



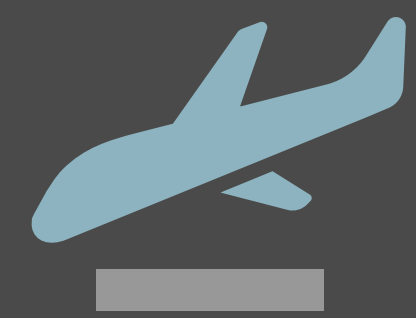
AIRPORT AREA WEST

REGIONAL WATER AND WASTEWATER
SERVICING STUDY

ONLINE PRESENTATION

SUMMER 2020





The terms and definitions below are used throughout the following presentation boards. Please refer to these definitions as required.



Regional Infrastructure is larger infrastructure that is required to distribute water or move wastewater to/from smaller local networks.

- **Force main:** A pressurized pipe used to move wastewater from a lift station to an interceptor sewer.
- **Interceptor sewer:** Large diameter sewer pipe used to move wastewater from common sewer mains to a sewage treatment plant or wastewater lift station. An interceptor is comprised of the most downstream links of the wastewater sewer system. Installation of connections or individual building services along the interceptor sewer pipe, or to intermediate manholes along the interceptor sewer pipe, are not allowed. The purpose of this sewer is to move rather than collect wastewater.

- **Feeder main:** A pressurized pipe with a diameter of 400 mm or larger used to move potable water from a pump station to the water main network. Installation of service connections and fire hydrants are not allowed along feeder mains.
- **Secondary supply main:** A feeder main extension with a pipe diameter greater than 300 mm but less than 600 mm used to move drinking water from a feeder main to the local water distribution network. Installation intermediate connections, service connections and fire hydrants are not allowed along secondary supply mains.



Unserviced land is land without municipal water and sewer services.



Local Infrastructure or Non-Regional Infrastructure is infrastructure that forms the distribution or collection networks between individual properties and regional infrastructure.

- **Wastewater sewer:** A sewer pipe used to move wastewater. Typically, a lateral (or branch), collector, or trunk sewer.
- **Collector sewer:** Sewer pipe used to move wastewater from a lateral or branch sewer to a trunk sewer. Typically located within a public road right-of-way.
- **Lateral or branch sewer:** Sewer pipe used to move wastewater originating from private property to a collector sewer.
- **Trunk sewer:** Sewer pipe used to move wastewater from a series of collector sewers to the interceptor sewer.
- **Service connection:** Water or sanitary sewer connection pipes between privately owned property and City of Winnipeg owned infrastructure.
- **Water main:** A pressurized pipe with a size less than or equal to 300 mm in diameter used to move drinking water from one or more feeder mains to water service pipes. Installation of fire hydrants are allowed.
- **Large diameter water main:** A pressurized pipe with a diameter greater than 300 mm but less than 600 mm used to move drinking water. Installation of service connections and fire hydrants are allowed along large diameter water mains.



To develop a cost estimate for the regional water and wastewater servicing of the Airport Area West lands.

- The Airport Area West lands include 1,457 hectares (3,600 acres) of unserviced land located in the northwest corner of Winnipeg.
- Regional water and sewer infrastructure are required to facilitate future development of this land.
- The purpose of this study is to develop a Class 3 (-20% to +30%) cost estimate for regional water and sewer infrastructure for use in future planning.

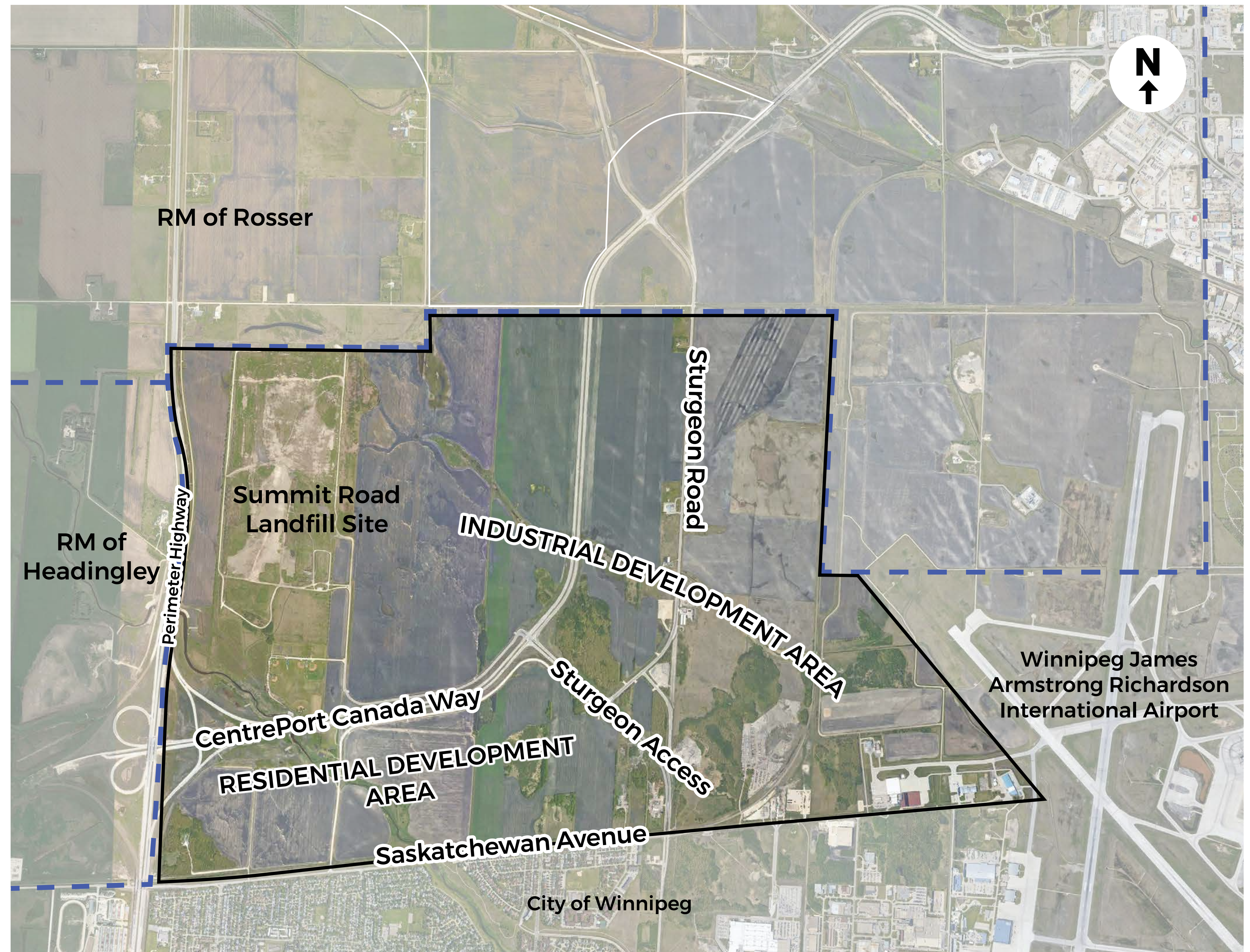


STUDY AREA



The study area boundaries include the RM of Rosser to the north, the Winnipeg James Armstrong Richardson International Airport to the east, Saskatchewan Avenue to the south, and the Perimeter Highway to the west.

The study area represents the southern portion of CentrePort Canada, a tri-modal inland port shared with the RM of Rosser.



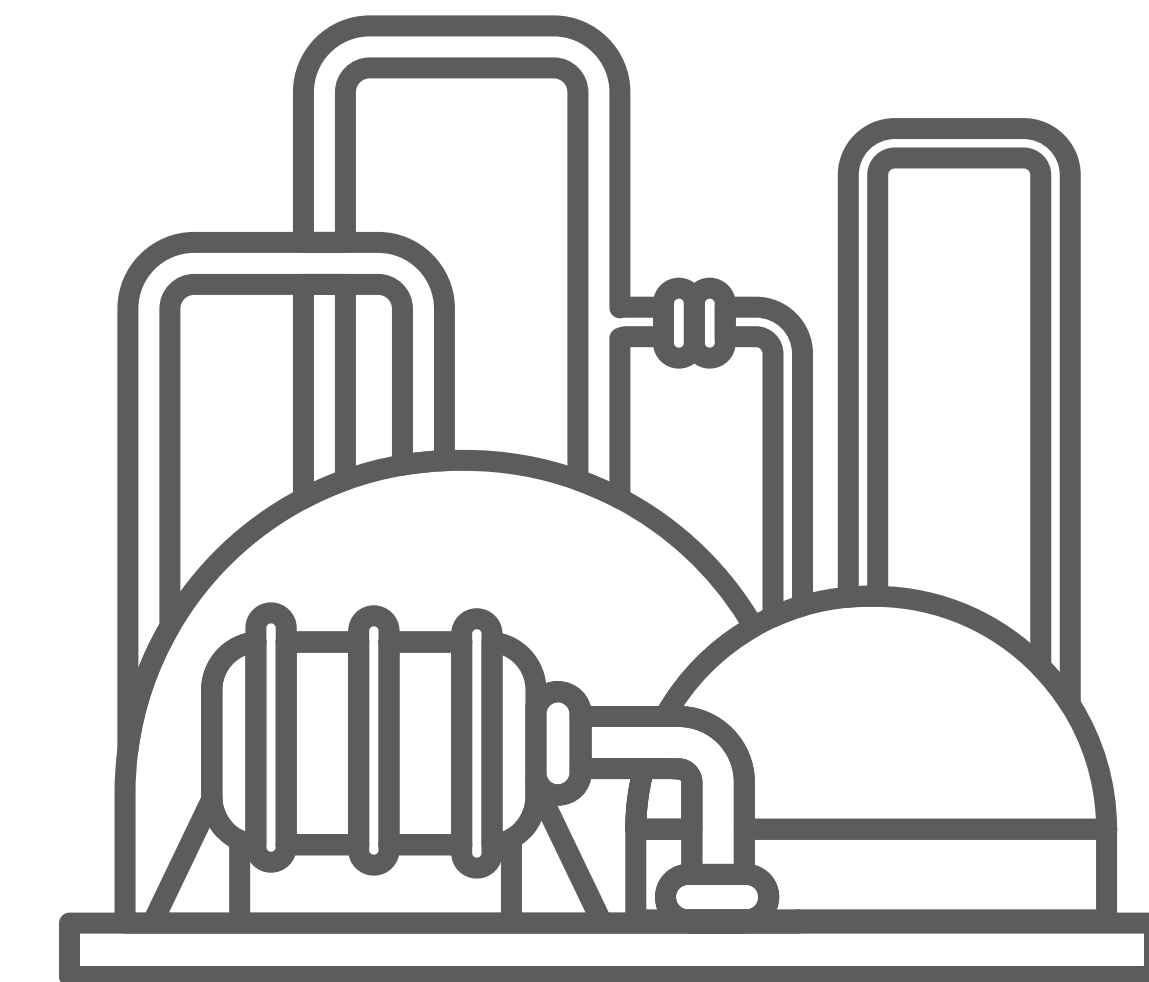
- WINNIPEG BOUNDARY
- STUDY AREA BOUNDARY

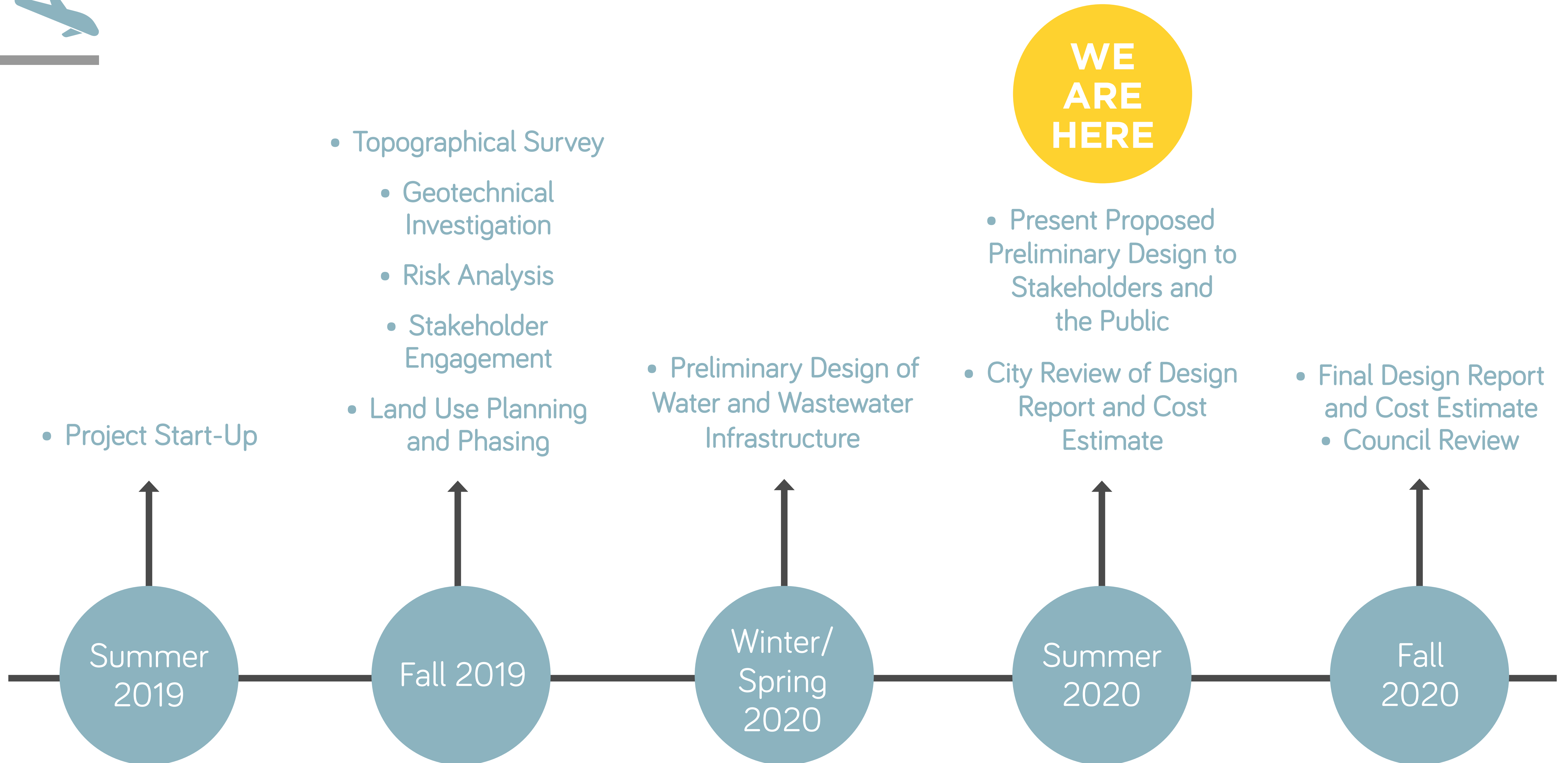


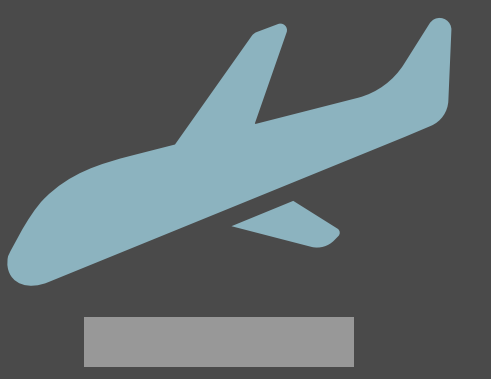
On April 25, 2019, City Council received the Employment and Commercial Lands Study as information. The study identifies a lack of vacant serviced industrial land to accommodate forecasted growth in Winnipeg. The Airport Area West lands were identified in the study as having the potential to help address the issue and become a significant employment hub within the city.

In summer 2019, the City started work on a Class 3 (-20% to +30%) cost estimate for regional water and wastewater services for the area to support growth and development, as it is currently not serviced. This includes plans for sewers, water mains, a lift station and force mains.

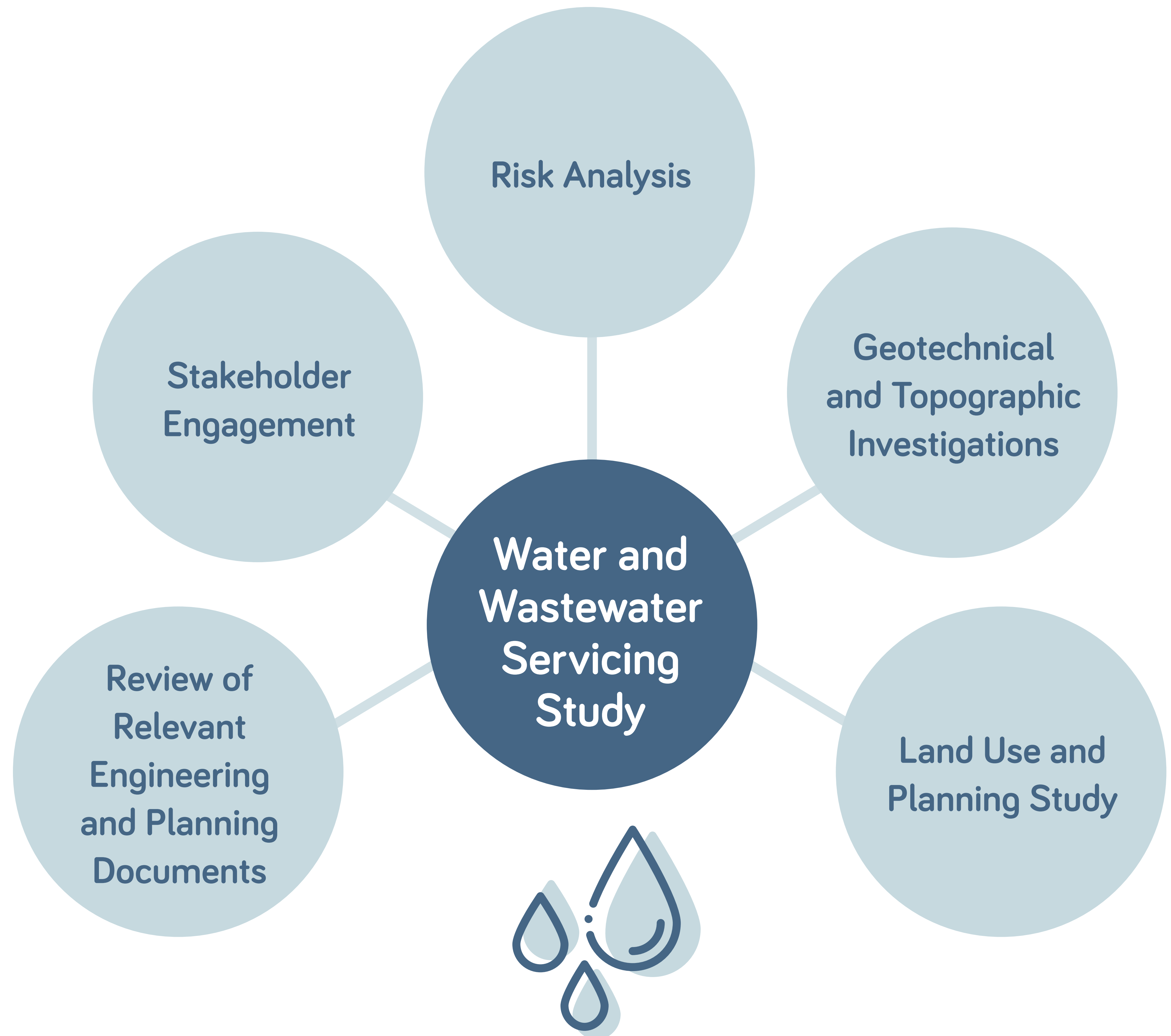
This cost estimate will be provided to City Council to help make decisions and prioritize future development in Winnipeg.

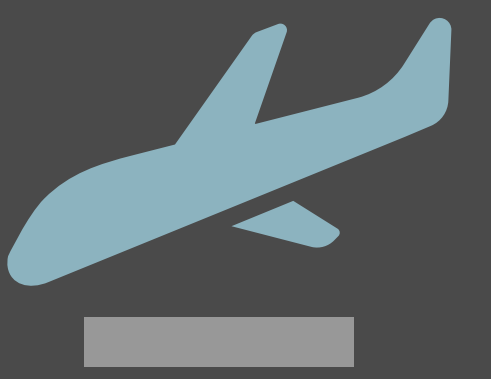






The preliminary regional water and wastewater servicing study has been informed by:





The City met with key stakeholders in August and November 2019, to gain insight into future land use and development plans for the study area.

These meetings helped establish future land use and phasing assumptions and assisted in identifying future servicing demands for the area and locations for future servicing infrastructure.





The study area is divided into two distinct areas – a residential area and an industrial area.

The City is currently reviewing a draft secondary plan (land use plan) for the residential area and another for the industrial area.

It is anticipated that the residential lands will be developed as a lower-density residential neighbourhood with a portion dedicated for mixed-use, higher-density residential development.

It is anticipated that the remaining lands will be developed for industrial use, with commercial development nodes identified at key locations.

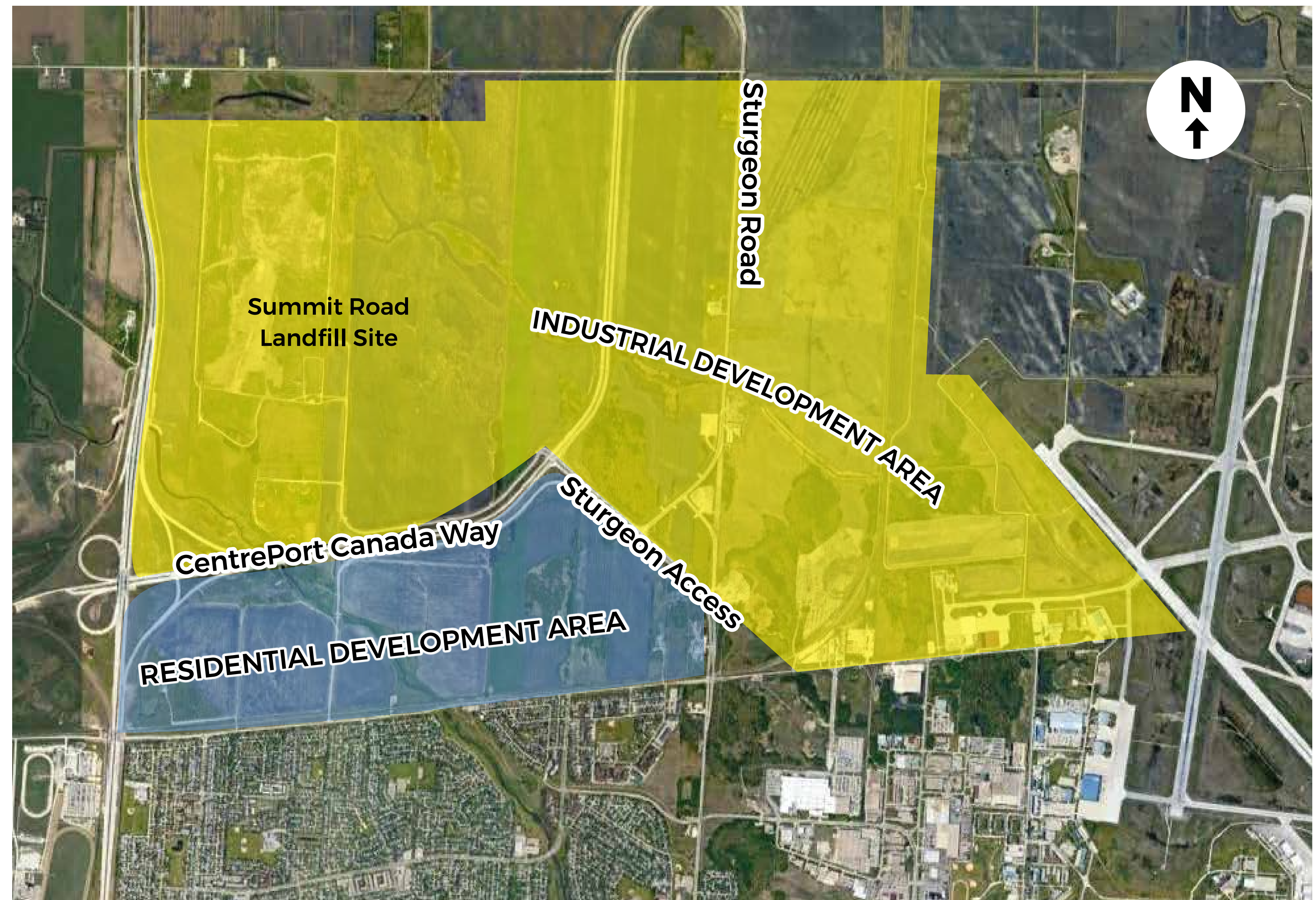


FIGURE 3: ANTICIPATED FUTURE LAND USE

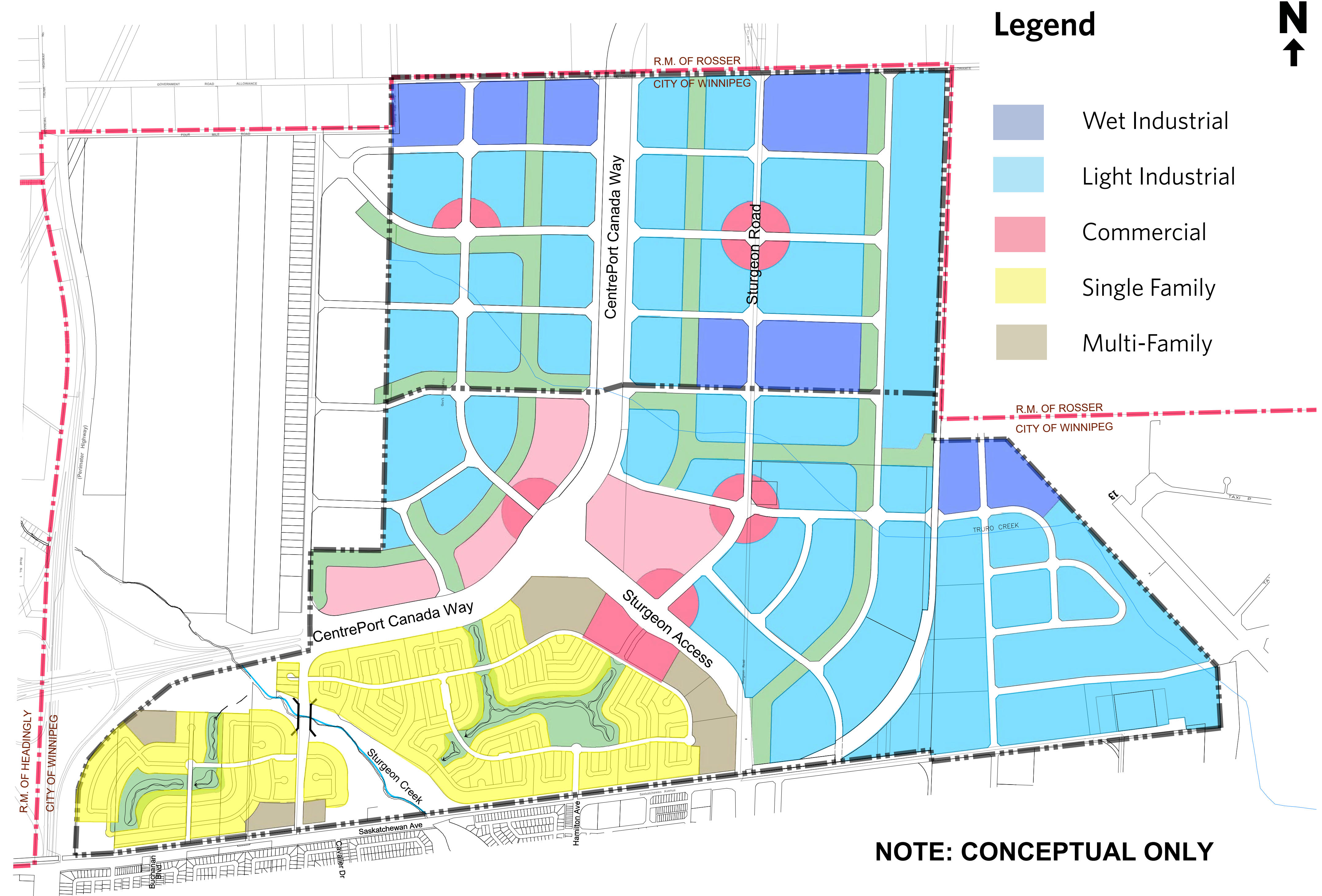
CONCEPTUAL SHADOW PLAN



To calculate servicing demands for the area, the project team developed a conceptual shadow plan that was partially based on the draft secondary plans and input received from stakeholders.

Land use information was then translated to correspond with the servicing classifications used in the City's Water Demand and Wastewater Flow Estimation Guidelines. These servicing classifications are identified on the drawing and legend to the right.

The conceptual shadow plan may vary over time due to fluctuations in market demand for future industrial, commercial, and residential development.



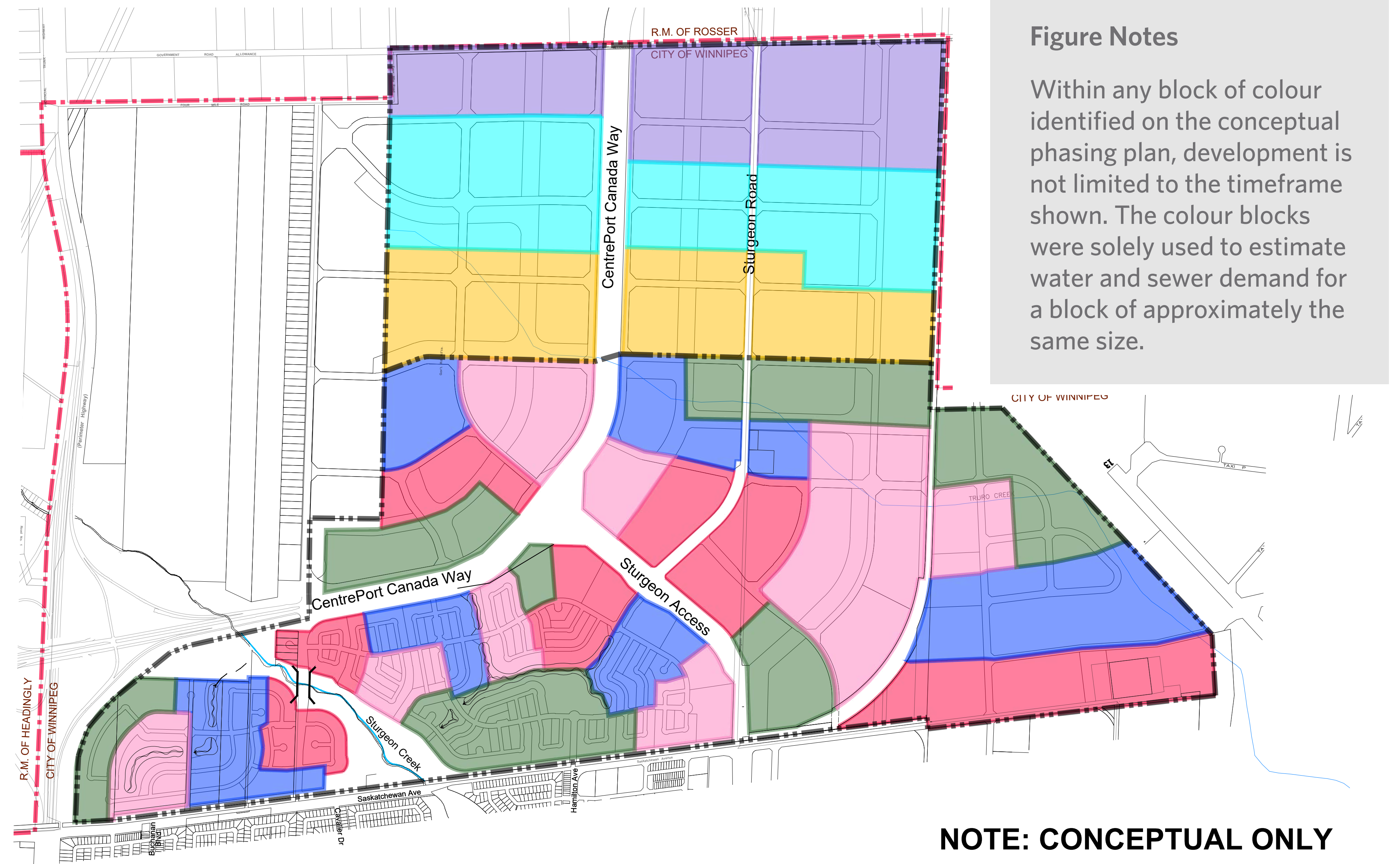
CONCEPTUAL PHASING PLAN



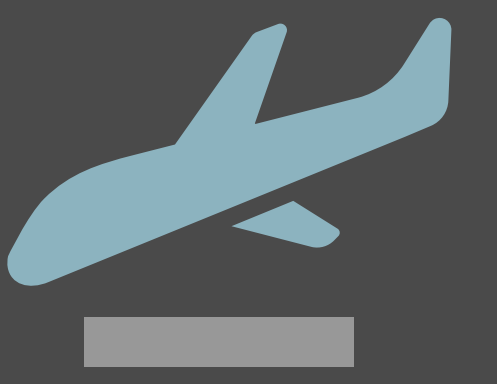
A conceptual phasing plan is required to identify the potential water demands and sewage production over the course of development of the study area.

Key assumptions that informed the conceptual phasing plan include:

- Industrial development will occur at an estimated average rate of 30 net acres per year over 50 years.
- Development of the residential area is anticipated to begin within five years and be completed within 20 years.
- Development of the Winnipeg Airport lands is anticipated to begin in the first phase and be completed within 20 years.
- The long linear nature of land parcels in the industrial areas will allow most landowners to begin development within the Phase 1 timeframe.



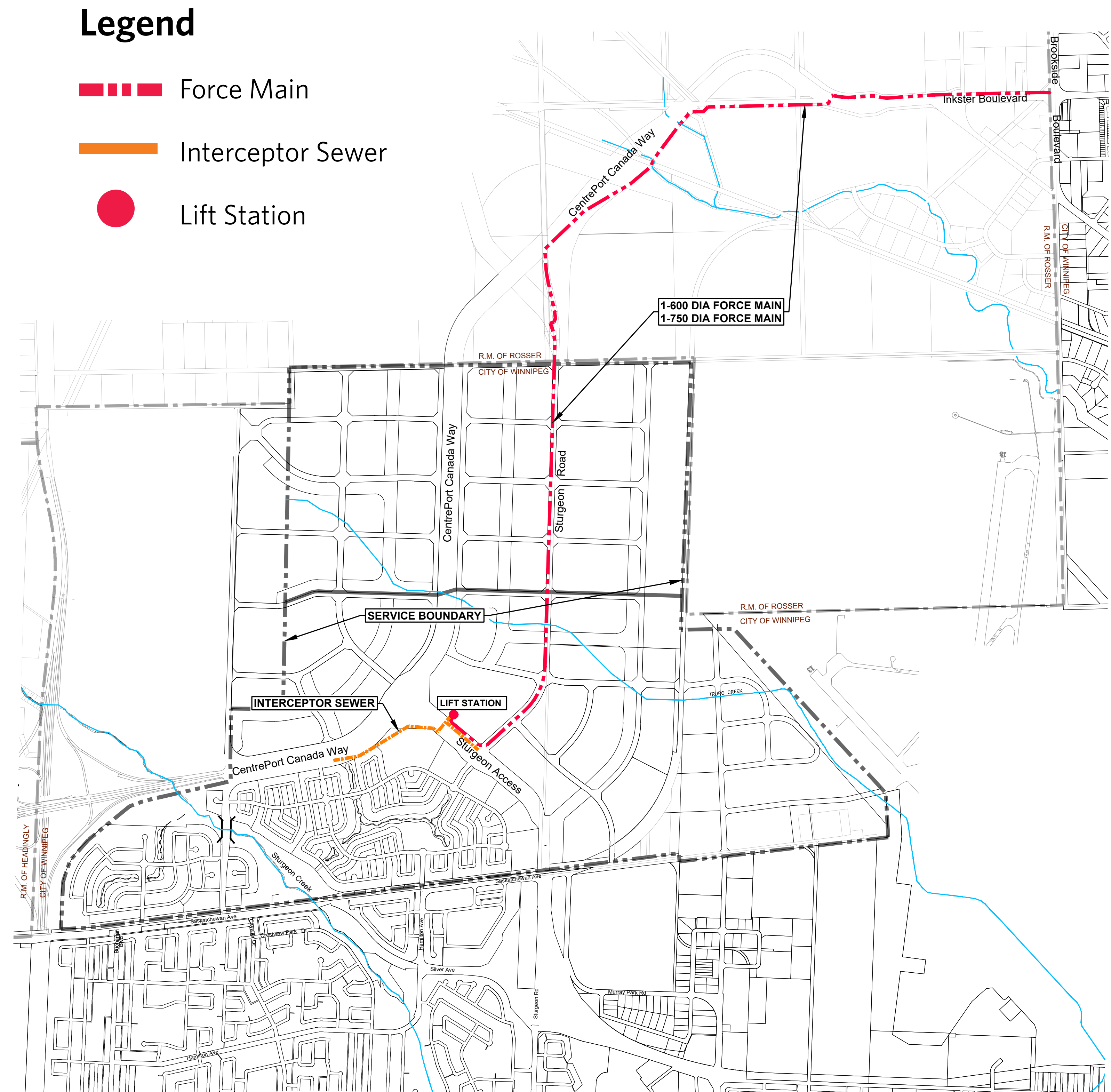
Legend		Phase 1		Phase 2	
		0 - 5 years	11 - 15 years	21 - 30 years	41 - 50 years
		6 - 10 years	16 - 20 years	31 - 40 years	



Regional wastewater infrastructure is required to support future wastewater production throughout the Airport Area West lands.

It is anticipated that future sewage collection piping will provide drainage to a central location. From here, various branches of sewers will connect into the interceptor sewer that will move flows to a sewage lift station.

The sewage will then be pumped via sewage force mains to the intersection of Inkster Boulevard and Brookside Boulevard where it will flow to the City's North End Sewage Treatment Plant (closest location with capacity to accept these flows).



NOTE: CONCEPTUAL ONLY



The project team developed a conceptual sewage collection system that will follow future roadways.

The pipe network was then modeled on anticipated sewage flows from the conceptual phasing plan so the regional infrastructure could be designed to support each phase of development.



NOTE: CONCEPTUAL ONLY

Legend

Local Infrastructure

- 250Ø PIPE
- 300Ø PIPE

- 375Ø PIPE
- 350Ø PIPE
- 525Ø PIPE

- 600Ø PIPE
- 750Ø PIPE
- 900Ø PIPE

Regional Infrastructure

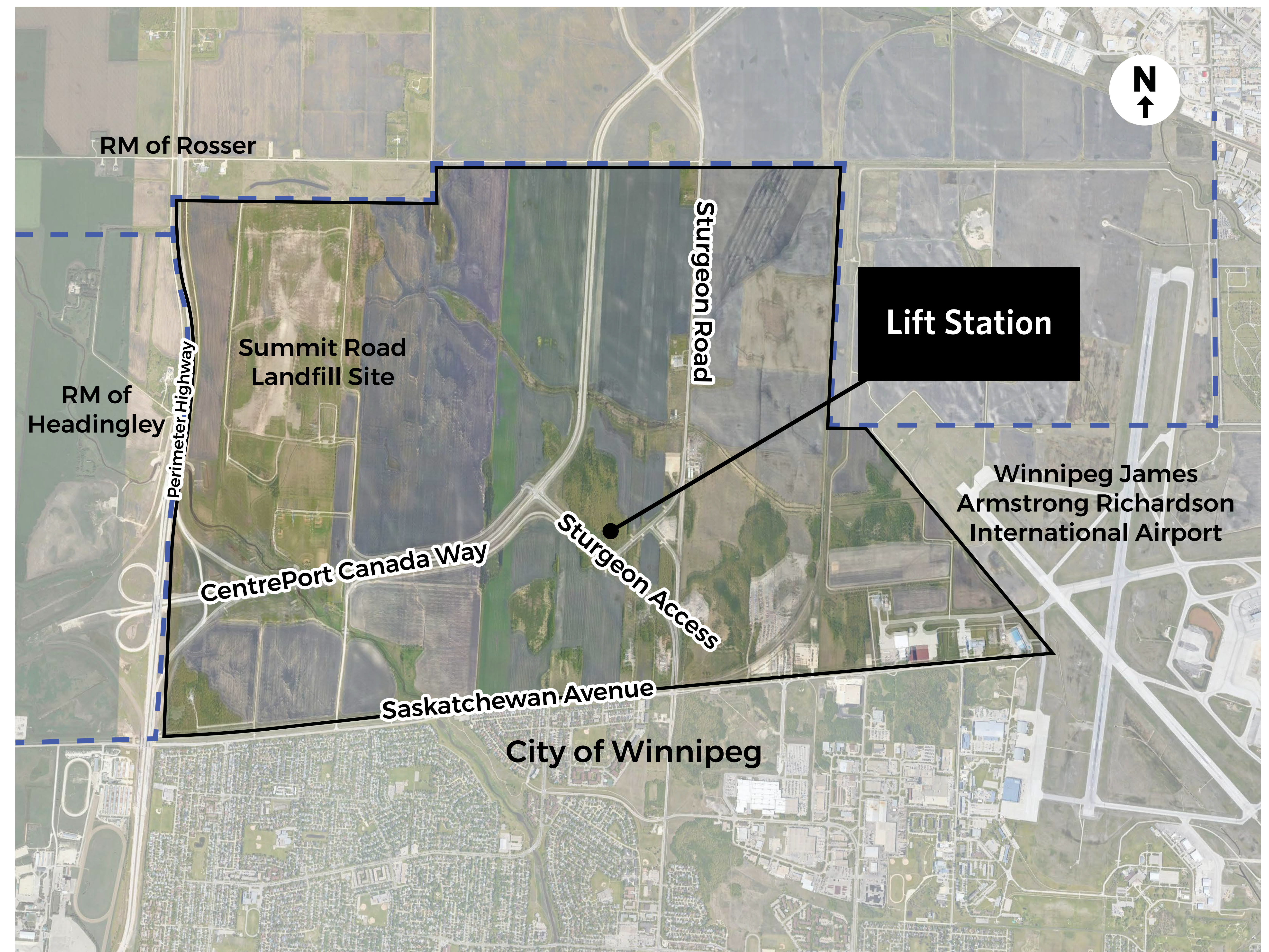
- 750Ø PIPE
- 900Ø PIPE
- 1200Ø PIPE

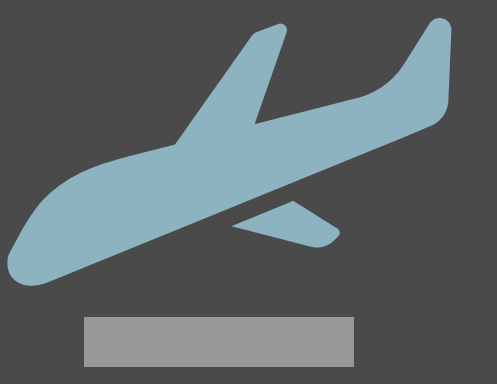


The study team evaluated potential locations for the proposed lift station using the following considerations:

- Depth of lift station
- Centrality of location
- Impacts of subsurface conditions (shallow rock interacting with infrastructure)
- Ease of access
- Land use
- Cost

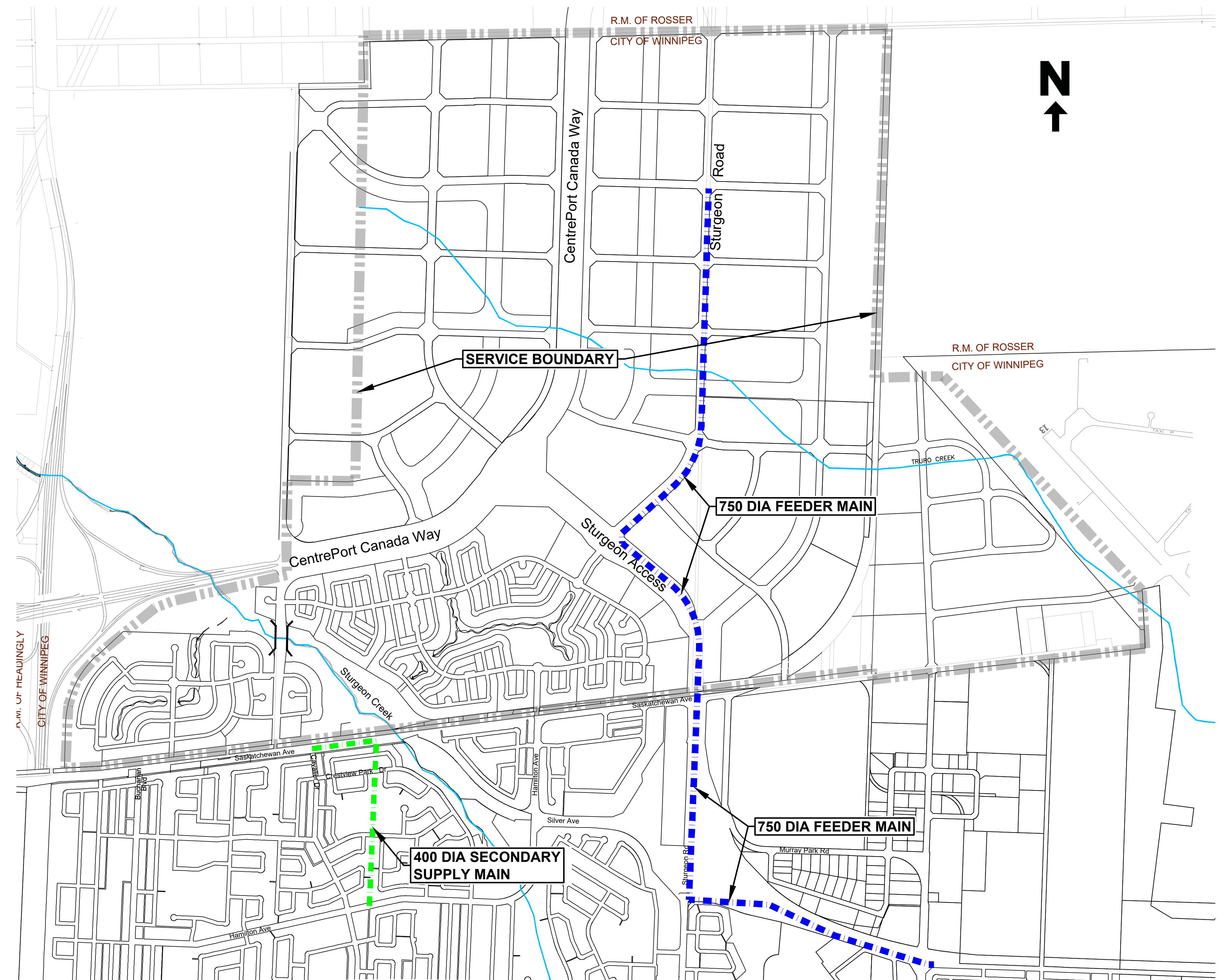
The location of the proposed lift station is identified below.





Regional water infrastructure is required to support the future domestic and fire flows necessary for development of the Airport Area West lands. The proposed water network includes:

- Distribution piping following the future road network
- Primary feeder main to provide the anticipated flows and pressures to the distribution system
- Connections to the City's water mains along the south limit of the Airport Area West lands, for circulation
- Secondary supply main to provide redundancy to the system



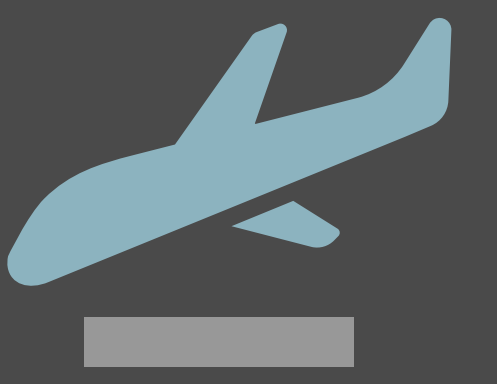
Legend

Regional Infrastructure

- 400Ø SECONDARY SUPPLY MAIN
- 750Ø FEEDER MAIN

NOTE: CONCEPTUAL ONLY

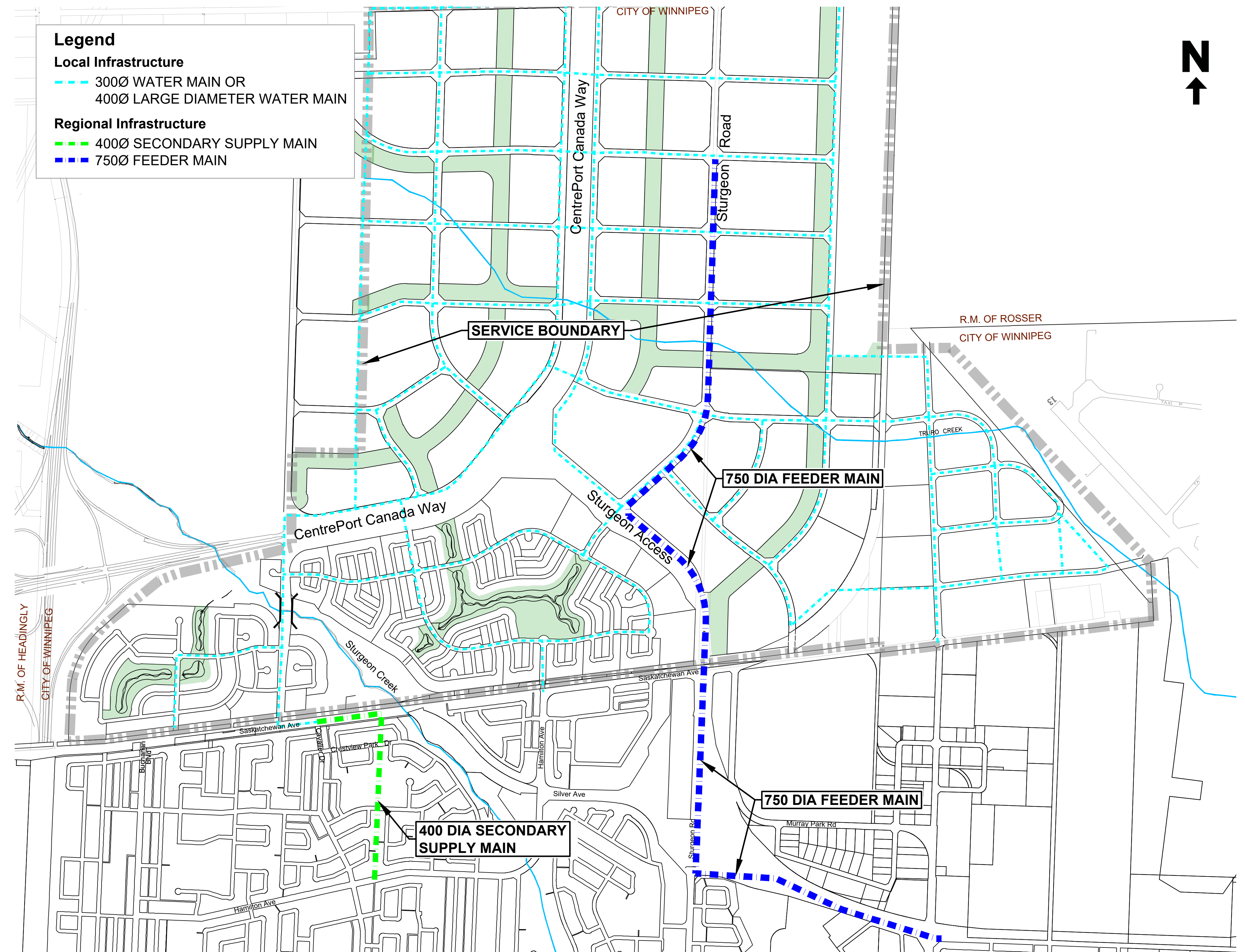
CONCEPTUAL WATER SERVICING INFRASTRUCTURE



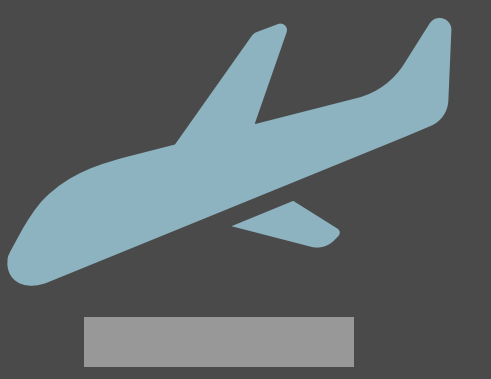
The regional water infrastructure for the study area requires approximately 5.0 km of 750 mm feeder mains and 1.1 km of 400 mm secondary supply mains to provide adequate pressure and flows to support the anticipated domestic and fire flow needs of the full build-out of the study area.

To determine that the proposed water infrastructure is sufficient to meet the City's performance requirements, the project team assumed worst case conditions when preparing the design, including:

- Larger water users along the periphery of the study area
- Industrial users all requiring a maximum fire flow
- Initial phasing constructed away from the feeder main, among other considerations



NOTE: CONCEPTUAL ONLY

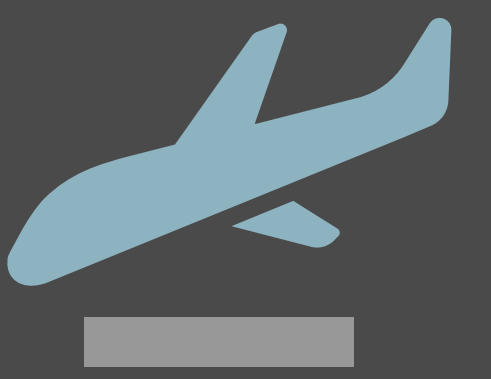


Where possible, regional servicing infrastructure has been proposed within the public right-of-way or on City owned land.

It is anticipated that minimal land acquisitions will be required; however, easement agreements will be necessary to ensure compatibility with existing and future infrastructure.

Where infrastructure cannot be accommodated on publicly owned lands, consultation with landowners will be required. Consultation will occur at future design stages.





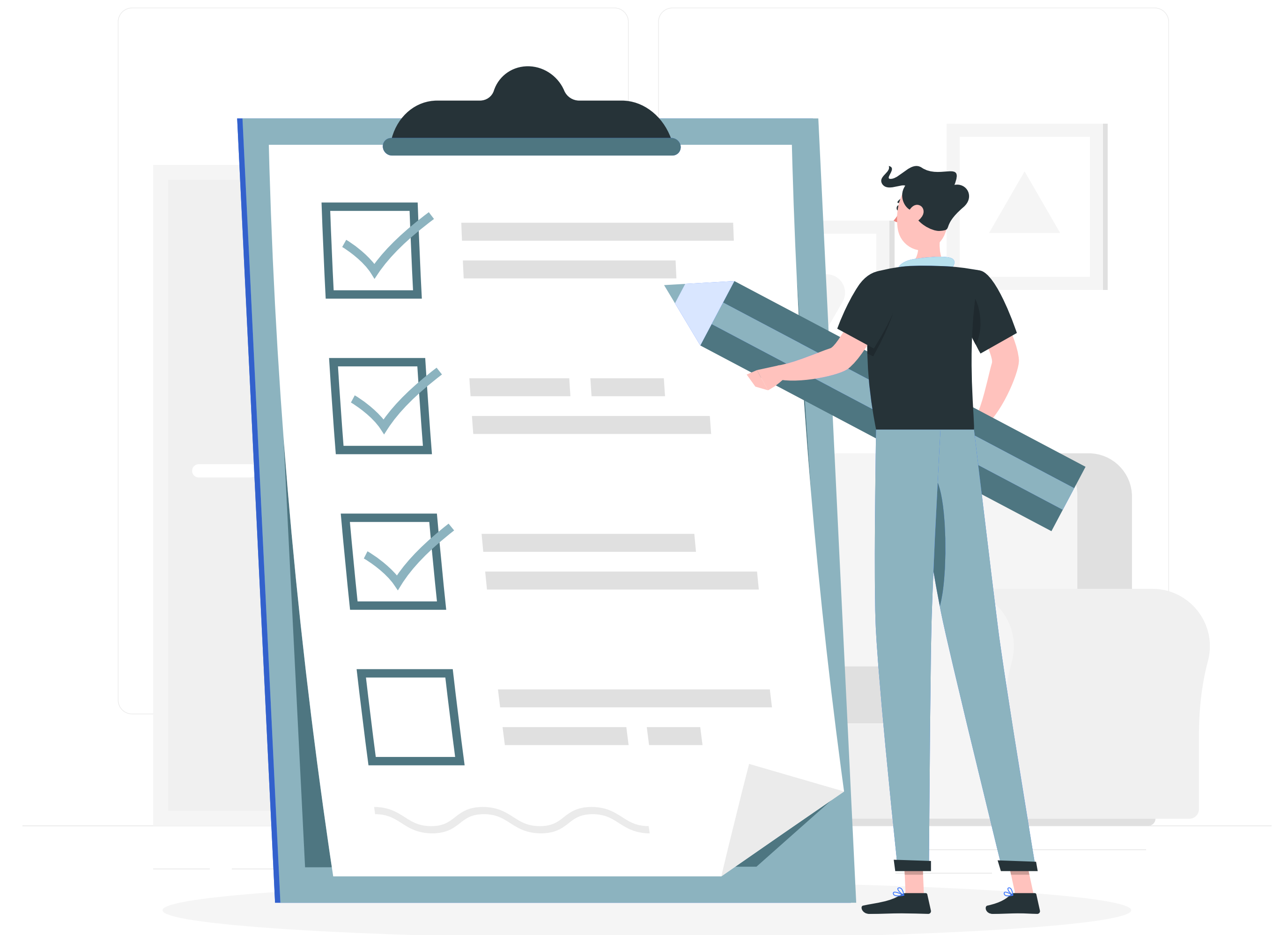
The final preliminary design report will be available for review in fall 2020 with a cost estimate for the City to use in future planning.

If you have any questions, please complete an online comment sheet available here:

winnipeg.ca/airportareawest

or contact Lauren Lange at 204-943-3178

or lauren.lange@wsp.com





THANK YOU

