

MANITOBA HYDRO

INTEROFFICE MEMORANDUM

FROM	Jonathan Wiens Environmental Specialist Compliance and Monitoring TD&EE Project Management Asset Planning and Delivery	TO	Jonathan Wiens Environmental Specialist Compliance and Monitoring TD&EE Project Management Asset Planning and Delivery
-------------	---	-----------	---

DATE 2023 12 12**FILE** MMTP Bird Diverter Retrofitting Project Report**SUBJECT MMTP BIRD DIVERTER RETROFITTING PROJECT REPORT**

As outlined in the information request response NEB Ex. [A8S0X5](#), Manitoba Hydro has reviewed the results of the 2021 and 2022 MMTP bird-wire collision monitoring reports as described in the MMTP environmental monitoring plan (NEB Ex. [A6V3U2](#)). The reports showed that several sites exhibited higher than expected levels of bird-wire collision. In response to these findings, and in keeping with the commitment to apply adaptive management, a wide suite of potential additional mitigation options were evaluated by Manitoba Hydro engineers, project managers and environmental specialists. This included department representatives from Transmission & Distribution Environment and Engagement, Transmission Overhead & Civil Engineering, Transmission & Distribution Projects and Transmission Line Maintenance. Expert contract avian biologists and other Canadian utilities were also consulted.

After reviewing all available information including avian biology, engineering constraints, product effectiveness, reliability, and industry standards, Manitoba Hydro implemented the following action plan in October 2023:

The following MMTP - D604I International Power Line (IPL) transmission line spans were supplemented with additional bird diverters to increase installation rate from 5-meter intervals to 2.5-meter intervals:

- MMTP - D604I IPL Towers 105-113 – Environmentally Sensitive Site #103
- MMTP - D604I IPL Towers 120-122 – Environmentally Sensitive Site #105
- MMTP - D604I IPL Towers 160-171 – Environmentally Sensitive Site #106

These spans were originally marked with bird diverters at the industry standard of 5-meter intervals (alternating yellow spirals and bird flight diverters). In doubling the diverter installation rate to 2.5-meter intervals, Manitoba Hydro implemented the highest known rate of bird diverter prescription in Canada. For this work Manitoba Hydro installed bird diverters produced by Power Line Sentry. These relatively new diverters have shown high rates of reliability, durability, glow in the dark visibility for low-light conditions and have been shown effective across North America. Manitoba Hydro's expectation is that these additional bird diverters will enhance visibility to

birds across most weather conditions and lower bird-collision rates, including for bird species at risk.

In addition, the following MMTP D604I IPL transmission line spans were newly outfitted with bird wire collision diverters:

- MMTP - D604I IPL Towers 102-105 – Environmentally Sensitive Site #CTR-103
- MMTP - D604I IPL Towers 122-123 – Environmentally Sensitive Site #Wild-105
- MMTP - D604I IPL Towers 319-320 – Environmentally Sensitive Site #CTR-123
- MMTP - D604I IPL Towers 321-322 – Environmentally Sensitive Site #CTR-123

These spans were not originally marked with bird diverters. However, through post-construction environmental monitoring Manitoba Hydro identified that they had higher than expected bird collision rates. For this work Manitoba Hydro also installed bird diverters developed by Power Line Sentry. These spans had bird diverters installed at the industry standard of 5-meter intervals.

To further alert and prevent birds from flying near MMTP - D604I, the following transmission line spans on adjacent transmission line projects were newly outfitted with bird diverters.

- M88R - Towers 033-043
- M602F - Towers 001-005

By adding bird diverters to these spans, birds will be better able to react and avoid the entire transmission line corridor, including MMTP - D604I. Manitoba Hydro installed bird diverters produced by Power Line Sentry for this work. These spans had bird diverters installed at the industry standard of 5-meter intervals.

In total, over 3,000 new bird diverters were installed on MMTP - D604I and adjacent transmission lines to further mitigate bird collision risk. The bird diverter installation work was conducted on October 7-10th, 2023 by highly trained Manitoba Hydro crews using a specialized contracted helicopter. Maps showing locations of bird diverter installations are included below.

To evaluate effectiveness, additional bird wire collision monitoring will occur in spring 2024 on spans that received additional mitigation. The bird collision monitoring methods will replicate what was conducted in previous monitoring years, with the addition of more frequent bird carcass searches to improve modelling results by lowering uncertainty due to predator scavenging. The results will be provided in the 2024 MMTP environmental monitoring report.

Manitoba-Minnesota
Transmission Project

Bird Diverter Installation Type

- 2.5-meter Intervals
- 5-meter Intervals

Project Infrastructure

- Converter Station
- D6041

Map Tile Index

- Map Series Tile

Infrastructure

- Existing 500kV Transmission Line
- Existing 230kV Transmission Line

Landbase

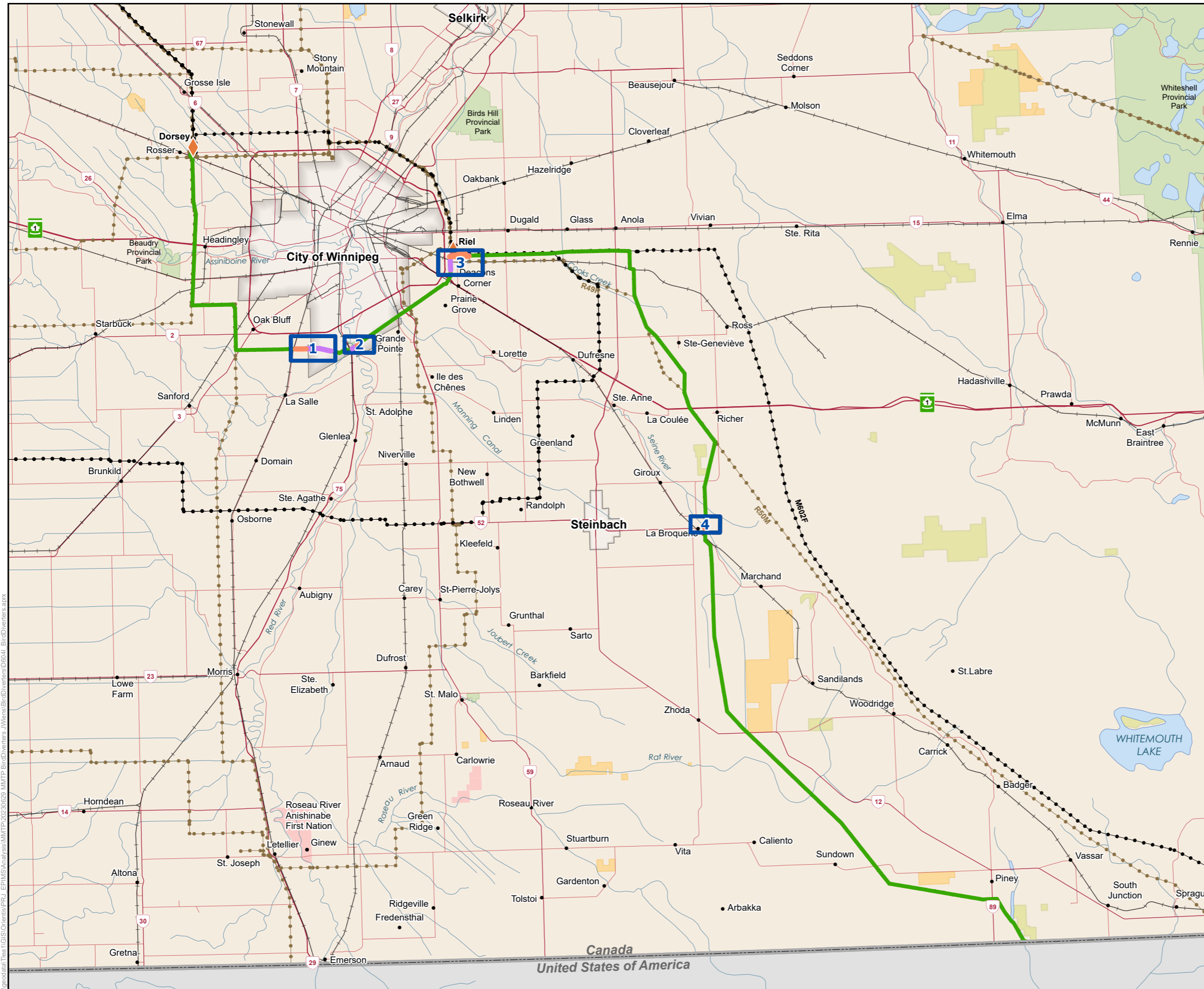
- Community
- Railway
- Trans Canada
- Provincial Highway
- Provincial Road
- City
- First Nation Lands
- Ecological Reserve
- Wildlife Management Area
- Provincial Park

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: June 30, 2023

0 3.5 7 10.5 Kilometres
0 1 2 4 6 8 10 Miles

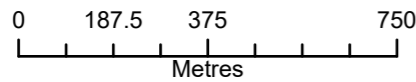
1:500,000

Bird Diverter
Installation Locations
Key Map Index





Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: June 30, 2023
Version: Draft



1:15,000

Existing Infrastructure

- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)

Land Base

- First Nation
- Provincial Park
- Parcel Fabric
- Rural Municipality

Project Infrastructure

- Tower Locations
- D604I
- Right of Way

Bird Diverter Installation Type

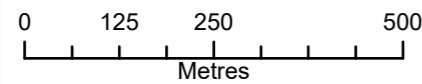
- 2.5-meter Intervals
- 5-meter Intervals

Service Layer Credits: Maxar

**D604I Transmission Line
Bird Diverter Installation Locations**



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: June 30, 2023
Version: Draft



1:10,000

Existing Infrastructure

- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)

Land Base

- First Nation
- Provincial Park
- Parcel Fabric
- Rural Municipality

Project Infrastructure

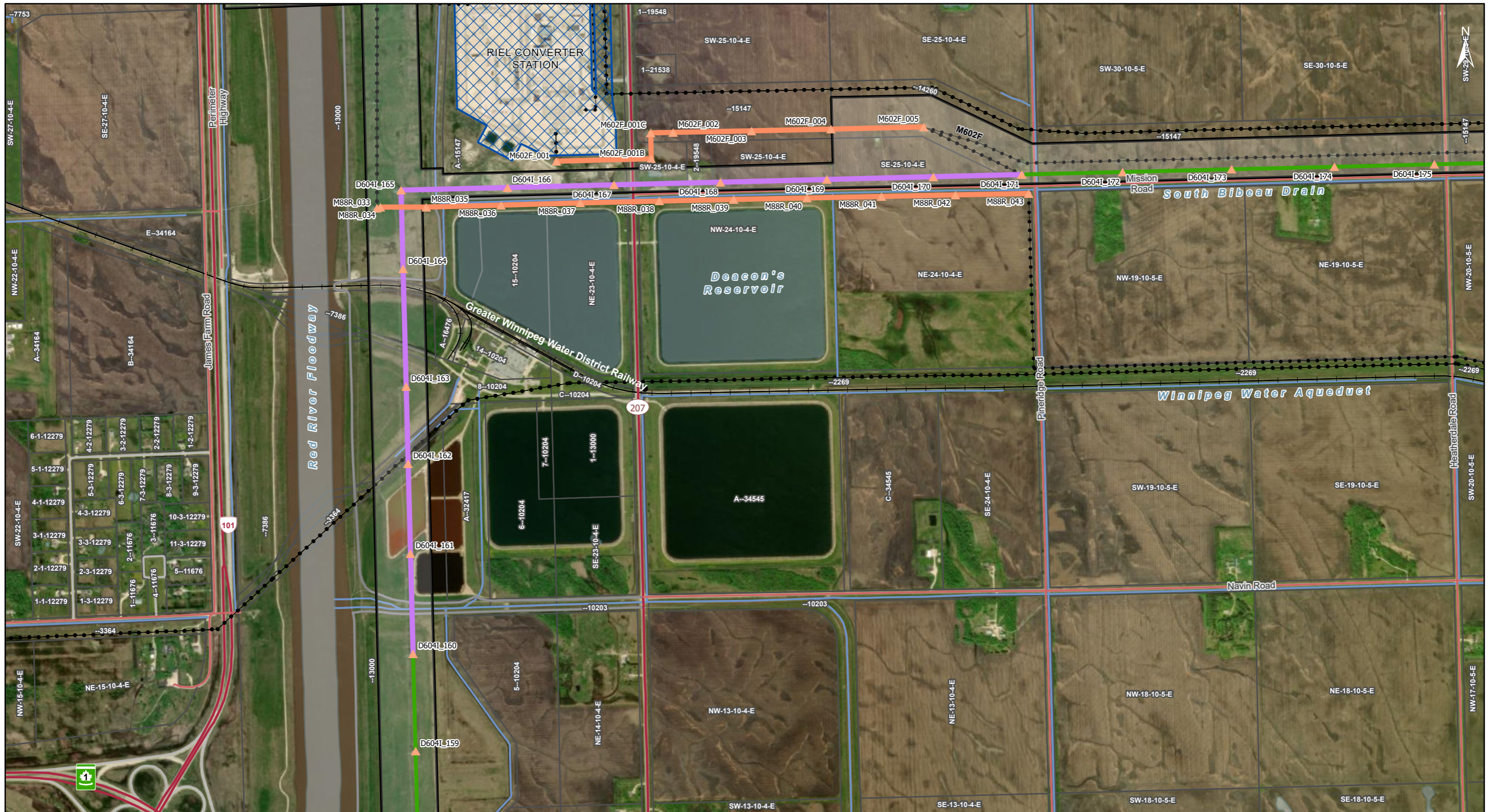
- Tower Locations
- D604I
- Right of Way

Bird Diverter Installation Type

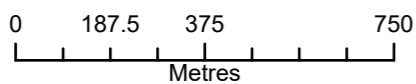
- 2.5-meter Intervals
- 5-meter Intervals

Service Layer Credits: Maxar

**D604I Transmission Line
Bird Diverter Installation Locations**



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: June 30, 2023
Version: Draft



1:15,000

Existing Infrastructure

- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)

Land Base

- First Nation
- Provincial Park
- Parcel Fabric
- Rural Municipality

Project Infrastructure

- Tower Locations
- D604I
- Right of Way

Bird Diverter Installation Type

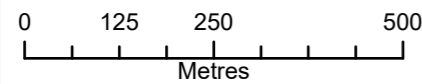
- 2.5-meter Intervals
- 5-meter Intervals

Service Layer Credits: Maxar

D604I Transmission Line Bird Diverter Installation Locations



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: June 30, 2023
Version: Draft



1:10,000

Existing Infrastructure

- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)

Land Base

- First Nation
- Provincial Park
- Parcel Fabric
- Rural Municipality

Project Infrastructure

- Tower Locations
- D604I
- Right of Way

Bird Diverter Installation Type

- 2.5-meter Intervals
- 5-meter Intervals

Service Layer Credits: Maxar

D604I Transmission Line Bird Diverter Installation Locations

