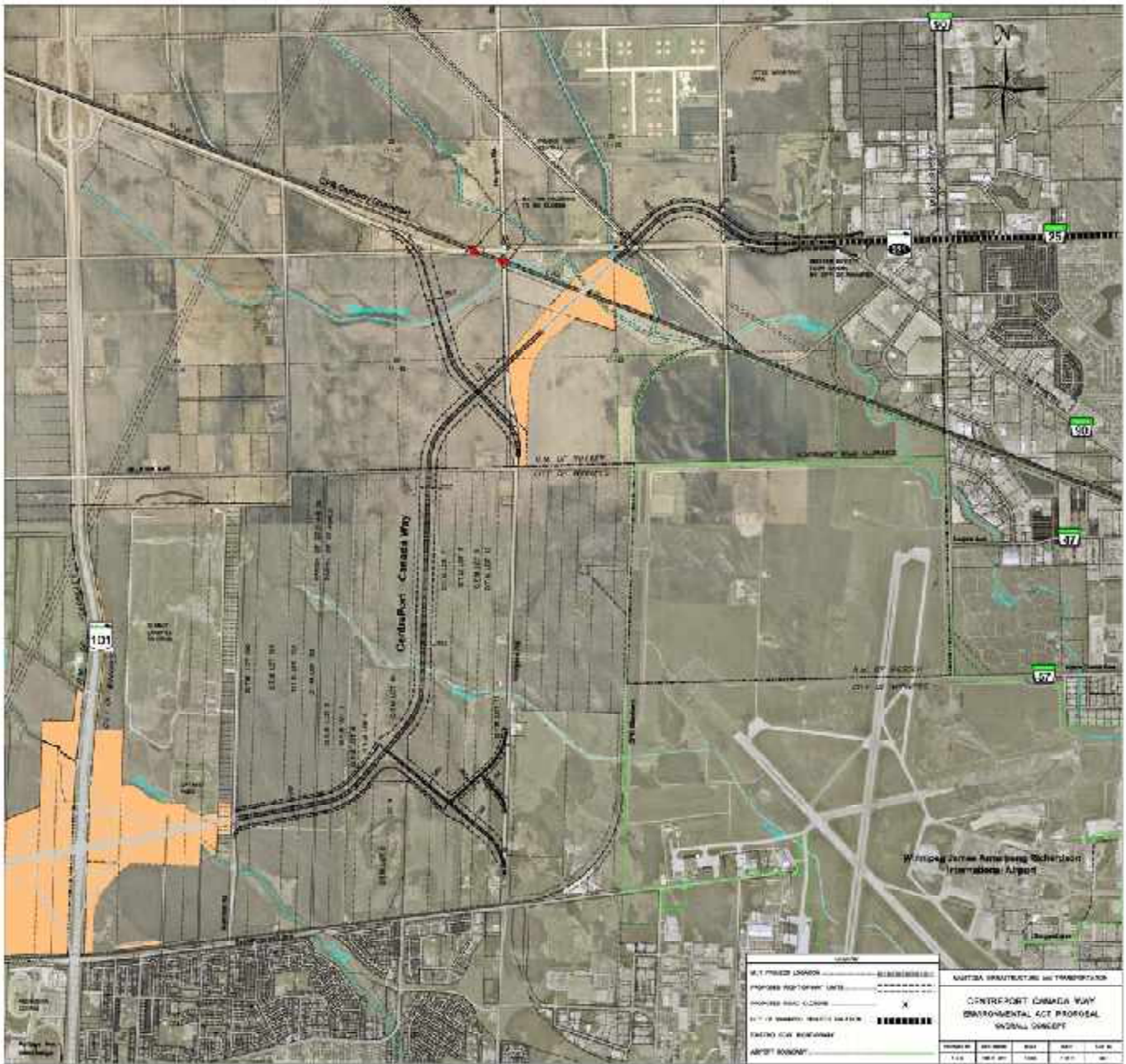


Figure 1.3.1.1: CCW Roads Project



Figure 1.3.3.1: CCW Inland Port Area

1.4 Project Need, Purpose and Alternatives

The northwest quadrant of Winnipeg currently experiences high volumes of vehicle traffic, with a large portion of the volumes contributed to by large truck traffic. The combination of signalized intersections and at-grade rail crossings withholding the free flow of traffic contributes to the area's congestion, drawn-out travel times and above-average rates of personal injury collisions when compared to the province as a whole (Table 1.4.1).

Table 1.4.1: Collision Rates in the Northwest Quadrant of Winnipeg per 100 Million Vehicle-Km

Collision Statistic	5-year Historical Collision Rate	Provincial/Territorial Average Collision Rate
Fatal Collisions	0.82	0.88
Personal Injury Collisions	45.14	22.85
Property-damage-only Collisions	77.36	94.44

(Source: Manitoba Infrastructure and Transportation, 2008)

There is a need to increase the efficiency and safety of road transportation networks in the northwest quadrant of Winnipeg. Furthermore, the current road network lacks the capacity to accommodate future traffic growth expected from both the north-south and east-west trade routes.

The purpose of the CCW Expressway is to contribute towards safety, capacity and vehicle transportation efficiency in the northwest quadrant of Winnipeg by increasing free-flow traffic and avoiding crossing delays.

The Project will provide a high-speed connection for vehicle traffic between node structures at PTH 101 and Inkster Boulevard as well as contribute to an improved transportation scheme. Overall, an estimated 3.5 km reduction in driving distances for traffic utilizing CCW for east and westbound movements and an anticipated reduction in collisions will be realized (Manitoba Infrastructure and Transportation, 2008).

The CCW Expressway is a critical component to developing efficient trade routes and increasing traffic flow efficiency and safety. The alternative of not constructing the CCW Expressway would hinder these goals and inhibit the overall effectiveness of the CentrePort Canada Way Initiative. Several alternative alignments were considered for the CCW Expressway and associated roadworks. **Appendix B** shows preferred

alignment options, and **Appendix C** shows alternative options for the CCW Expressway alignment.

2.0 REGULATORY FRAMEWORK

2.1 Statutes

Manitoba Environment Act

The construction of a new, four-lane roadway is defined as a Class 3 Development under the *Classes of Development Regulation* and therefore requires licensing under *The (Manitoba) Environment Act*. Manitoba Infrastructure and Transportation is seeking provincial licensing for the construction of the four-lane roadway while considering future plans for expansion to six lanes.

Manitoba Endangered Species Act

The Endangered Species Act applies to any mammal, bird, reptile, amphibian, fish or plant that is listed under the *Act*. Its purpose is to ensure the protection and enhance the survival of threatened and endangered species in Manitoba, enable reintroduction of extirpated species into the province, and designate species as threatened, endangered, extirpated or extinct (Manitoba Conservation, 2009). The *Act* prohibits disturbing reintroduced endangered, threatened or extirpated species and their habitat, including natural resources on which they depend.

The Water Rights Act

The Provincial *Water Rights Act*, administered by Manitoba Water Stewardship, aims to protect the rights of downstream users to water and to ensure levels of surface and groundwater are sufficient to maintain and protect aquatic ecosystems. A License to Construct Drainage or Other Works is required for developments deemed to be water control works, including drainage, bridges, culverts and wells. Other methods of water contrivance such as the relocation or realignment of drains and the use of a bedrock depressurization system for groundwater control may also be subject to permitting under the *Act*. Under the new Manitoba Water Stewardship *Policy and Procedure for Expedited Authorization of Minor Water Control Works* (Manitoba Water Stewardship, 2009), an expedited authorization can be issued for minor works including municipal drainage, dams and infrastructure installations if they meet the criteria outlined in the policy.

Fisheries Act

The *Fisheries Act*, enforced by DFO, pertains to the management of Canada's fisheries resources and the conservation and protection of fish and fish habitat. The *Act* aims to protect the unobstructed passage of fish, provide sufficient flow for fish, prevent fish mortality, and prohibit the harmful alteration, disruption or destruction of fish habitat (HADD) unless authorized by Fisheries and Oceans Canada. DFO utilizes their 1986 "Policy for the Management of Fish Habitat" (DFO, 1986) to determine the terms and conditions of authorizations granted under the *Act*. A chief guiding principle of the policy document is the No Net-Loss Principle which seeks to achieve no net-loss of the productive capacity of aquatic habitats through balancing unavoidable habitat losses with habitat replacement (DFO, 1986).

Upon review of the project, if DFO determines that the project is unlikely to result in HADD, a Letter of Advice (LOA) will be issued, which will include mitigation measures to be implemented during construction. If DFO determines that HADD is likely to result from project construction, an Authorization will be required for those works or undertakings affecting fish habitat, including the requirement for either habitat compensation or specific mitigation measures.

Species at Risk Act

The *Species at Risk Act (SARA)* is Federal legislation under the National Strategy for the Protection of Species at Risk. The *Act* aims to prevent the disappearance of species, provide recovery for species that have become extirpated, endangered, or threatened due to human activity, and manage species of special concern to prevent them from becoming endangered or threatened. Specifically, *SARA* prohibits the killing, harming, harassing and/or capture of species designated as extirpated, endangered or threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). In addition, the damage or destruction of habitat of extirpated, endangered or threatened species is prohibited.

2.2 Municipal By-laws

Waterway By-law No. 5888/92

The City of Winnipeg *Waterway By-law No. 5888/92* regulates construction activities along city waterways through an application and permit approval process. The *By-law* identifies regulated waterway areas and establishes a procedure for dealing with Waterway Permits and orders within the regulated areas of the city. Specifically, the by-law states that "no person shall begin or authorize work in the regulated area without

first obtaining a Waterway Permit”. The permit is required to protect the public from construction, which may endanger the stability of the riverbank, impede water flow or adversely alter the waterway. The regulated area within the City of Winnipeg consists of the creek bed and lands extending 81.25 m on either side of Omand’s, East Branch Colony and Truro Creeks.

2.3 Guidelines

TP 1247 – Land Use in the Vicinity of Airports

The TC document TP 1247 – *Land Use in the Vicinity of Airports* (Transport Canada, 2005) describes airport operations in relation to adjacent land uses and where appropriate, establishes guidelines for land uses adjacent to an airport. For example, the use of storm water retention ponds adjacent to airports is acknowledged as a bird attractant for which a viable alternative should be investigated prior to being located near an airport.

3.0 PROJECT DESCRIPTION

3.1 Property and Land Ownership

Property within the vicinity of the CCW roadworks is owned by a variety of landowners which include private and public entities. A list of landowners and property to be acquired through MITs expropriation process is shown in **Appendix D**. The process involves negotiation with affected landowners and provision of a fair-market value assessment of the required properties. **Appendix E** provides aerial photographs which illustrate right-of-way sections of the roadworks, and identify sections of land where property will be acquired.

3.2 Primary Project Components

The CCW Roadworks Project includes several major components which are described below. Cross-section details can be found in **Appendix F**. The primary components of the overall plan as illustrated in **Figure 1.3.3.1** include the following:

- ▶ CentrePort Canada Expressway
- ▶ Sturgeon Road Realignment
- ▶ PR 221 Upgrade
- ▶ PR 221 Connection
- ▶ Public Access Roads

CentrePort Canada Way Expressway

The CCW Expressway component will be a four-lane divided expressway constructed on a 120 to 160 m wide right-of-way and will connect Inkster Boulevard via the Phase I node structure to PTH 101 north of Saskatchewan Avenue. The western extension of the Expressway will connect with the east branch of the CCW Phase I node structure.

The first stage of the CCW Expressway will include the construction of two travel lanes in each direction from Summit Road to CPR Carberry/Omand's Creek overpass, which is currently under construction, with a 17.4 m wide median, including 1.5 m inside shoulders.

The second stage will include the construction of a second lane of travel in both directions, totalling four lanes, added to the side and reducing the median width to

10.0 m including 2.5 m inside the shoulders. Ultimately, the CCW Expressway will be completed in the future, with an additional lane of travel in both directions.

Sturgeon Road Realignment

Sturgeon Road will be realigned at two locations: the first will be approximately 120 m north from Saskatchewan Avenue, and will allow access to the Expressway; secondly, the realignment will provide access at the Carberry/Omand's Creek overpass. The Sturgeon Road realignment will be constructed on a 110 to 125 m wide right-of-way.

PR 221 Upgrade

PR 221 will be upgraded and realigned from a two-lane undivided roadway to a four-lane divided roadway from Roy Roche Drive to Klimpke Road on a 106 m wide right-of-way.

PR 221 Connection

A connecting detour will be constructed south of the CPR/Carberry/Omand's Creek overpass that will allow vehicular traffic access from Sturgeon Road to PR 221 in a northwest orientation on a 120 m wide right-of-way.

Public Access Roads

Local service roads will be constructed to allow public vehicular traffic access to current land use areas within the vicinity of CCW, and will be constructed adjacent to the Expressway. Public access roads will be routed from PTH 101 to Sturgeon Road, and a second access road along PR 221.

3.2.1 Project Design

Infrastructure Design

The Functional Planning Study for the Project identified the following guidelines for preliminary roadway infrastructure alignment and cross-section design:

- ▶ Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (1999)
- ▶ Manitoba Infrastructure and Transportation Supplements to the TAC Geometric Design Guide for Canadian Roads (1999)
- ▶ Manitoba Infrastructure and Transportation Policy/Standard TP 2/98

The geometric design criteria for the existing and planned road works are shown in **Table 3.2.1.1**.

Bridges and other Project structures were designed to meet the American Association of State Highway and Transportation Officials (AASHTO) design code.

Drainage Design

Culvert design specific to the roadway is pending final development, however a Storm Water Management Plan has been developed for the CCW project, with the majority of drainage to be managed by typical roadside ditches and culverts. The following design criteria have been established for storm water facilities as a minimum guideline:

- ▶ Drainage control to be achieved by ditches and culverts
- ▶ Ditches adjacent to the main highway corridor and interchanges to have a minimum 3.5 m wide bottom, 6:1 side slopes, 5:1 back slopes, a minimum depth of 1.6 m, minimum slope of 1.5 percent
- ▶ Tributary ditches to have a 2.5 m wide bottom and 4:1 side slopes
- ▶ Creek structures should be sized to accommodate the 1:50 year flood level
- ▶ All ditches should be sized to accommodate major flows as calculated using the City of Winnipeg 1:50 year 'design' storm event
- ▶ Minimum culvert size to be 600 mm diameter (circular) to minimize maintenance concerns

Culvert design will need to meet fish passage guidelines set by DFO. Culvert design for East Colony Creek will be required to account for fish passage velocity and embedment, while Truro and Omand's Creek culverts will only need to account for embedment. Culvert design is currently under review by MIT and will account for DFO recommendations prior to installation.

Table 3.2.1.1: Geometric Design Criteria

Criteria	CCW	Collector-Distributor Roads	Access Roads
Road Classification	RFD	UAD ²	RLU ⁴
Number of Lanes- First Stage	2 Eastbound 2 Westbound	1 plus Auxiliary lane	1/direction
Number of Lanes – Ultimate	3 Eastbound 3 Westbound	1 plus Auxiliary lane	1/direction
Design Speed	100 km/h	90 km/h	60 km/h
Max. Gradient	3 percent	3 percent	6 percent
Min. Stopping Sight Distance	365 m	N/A	95 m
Min. Sag Curve K Value	Sag=50 Crest=70	Sag=40 Crest=55	Sag=20 Crest=15
Min. Radius	440 m	340 m	130 m
Lane Width	3.7 m	3.7-4.8 m	3.0 m
Shoulder Width – Inside	1.5 m (First Stage) 2.5 m (Ultimate)	1.5 m	N/A
Shoulder Width – Outside	3.0 m	3.0 m	N/A
Shoulder Width – Long Structures	2.5 m inside 3.0 m outside	0.5 m inside 3.0 m outside	N/A

¹RFD – Rural Freeway Divided

²UAD – Urban Arterial Divided

³RCU – Rural Collector Undivided

⁴RLU – Rural Local Undivided

3.2.2 Hazardous Materials

Multiple sources of hazardous materials may be stored and/or handled on site during the construction, operation and/or maintenance stages of the CCW Expressway project, which may include, but are not limited to, the following:

- ▶ Hydrocarbon fuels (diesel, gasoline, propane)
- ▶ Lubricants and greases
- ▶ Hydraulic fluids
- ▶ Concrete sealants
- ▶ Bituminous asphalt
- ▶ Pesticides/herbicides
- ▶ Fertilizers

The specific type and quantity of hazardous materials to be contained on-site will be dependent on the detailed design and construction methods developed by the General Contractor for various project components.

3.3 Project Schedule

Below is the timeline which describes the processes involved with construction of the CCW Expressway:



The CCW Expressway is anticipated to begin in July 2011 with an estimated completion timeframe of mid-2013. The first stage of the CCW Expressway would include the alignment from Summit Road east to the CPR Carberry/Omand's Creek overpass and the realignment of Sturgeon Road north of Saskatchewan Avenue to tie-in to CCW.

3.4 Project Funding

The CentrePort Canada Expressway and all associated roadworks are being funded entirely by Manitoba Infrastructure and Transportation.

4.0 ENVIRONMENTAL SETTING

4.1 Physical Environment

4.1.1 Air Quality and Climate

The Project study area is located within the Winnipeg Ecodistrict of the Grassland Transition Ecoclimatic Region of the Prairies Ecozone (Smith et al., 1998). The area generally experiences a continental climate, characterized as humid with long, cold winters and hot, short summers. Average annual temperature for the region is 2.4°C with an average monthly temperature range of -22.8°C in January to 25°C in August. Extreme temperature ranges as recorded at the Airport weather station from 1971-2000 range from -45°C in February to 40.6°C in August (Environment Canada, 2008).

The average annual precipitation is 515 mm with the greatest amount falling as rain in late spring and throughout summer (Smith et al., 1998). In summer and winter 2008 the Winnipeg region experienced a respective 40 percent and 20 percent departure from precipitation normals (Meteorological Service of Canada, 2008). This data is similar to increases in precipitation noted in southern Saskatchewan and Ontario and across Canada.

The average wind speed is 16.9 km/h and most frequently originates from the south. Maximum gusts of 98-129 km/h have been observed historically with these winds originating from the north or west (Environment Canada, 2008).

There is no specific air quality data for the area and there are no significant point sources of air pollutants in the area. The airport and existing transportation operations are the primary area sources of air pollutants. Sensitive receptors are residential properties east of PTH 101 and south of Saskatchewan Avenue.

The air quality in the area is likely similar to the urban air quality in Winnipeg which is generally considered good with health risks associated with air quality considered generally low.

4.1.2 Physiography and Landscape

The City of Winnipeg, R.M. of Rosser and the R.M. of Headingley occupy part of the northern portion of the Red River Valley subsection of the Manitoba Plain and a part of the southern portion of the Woodlands Plain to the north (Canada-Manitoba Soil Survey, 1980). Surface topography is classified as being generally flat with slopes of less than 2 percent. Land surface elevation in the area ranges from approximately 235

to 241 m ASL. Low surface gradients (less than 0.3 m/km) result in very slow surface drainage, mainly through a network of man-made ditches draining to Sturgeon Creek, Omand's Creek and the Assiniboine River (AAFC, 1995).

4.1.3 Geology and Soils

The bedrock formations underlying the surface deposits of the area include rock types from the Mesozoic to the Precambrian era, with the dominant rock types of the Paleozoic era. To the immediate west of Winnipeg the underlying rock consists of calcareous shale, limestone and dolomite of the Stony Mountain Formation (Ordovician Period) and dolomites of the Stonewall Formation. Further to the west, the underlying rocks are of the Silurian Period, belonging to the formations of the Interlake Group (Canada-Manitoba Soil Survey, 1975).

Generally, soils in the Winnipeg Ecodistrict are characterized as being predominantly imperfectly drained Gleyed Humic Vertisols and Gleyed Vertic Black Chernozems, and poorly drained Gleysolic Humic Vertisols and Humic Gleysols which have developed on calcareous, clayey glaciolustrine sediments. Gleyed Rego Black Chernozemic and Gleysolic soils also occur on shallow, extremely to very strongly calcareous, loamy to silty sediments (Smith et al., 1998).

Some of these occur in the form of intersecting bars and spits and were formed during the later stages of Lake Agassiz. These medium textured soils are found northwest of the City of Winnipeg.

Soil types for the majority of the area in the Winnipeg Region (Michalyna et al., 1975) were identified as being predominantly Gleyed Rego Black Chernozems (imperfectly drained developed on moderate to strongly calcareous fine textured lacustrine deposits, including an underlay of stony glacial till), Gleyed Carbonated Rego Black Chernozems (imperfectly drained developed on dominantly moderately coarse to medium textured sediments over fine textured lacustrine clay with a surface texture of very fine sandy loam), and Carbonated Rego Black Chernozems (also imperfectly drained). These soil types are generally found in areas where the topography is classified as being level to very gently sloping and runoff and permeability of the soils is considered to be moderate to moderately slow.

Inclusions of Calcareous Black Chernozems (moderately well to well drained), Rego Black Chernozems (also moderately well-to-well drained), Rego Humic Gleysols and Carbonate Rego Humic Gleysols (both poorly drained), and Orthic Dark Gray Luvisols (well to moderately well drained) are also found in the area. A brief description of each can be found below.

The Rego Black Chernozems have developed on extremely calcareous loamy till or clay till. Surface textures range from sandy loam to loam to clay and topography where these soils are located is characterized as being very gently to gently sloping and runoff and permeability are classified as being moderate to moderately slow.

The inclusions of the Rego Humic Gleysols and Carbonated Rego Humic Gleysols have developed on moderately to strongly calcareous fine-textured lacustrine and alluvial deposits or loamy glacial and water modified deposits. These soils tend to occur in depressions and as a result runoff and permeability of these soils is identified as being very slow.

The Orthic Dark Gray Luvisol are only found in the northeast portion of the area. These soils have developed on strongly to extremely calcareous, stony, glacial till. Surface textures are classified as being sandy loam to loam and these soils can be found in areas where the topography is identified as very gently to gently sloping and runoff and permeability is characterized as moderate to moderately slow.

4.1.4 Groundwater

Groundwater within the Project Study Area occurs in three aquifers – the Upper Carbonate Aquifer, Sandstone Aquifer and Sand and Gravel Aquifers. The Carbonate Aquifer, one of Manitoba's largest aquifers (Manitoba Environment, 1995), was formed during the Silurian Period of the Paleozoic era and is comprised mainly of dolostone and shale. Groundwater is stored and transmitted through fractures and bedding planes within the carbonate bedrock.

The Upper Carbonate Aquifer forms the main water bearing zone from which water within the areas is withdrawn for industrial, agricultural and domestic purposes (Manitoba Water Stewardship, 2009a). The Sandstone Aquifer underlies the Carbonate Aquifer at approximately 180 m below the surface and is generally not developed due to its depth. Sand and Gravel Aquifers occur in ridges and deposits within the area. The quality of groundwater resources within the Upper Carbonate and Sand and Gravel Aquifers is described as fair, with good quality water in some locations (Rutulius, 1980).

Depth to bedrock within the area is highly variable as the surface of the bedrock is uneven in comparison to the relatively even land slope. Generally the depth to bedrock ranges from 0 to 21 m, with depth to till ranging from less than 0.3 m (i.e. subcrop) to 9 m (University of Manitoba Department of Geological Engineering, 1983). According to the Province of Manitoba, groundwater elevation generally ranges from 230-235 m ASL (Manitoba Water Stewardship, 2007). Preliminary geotechnical investigations undertaken in the spring of 2009 (KGS Group, 2009) identified relatively high groundwater levels of up to 237.7 m ASL.

4.1.5 Surface Water

The Project Study Area is traversed by four main waterways: Sturgeon, Omand's, Truro and Colony Creeks. However, the CCW Expressway will only have direct impacts on Omand's, Truro and Colony Creeks. Agricultural production is the primary land use in the study area therefore substantial anthropogenic modification of the waterways (i.e. realignment, deepening, etc.) has occurred to facilitate water evacuation from the land. Below is a general characterization of the hydrology of all reaches of these creeks.

Omand's Creek

Omand's Creek, originating near the village of Rosser, is a seasonally flowing tributary of the Assiniboine River. Present day Omand's Creek was formed when the west and east branches of Colony Creek were diverted into the smaller Omand's Creek channel. The diversion increased the drainage area from being within the City limits, to its present 71 km² area. Omand's Creek has a nival flow regime, which is generally low throughout most of the summer, with the exception of large rain events.

Truro Creek

Truro Creek is an ephemeral creek which drains a relatively small area of 7.70 km² within the Winnipeg city limits. The Truro Creek headwaters originate within the study area in the vicinity of the closed Summit Road Landfill, flowing east and south through the Airport, prior to terminating at its confluence with the Assiniboine River. Truro Creek is subject to a nival flow regime, with flows becoming low or non-existent by early summer, with the exception of large rain events.

East Branch Colony Creek

The East Branch Colony Creek is located in the north-central portion of the study area and flows generally in a southward direction. The Colony Creeks were previously diverted to become tributaries to Omand's Creek, prior to draining into the Assiniboine River. The creek experiences a low to moderate flow during spring freshet, with flows declining into the summer to become nearly dry.

4.2 Biophysical Environment

4.2.1 Aquatic Resources

Classification of fish habitat within the Project Study Area waterways was based on quality and sensitivity guidelines published in *Habitat Conservation and Protection Guidelines* (DFO, 1998). Under this system, habitat can be classified as being Critical, Important, Marginal or No Fish Habitat. Classification is based on the waterway's

importance to fisheries, productive capacity, season length, life stages directly supported and diversity of habitat. None of the proposed effected reaches were identified as critical habitat (North/South Consultants, 2009).

Omand's Creek and East Branch Colony Creek within the vicinity of the proposed CCW roadway alignment are considered to be *Marginal* habitat (North/South Consultants, 2009). Locations of the proposed crossings are at the known upstream limit of Northern Pike and White Sucker distribution in the watercourse and it is likely that these large-bodied species spawn infrequently within these reaches due to the short effective flow period. Small-bodied forage fish species may successfully spawn and survive year round in the watercourse even upstream of this location if a combination of timely rainfall and shallow pools remain after the spring freshet. Overall, these reaches support only a limited number of fish during a very short period of the year. DFO has identified these reaches as *Simple* habitat with Indicator Fish Species Present – Type B (DFO Draft Fish Habitat Classification for Manitoba Agricultural Watersheds, Map 062H14, Version 1.0 Valid until March 31, 2008).

A portion of Truro Creek to be affected by the roadway alignment is considered to be *Marginal* habitat (North/South Consultants, 2009). Both reaches are shallow with an abundance of in-stream vegetation that spans the channel in some locations. Typically, there is generally little standing water which remains by the end of May, limiting the contribution of these reaches to downstream areas. DFO has previously identified these habitats as *Complex* habitat with Forage Fish Species Present – Type C (DFO Draft Fish Habitat Classification for Manitoba Agricultural Watersheds, Map 062H014, Version 1.0 Valid until March 31, 2008).

4.2.2 Aquatic Species of Concern

The silver chub is listed as a Species of Special Concern pursuant to Schedule 1 of SARA. The species has been previously identified as inhabiting the Assiniboine River and the lower reaches of its tributaries (Stewart and Watkinson, 2004). The species was not caught in the 2005 or 2007 fish sampling activities of the subject waterways carried out by the City of Winnipeg Naturalist Services Branch (City of Winnipeg, 2005; 2007).

4.2.3 Terrestrial Resources

Wildlife species characteristic of the Project study area are typical of prairie or parkland environments and include white-tailed deer, coyote, rabbits, ground squirrels and waterfowl (Smith et al., 1998). There is a high degree of anthropogenic disturbance within the area, which limits habitat to the few pockets of contiguous forest or natural cover (e.g. grassland, shrub areas). However, there are areas that provide critical life

requisites for reproduction, foraging, security and thermal regulation which are able to support both seasonal and permanent wildlife residents.

Field investigations were conducted in late spring/early summer 2009 (Schindler, 2009) to determine the extent of wildlife presence, including species of concern. Mammalian wildlife investigations consisted of visual encounter surveys and reconnaissance surveys for signs of wildlife. Surveys yielded observations of two mammal species: white-tailed deer and muskrat.

In April 2009, a visual observation survey was conducted from late afternoon and into dusk to locate and count concentrations of white-tailed deer. The survey coincided with the spring snow melt in which local deer populations were feeding on newly exposed vegetation adjacent to wintering areas. A total of 109 deer were observed in the single survey (**Figure 4.2.3.1**), with 85 of the observed individuals occurring within the area. Based on these observations and a previous aerial deer survey conducted in 2006 (Manitoba Conservation, 2006), it is evident that there is a significant local population of white-tailed deer in the area (Schindler, 2009). Furthermore, Manitoba Conservation has identified Sturgeon Road within the vicinity of Murray Park and Saskatchewan Avenue as an existing high risk area for deer collisions. There are approximately 300 collisions with deer within the City of Winnipeg that occur each year (Manitoba Conservation, 2009).

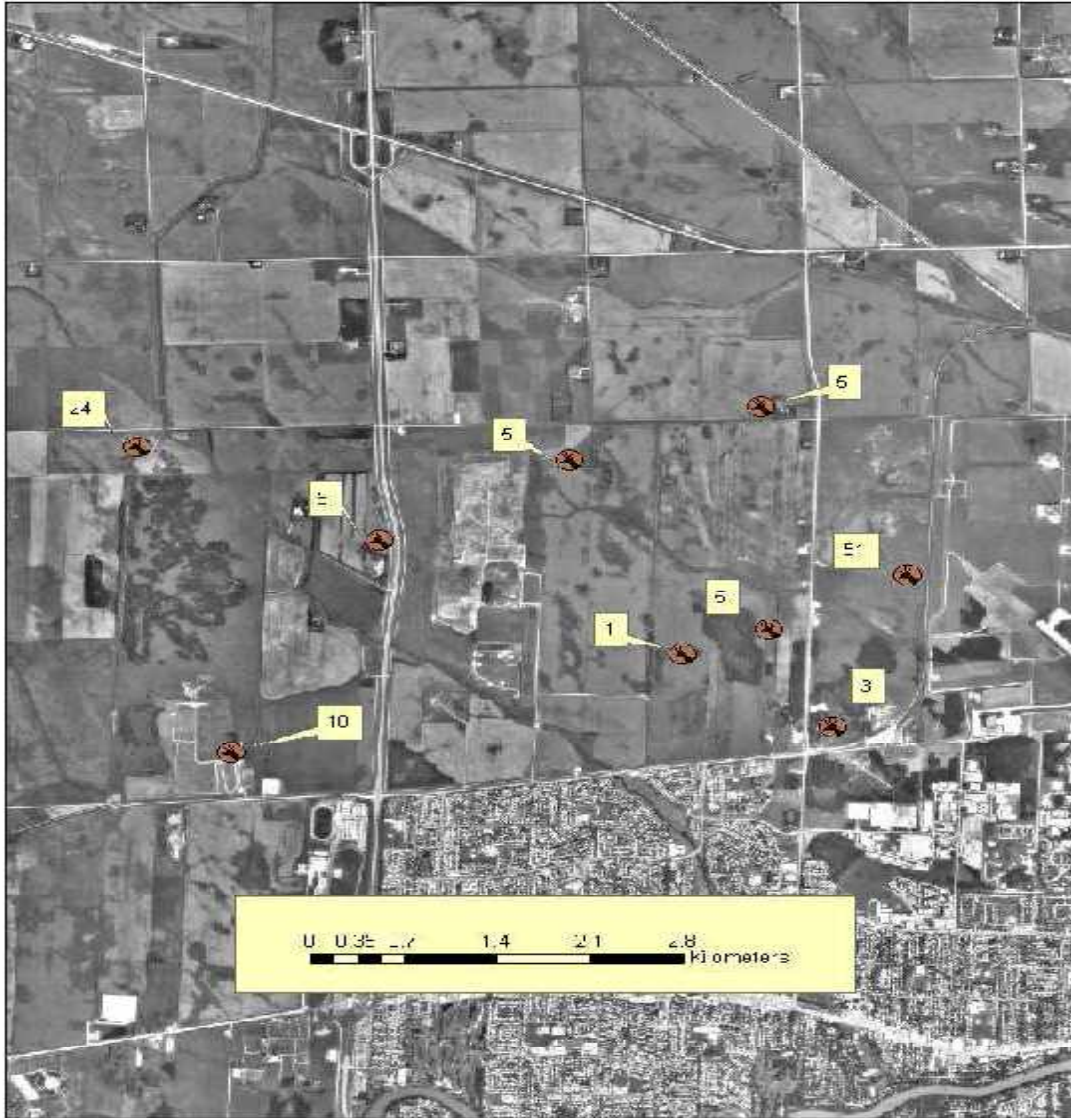


Figure 4.2.3.1: Numbers and Locations of White-tailed Deer Observed on April 22, 2009

Avian wildlife investigations consisted of a spring migrating bird survey, stick nest survey, breeding bird survey and broadcast survey. Field investigations coincided with the spring snow melt which provided a sheet water habitat, ideal for foraging and loafing during migration for staging waterfowl and water birds. A total of 72 bird species were observed (Schindler, 2009), with notable observations including sora rail, saw-whet owl, horned owls and red-tailed hawks. Sora rail was the only water bird observed during the surveys (two occurrences). Two stick nests were observed, but confirmed to be not in use during the survey. It was noted that the number and diversity of avian wildlife declined once overland spring melt flooding receded by late May.

4.2.4 Protected Wildlife Species

Protected wildlife species, for the purpose of this report, are defined as any species whose existence is threatened and are protected under the Manitoba Endangered Species Act or under status review with the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Wildlife surveys included investigations to determine the presence (if any) of protected wildlife species occurring within the study area. Included in the surveys was a review of the Manitoba Conservation Data Centre (MCDC) database to identify species of concern that could potentially occur within the study area (Table 4.2.4.1).

Table 4.2.4.1: List of Species of Concern that Could Potentially Occur in the Study Area

Common Name	Scientific Name	National Rank	COSEWIC Status
MCDC Species			
Cooper's Hawk	<i>Accipiter cooperii</i>	S4S5	Not at Risk
Chimney Swift	<i>Chaetura pelagica</i>	S2	Endangered
Plains Pocket Gopher	<i>Geomys bursarius</i>	S3	Not at Risk
Least Bittern	<i>Ixobrychus exilis</i>	S2S3	Endangered
Little Brown Myotis	<i>Myotis lucifugus</i>	S2, S5	Not Listed
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	S4	Not Listed
Barred Owl	<i>Strix varia</i>	S3S4	Not Listed
Manitoba Endangered Species Act			
Loggerhead Shrike	<i>Lanius ludovicianus migrans</i>		Endangered
Bairds Sparrow	<i>Ammodramus bairdii</i>		Not at Risk
Burrowing Owl	<i>Athene cunicularia</i>		Endangered

COSEWIC			
Burrowing Owl	<i>Athene cunicularia</i>		Endangered
Loggerhead Shrike	<i>Lanius ludovicianus migrans</i>		Endangered
Least Bittern	<i>Ixobrychus exilis</i>		Threatened
Olive-sided Flycatcher	<i>Contopus cooperi</i>		Threatened
Common Nighthawk	<i>Chordeiles minor</i>		Threatened
Loggerhead Shrike	<i>Lanius ludovicianus excubitorides</i>		Threatened
Chimney Swift	<i>Chaetura pelagica</i>		Threatened
Whip-poor-will	<i>Caprimulgus vociferous</i>		Threatened
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>		Threatened
Peregrine Falcon	<i>Falco peregrinus</i>		Special Concern
Short-eared Owl	<i>Asio flammeus</i>		Special Concern
Yellow Rail	<i>Coturnicops noveboracensis</i>		Special Concern

(Source: Schindler, 2009)

The loggerhead shrike eastern race has been observed nesting in the vicinity of Summit Road Landfill and Optimist Park in different spruce tree locations. The first observation occurred in 2004 and the last observation was in June 2008. Loggerhead shrikes are a summer resident of the prairies and their nesting sites, which are built in early spring, vary from year-to-year (Schindler, 2009). The prairie and grass areas in the general area throughout the landfill and park site are utilized by the shrike for hunting and foraging (De Smet, Pers. Comm., 2009). The shrike has been found to hunt up to 400 m from its nest (Brooks and Temple, 1990). The shrike is considered a sensitive

species and is noted as susceptible to mortality from collisions with vehicles as they prefer to nest near roads (Manitoba Avian Research Committee, 2003).

The occurrence of burrowing owl is considered an artifact of past occupancy. The last observation of burrowing owl in the area dates back to the 1980s on pasture lands. Current land uses do not include pasture lands, which would attract burrowing owls; however, there have been recent observations of burrowing owl near Winnipeg, beyond its traditional range in southwestern Manitoba (De Smet, Pers. Comm, 2009).

Field investigations yielded one occurrence of a protected wildlife species – one individual of a common nighthawk (COSEWIC Threatened) was observed. Targeted investigations for species of concern including an intensive search area for loggerhead shrike and burrowing owl breeding bird surveys in areas of known occurrence and waterbird broadcast surveys for least bittern and yellow rail did not yield any occurrences (Schindler, 2009).

4.2.5 Vegetation and Wetlands

The Winnipeg Ecodistrict of the broader Lake Manitoba Ecoregion originally consisted of prairie and meadowgrass vegetation communities. Cultivation and development activities have significantly reduced the extent of these communities. Historically, tree cover within the ecodistrict has not been extensive and generally consists of bur oak and trembling aspen stands with a shrub understory located on better-drained sites (Smith et al., 1998).

Field investigations (Szwaluk, 2009) were carried out in late spring/early summer to characterize the Project Study Area vegetation and survey for rare vascular plants. Investigations consisted of meander and patterned pedestrian searches from accessible lands. Random segment searches of 100 m in length were conducted in ditches in the study area.

The predominant vegetative cover is agricultural in the form of cultivated land, sown crops, non-cultivated fallow fields, and stubble burnt fields. The area also includes a minor component of hardwood tree stands and grassy areas. One of the large grass areas was located on the City of Winnipeg property south of Summit Landfill, previously used as a city snow disposal site. The grass areas were noted as disturbed with numerous weed species (11 observed). Eight broad vegetation types were identified (Szwaluk, 2009):

- ▶ Agricultural land

- ▶ Trembling aspen – bur oak

- ▶ Trembling aspen
- ▶ Bur oak
- ▶ Green ash – American elm
- ▶ Trembling aspen/Manitoba maple
- ▶ Beaked willow
- ▶ Fowl blue grass

The trembling aspen-bur oak vegetation type was noted as similar to the trembling aspen-bur oak/sarsaparilla forest (S3S4; uncommon to abundant and apparently secure, with elements of long-term concern) listed by the MCDCC. However, the trembling aspen-bur oak vegetation type found within the area lacks the dominant sarsaparilla understory of the MCDCC listed type (Szwaluk, 2009). This forest type has previously been regionally referred to as oak savannah habitat (IDG Stanley, 1996).

Riparian vegetation associated with the creeks that traverse the area was found to be analogous with the flow regimes. Creeks with moving water consisted of graminoid (i.e., grassed) banks of smooth brome and blue grass. Creeks with slow moving water were dominated by cattails, bulrushes and sedges that extended across the channel bed in some areas (North/South Consultants Inc., 2009). The location of slow moving, cattail-dominated creeks included Omand's Creek (east of Sturgeon Road) and Truro Creek (Szwaluk, 2009).

Ditches that parallel the roadways in the area were noted as moist to wet sites. Species found along road ditches include: Canada thistle, wild strawberry, northern bedstraw, Canada anemone, prairie sage, buckrush, small-leaved pussytoes, sweetgrass, stinkweed, red clover, sweet clover and common plantain (Szwaluk, 2009).

There is a seasonal wetland area at the northwest end of Truro Creek that usually dries up after spring melt. There are no permanent wetlands in the area.

4.2.6 Rare Vegetation

No vascular plant species of concern were observed during rare plant field surveys, which aimed at capturing early spring flowering species. According to the MCDCC database, there have been previous observations of six plant species of concern recorded for the Project Study Area (**Table 4.2.6.1**). The location of previously recorded rare plant observations were generally associated with recreational green spaces, with one occurrence (downy gentian) occurring in a riparian area.

Table 4.2.6.1: MCDC Previously Recorded Plant Species of Concern

Common Name	Scientific Name	MCDC S-Rank	
Whorled Milkweed	<i>Asclepias verticillata</i>	S2	(Rare)
Downy Gentian	<i>Gentiana puberulenta</i>	S2	(Rare)
White Boltonia	<i>Boltonia asteroides var. recognita</i>	S2S3	(Rare to Uncommon)
Green Needle Grass	<i>Nassella viridula</i>	S3	(Uncommon)
Yellow Star Grass	<i>Hypoxis hirsute</i>	S3	(Uncommon)
Plains Rough Fescue	<i>Festuca hallii</i>	S3	(Uncommon)

(Adapted from: Szwaluk, 2009)

4.3 Socio-economic Environment

4.3.1 Development and Population

There are two primary types of development that occur in the Project Study Area: suburban residential neighbourhoods and rural residential dwellings, including farmsteads. Major suburban residential neighbourhoods within the City of Winnipeg include the boroughs of Tyndall Park (located east of Brookside Boulevard), Crestview and Buchanan Boulevard (located south of Saskatchewan Avenue). According to the 2006 Census of Canada (**Table 4.3.1.1**), at a community level, the borough of Tyndall Park has the greatest population with the highest density, followed by the boroughs of Crestview and Buchanan Boulevard located south of Saskatchewan Avenue. The R.M. of Headingley is the fastest growing community in the surrounding area, experiencing an approximately 43 percent increase in population between 2001 and 2006, followed by the City of Winnipeg proper. All the city boroughs experienced a net out-migration of people from the area during the same time period, as did the R.M. of Rosser. The R.M. of Rosser contains the least number of private dwellings with a total of 472 and the lowest population density at 3.1 people per square kilometre.

Table 4.3.1.1: Population for Major Study Area Communities – 2006

Characteristic	City of Winnipeg	Crestview Borough	Buchanan Borough	R.M. of Rosser	R.M. of Headingley	Tyndall Park
Population (2006)	633,451	8,855	2,820	1,364	2,726	12,775
Population (2001)	619,544	9,155	3,030	1,412	1,907	13,065
Population Change (%)	2.2	-3.3	-6.9%	-3.4%	42.9%	-2.2%
Private Dwellings	269,586	3,650	1,135	472	733	3,730
Population Density (person/km ²)	1,365.2	3,108.5	2,373.7	3.1	25.5	4,246.8
Land Area (km ²)	464.01	2.8	1.2	441.43	106.96	3.0

As of 2006, the population of the study area communities was 28,540, which was a decrease from 28,569 in 2001. In 2006 these people were housed in 9,720 private dwellings. Approximately 63 percent of those dwellings were single-detached houses, 19 percent apartments, and 1.3 percent rural residential properties.

4.3.2 Property Ownership

In most cases property within the study is privately owned. Property ownership in the R.M. of Rosser is predominantly characterized by large agricultural holdings followed by smaller lot development for rural residential and non-agricultural/industrial. These smaller holdings become more apparent when in close proximity to the City of Winnipeg (i.e., in the vicinity of Little Mountain Park, and a portion of the area in the R.M. of Rosser along the southern boundary within the City of Winnipeg and the R.M. of Headingley). The property ownership pattern within both the City of Winnipeg and the R.M. of Headingley portions of the area is characterized by outer two-mile (OTM) river lot holdings as part of the Parishes of St. James and St. Charles.

Apart from public road allowances, there are four other large concentrations of Crown and publicly-owned lands within or immediately adjacent to the area, which include:

- ▶ Provincial lands associated with the interchange for PTH 7 and PTH 101 and the intersection of PTH 6 and PTH 101
- ▶ Little Mountain Park, owned by the City of Winnipeg, which occupies the northwest quarter of section 27, township 11, range 2 east of the prime meridian (EPM)
- ▶ Highwood Snow Disposal Site (closed indefinitely), owned by the City of Winnipeg located within part of lot 96 OTM in the Parish of St. Charles
- ▶ Federal lands located to the north of the Airport bounded by the CPR subdivision line in SE21 and part of SW 22-11-2 EPM
- ▶ Federal DND lands associated with the St. Charles Rifle Range located west of PTH 101 in the R.M. of Rosser and R.M. of Headingley

In addition to private and publicly-owned lands, there is one Treaty Land Entitlement (TLE) parcel and a First Nation owned golf course in the Project Study Area. The TLE is located at the junction of PTH 6 and PR 236 and has been selected by the Roseau River Anishinabe First Nation (RRAFNF) under the treaty land entitlement process. The parcel is currently occupied by the Red Sun Smoke Shop and Gas Bar. The Players Golf Course off of Inkster Boulevard is owned and operated by the Southeast Resource Development Council, a tribal council comprised of nine member First Nations from southeastern Manitoba.

No other First Nation or TLE lands are known to exist in the area.

4.3.3 Economy

As shown in **Table 4.3.3.1**, the percentage of the population that possesses a certificate, diploma or degree is higher within Winnipeg than in the surrounding municipalities. The R.M. of Rosser had the highest percentage of those 15 and older in the labour force at 80 percent, or 1,100 people. The R.M. of Headingley had the least percentage of those 15 and older in the labour force at 50 percent of the total population, or 1,330 people. Boroughs within the study area are consistent with the City of Winnipeg average at 4.6 percent. Unemployment drops outside the city within the R.M. of Rosser and R.M. of Headingley at 2.9 and 1.5 percent respectively.

The R.M. of Headingley had the highest average employment income for full time, full year work in 2006. The R.M. of Rosser had the lowest average income over the same

time period. The R.M. of Headingley also has the highest average dwelling value at approximately \$340,000, which is an approximate 200 percent increase over the housing values within the City of Winnipeg proper. Dwelling values in the R.M. of Rosser were also above the City of Winnipeg values. The R.M. of Rosser also had the greatest number of individuals declaring their home as their place of employment at approximately 33 percent of the labour force, or 460 individuals. The R.M. of Headingley had the second highest occurrence of individuals working from home at approximately 7 percent of the population.

Table 4.3.3.1: Selected Labour, Income and Housing Statistics for Study Area Communities – 2006

Characteristic	City of Winnipeg	Crestview Borough	Buchanan Borough	Tyndall Park	R.M. of Rosser	R.M. of Headingley
Population 15 years and over						
With a certificate, diploma or degree	395,755 (62.5%)	5,600 (63.2%)	1,800 (63.8%)	7,740 (60.6%)	750 (55%)	1,375 (50.4%)
In the labour force	350,060 (55.3%)	4,825 (54.5%)	1,615 (57.3%)	7,660 (60%)	1,100 (80.6%)	1,330 (48.8%)
Work from home	15,015 (2.3%)	170 (1.9%)	90 (3.2%)	145 (1.1%)	460 (33.7%)	95 (7.0%)
Unemployment Rate	5.2%	5.1%	5.0%	4.6%	2.9%	1.5%
Average Employment income (full time, full year)	\$38,272	\$43,421	\$42,122	\$38,066	\$31,193	\$48,077
Average value of dwelling	\$162,019	\$151,088	\$130,997	\$147,908	\$228,027	\$343,217

In the R.M. of Rosser the majority of individuals are assumed to be employed by the agriculture industry as shown in **Table 4.3.3.2** under the employment sector of agriculture, forestry, fishing and hunting. Business services, including professional services, were the largest employment sector in the City of Winnipeg and R.M. of Headingley in 2006. Within the City of Winnipeg, retail trade was the main employment

sector for the residents of the boroughs of Crestview and Buchanan. Residents of the Tyndall Park borough were most commonly employed in the healthcare and social assistance industry.

Table 4.3.3.2: Sectors of Employment for Study Area Communities – 2006.

Sector	City of Winnipeg	Crestview Borough	Buchanan Borough	Tyndall Park	R.M. of Rosser	R.M. of Headingley
Health care and social assistance	12.6	13.2	9.1	12.6	7.6	9.4
Retail trade	11.5	14.2	12.2	11.5	11.2	12.1
Manufacturing	11.2	8.2	6.9	11.2	9.4	9.1
Educational services	7.8	6.0	7.5	7.8	7.1	6.0
Accommodation and food services	-	7.1	5.6	7.1	-	-
Public administration	-	6.9	11.9	7.0	-	-
Transportation and warehousing	-	7.2	11.6	5.9	-	-
Business services	18.7	3.6	5.0	5.6	12.4	19.2
Finance and real estate	6.5	9.4	5.9	6.5	2.9	5.7
Construction	4.5	3.1	5.0	4.5	2.4	5.3

Sector	City of Winnipeg	Crestview Borough	Buchanan Borough	Tyndall Park	R.M. of Rosser	R.M. of Headingley
Administrative support, waste management and remediation services	-	5.1	4.4	4.5	-	-
Wholesale trade	4.2	4.2	3.8	4.2	5.3	3.0
Information and cultural industries	-	2.9	2.5	2.7	-	-
Arts, entertainment and recreation	-	2.7	1.9	2.1	-	-
Utilities	-	0.6	2.5	1.1	-	-
Agriculture, forestry, fishing and hunting	1.7	0.4	0.0	0.5	25.9	4.2
Mining and oil and gas extraction	-	0.0	0.6	0.1	-	-
Management of companies and enterprises	-	0.2	0.0	0.1	-	-
Other services	21.2	4.7	3.4	4.9	15.9	25.3
Total	100	100	100	100	100	100

Note: The classification of employment sectors differed between different levels of organization (boroughs vs. R.M.s and cities)

4.3.4 Existing Infrastructure

Road Infrastructure

The existing road infrastructure network within the Project study area is composed of the following primary roadways:

- ▶ PTH 101 – a four-lane divided roadway (has been converted to a temporary two-lane detour within the vicinity of the project to allow for construction of node structures)
- ▶ PR 221 (Inkster Boulevard) – a two-lane undivided roadway
- ▶ Saskatchewan Avenue – a two-lane undivided roadway
- ▶ Summit Road – a two-lane undivided roadway
- ▶ Sturgeon Road – a two-lane undivided roadway

Utilities

Information regarding existing utilities in the Project Study Area was requested from Manitoba Hydro – Gas Division; Manitoba Hydro – Electrical Division; Manitoba Telecom Systems (MTS); Shaw; MIT – Traffic Signals; and CPR.

At the CPR Carberry/Omand's Creek overpass location there is a communication conduit on the north side of the existing track.

Manitoba Hydro – Electrical overhead lines exist on the north side of PR 221 (Inkster Boulevard) and follow the roadway out of the Project Study Area. No other utilities were identified within the immediate area.

4.3.5 Land and Resource Use

Land Use

There are a number of recreational, institutional and commercial land uses which occur within the Project study area.

Recreational Uses

Facilities and spaces for recreational use within the area include Little Mountain Park, Little Mountain Sportsplex, Optimist Park, The Players Golf Course and Prairie Dog Central Railway. The closed Summit Road Landfill is an additional green space in the

area which has been a location of tree plantings in recent years, initiated by the City of Winnipeg Naturalist Branch.

Little Mountain Park is a 65 ha woodland and open space area that was set aside in 1965. The park is situated on a limestone ridge which was the site of one of Winnipeg's first limestone quarries (1896) and was the site of a village named Quarry Village which existed at the site from 1898 – 1905. Contemporary use of the park includes walking, hiking, cross-country skiing and picnicking. The park contains two parking lots located on the north and west side of the site, barbeque pits, indoor washrooms with running water, an off-leash dog park, large open spaces for recreational sport activity and a 3.2 km bark chip trail, designated the Little Mountain Trail, by the Winnipeg Trails Association.

Little Mountain Sportsplex, established in 1999, is an approximately 86 ha multi-sport facility located west of Little Mountain Park which supports a number of recreational activities. Sport facilities include 28 softball diamonds, six soccer fields, three hockey rinks and one rugby field. As such, the facility supports a number of recreational sport leagues and tournaments. There is also a clubhouse located on-site which contains a bar and grill restaurant facility and has associated licensed patio and picnic areas.

Optimist Park is located southeast of the closed Summit Road Landfill Site. The recreational sports park is accessible off of Summit Road to the east. The park contains five softball diamonds, three football fields and indoor structures.

The Players Golf Course is a 9-hole, semi-private golf course located south of Little Mountain Park. The facility is accessed from the south off of Inkster Boulevard (PR 221).

Prairie Dog Central Railway is a short line vintage railway which departs Inkster Junction Station located west of Little Mountain Sportsplex with access off of PR 221 to the south. The station, which was designated a Canadian Heritage Railway Station in 1991, was moved to its present location from the Polo Park area in St. James in February 2000. The railway is owned and operated by the Vintage Locomotive Society Inc., a non-profit organization which operates the railway as volunteers. The vintage train travels along a CNR line to Warren, Manitoba.

Additional recreational uses located adjacent to the area include Red River Exhibition Park and Assiniboia Downs, located west of PTH 101 between Saskatchewan Avenue and Portage Avenue.

Commercial Uses

Major commercial uses within and adjacent to the area include the James Armstrong Richardson Airport and Paterson Grain Terminal.

The present location of the airport first became an airfield in 1928. The airfield grew dramatically in 1936 when it became the operating headquarters of the Trans Canada Airlines (TCA) national airline. Designated the Winnipeg JAR International Airport in December 2006, the multi-modal, 24-hour unrestricted international airport occupies approximately 1,370 ha of land adjacent to the area. In 2008, the airport facilitated the movement of over 3.5 million passengers and approximately 148,000 metric tonnes of cargo traffic through 144,000 aircraft movements (Winnipeg Airports Authority, 2008).

Paterson Grain operates one of its largest grain handling facilities in the northwest portion of the area. The North Terminal is located on Paterson Road, accessed off of Prairie Dog Trail to the north. The facility is also accessible by a private rail siding, the Lilyfield Subdivision. The facility opened in April 2000 with a handling capacity of 13,000 tonnes. In 2004 the facility, which handles wheat, oats, canola, barley and flax, was expanded to a handling capacity of 46,000 tonnes.

Additional commercial uses within the area include industrial and farm equipment retailers, canine boarding kennels, and a landscape supply company.

Aboriginal Uses

The Red Sun Smoke Shop and Gas Bar is located at the Roseau River Anishinabe First Nation treaty land entitlement selection at the junction of Highway 6 and 236 in the northwest corner of the area.

The Players Golf Course located off Inkster Boulevard is owned and operated by the Southeast Resource Development Council, a tribal council comprised of nine member First Nations from south eastern Manitoba.

Institutional Uses

Major institutional uses within and adjacent to the area include the Department of National Defence St. Charles Rifle Range and the Singh Sabha Sikh Temple.

The St. Charles Rifle Range is located immediately west of the area, within the R.M. of Headingley, with access off of Saskatchewan Avenue to the south. The Department of National Defence has maintained exclusive control of this approximately 335 ha area since 1908. A number of training exercises are undertaken at the rifle range including small arms training. The range is available for events and competitions held by outside

organizations such as the Manitoba Provincial Rifle Association. Unique to the range is an approximately 100 ha parcel of unbroken, riverbottom tall grass prairie. As such, a number of academic studies are undertaken at the range including tall grass prairie management and studies on a rare ground beetle, *Lebia divisa*, which occupies the area. In 2002, the St. Charles Range Environmental Advisory Group (SCREAG) was formed, with representation from the three levels of government, academia and public environmental groups, to aid in the management of the tall grass prairie.

Singh Sabha is a Sikh temple which is located at 4000 Sturgeon Road in the south-central portion of the area. The day-to-day operation of the temple, including events and programmes, are overseen by an 11-member Board of Directors.

Resource Use

The major resource use within the Project study area is agricultural production of annual forage crops. Secondary resource uses include migratory game bird hunting and recreational fishing.

Migratory game bird hunting is permitted within the portions of the R.M. of Rosser, within PTH 101 in game hunting area (GHA) 38. The hunting of waterfowl is limited to Manitoba residents only, hunting on private land with landowner permission. There is no hunting permitted on Crown lands including the Little Mountain Park or within 300 m of the centreline of PR 221 and PTH 7. Hunting of big game including white-tailed deer is not permitted in the R.M. of Rosser within the boundaries of PTH 101.

Recreational fishing is known to occur along both Sturgeon and Omand's creeks within the City of Winnipeg, and as such, is anticipated to occur within the area.

4.3.6 Noise

There are a number of existing continuous and seasonal sources of noise located within and adjacent to the Project study area. Major sources of continuous noise include vehicular traffic travelling on the existing transportation road network and aviation traffic related to the airport. Additional sources which contribute to noise on a seasonal basis include Assiniboia Downs, which operates live thoroughbred racing annually from May to September and Red River Exhibition Park which operates the annual summer fair for two weeks in June. The CPR Glenboro subdivision which parallels Saskatchewan Avenue is not considered a major source of noise due to its low level of service (ITC, 2009).

Sound monitoring was conducted in June 2009 to determine baseline sound levels in residential areas adjacent to the node structures. Eight sound level monitors were located in residential areas backing onto Saskatchewan Avenue and PTH 101 from

Cavalier Drive to Portage Avenue (**Figure 4.3.6.1**). Traffic associated with PTH 101 was identified as the dominant source of noise. Sounds associated with the acceleration of trucks ascending the incline of the PTH 101 overpass of Portage Avenue was identified as a higher source of noise than other traffic in that location.



Figure 2.3.6.1: Sound Level Monitoring Locations

Sound simulations based on average hourly weekday traffic counts were undertaken using SoundPLAN Version 6.5 sound simulation software for comparison against measured levels (**Table 4.3.6.1**). The *City of Winnipeg Motor Vehicle Noise Policies*

and Guidelines (The City of Winnipeg, 1984) were used as a guideline to determine the design noise level limits for residential areas adjacent to a regional transportation facility. The guidelines established a design level limit of 65 decibel (dB) day-night level (L_{dn}).

Table 4.3.6.1: Measured Baseline Sound Levels Versus Levels Predicted Based on Traffic Volumes

	Location							
	1	2	3	4	5	6	7	8
Measured Levels								
Ld	67.5	61.5	68.5	69.6	67.4	62.0	63.6	64.7
Ln	63.7	58.7	64.6	63.4	63.8	58.2	58.0	59.8
Ldn	70.9	65.6	71.8	71.4	71.0	65.4	65.8	67.4
Leq ₂₄	66.4	60.7	67.4	68.1	66.4	61.3	62.2	63.4
Predicted Levels								
Ld	66.5	62.1	67.7	67.3	68.5	64.5	63.8	63.6
Ln	61.2	56.8	62.6	62.3	63.4	58.4	57.5	57.3
Ldn	69.5	65.1	70.4	70.5	71.7	67.2	66.4	66.2

The predicted sound levels were generally comparative with measured levels. The measured baseline sound levels adjacent to the residential area currently exceed the City of Winnipeg Guideline design noise level. Sound barrier walls are currently being installed along residential property lines adjacent to PTH 101 and Saskatchewan Avenue in order to mitigate potential noise disturbance as a result of altered traffic flows via the CCW node structure at PTH 101 and Saskatchewan Avenue onto the CCW Expressway.

4.3.7 Heritage Resources

A background study was conducted for the existence of archaeological sites using the Historic Resources Branch archaeological database. Six sites were found to be located in the CCW study area, associated with the Late Woodland and Late Historic cultural affiliations. An additional four sites were found on the periphery of the study area, which are assumed to have possible extensions falling within the area.

The proximity of the Project to the historic Red River Settlement combined with the presence of the Omand's and East Branch Colony Creek waterways indicates that there is a high potential for uncovering heritage resources. Historically, these creeks would have served as both a travel route and vital source of water. Typical historic features which have been recorded within the area include homesteads, building foundations and historic trails.

The Heritage Resource Impact Assessment (HRIA) conducted in July 2009 (NLHS, 2009) consisted of pedestrian surveys and shovel testing in areas deemed high in potential for heritage resources. Surveying was conducted for the future extension of CCW west of PTH 101 and the proposed CCW alignment. Impediments to field investigations included lack of access permissions for all lands potentially affected and the presence of well-established crops which obscured ground visibility and precluded shovel testing.

The general CCW alignment area included seeded fields and wooded areas. Areas of access permission were investigated. Field surveys revealed the presence of two river lot roads in two locations which were both oriented in a northeast-southwest direction, and modern debris, including metal and large tires. A 25 m swath of recent historic artifacts (circa 1930) was discovered away from the CCW alignment. The artifacts which included tin can fragments, a small medicine jar, the base of a large glass jar embossed with 'MADE IN CANADA', shards of earthenware ceramics, a stoneware vessel and porcelain plate, shards of window glass, and a shard of a glass bottle stopper embossed with the date '1930'. In another location along the alignment, mammal remains including a long bone shaft, femur and proximal rib fragment, believed to belong to a juvenile deer were discovered. There were no artifacts found in association with the site and therefore, the site was not identified as an archaeological site due to the lack of human-made or modified elements.

The existing St. James burial mound site (DILh-14) was revisited during field investigations. The registered site is located away from the CCW alignment in a cropped field. A pedestrian survey of the site yielded no evidence of the mound, suggesting that agricultural activities and previous excavations that occurred in the early 1900s have impacted the site.

During Phase I construction activities, mainly in the vicinity of Sturgeon Creek, several minor anthropogenic items and one deer vertebrae were discovered. Northern Lights Heritage Services were notified in each instance. The discoveries were recorded and determined to be of minor historic importance.

The HRIA concluded that both the existing heritage sites and newly discovered sites should not be affected by the Project.

5.0 STAKEHOLDER AND PUBLIC CONSULTATION

A consultation process for the CCW Roadworks project was undertaken with representatives from the public and private sector, which included First Nation communities, potentially affected landowners and businesses within the Project study area and with the general public.

5.1 Aboriginal Consultation

The Manitoba Metis Federation (MMF) and the Assembly of Manitoba Chiefs (AMC) were notified of the CCW road project in April 2010 (**Appendix G**). The notice gave a general description of the Project, including location, purpose, and schedule. The notice indicates that no Crown land will be acquired for the Project and that it was not expected to infringe on any aboriginal or treaty rights. Comments and questions were welcomed from both the MMF and AMC, however to date none have been formally received.

5.2 Public / Private Sector Stakeholder Consultation

On December 8, 2010 representatives from Manitoba Infrastructure and Transportation held a public open house with respect to the CCW Expressway. The open house gave those who may be affected or wished to learn more about the project an opportunity to view details about the project and provide feedback. The open house recorded 320+ attendees, 178 of which returned comment sheets. A summary of public open house feedback can be found in **Appendix H**.

The format of the public open house included the presentation of story boards which displayed key components of the CCW Expressway (**Appendix I**).

Specific concerns raised during the open house include:

- ▶ Effects on Sturgeon Road businesses
- ▶ Effects to emergency routes
- ▶ Effects on agricultural activities within the area, including field access
- ▶ Potential implications on drainage
- ▶ Access to PTH 101 from Saskatchewan Avenue
- ▶ Details of CCW roadworks presentation lacking adequate information and explanation

- ▶ Effects on local wildlife populations
- ▶ Potential traffic increases

Additional general feedback received from the open house focused on noise and use of sound barriers, long-term land use development concerns, costs of the project, and local access and zoning issues.

6.0 EFFECTS AND MITIGATION

An environmental effect matrix was used to identify potential interactions between road construction and operation activities and environmental components (**Table 6.1**). Environmental components include aspects of the physical, biophysical and socio-economic environment. Where project-environment interactions are anticipated the interaction was rated with a magnitude of high, medium, low or negligible. The significance of unmitigated effects was further characterized based on magnitude, geographic extent, duration, frequency, permanence and ecological context (**Table 6.2**). A summary table of effects and significance can be found in **Appendix J**.

Mitigation measures to reduce the significance of adverse effects were identified. Any residual effects anticipated to remain after the successful implementation of mitigation measures were defined and characterized with respect to significance.

6.1 Aquatic Environment and Resources

CCW roadworks will permanently intersect with multiple sections of fish habitat. Installation of culverts will have potential effects to the aquatic environment and resources which include removal of riparian vegetation, disturbance of the stream bed, erosion and in-stream sedimentation during the construction phase. Once complete, stream crossings have the potential to adversely affect fish passage.

Riparian vegetation along banks provides stability and once removed for crossing installation could promote erosion and sedimentation, which may increase turbidity of the aquatic environment. Tall vegetation provides the aquatic environment with canopy cover and deadfall, which is essential for fish and benthic invertebrates. Removal of this vegetation could threaten quality of the aquatic environment.

The installation of culverts will require infilling of the stream channel with the culvert for the length and width of the pipe and embankment material. At proposed culvert crossings the substrate is generally composed of a silt/organic material. The infilling of the channel around the culvert will effectively remove the availability of that channel bed habitat to aquatic species. A potential positive effect on habitat diversity can be gained from incorporating riprap material transitions upstream and downstream of the culvert and along its embedded length.

Table 6.1: Environmental Effects Matrix

PROJECT PHASES / COMPONENTS	ENVIRONMENTAL COMPONENTS												OTHER											
	DIRECT ENVIRONMENTAL EFFECTS						INDIRECT ENV. EFFECTS																	
	Land		Water		Air		Natural Systems			Socio-Economic		Cultural												
Construction:																								
Prepare Site - Stripping/Cleaning/Grading/Excavating	yphta gopot dne h ar et	yll au Ql oS	š ne r fdeŠt aug A	ylll l bŠ SepdŠ nŠ s r E	yll au Q r dŠ We c t r u S	yll au Q r dŠ We c t r u S	yll au Q r dŠ We c t r u S	yll au Q r dŠ We c t r u S	er usser P r dŠ w d n u r G	yll au Q r dŠ We c t r u S	yll au Q r dŠ We c t r u S	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	er usser P r dŠ w d n u r G	
Using heavy equipment																								
Roads - Paving/Asphalting																								
Crossings																								
Drainage - Ditches/Ponds																								
Re-vegetation & Landscaping																								
Operation:																								
Vehicular traffic																								
Snow clearing																								
Roadway Maintenance																								
Accident / Malfunctions:																								

X – implies an interaction between project phases/components and environmental effects

Table 6.2: Significance Criteria Definitions

Criterion	Low	Moderate	High
Magnitude	Effect is evident only at or nominally above baseline conditions	Effect exceeds baseline conditions; however, is less than regulatory criteria or published guideline values	Effect exceeds regulatory criteria or published guidelines
Geographic Extent	Effect is limited to the project site/footprint	Effect extends into areas beyond the project site/footprint boundary	Effect is trans-boundary in nature
Duration	Effect is evident only during the construction phase of the project	Effect is evident during construction and/or the operational phase of the project	Effects will be evident beyond the operation life of the project
Frequency	Conditions or phenomena causing the effect occur infrequently (e.g. < once per year)	Conditions or phenomena causing the effect occur at regular intervals although infrequent intervals (e.g. < once per month)	Conditions or phenomena causing the effect occur at regular and frequent intervals (e.g. > once per month)
Permanence	Effect is readily reversible over a short period of time (e.g. one growing season)	Effect is not readily reversible during the life of the project	Effect is permanent
Ecological Context	Evidence of environmental effects by human activities. Effect results in minimal disruption of ecological functions and relationships in the impacted area	Relatively pristine area. Effect results in some disruption of non-critical ecological functions and relationship in the impacted area	Pristine area/not affected by human activity. Effect results in disruption of critical ecological functions and relationship in the impacted area

The installation of corrugated steel pipe culverts and other crossing structures such as box culverts, can artificially increase stream velocities and remove habitat features used by fish and other aquatic organisms to avoid high flows, potentially impeding their ability to pass the crossing.

The use of heavy equipment for activities such as stripping, grading, excavating and infilling near a stream have the potential to destabilize bank materials making them available for transport into water bodies via wind or runoff erosion. The introduction of sediments into a water body can cause direct and indirect effects on fish habitat by affecting fish and egg respiration, fish foraging efficiency, and habitat productivity for fish and invertebrates.

Effects to aquatic resources are moderate in magnitude with low frequency, duration, permanence, geographic extent and ecological context.

The following mitigation measures will be implemented to reduce the potential effect on aquatic resources:

- ▶ Maintain a buffer of vegetation when working along waterways, where possible, to promote bank stabilization and reduce erosion.
- ▶ Re-vegetate disturbed riparian areas to meet the City of Winnipeg – City Naturalist specifications (City of Winnipeg Best Management Practices Handbook for Activities In and Around the City's Waterways and Watercourses).
- ▶ Develop and implement an Erosion and Sedimentation Control Plan in adherence with the Transportation Association of Canada National Guide to Erosion and Sediment Control on Roadway Projects (Transportation Association of Canada, 2005).
- ▶ Install riprap over gravel transition zone for 10 m upstream and downstream of culvert installations, and if possible riprap along the entire embedded length, to increase substrate / habitat diversity at crossing locations and to increase roughness to improve fish passage characteristics.
- ▶ Install riprap such that it does not negatively affect fish passage.
- ▶ Prohibit in-stream work from April 1- June 15 of any construction season to protect spring spawning by fish.
- ▶ Avoid in-stream work during periods of anticipated high water flow.

- ▶ Follow the applicable sections of the Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (Manitoba Natural Resources, 1996)

In the case for East Colony Creek follow DFO-Manitoba fish passage guidance as follows:

- ▶ Incorporate clear span stream crossing structure designs where technically/economically feasible to avoid in-channel pilings, abutments or other forms of channel encroachments.
- ▶ Minimize the amount of grubbing of existing vegetation for the installation of support structures within the floodplain.
- ▶ Provide appropriate habitat replacement (compensation) as required by DFO.

After implementation of mitigation measures and fulfillment of habitat replacement the residual effects to the aquatic environment and resources are low in magnitude, duration, frequency, geographic extent, permanence, ecological context, and not significant.

6.2 Groundwater

The project is not expected to affect groundwater quality or quantity.

It has been identified that a depressurization system of wells may be required for shallow foundations and temporary excavations during construction in some areas due to the relatively low depth to groundwater (± 3.5 m) and the hydraulic connectivity of the till and bedrock layers (KGS Group, 2009).

During Phase I depressurization of highly-concentrated chloride groundwater was required at the PTH 101 and Sturgeon Creek box culvert site. With recommendations from Manitoba Water Stewardship the groundwater was pumped into settling ponds before deep injection into the underlying aquifer.

The CCW roadwork's crossing designs have not been finalized; however in the event groundwater dewatering is required, appropriate mitigation measures will be taken in accordance with discussion and recommendations from Manitoba Water Stewardship.

Anticipated effects on groundwater are expected to be null in magnitude, geographic extent, duration, frequency, permanence, and ecological context

6.3 Air Quality

During the construction phase, dust and additional vehicle emissions from heavy equipment will occur. During the operation phase there will be additional vehicle movement throughout the vicinity of CCW with related vehicle emissions, but it is anticipated that there will be a reduction in traffic using Saskatchewan Avenue which should be a benefit to the residential community south of Saskatchewan Avenue and east of PTH 101.

Effects due to air quality are low in magnitude, geographic extent, permanence and ecological context, moderate in duration and frequency and not significant.

As a mitigation measure, dust during construction will be controlled by use of water and other environmentally friendly dust suppressants.

Following implementation of mitigation measures the effect of dust on the nearby residential area is not significant.

6.4 Greenhouse Gas Emissions

An analysis of traffic flow within the immediate road network and resulting greenhouse gas emissions from the CCW roadway was generated using Transport Canada's Urban Transportation Emissions Calculator (UTEC). Emissions were calculated by comparing Vehicle-Kilometre Travelled (VKT) through the Synchro Version 7 traffic operations model. Traffic volumes were assumed from the original CCW Functional Planning Study (MMM Group, 2009) which provides current and predicted traffic flow scenarios.

Five scenarios were assumed for the analysis, which include:

- ▶ 2010 Background PM Peak Hour Existing Road Network
- ▶ 2030 Background PM Peak Hour Existing Road Network Option 1 (assuming PR 221 is a two lane undivided highway)
- ▶ 2030 Background PM Peak Hour Existing Road Network Option 2 (assuming PR 221 is a four lane divided highway)
- ▶ 2010 Background PM Peak Hour with CCW Expressway in place
- ▶ 2030 Background PM Peak Hour CCW (assuming PR 221 remains as a two lane undivided highway)

The immediate road network and source of traffic flow that was considered for the review, located on the northwest side of Winnipeg, was defined by:

- ▶ Sturgeon Road to the east
- ▶ Saskatchewan Avenue to the south
- ▶ Perimeter Highway (PTH 101) to the northwest between its intersection with Saskatchewan Avenue and its intersection with PTH 7

Table 6.4.1 summarizes findings from the Synchro models and the UTEC calculator. In general, the models indicate that, in all scenarios, the proposed CCW network would reduce the annual emission of greenhouse gas emissions as compared to the existing road network.

In 2009 Manitoba reported that all sources of emissions produced over 2 million tonnes of GHG CO₂ equivalent (Environment Canada, 2010). Using the same emission level for 2010, vehicular traffic in the vicinity of CCW accounts for 41,600 tonnes GHG CO₂ equivalents or about 2.1 percent of the provincial total. The addition of the CCW Expressway under a 2010 scenario generates 39,770 tonnes GHG CO₂ equivalents or 1.9 percent of the provincial total, a reduction of 1,830 tonnes. Implementation of the CCW network results in a modest reduction to Manitoba's greenhouse gas emission inventory and is insignificant.

Table 6.4.1: Greenhouse Gas Emissions Summary

Scenario	VKT ⁽¹⁾	LDPV ⁽²⁾	LDCV ⁽³⁾	MDCW ⁽⁴⁾	HDCV ⁽⁵⁾	GHG ⁽⁶⁾
2010 Background PM Existing Road Network	34,849	32,061	558	1,672	558	41,600
2030 Background PM Existing Road Network Option 1	41,775	38,433	668	2,006	668	44,490
2030 Background PM Existing Road Network Option 2	41,778	38,435	669	2,005	669	44,490
2010 Background PM CCW Road Network	33,307	30,642	533	1,599	533	39,770
2030 Background PM CCW Road Network	39,998	36,798	640	1,920	640	42,590

Notes:

- (1) VKT: Vehicle-Kilometre Travel (during the PM peak hour). It is taken from the Distance Travelled (km) in the Network Synchro MOE Reports.
- (2) LDPV: Light-duty passenger vehicle in vehicle-kilometre travel during the PM peak hour (Defined by the UTEC).
- (3) LDCV: Light-duty commercial vehicle in vehicle-kilometre travel during the PM peak hour (Defined by the UTEC).
- (4) MDCV: Medium-duty commercial vehicle in vehicle-kilometer travel during the PM peak hour (Defined by the UTEC).
- (5) HDCV: High-duty commercial vehicle in vehicle-kilometre travel during the PM peak hour (Defined by the UTEC).
- (6) GHG Annual Greenhouse Gas Emissions (tonnes CO_{2eq}).

6.5 Vegetation and Wetlands

There are potential side effects on vegetation resulting from road alignment construction activities. Low lying vegetation including grasses, herbs and low shrubs will be affected during stripping and grading activities required for site preparation for the road alignment and stream crossings.

Anticipated effects to low vegetation are low in magnitude, duration, frequency, permanence, ecological context and geographic extent, or a minor adverse effect.

There are sections of tall vegetation that will be affected by road alignment construction activities. Treed areas and shelterbelts will be removed at intersections of road alignment.

Anticipated effects to tall vegetation are characterized as moderate in duration and permanence with low magnitude, frequency, ecological context and geographic extent, or a minor adverse effect.

There were no vascular plant species of concern identified within locations surveyed. Surveying activities were impeded by a lack of contiguous land owner permissions and early year field investigations. Additional field surveys of project area footprints to determine the presence of vascular plant species of concern was identified; however, the likelihood was considered low (Szwaluk, 2009).

There are no anticipated effects on the seasonal wetland in the area.

The following mitigation measures will be implemented to reduce the potential effect on vegetation by road alignment activities:

- ▶ Conduct pre-construction field surveys for rare, endangered or unique vascular plant species on lands not previously investigated due to access restrictions
- ▶ Limit construction activity within the trembling aspen – bur oak vegetation type which is similar to the S3S4 forest listed by MBCDC
- ▶ Limit the removal of trees and snags in forested areas, where possible, as these provide wildlife habitat, windbreak and aesthetics
- ▶ Contain equipment storage and vehicle traffic within road right-of-ways, where possible, particularly in treed areas
- ▶ Maintain a buffer of vegetation when working along waterways, where possible, to promote bank stabilization and reduce erosion
- ▶ Seed areas disturbed by construction activities with appropriate species
- ▶ Adhere to standard or best management environmental protection practices for road construction

After implementation of mitigation measures effects on vegetation are not significant.

6.6 Wildlife and Habitat (including Migratory Birds)

Effects to wildlife are primarily related to the potential loss of habitat during project construction and the potential for wildlife strikes during roadway operation.

There is a potential for direct and indirect effects to wildlife and habitat, including loggerhead shrike and migratory bird nesting sites, during project construction and operation. Direct effects to habitat are related to the potential destruction of nesting sites through clearing and stripping during construction site preparation, and loss of habitat area due to alignment surface area.

The potential direct effects to wildlife habitat are high in magnitude and ecological context, with moderate permanence and duration, frequency and geographic extent.

Indirect effects of the project on wildlife habitat are associated with the potential loss of nesting sites. There are several locations of treed areas and foraging habitat within the vicinity of the road alignment, which will be impacted by construction and operation. There is also potential loss of loggerhead shrike communities as their Fowl Bluegrass habitat is potentially removed within the roadway alignment footprint (Schindler, 2009).

The potential indirect effects to wildlife habitat are moderate in ecological context, magnitude, geographic extent, permanence and duration, and low in frequency.

Wildlife species are at risk to loss of life or injury as a result of construction and operation of the road alignment by vehicular traffic. White-tailed deer are especially susceptible to collision due to their movements and abundance in the area. Loggerhead shrike is also susceptible to collisions as their hunting and perching regimes favour roadsides (Cade and Woods, 1997).

The potential for injury or loss of wildlife species will have a moderate to high frequency and ecological context, high permanence, moderate magnitude and duration with a low to moderate geographic extent.

The following mitigation measures will be implemented to reduce the potential effect on wildlife:

- ▶ The proponent will be required to conduct pre-construction surveys prior to Phase II construction to determine the nesting presence of loggerhead shrike, short-eared owl, burrowing owl and red-headed woodpecker in Project areas to be affected.
- ▶ Implement cautionary signage or fencing in white-tailed deer migration corridors to reduce the likelihood/opportunity for deer/vehicle collisions.

- ▶ Prohibit tall vegetation clearing during the period of April 1 to July 31 inclusive to avoid destruction of active bird nests and comply with the federal Migratory Birds Convention Act.
- ▶ Maintain a 400 m buffer from any loggerhead shrike nesting locations identified as active during the pre-construction survey for nests.
- ▶ Re-vegetation and landscaping treatments (of areas away from the road alignment) will incorporate species preferred by Loggerhead Shrike including hawthorne and omit species palatable to deer.

Residual effects in relation to indirect loss of wildlife habitat and loss of life to animal strikes are anticipated to occur, despite the successful implementation of mitigation measures outlined.

Monitoring will be required during the operations phase to determine the relative number of animal strikes occurring along new infrastructure within the Project study area, which will allow for an adaptive management approach to the placement of cautionary signage and fencing.

After implementation of mitigation measures, pre-construction surveys, monitoring and adaptive management, effects to wildlife are expected to be low in magnitude, geographic extent, permanence, ecological context and not significant.

6.7 Protected Species

The *Species at Risk Act (SARA)* has listed the silver chub as a Species of Special Concern according to Schedule 1 of the Act. The species has been noted to occupy the Assiniboine River and the lower sections of its tributaries (Stewart and Watkinson, 2004). The species was not caught in the 2005 or 2007 fish sampling activities of the subject waterways carried out by the City of Winnipeg Naturalist Services Branch (City of Winnipeg, 2005; 2007).

Lake Sturgeon from the Red and Assiniboine River drainage have been listed as an endangered species by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and is suspected to be an upcoming listed species under SARA. Recently, conservation efforts have been made to reintroduce Lake Sturgeon to the Red and Assiniboine Rivers, and reports show that a Lake Sturgeon was caught in the vicinity of Grant's Mill on Sturgeon Creek. The roadway alignment does not intersect with Sturgeon Creek, however there is a possibility of Lake Sturgeon presence within associated Red and Assiniboine tributaries such as East Colony and Omand's Creeks.

The loggerhead shrike eastern race has been listed as endangered under the *Manitoba Endangered Species Act* and by COSEWIC. The species has been observed nesting in the vicinity of Summit Road Landfill and Optimist Park in different spruce tree locations. The first observation occurred in 2004 and the last observation was in June 2008 (MCDC, 2009).

The occurrence of burrowing owl is considered an artifact of past occupancy. The last observation of burrowing owl in the study area dates back to the 1980s on pasture lands. Current land uses do not include pasture lands, which would attract burrowing owls. The burrowing owl has been listed as endangered by the *Manitoba Endangered Species Act* and COSEWIC.

Field investigations yielded one occurrence of a protected wildlife species – one individual of a common nighthawk (COSEWIC Threatened) was observed.

No vascular plant species of concern were observed during rare plant field surveys, which aimed at capturing early spring flowering species.

After implementation of pre-construction surveys, mitigation measures and monitoring, the effects on protected wildlife species are not significant.

6.8 Socio-economic Issues

Socio-economic issues relating to the roadway alignment are area footprints and aesthetic concerns related to construction and operation phases of the project. Traffic delays and inhibiting of local traffic flows during construction are also of concern. Overall, the Project is intended to create efficiencies with traffics flows and reduce traffic usage along Saskatchewan Avenue adjacent to residences.

Anticipated effects on residences are low in frequency, geographic extent and ecological context with a low-moderate magnitude and high duration and permanence.

Where in agricultural use, the lands affected by proposed infrastructure right-of-ways will be effectively removed from the productive land base. Access roads will be constructed to allow access for agriculture land use.

Anticipated effects in relation to changing land use patterns are low in frequency and ecological context with a low-moderate magnitude and geographic extent and high duration and permanence.

Traffic delay-related effects are minor adverse effects due to the low magnitude, duration and geographic extent.

Specific sections of Sturgeon Road and PR 221 will be permanently closed and replaced by the Expressway and public access roads. Construction of access roads will provide access to various land uses currently in operation along existing road networks.

Immediate effects will be experienced by Player's Golf Course. The facility will be crossed by an access road to be constructed adjacent to the PR 221 upgrade, and will transect land which is currently in use by the business parking lot and driving range. The area of land to be crossed by the access road will be purchased through an expropriation process.

Access severance effects are adverse due to the high magnitude, duration and permanence of the effect.

The construction of a new east-west transportation link in the northwest quadrant of Winnipeg is anticipated to increase travel efficiencies including the reduction of delays, stopping and distances travelled to reach destinations.

The following mitigation measures will be implemented to reduce potential effects to the socio-economic environment:

- ▶ Public access roads are to be incorporated adjacent to the CCW Expressway alignment which will allow business owners and their customers, and local landowners access to these lands.

After implementation of mitigation measures, effects to the socio-economic environment are not significant.

6.9 Heritage Resources

During the construction phase of the CCW roadway there is potential to unearth or disturb existing or undiscovered heritage resources, which may include human remains. Activities associated with roadway construction such as stripping, clearing and excavating have the potential to disturb existing and unknown sites. There is a low chance of unearthing heritage resources along riparian areas as modern agricultural activities may have previously impacted these sites (NLHS, 2009)

Anticipated effects to heritage resources are low in magnitude, duration, frequency and geographic extent with moderate to high permanence.

The following mitigation measures will be implemented to reduce the potential effect on heritage resources:

- ▶ Conduct pre-construction surveys for heritage resources in the vicinity of roadway construction.
- ▶ Retain a qualified archaeologist to monitor construction activities at Truro Creek, given the previous record of an existing heritage site (DILh-14) at UTM coordinates 622572E, 5531418N located to the northwest of the crossing site, as there is potential to uncover unknown heritage resources at the crossing.
- ▶ Flag the occurrence of any new heritage resources, if discovered, for assessment and/or removal by a qualified archaeologist.
- ▶ In the event that human remains are exposed, the Royal Canadian Mounted Police (RCMP) and/or City of Winnipeg Police and the Historic Resources Branch will be notified so that provincial procedures respecting human remains can be implemented.

6.10 Navigation

Transport Canada has concluded that Truro, East Colony and Omand's Creeks are not navigable within the alignment of the CCW Expressway, therefore NWPAs regulations do not apply for these waterbodies. Design of stream crossings will not be obligated to meet NWPAs criteria for navigability (**Appendix K**).

6.11 Accidents and Malfunctions

There is a potential for hazardous material spills to occur during the construction and maintenance phases of the project. Spills may occur as a result of human-induced error during refuelling or the malfunction of heavy equipment (e.g. ruptured hydraulic line) or storage facilities. Hazardous materials could potentially be deposited directly into soils or the aquatic environment, or mobilized by run off from soils to aquatic habitats if not addressed immediately. Potential hazardous material spills can result in direct effects to the quality of terrestrial and aquatic habitats which can further lead to indirect impacts to the health of fish, wildlife and humans and to vegetative success.

The following mitigation measures will be implemented during construction to reduce the likelihood and severity of accidents and malfunctions:

- ▶ All materials will be stored and handled in accordance with MR 188/2001 Storage and Handling of Petroleum Products and Allied Products Regulation.
- ▶ Refuelling is to occur in dedicated staging areas located at least 100 m from the nearest water body.

- ▶ Spill response equipment capable of recovering hazardous spills on land or water will be located on site and maintained in good working order. Staff will be informed of the spill kit locations and trained in their deployment.
- ▶ The Contractor must develop and implement an Emergency Response Plan to address the mobilization of containment measures in the event of a spill and include contacts for reportable spills.

After implementation of the mitigation measures, the effects of accidents and malfunctions are moderate to high in magnitude and frequency, low in geographic extent, permanence and ecological context, and moderate in duration.

6.12 Effects of the Environment on the Project

Inclement weather is presumed to have the greatest environmental effect on the project. In particular, spring flooding and large amounts of precipitation events during the summer months have potential to influence construction activities such as earthworks and paving.

In addition, periods of heavy precipitation can increase the probability of erosion events.

To mitigate the effects of inclement weather on the Project, the relevant Contractor will be required to:

- ▶ Develop and implement an Erosion and Sedimentation Control Plan in adherence with the Transportation Association of Canada National Guide to Erosion and Sediment Control on Roadway Projects (Transportation Association of Canada, 2005).
- ▶ Halt earthworks during heavy rainfall events.

After implementation of the mitigation measures the effects of the environment on the project are low in magnitude, geographic extent, frequency, permanence, and ecological context, and moderate in duration.

6.13 Noise and Vibration

During the construction phase, the use of heavy equipment for activities including stripping, grading, clearing, excavating, and laying road material may contribute to the existing noise and vibration levels within the study area between Summit Road and PR 221/Inkster Boulevard.

A noise study completed for the node infrastructure at Saskatchewan Avenue and PTH 101 for Phase I of the CCW Project found noise levels exceeded the City of Winnipeg noise level limit for residential areas adjacent to a regional infrastructure facility. The guidelines establish a design level limit of 65 decibel (dB) day-night level (L_{dn}). Installation of a noise abatement wall was identified as a mitigation measure in this case. After construction of the noise abatement wall, noise effects on the residential area are not anticipated to be significant. A further benefit, with respect to noise, should be realized with the reduction of general traffic, including heavy truck traffic, utilizing Saskatchewan Avenue once the new CCW road alignment becomes operational.

The principal source of continuous noise during the operations phase of CCW roadworks will be vehicles along the proposed alignment. There is an existing condition of noise experienced in the general study area from current vehicle use on existing road networks and aviation traffic related to the Airport. A change in the traffic pattern of vehicle use could contribute to increased noise levels experienced by adjacent land users, including residents.

The anticipated effects related to changes in noise levels is low-moderate in magnitude and ecological context, moderate in duration, geographical extent and permanence with a high frequency, or a moderate adverse effect. Given that the proposed CCW alignment crosses through lands that are relatively undeveloped with a low population density, operational noise levels from CCW roadworks are not expected to be significant

6.14 Residual Effects

Anticipated adverse residual effects resulting from the proposed project are related to the physical presence of the facility, potential effects to watercourses, increased traffic during concurrent construction phases, increased noise and vibration and changes in air quality.

Construction of CCW and additional highway/road networks will result in a permanent alteration within the current land use pattern for as long as the facility is in operation. The physical presence of the road alignments is not expected to be a significant detriment to the general land use pattern, that being agricultural forage crop production. It is anticipated that any land use transition in the study area will be slow, occurring over the next 50 or more years. In addition, it is anticipated that the forthcoming Development Plan for CentrePort Lands will include provision for a reserve area that will not be open to development in the near term.

The development of the crossing structures at Omand's Creek and East Branch Colony Creek has the potential to affect fish and fish habitat. Design features are expected to be implemented at both of these crossings as part of CCW Roadworks, to minimize effects on this watercourse for fish passage and channel effects, in accordance with recommendations and authorization from DFO. Following implementation of fish habitat replacement programs, residual effects on fish and fish habitat are not expected to be significant.

The anticipated increase in development and transportation corridor infrastructure may increase noise and vibration levels and deteriorate air quality during the construction and operation phases of the project. The increase in noise and vibration levels or deterioration in air quality are not a high magnitude effect due to the baseline condition of noise levels which exceed current guidelines and the rural setting of the area and the short-term nature of air quality impacts. Residual effects related to noise and vibration and air quality are not expected to be significant.

Residual impacts to air quality during operation relate to changes in traffic flow within the immediate road network and resulting greenhouse gas emissions from the CCW roadway. The construction of the CCW alignment in combination with potential future highway and road extension and construction projects is anticipated to increase traffic efficiencies of road transportation networks during their concurrent operational phases. The CCW alignment alone is anticipated to reduce travelling distance by 3.5 km for east and westbound traffic (Manitoba Infrastructure and Transportation, 2008). Projected greenhouse gas emission levels for the CCW road network scenarios are forecast to be lower than those for the existing road network. As such, the construction of the proposed Project is anticipated to yield positive effects in relation to transportation efficiencies and emissions.

7.0 MONITORING AND FOLLOW-UP PROGRAM

7.1 Monitoring Review and Reporting

Monitoring and follow-up will occur during the pre-construction, construction and operational phases of the proposed project. A monitoring program will be implemented as follows:

- ▶ Pre-construction monitoring of project implementation will be required to identify nesting presence of loggerhead shrike, short-eared owl, burrowing owl and red headed woodpecker that might be affected by the construction.
- ▶ Pre-construction monitoring for rare, endangered or unique vascular plants that might be affected by construction.
- ▶ Monitoring for vehicle/animal strike incidents after completion of CCW Expressway.
- ▶ Monitoring for heritage resources at the Truro Creek crossing sites will be carried out during construction activities.
- ▶ Monitoring of regulatory approval requirements to ensure compliance.

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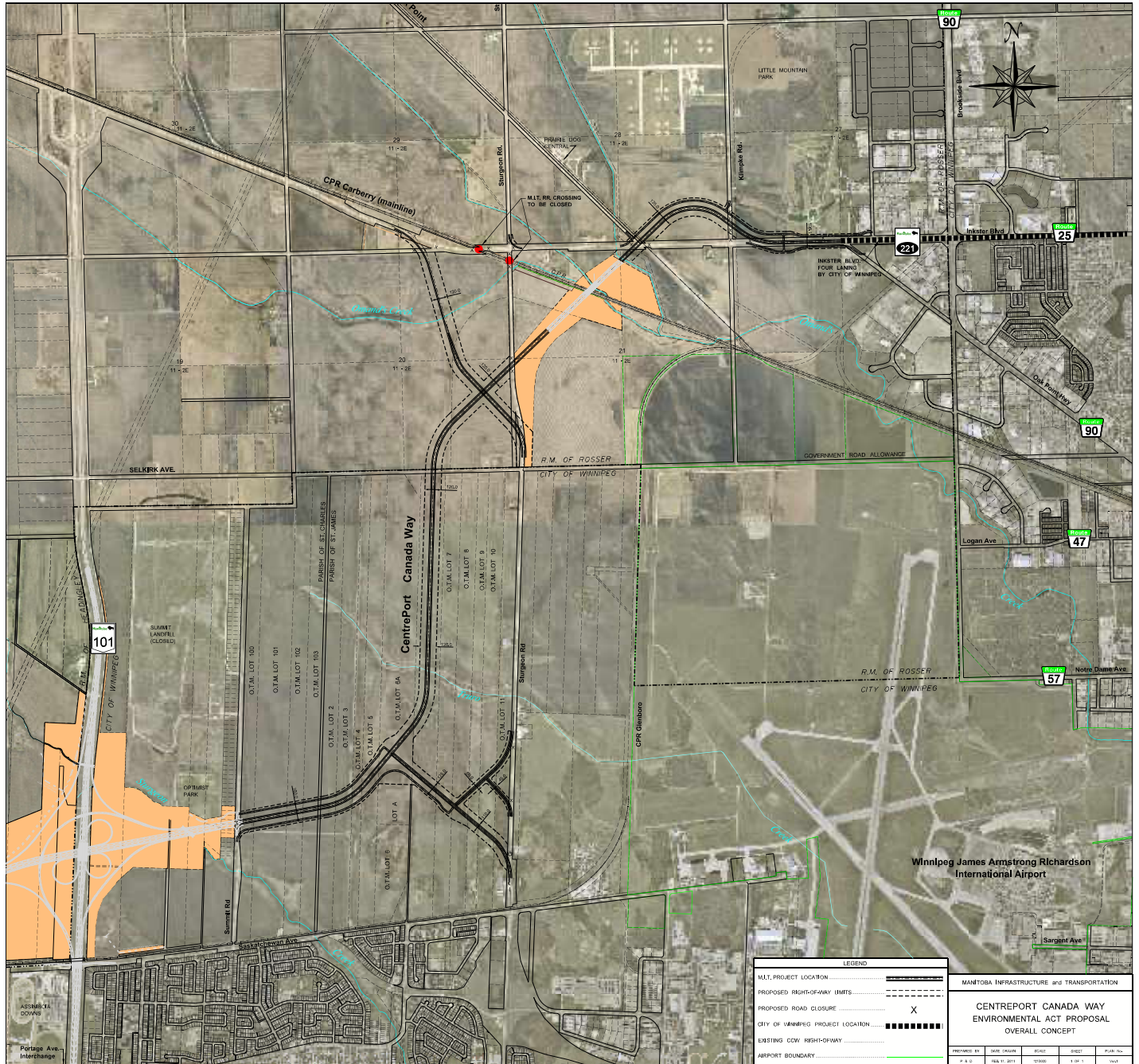
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LEGEND

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- PROPOSED RIGHT-OF-WAY UNITS [Symbol]
- PROPOSED ROAD CLOSURE [Symbol]
- CITY OF WINNIPEG PROJECT LOCATION [Symbol]
- EXISTING COW RIGHT-OF-WAY [Symbol]
- AIRPORT BOUNDARY [Symbol]

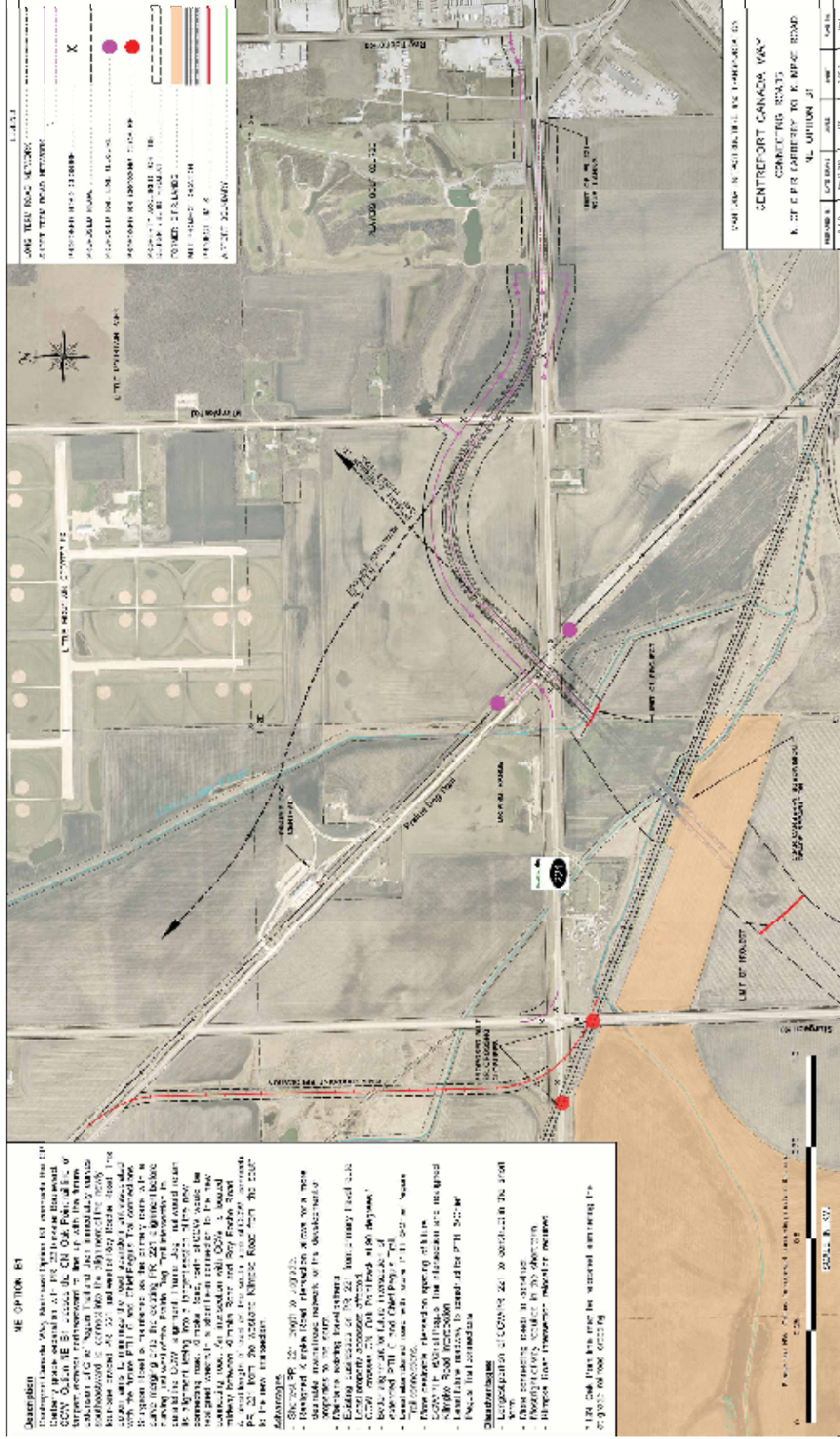
MANITOBA INFRASTRUCTURE and TRANSPORTATION

CENTREPORT CANADA WAY ENVIRONMENTAL ACT PROPOSAL OVERALL CONCEPT

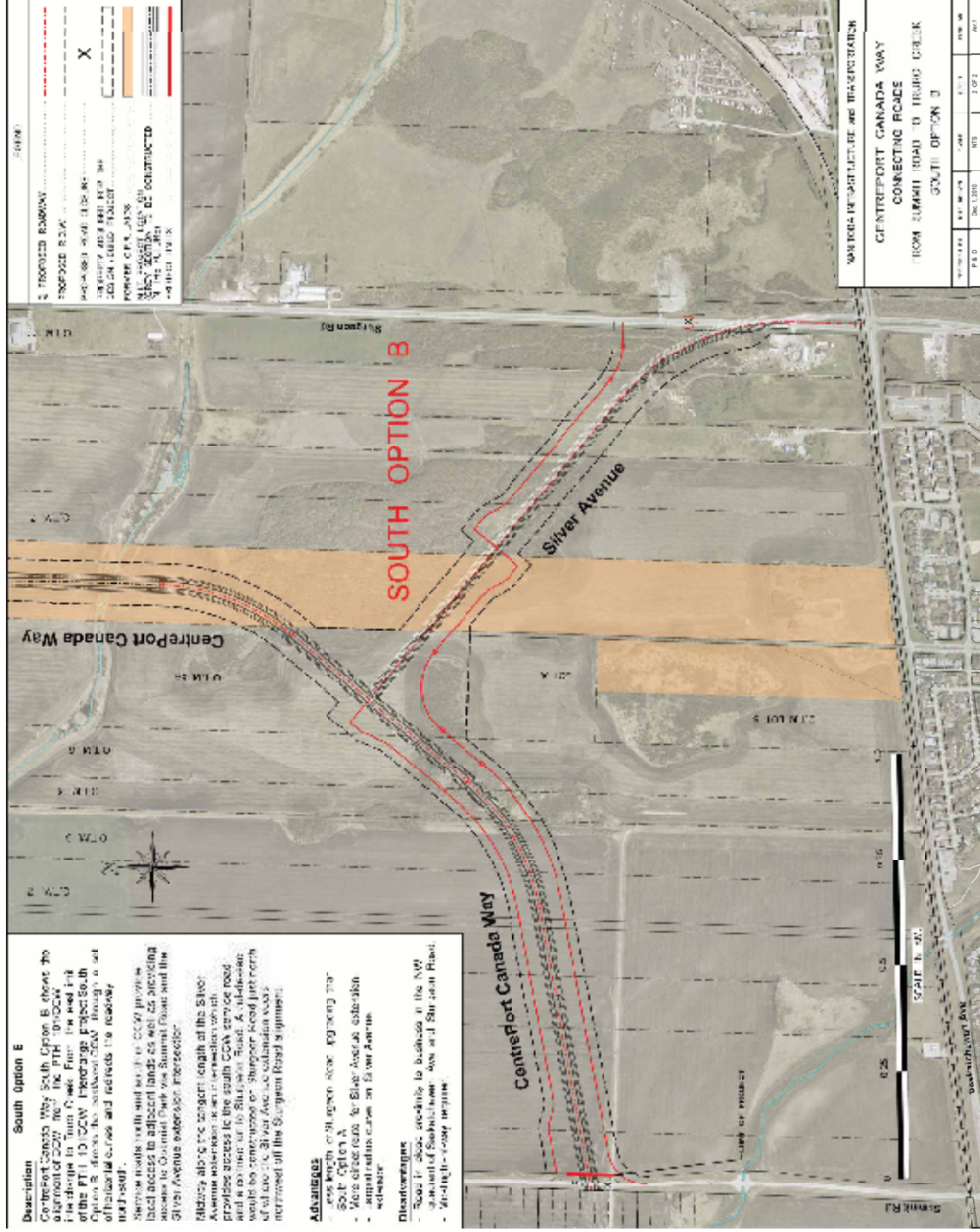
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APPENDIX B – Preferred CCW Expressway Alignments

Connecting Roads - Northeast Option B1



Connecting Roads - South Option B



Description South Option B

CentrePort Canada Way South Option B, shows the proposed roadway extension from the existing roadway to the south end of the PTI 10/20/2010 Interchange Project South Option B, from the southeast 200' through a set of residential easements and abutts the nearby road road.

Service roads will be set at 20' from the local access to adjacent lands as well as providing access to Summit Park via Summit Road and the Silver Avenue extension intersection.

Ability along the longest length of the Silver Avenue extension is an intersection which provides access to the south CGW service road and a barrier to Silver Creek Road. A sidewalk would be constructed on Summit Road just north of the Silver Avenue extension and a sidewalk constructed on the Summit Road segment.

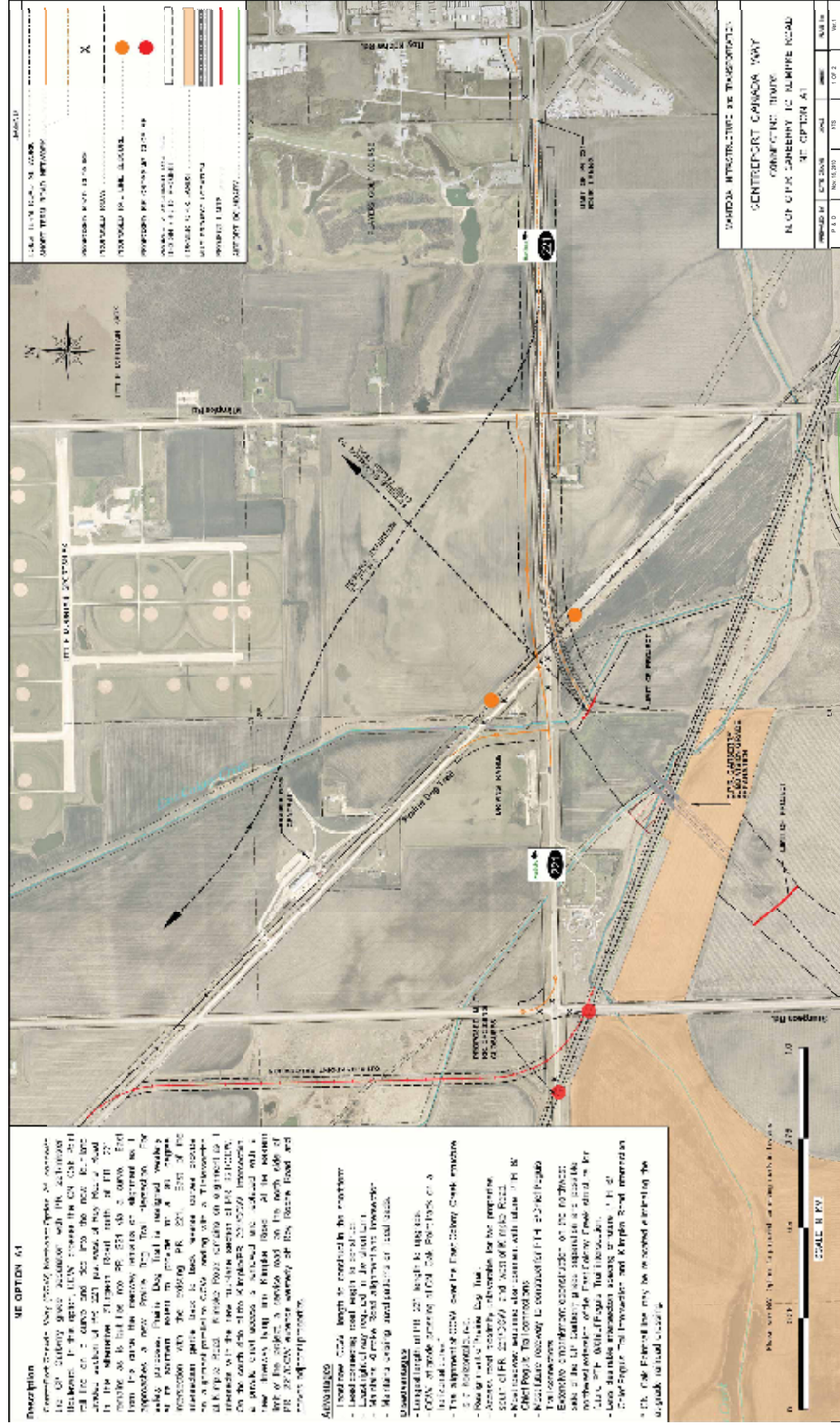
Advantages

- Less length of Silver Avenue extension than South Option A.
- More clear roads for Silver Avenue extension.
- Minimal utility easements on Silver Avenue extension.

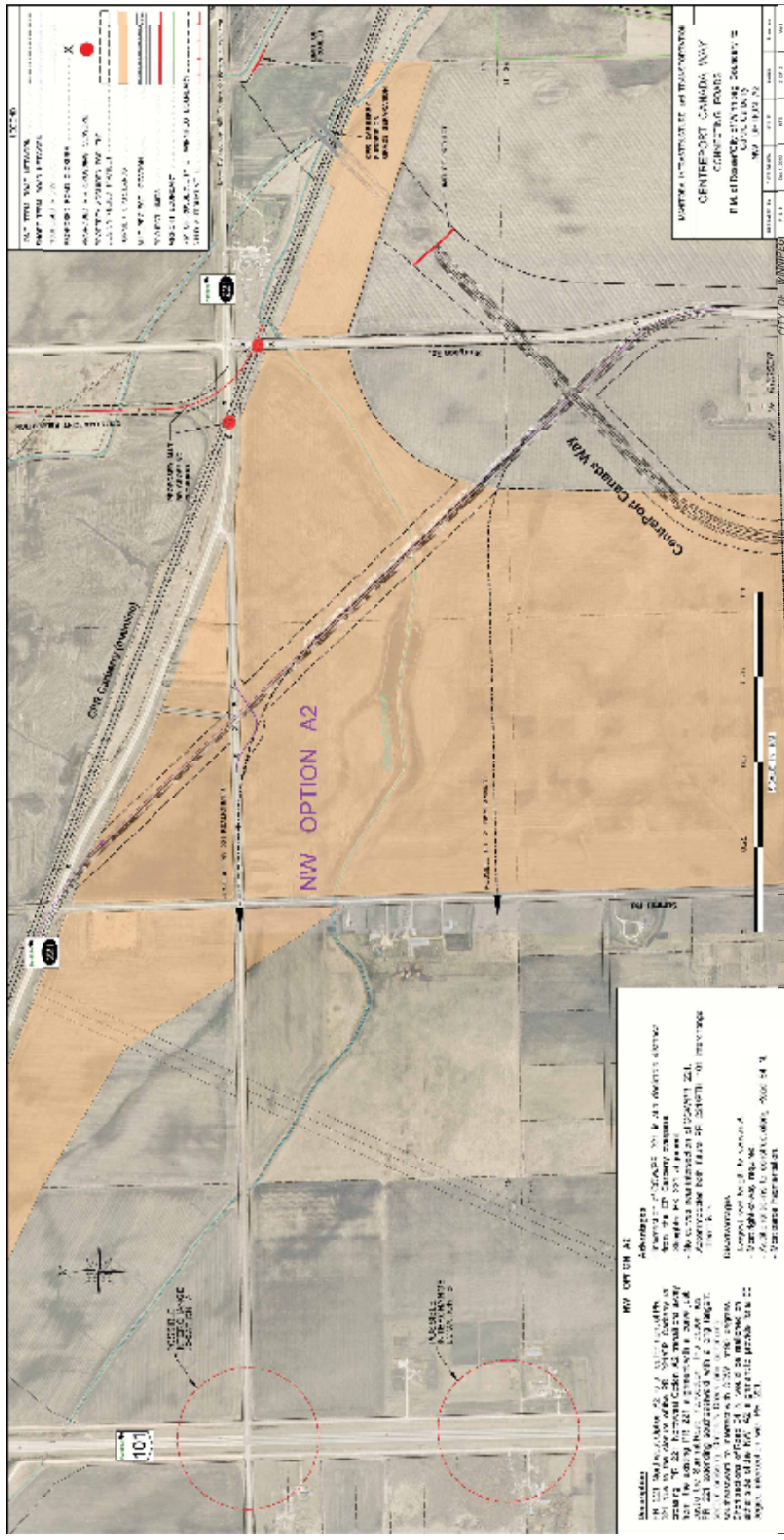
Disadvantages

- Does not allow access to backside of the North end of Summit Park via Summit Road.
- Minimizes road easements.

Connecting Roads - Northeast Option A1



Connecting Roads - Northwest Option A2



APPENDIX D – Landowner Property Parcels To Be Acquired

Name on Title	Certificate of Title Number	Hectares to be Expropriated
Her Majesty The Queen In Right Of The Province Of Manitoba	1223191	
Genstar Titleco Limited	1697216	5.70
Genstar Titleco Limited	1697206	7.79
Genstar Titleco Limited	1697201	0.40
3519015 Manitoba LTD.	1460943	4.61
Stradbroke Investments LTD.	937605	9.99
Her Majesty The Queen In Right Of The Province Of Manitoba	2477703	22.21
Her Majesty The Queen In Right Of The Province Of Manitoba	2477722	
Her Majesty The Queen In Right Of The Province Of Manitoba	2477715	3.38
Her Majesty The Queen In Right Of The Province Of Manitoba	2477720	
Qualico Developments (Winnipeg) LTD.	1022402	4.56
Florence Jean Fortin and Charles Gerald Fortin (Joint Tenants)	2279345	0.87
Florence Jean Fortin and Charles Gerald Fortin (Joint Tenants)	2279531	0.93
Qualico Developments (Winnipeg) LTD.	1022328	3.08
2936632 Manitoba LTD.	1270941	4.04
Her Majesty The Queen In Right Of The Province Of Manitoba	1570638	

Name on Title	Certificate of Title Number	Hectares to be Expropriated
Douglas Gordon Thoms	2477992	13.01
Lloyd Henry Johnson and Beverly Ann Johnson	2478001	1.01
Her Majesty The Queen In Right Of The Province Of Manitoba	2477694	13.60
Her Majesty The Queen In Right Of The Province Of Manitoba	2477699	0.54
Her Majesty The Queen In Right Of The Province Of Manitoba	2477797	
Her Majesty The Queen In Right Of The Province Of Manitoba	2432937	1.73
Canadian Pacific Railway Company	2477787	
Her Majesty The Queen In Right Of The Province Of Manitoba	2261482	0.52
Her Majesty The Queen In Right Of The Province Of Manitoba	2263118	1.77
HMQ – o/s Abstract		0.66
NAYR Enterprises LTD.	2432940	n/a
Robert Keith Ryan and Colleen Ryan	2432951	n/a
Charles Hugh Turbett and George Royston Turbett (1/2 Interest Each)	2432960	0.77
Bradley Abraham Hiebert	2171446	0.07
Tak Yuen Sung	2040490	n/a
Eretz Farms LTD.	A 42437 (Paper)	10.03
John Hiebert	1327089	n/a

Name on Title	Certificate of Title Number	Hectares to be Expropriated
Wayne Pownall and Judy Pownall (Joint Tenants)	2363334	n/a
Jennifer Skye Houston	1911872	n/a
Shawano-Wapunong Building LTD.	1837061	n/a
The Players Golf Course	1225479	0.98
Inkster Industrial Park South LTD.	2458522	2.18
Brian Roy Roche	1217680	0.26
Brian Roy Roche	1217683	0.30
Her Majesty The Queen In Right Of The Province Of Manitoba	1520677	n/a
Her Majesty The Queen In Right Of The Province Of Manitoba	2347071	n/a
Her Majesty The Queen In Right Of The Province Of Manitoba	2050587	n/a
4186397 Canada Inc.	1993877	0.11



REFER TO SHEET 1
DIMENSIONS OF RAW REQUIRED

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY

DATE	CHECKED	APPROVED	REVISIONS	TO BE REVISIONS	DATE

DATE	SCALE	DATE	SCALE
PROPOSED BY	DATE	DATE	SCALE
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PROJECT NO.	DATE	DATE	SCALE

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<input type="checkbox"/> ENGINEERING CHECKED	<input type="checkbox"/> ROADWAY CHECKED

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MANITOBA INFRASTRUCTURE AND TRANSPORTATION
PROPOSED LOCATION PLAN
OF
CENTREPORT CANADA WAY
CONNECTING ROADWAYS PROJECT
FROM SUMMIT RD TO WEST OF ROUTE 80

APPROVED BY
CITY OF WABERLEY

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY

DATE OF PLAN PROVISIONAL: PREVIOUS EDITION
MUNICIPALITY: WABERLEY, SASKATCHEWAN, SASKATCHEWAN PROVINCE OF CANADA

LEGAL CHECKED
 ENVIRONMENTAL CLEARANCE
 SURVEYING CHECKED
 ENGINEERING CHECKED

DATE OF THIS SHEET: _____

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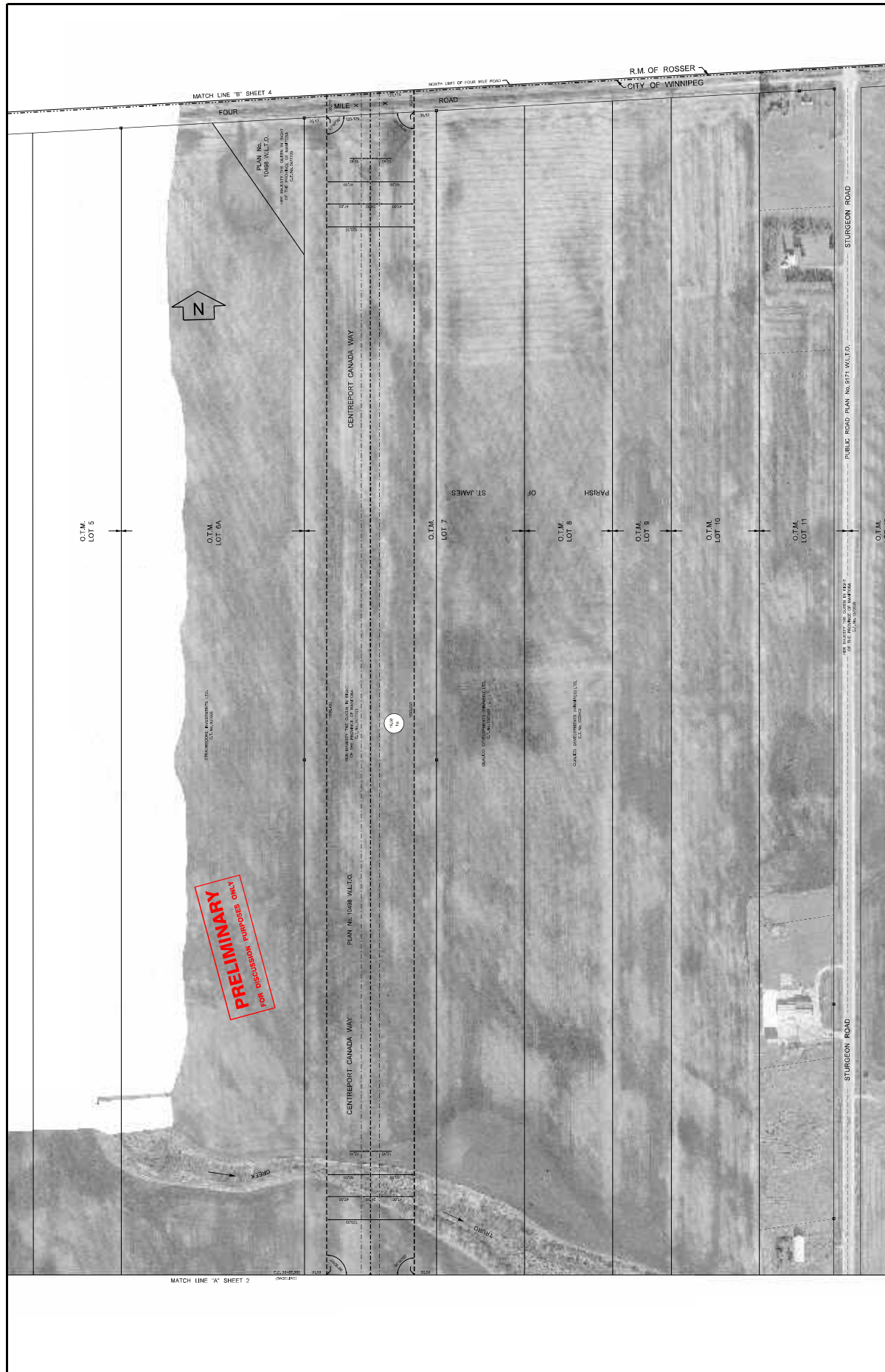
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MATCH LINE "A" SHEET 2

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PRELIMINARY
FOR DISCUSSION PURPOSES ONLY

PLAN No. 1088 M.V.L.D.O.
PREPARED FOR THE CITY OF MINNEAPOLIS BY
S. L. J. ARCHER, INC., CIVIL ENGINEERS

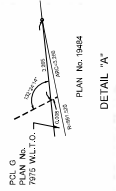
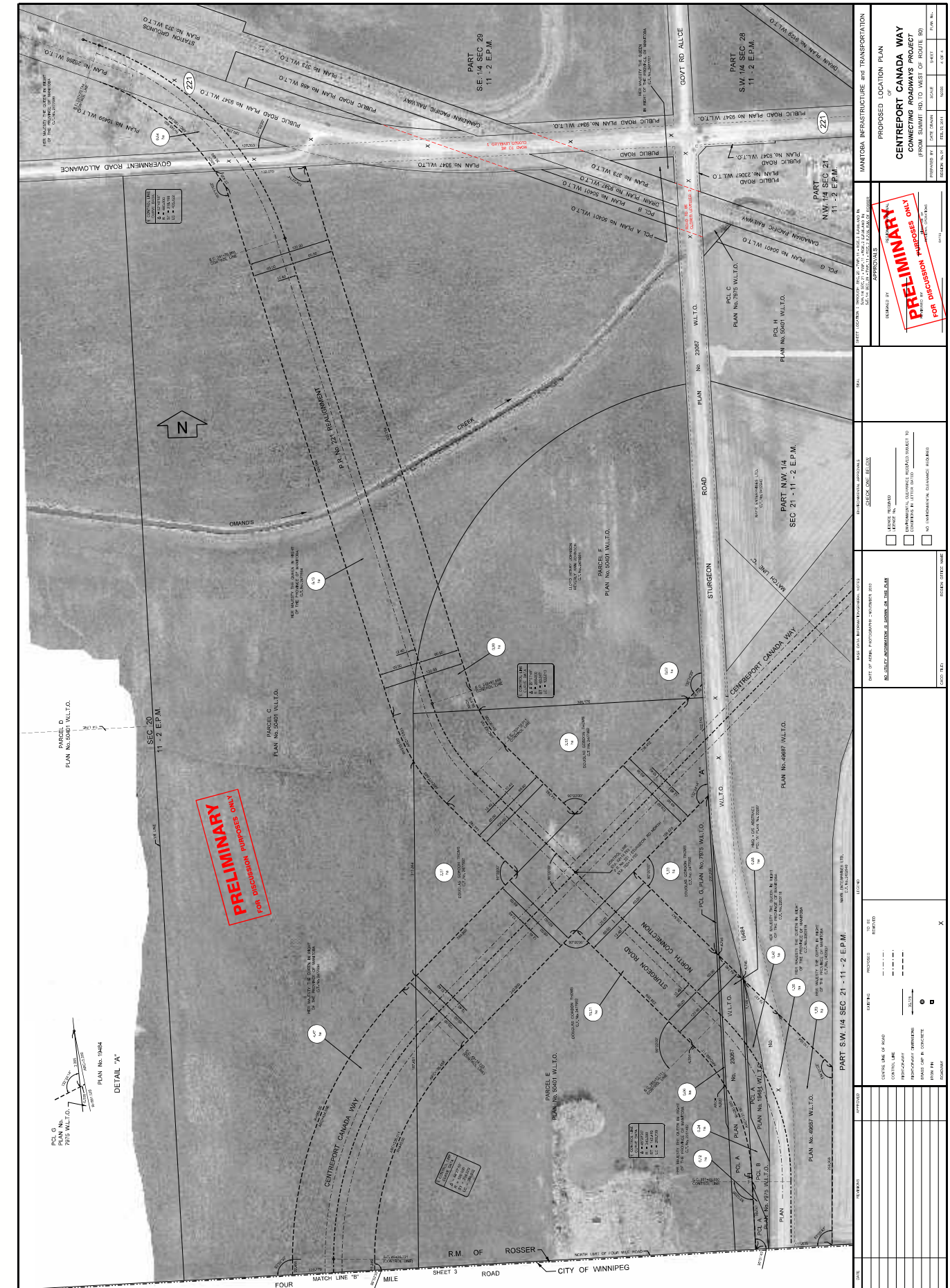
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DATE OF FINAL PROVISIONAL APPROVAL MARCH 28, 2011	DATE OF FINAL PROVISIONAL APPROVAL MARCH 28, 2011
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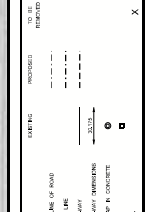
PUBLIC ROAD PLAN No. 871 W.L.D.O. PLAN No. 1088	PROPOSED LOCATION PLAN OF CENTREPORT CANADA WAY CONNECTING ROADS PROJECT FROM SUMMIT RD. TO WEST OF ROUTE 80	MANITOBA INFRASTRUCTURE AND TRANSPORTATION
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DETAIL "K"

PRELIMINARY
for discussion purposes only

DATE: _____ SCALE: _____ SHEET: _____ OF _____ DRAWN BY: _____ CHECKED BY: _____	
PROPOSED LOCATION PLAN OF CENTREPORT CANADA WAY CONNECTING ROADWAYS PROJECT FROM SUMMIT RD TO WEST OF ROUTE 80	
PRELIMINARY FOR DISCUSSION PURPOSES ONLY	
MANITOBA INFRASTRUCTURE AND TRANSPORTATION 487 WEST GERRARD STREET, W., SUITE 1100, WINNIPEG, R3M 1M7, CANADA TEL: (204) 985-4242 FAX: (204) 985-4243 WWW.MTI.MANITOBACANADA.GOV.CA	
APPROVALS DESIGNED BY: _____ CHECKED BY: _____ ENVIRONMENTAL CLEARANCE BOARD SUBJECT TO ENVIRONMENTAL CLEARANCE BOARD APPROVAL <input type="checkbox"/> ENVIRONMENTAL CLEARANCE BOARD SUBJECT TO ENVIRONMENTAL CLEARANCE BOARD APPROVAL <input type="checkbox"/> NO ENVIRONMENTAL CLEARANCE REQUIRED	
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PART S.W. 1/4 SEC 21 - 11 - 2 E.P.M.

PART N.W. 1/4 SEC 21 - 11 - 2 E.P.M.

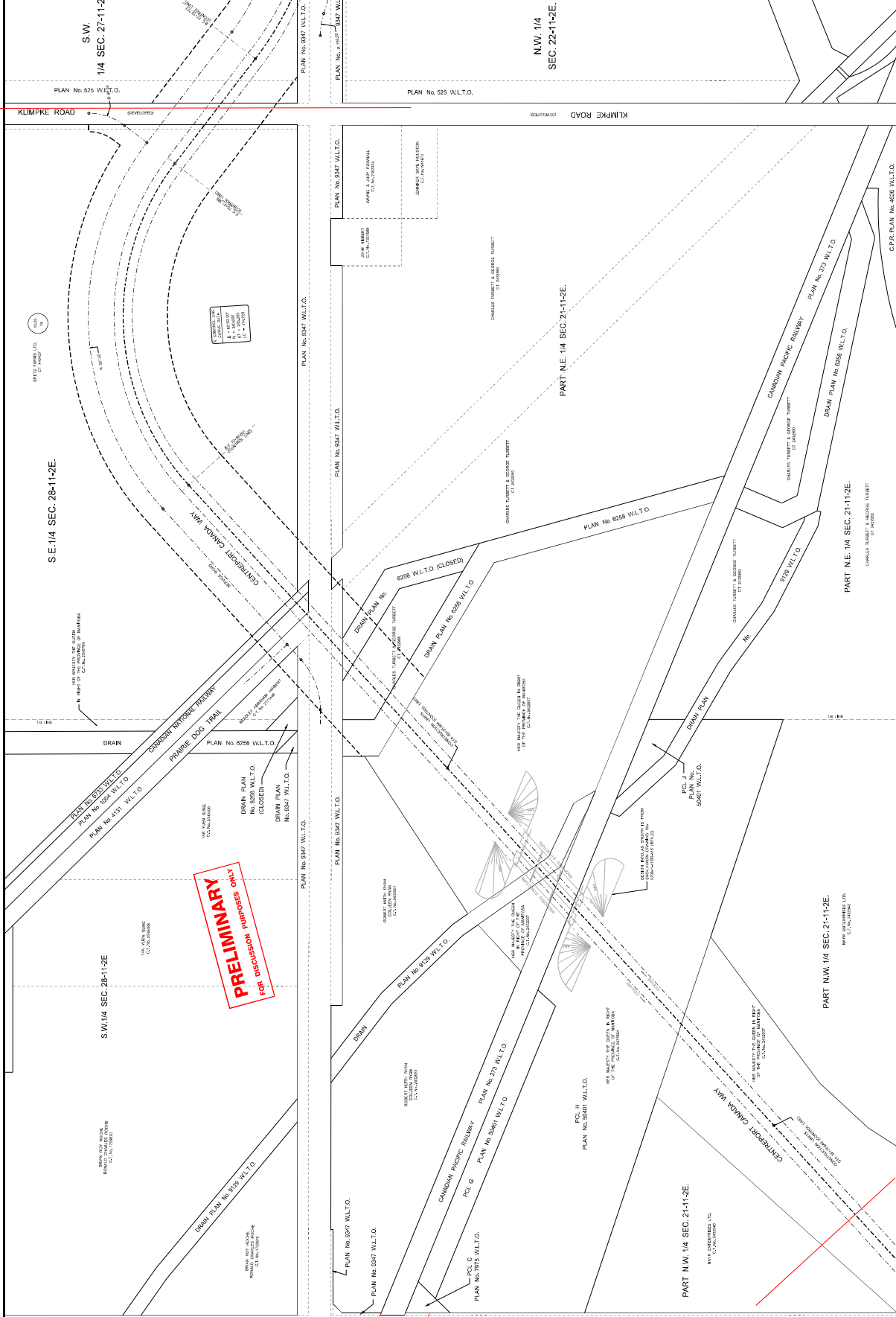
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PART S.W. 1/4 SEC 28 11 - 2 E.P.M.

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PART S.E. 1/4 SEC 29 11 - 2 E.P.M.

PART S.W. 1/4 SEC 28 11 - 2 E.P.M.



PRELIMINARY
 for discussion purposes only

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REVISION	DATE	DESCRIPTION

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PROPOSED LOCATION PLAN OF CENTREPORT CANADA WAY CONNECTING ROADWAYS PROJECT FROM SUMMIT RD TO WEST OF ROUTE 80	MANITOBA INFRASTRUCTURE AND TRANSPORTATION 1000 BROADWAY WINNIPEG, MB R3T 1J6
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PREPARED BY: [NAME] DATE: [DATE]
 CHECKED BY: [NAME] DATE: [DATE]
 APPROVED BY: [NAME] DATE: [DATE]

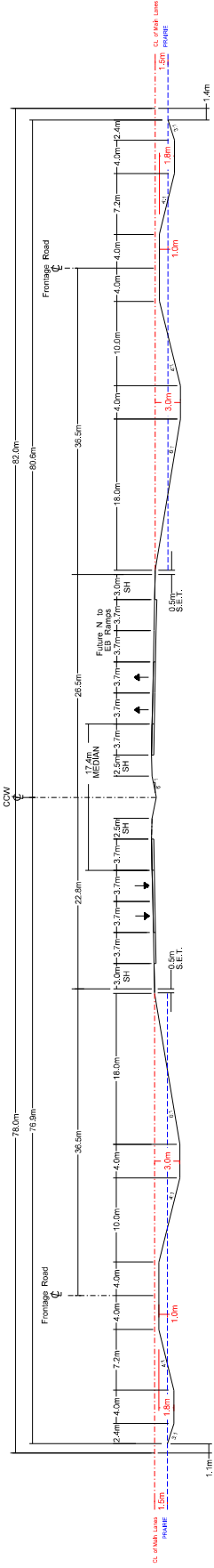
PROPOSED LOCATION PLAN
OF
CENTPORT CANADA WAY
CONNECTING ROADWAYS PROJECT
 FROM SUMMIT RD TO WEST OF ROUTE 80

PROJECT NO.: [NUMBER]
 SHEET NO.: [NUMBER] OF [TOTAL SHEETS]

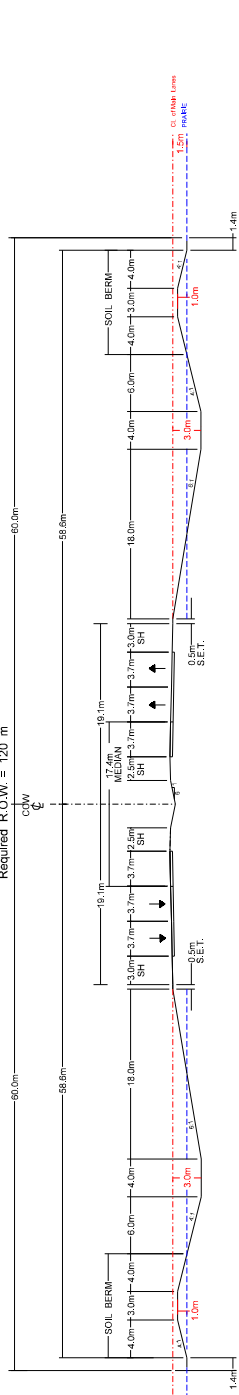
PRELIMINARY
 FOR DISCUSSION PURPOSES ONLY

PRELIMINARY
 FOR DISCUSSION PURPOSES ONLY

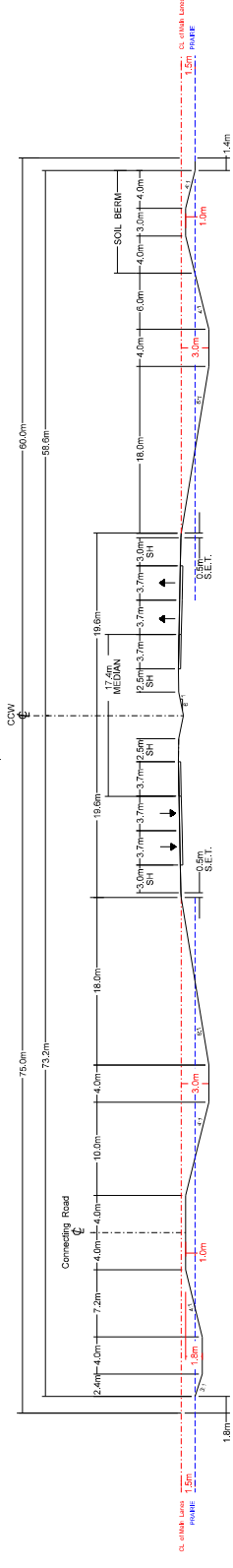
CentrePort Canada Way - Summit Road to Silver Avenue with Frontage Roads
 Opening Day & Ultimate Stage Typical Section
 Required R.O.W. = 160m



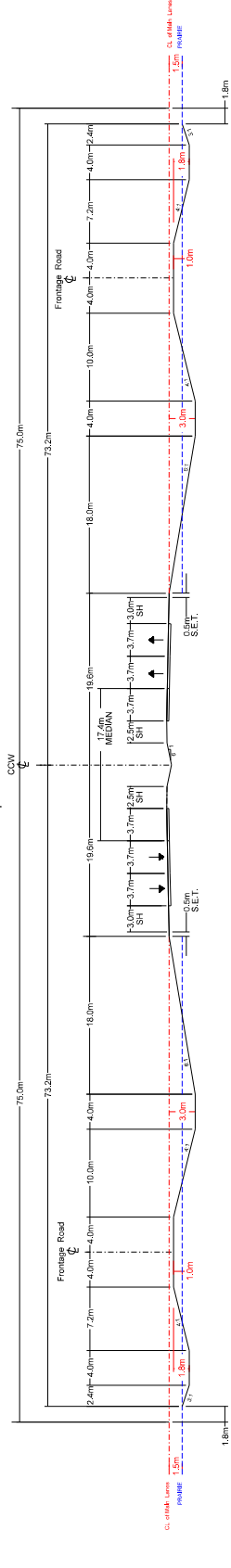
CentrePort Canada Way North of Silver Avenue without Frontage Roads
 Opening Day & Ultimate Stage Typical Section
 Required R.O.W. = 120 m



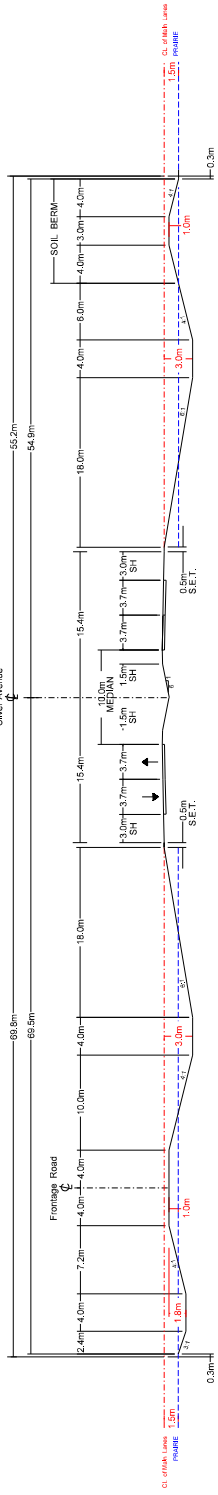
CentrePort Canada Way with North Connecting Road
 Opening Day & Ultimate Stage Typical Section
 Required R.O.W. = 135 m



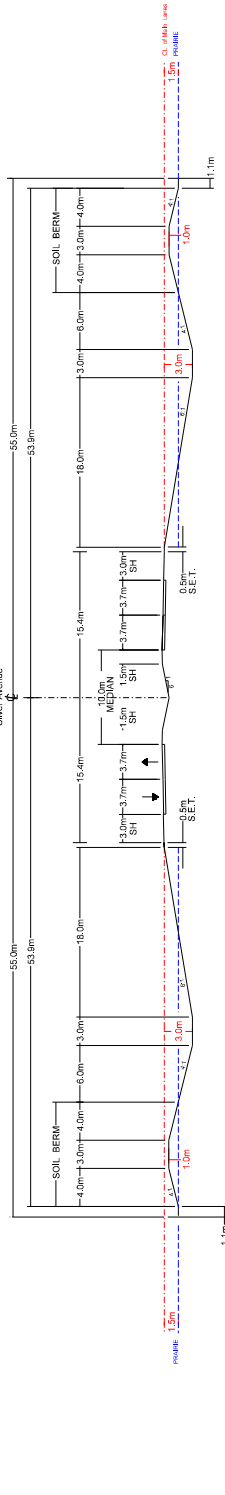
CentrePort Canada Way with North and South Frontage Roads
 Opening Day & Ultimate Stage Typical Section
 Required R.O.W. = 150 m



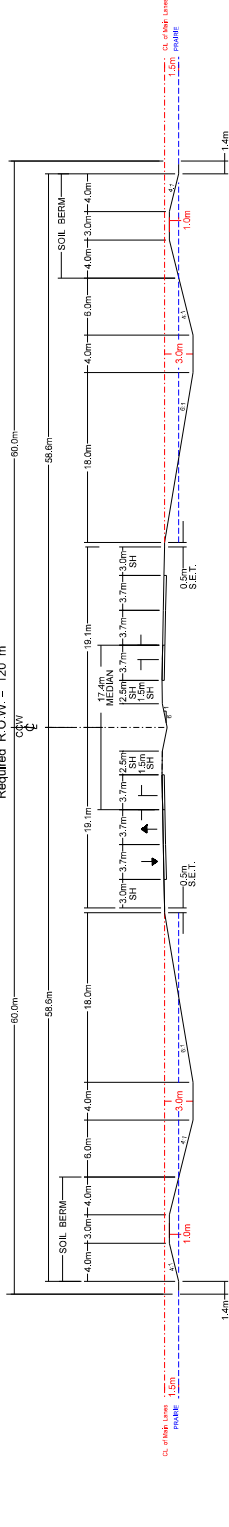
Silver Avenue with Frontage Road
Opening Day & Ultimate Stage Typical Section
 Required R.O.W. = 125 m



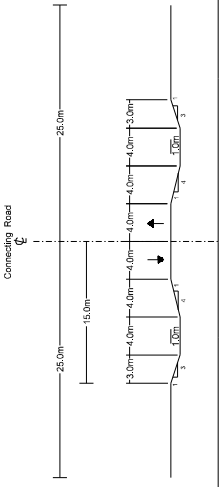
Silver Avenue without Frontage Road
Opening Day & Ultimate Stage Typical Section
 Required R.O.W. = 110 m



PR 221 Realignment
Opening Day & Ultimate Stage Typical Section
 Required R.O.W. = 120 m



Connecting Road (Various Locations)
Opening Day Typical Section
 Required R.O.W. = 50 m



Note: Estimated Right-of-Way Requirements



CCW # 8

MANITOBA INFRASTRUCTURE
AND TRANSPORTATION

APR 28 2010
ASSISTANT DEPUTY MINISTER
ENGINEERING AND OPERATIONS

MINISTER OF INFRASTRUCTURE
AND TRANSPORTATION

Room 203
Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

bc: Minister
Deputy Minister (DM10-381)
ADM E&O
ADM Policy
ADM LGA
G. Hannon (JUS)
L. Bayer (ANA)
A. Brandt (CTT)
R. Fleming (MAFRI)
Chrono

DM10-381

APR 27 2010

Grand Chief Ron Evans
Assembly of Manitoba Chiefs
Suite 200 - 275 Portage Avenue
Winnipeg, Manitoba R3B 2B3

Dear Grand Chief Evans:

Re: CentrePort Canada Way

We are writing to provide the Assembly of Manitoba Chiefs with information about the proposed construction of CentrePort Canada Way (the "project") which is intended to be the road backbone to the 20,000 acre CentrePort Canada development zone located in northwest Winnipeg. The 20,000 acre development zone is in support of the establishment of an inland port (CentrePort Canada) serving Manitoba. Inland ports are hub centres of economic activity that take advantage of multimodal transportation (rail, road, and air) for distribution and manufacturing.

The project involves the construction of a new four-lane roadway to connect PTH 101 in the vicinity of Saskatchewan Avenue to Brookside Boulevard in the vicinity of Inkster Boulevard. The project is intended to begin construction in May 2010 and be completed by fall 2014. The project is illustrated on the attached plan. It will consist of an interchange at PTH 101 and CCW, an overpass by CCW of the CPR Carberry Subdivision and connecting roadways between the two and ultimately Brookside Boulevard. The interchange and overpass are planned for construction between May, 2010 and August 2012. The connecting roadways are planned for construction between 2012 and 2014. No additional crown land is required for the project and the only new lands required will be private lands acquired to construct the road.

Based on our initial assessment of the project, it is our understanding that the project will not infringe on, or adversely affect the exercise of, any aboriginal or treaty rights and therefore the Government of Manitoba does not consider this project to raise any duty of Crown-Aboriginal consultation.

.../2

However, we are interested in hearing any questions or concerns your organization may have in relation to the proposed project. Please contact Gilbert Manitopyes, Aboriginal Liaison, Manitoba Infrastructure and Transportation (204-945-1613) or Don McRitchie, Project Manager, Manitoba Infrastructure and Transportation (204-232-0248) if you require additional information or wish to discuss the project with our Department.

Sincerely,

ORIGINAL SIGNED BY:

Steve Ashton
Minister

c: Don McRitchie
Gilbert Manitopyes



RPGC 101

CentrePort Land Use Planning Area

Boyd Boulevard (ROUTE 90)

CentrePort Canada Way

Aéroport International
James Armstrong Richardson
de Winnipeg

Conceptual Arterial Alignments for CentrePort Lands - Stage 1





CCW #8

bc: Minister
Deputy Minister (DM10-381)
ADM E&O
ADM Policy
ADM LGA
G. Hannon (JUS)
L. Bayer (ANA)
A. Brandt (CTI)
R. Fleming (MAFRI)
Chrono

MANITOBA INFRASTRUCTURE
AND TRANSPORTATION

MINISTER OF INFRASTRUCTURE
AND TRANSPORTATION

Room 203
Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V3

APR 26 2010
ASSISTANT DEPUTY MINISTER
ENGINEERING AND OPERATIONS

DM10-381

APR 27 2010

David Chartrand
President
The Manitoba Metis Federation
300-150 Henry Avenue
Winnipeg, Manitoba R3B 0J7

Dear Mr. Chartrand:

Re: CentrePort Canada Way

We are writing to provide the Manitoba Metis Federation with information about the proposed construction of CentrePort Canada Way (the "project") which is intended to be the road backbone to the 20,000 acre CentrePort Canada development zone located in northwest Winnipeg. The 20,000 acre development zone is in support of the establishment of an inland port (CentrePort Canada) serving Manitoba. Inland ports are hub centres of economic activity that take advantage of multimodal transportation (rail, road, and air) for distribution and manufacturing.

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However, we are interested in hearing any questions or concerns your organization may have in relation to the proposed project. Please contact Gilbert Manitopyes, Aboriginal Liaison, Manitoba Infrastructure and Transportation (204-945-1613) or Don McRitchie, Project Manager, Manitoba Infrastructure and Transportation (204-232-0248) if you require additional information or wish to discuss the project with our Department.

Sincerely,

ORIGINAL SIGNED BY:

Steve Ashton
Minister

c: Don McRitchie
Gilbert Manitopyes

APPENDIX H – CCW Connecting Roads Information Session Comment Sheet
Results Summary, December 8, 2010

Comments Based on 178 comment sheets and 320+ attendees

Comments Regarding Specific Concerns

General concern about increasing noise levels and need for sufficient sound barriers.

Business owner at 2929 Sturgeon Road concerned about general access to business property – worried business will fail.

Concerns about access for farmers.

Concerns about access for emergency services.

Concerns about effects on drainage from road construction and operation.

Concerns how CCW Expressway could affect landowner zoning plans, specifically land at northwest corner of Inkster Boulevard and Sturgeon Road.

Comments from citizens were in support of the CCW Expressway.

Concerns Regarding Saskatchewan Avenue and PTH 101

Some individuals are unhappy that access at this junction will be removed.

Access to be located at CCW Expressway and PTH 101 will be sufficient for residents to access perimeter.

Concerns Regarding Sturgeon Road

Increased traffic southbound on Sturgeon Road will be an issue.

Cleaner connection to Sturgeon Road would be useful.

Land owner at northwest corner of Sturgeon Road and Inkster concerned about closings affecting access to land.

Specific Environmental Concerns

Some citizens worried that noise and vibration from construction and operation will affect their properties.

Concerns towards effects on wildlife – specifically deer populations.

Concerns that Little Mountain Park will eventually be lost to development.

APPENDIX I – CentrePort Canada Way Connecting Roads Information Session Story Boards

CentrePort Canada Way Connecting Roads Information Session

Assiniboia Downs – Finish Line Banquet Room

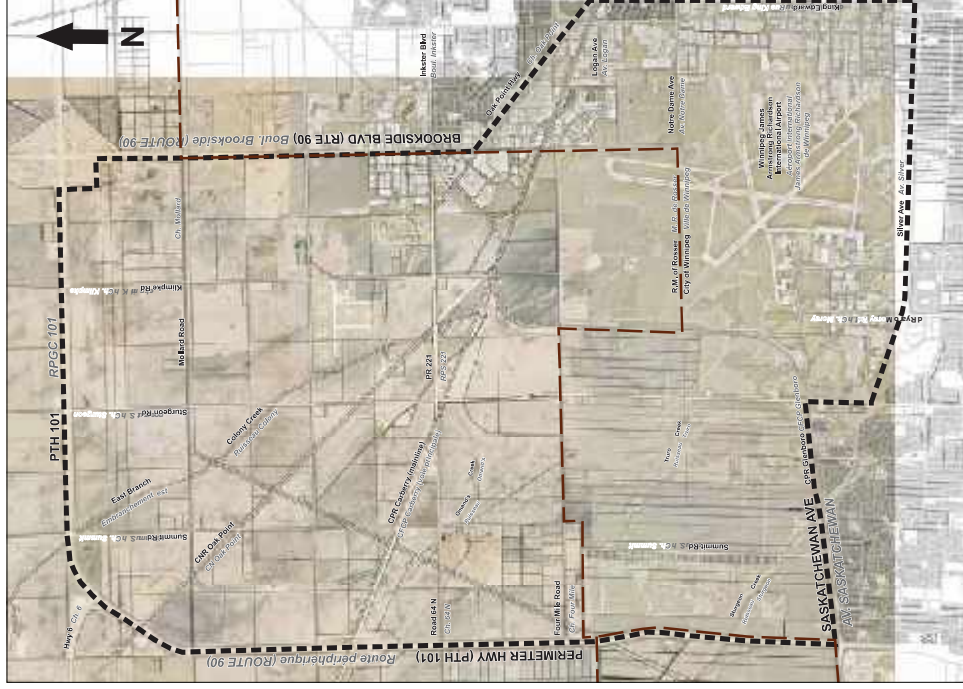
December 8th, 2010

4:00pm – 8:00pm

What is CentrePort Canada and CentrePort Canada Way?

- CentrePort Canada is an inland port around Winnipeg's James Armstrong Richardson Airport that includes a collection of land uses and activities related to the multi-modal distribution of goods within a 20,000 acre site.
- CentrePort Canada Way is a new expressway that will link the Perimeter Highway (PTH 101) to the City of Winnipeg's roadway network at Inkster Boulevard and provide access to the 20,000 acres in CentrePort Canada.

CentrePort Canada Planning Area



Planning Area Limits

West: Perimeter Highway

North: Perimeter Highway

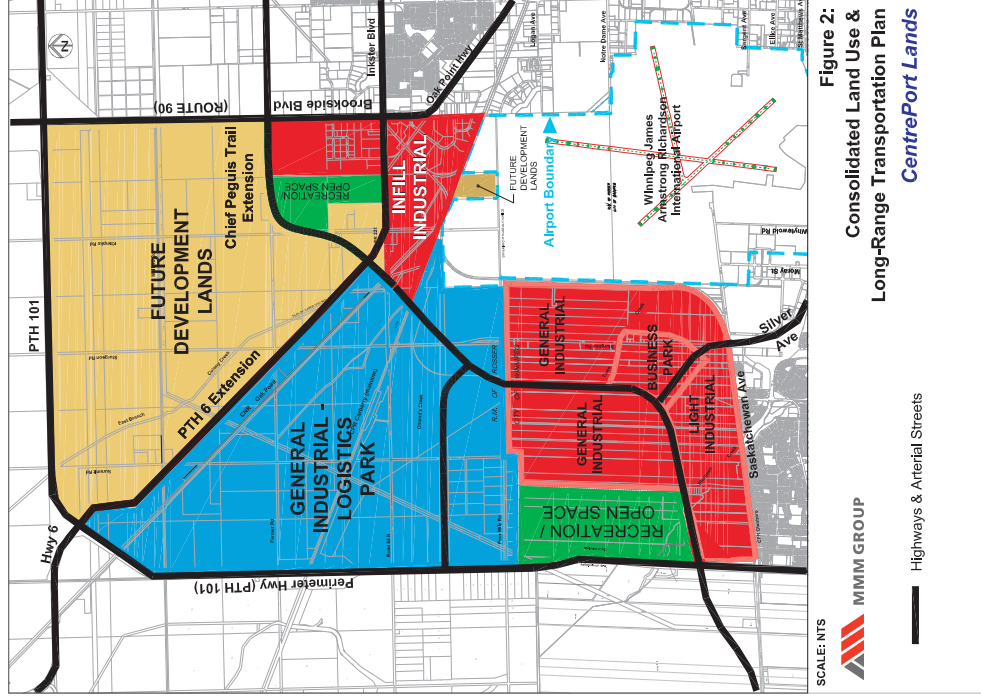
East: Route 90 (Brookside Blvd)

South: Saskatchewan Avenue

Previous Open Houses/Information Sessions Related to CentrePort Canada

- Manitoba Development Plan for CentrePort Lands
 - Public Open House #1, May 13, 2009
- Manitoba Development Plan for CentrePort Lands
 - Public Open House #2, September 24, 2009
- Manitoba Development Plan for CentrePort Lands
 - Public Open House #3, December 1, 2009
- CentrePort Canada Way
 - Information Session, May 27, 2010

CentrePort Canada Proposed Land Use Plan



The Proposed Land Use Plan has been created to protect, enhance and promote those land uses and development elements that contribute to the establishment of a comprehensively planned and functionally integrated inland port in an efficient and cost-effective manner.

CentrePort Canada Way – Nodes

Current Construction Activity

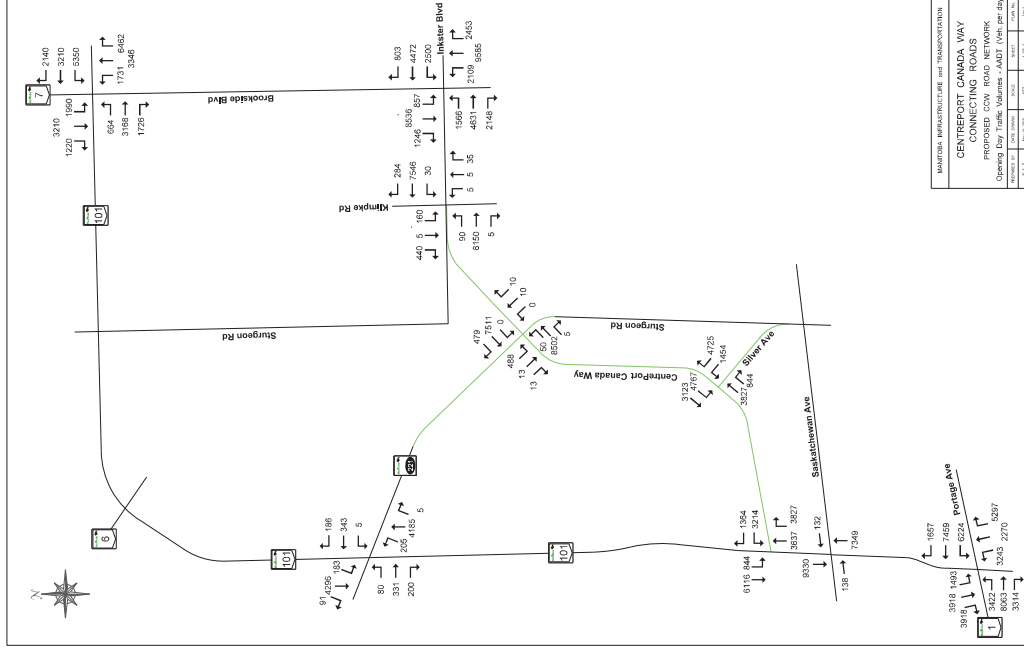
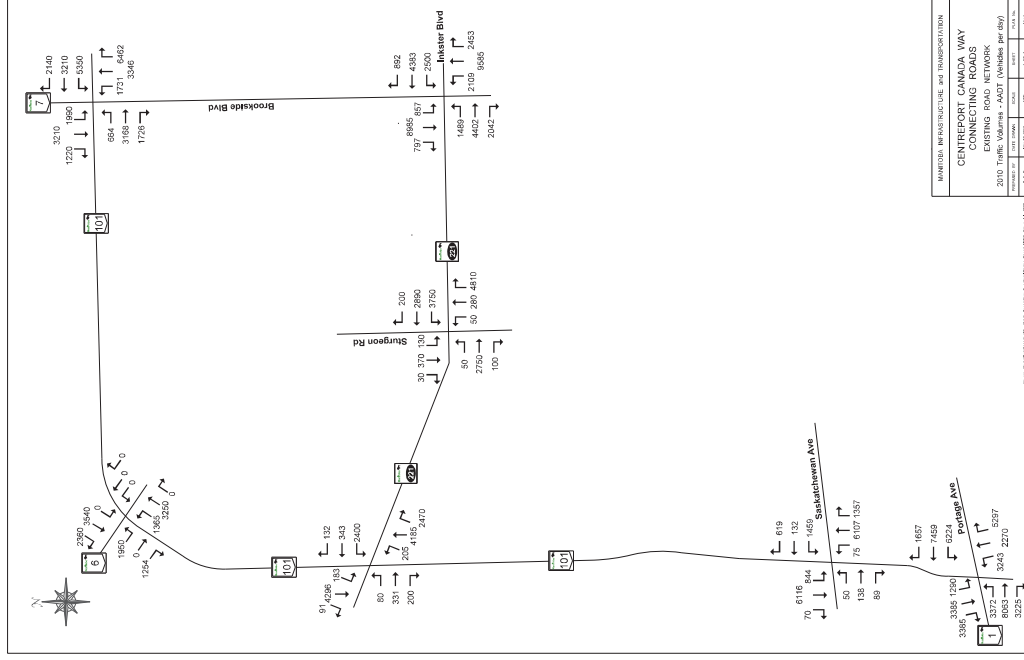
- 1. PTH 101 Interchange & CPR Glenboro Subdivision Grade Separation**
 - A new interchange on the Perimeter Highway north of Saskatchewan Avenue to provide direct access to CentrePort Canada Way and its developable lands. This interchange represents the southern node of CentrePort Canada Way.
- 2. Canadian Pacific Railway Overpass**
 - A new grade separated overpass of the CPR Carberry Subdivision east of Sturgeon Road to reduce the number of at-grade rail crossings along CentrePort Canada Way. This overpass represents the central node of CentrePort Canada Way.
- 3. PR 221**
 - The Province of Manitoba and the City of Winnipeg are working together to improve PR 221 east of Prairie Dog Trail. This improvement represents the northern node of CentrePort Canada Way.

CentrePort Canada Way – Connecting Roads

Current Design Considerations

- The purpose of this project is to establish a new roadway network to facilitate development within the 20,000 acres of CentrePort Canada based on the proposed land use plan.
- Create a high-speed (80km/h posted), limited access expressway with:
 - 2-lanes in each direction expandable to 3-lanes in the future,
 - 3 – 4 strategic intersections with turn lanes (signalized when required),
- The total length of the new CentrePort Canada Way will be approximately seven kilometres.

Traffic Volumes - Existing and Opening Day



Connecting Roads – Overall Plan

- The Study Area includes 3 unique sections with 2 feasible options in each.
- All options in all sections are compatible with all adjoining options.
- The next board shows the entire study area with all 3 sections shown to illustrate their respective location within the study area.
- Subsequent boards, presented from south to central to north, show the 3 sections in greater detail.
- Two boards show detailed cross sections of CentrePort Canada Way and the connecting roads.

Connecting Roads – Next Steps

Early 2011	-	Complete Functional Design
Early – Mid 2011	-	Commence Land Acquisition
Mid 2011	-	Complete Detailed Design
Mid 2011	-	Begin Construction
Late 2012	-	CCW Open to Traffic
Mid 2013	-	Construction Complete

Public Comments

A comment sheet is available for those who wish to share their thoughts in writing. Please leave your completed comment sheet at the front table.

Comment sheets may also be taken home and returned via mail or fax as indicated in the information at the top of the comment sheet. Comment sheets should be returned no later than December 22, 2010.

Thank You!

Manitoba Infrastructure and Transportation would like to thank you for participating in today's Information Session.

If you have any additional questions or comments, please contact MIT at hwyplandes@gov.mb.ca or 945-3660.

Thank you for your time and have a safe trip home.

APPENDIX J – Summary of Environmental Effects and Significance

6.1 Aquatic Environment and Resources

Effects to aquatic resources are moderate in magnitude with low frequency, duration, permanence, geographic extent and ecological context.

After implementation of mitigation measures and fulfillment of habitat replacement the residual effects to the aquatic environment and resources are low in magnitude, duration, frequency, geographic extent, permanence, ecological context, and not significant.

6.2 Groundwater

Anticipated effects on groundwater were expected to be null in magnitude, geographic extent, duration, frequency, permanence, and ecological context.

6.3 Air Quality

Effects due to air quality are low in magnitude, geographic extent, permanence and ecological context, moderate in duration and frequency and not significant.

Following implementation of mitigation measures the effect of dust on the nearby residential area is not significant.

6.4 Greenhouse Gas Emissions

Implementation of the CCW network results in a modest reduction to Manitoba's greenhouse gas emission inventory and is insignificant.

6.5 Vegetation and Wetlands

Anticipated effects to low vegetation are low in magnitude, duration, frequency, permanence, ecological context and geographic extent, or a minor adverse effect.

Anticipated effects to tall vegetation are characterized as moderate in duration and permanence with low magnitude, frequency, ecological context and geographic extent, or a minor adverse effect.

After implementation of mitigation measures effects on vegetation are not significant.

6.6 Wildlife and Habitat (including Migratory Birds)

The potential direct effects to wildlife habitat are high in magnitude and ecological context, with moderate permanence and duration, frequency and geographic extent.

The potential indirect effects to wildlife habitat are moderate in ecological context, magnitude, geographic extent, permanence and duration, and low in frequency.

The potential for injury or loss of wildlife species will have a moderate to high frequency and ecological context, high permanence, moderate magnitude and duration with a low to moderate geographic extent.

After implementation of mitigation measures, pre-construction surveys, monitoring and adaptive management, effects to wildlife are expected to be low in magnitude, geographic extent, permanence, ecological context, and not significant.

6.7 Protected Species

After implementation of pre-construction surveys, mitigation measures and monitoring the effects on protected wildlife species are not significant.

6.8 Socio-economic Issues

Anticipated effects on residences are low in frequency, geographic extent and ecological context with a low-moderate magnitude and high duration and permanence.

Anticipated effects in relation to changing land use patterns are low in frequency and ecological context with a low-moderate magnitude and geographic extent and high duration and permanence.

Traffic delay-related effects are minor adverse effects due to the low magnitude, duration and geographic extent.

Access severance effects are adverse due to the high magnitude, duration and permanence of the effect.

After implementation of mitigation measures effects to the socio-economic environment are not significant.

6.9 Heritage Resources

Anticipated effects to heritage resources are low in magnitude, duration, frequency and geographic extent with moderate to high permanence.

6.10 Navigation

Transport Canada has concluded that Truro, East Colony and Omand's Creeks are not navigable within the alignment of the CCW Expressway, therefore NWPA regulations do not apply for these waterbodies. Design of stream crossings will not be obligated to meet NWPA criteria for navigability (Appendix K).

6.11 Accidents and Malfunctions

After implementation of the mitigations measures, the effects of accidents and malfunctions are moderate to high in magnitude and frequency, low in geographic extent, permanence and ecological context, and moderate in duration.

6.12 Effects of the Environment on the Project

After implementation of the mitigation measures the effects of the environment on the project are low in magnitude, geographic extent, frequency, permanence, and ecological context, and moderate in duration.

6.13 Noise and Vibration

The anticipated effects related to changes in noise levels is low-moderate in magnitude and ecological context, moderate in duration, geographical extent and permanence with a high frequency, or a moderate adverse effect. Given that the proposed CCW alignment crosses through lands that are relatively undeveloped with a low population density, operational noise levels from CCW roadworks are not expected to be significant.

6.14 Residual Effects

Anticipated residual effects related to the CCW Expressway are not expected to be significant.

APPENDIX K – Notice From TC to MIT: Determination of Navigability of East Colony and Omand's Creek



Transport
Canada

Transports
Canada

Navigable Waters Protection
1100 9700 Jasper Avenue
Edmonton, AB T5J 4E6

Your file / Votre référence

December 15, 2010

Our file / Notre référence
8200-2010-600631

Manitoba Infrastructure and Transportation
1420 – 215 Garry Street
Winnipeg, MB R3C 3P3

Attention: Kimber Oslowy

Re: Application for a navigability assessment of Omand's Creek, Section 20, Township 11, Range 2, EPM, Province of Manitoba

Reference is made to your application dated November 17, 2010.

Please be advised that our office has determined that the proposed/existing works at the site indicated are not subject to the *Navigable Waters Protection Act* (NWPA). Consequently, the NWP Program has no interest in any works at this location.

If you have any questions concerning the foregoing, please contact our office at 780-495-8215 or by email at NWP-PEN.PN@tc.gc.ca.

Sincerely,

Matt Klaverkamp
A/Regional Manager
Navigable Waters Protection Program
Transport Canada
Prairie and Northern Region

RECEIVED BY
HIGHWAY PLANNING and DESIGN

DEC 30 2010

MANITOBA INFRASTRUCTURE
AND TRANSPORTATION

Canada

Navigable Waters Protection
1100 9700 Jasper Avenue
Edmonton, AB T5J 4E6

Your file Votre référence

December 15, 2010

Our file Notre référence
8200-2010-500632

Manitoba Infrastructure and Transportation
1420 – 215 Garry Street
Winnipeg, MB R3C 3P3

Attention: Kimber Osiowy

**Re: Application for navigability assessment of East Branch Colony Creek, Section 1,
 Township 11, Range , Province of Manitoba**

Reference is made to your application dated November 17, 2010.

Please be advised that our office has determined that the proposed/existing works at the site indicated are not subject to the *Navigable Waters Protection Act* (NWPA). Consequently, the NWP Program has no interest in any works at this location.

If you have any questions concerning the foregoing, please contact our office at 780-495-8215 or by email at NWP-PEN.PN@tc.gc.ca.

Sincerely,



Matt Klaverkamp
A/Regional Manager
Navigable Waters Protection Program
Transport Canada
Prairie and Northern Region

RECEIVED BY
HIGHWAY PLANNING and DESIGN

DEC 30 2010

MANITOBA INFRASTRUCTURE
AND TRANSPORTATION

Canada