MANITOBA TRANSPORTATION AND INFRASTRUCTURE

PTH 3 FUNCTIONAL DESIGN STUDY

SUMMARY – FINAL

AUGUST 2025

PTH 3 FUNCTIONAL DESIGN STUDY

SUMMARY

MANITOBA TRANSPORTATION AND INFRASTRUCTURE

FINAL

PROJECT NO.: 231-00717-00

DATE: AUGUST 12, 2025

WSP
1600 BUFFALO PLACE
WINNIPEG, MB
CANADA R3T 6B8
T: +1 204 477-6650
F: +1 204 474-2864
WSP.COM

WSP Canada Inc. prepared this report solely for the use of the intended recipient, Manitoba Transportation and Infrastructure, in accordance with the professional services agreement. The intended recipient is solely responsible for the disclosure of any information contained in this report. The content and opinions contained in the present report are based on the observations and/or information available to WSP Canada Inc. at the time of preparation. If a third party makes use of, relies on, or makes decisions in accordance with this report, said third party is solely responsible for such use, reliance, or decisions. WSP Canada Inc. does not accept responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken by said third party based on this report. This limitations statement is considered an integral part of this report.

The original of this digital file will be conserved by WSP Canada Inc. for a period of not less than 10 years. As the digital file transmitted to the intended recipient is no longer under the control of WSP Canada Inc., its integrity cannot be assured. As such, WSP Canada Inc. does not guarantee any modifications made to this digital file subsequent to its transmission to the intended recipient.

TABLE OF CONTENTS

FIGURES

1 INTRODUCTION

1.1 PROJECT BACKGROUND

Provincial Trunk Highway (PTH) 3 is classified as a Primary Arterial and is an important route providing access into Winnipeg for motorists throughout the province, trade and commercial vehicles, and highway users that reside in the project vicinity. Increasing traffic volumes, in part precipitated by commercial and industrial development along the corridor, mean that twinning may need to be considered in the short to medium term. There is a functional design for twinning, along with an access management plan, that was prepared by WSP in 2006; however, it needed to be reviewed based on the latest design standards, traffic forecasts, and existing and anticipated development. The updated plan identifies potential lands needed for the roadway right-of-way while minimizing property acquisition and impacts on property owners.

The intent of the PTH 3 Functional Design Study is to ensure PTH 3 will meet transportation demands for at least the next 20 years and address local road network and intersection / access requirements in the study area. The project included a public engagement program and a review of active transportation needs, right-of-way requirements, environmental licensing requirements, impacts to utilities, and resolving drainage concerns.

PTH 3 is currently a two-lane undivided Primary Arterial located southwest of the City of Winnipeg in the Rural Municipality (RM) of Macdonald. The study examined approximately 6.7 km of PTH 3 from the City of Winnipeg limits just west of Brady Road to 1.6 km east of PTH 100 near Road 7E. The study updates a 2006 twinning and access management plan study prepared by WSP, considering development that has occurred since 2006, forecast future development, and the latest traffic data and forecasts. Development along PTH 3 ranges from agricultural to residential to commercial and industrial. Much of the more recent industrial / commercial development has occurred in the east part of the corridor closer to the City of Winnipeg. The adjacent development is served by a range of access types, including indirect access off an intersecting municipal road, access off service roads, and private approaches.

The review of functional alternatives considered options for two main corridor alignments:

- Along the existing PTH 3 alignment; and
- A realignment of PTH 3 to connect directly with the future extension of Abinojii Mikanah (previously known as Bishop Grandin Boulevard).

MTI also required a conceptual alignment of a Future Highway Connection to the William R. Clement Parkway (WRCP) extension from Wilkes Avenue and conceptual alignments for Road 8E and Provincial Road (PR) 330 between PTH 3 and PTH 100.

Figure 1-1 shows the PTH 3 study area.

1.2 STUDY TEAM & PROJECT OVERSIGHT

The PTH 3 Functional Design Study Team included individuals from the following consulting firms:

- WSP Canada Inc. – project management; transportation planning and analysis; land development and property services; roadway surveying; roadway, land drainage and utility design; railway crossings; construction staging and scheduling; cost estimating; illumination; environmental site assessments and public engagement.
- Fireseeds North Infrastructure – independent road safety audit.

Direction for the study was provided by the MTI Steering Committee comprised of the following departmental representatives:

- Grace Quintana, MTI Project Manager, Project Management Branch, Infrastructure, Capital Projects.
- Nicole Fleury, Technical Services Engineer, Eastern Region
- Russell Andrushuk, Assistant Deputy Minister, Engineering and Technical Services Division.
- Blair McTavish, Assistant Deputy Minister, Transportation Operations Division.
- Cynthia Ritchie, Assistant Deputy Minister, Infrastructure, Capital Projects.
- Tara Liske, Executive Director, Regional Operations.
- Ryan Coulter, Director Regional Operations, Eastern Region.
- Dustin Booy, Executive Director, Highway Engineering Services.
- Olubiyi Salami, A/Director, Project Management Branch.

1.3 STUDY REPORTS

The study included the following project deliverables:

- **PTH 3 Functional Design Report** – This report outlines the functional design study completed for the twinning of PTH 3 from the City of Winnipeg limits just west of Brady Road to 1.6 km east of PTH 100 near Road 7E. The recommended design for PTH 3 includes two stages – Initial and Ultimate.
- **PTH 3 Environmental Impact Assessment Report** – This report outlines the Environmental Impact Assessment (EIA) completed for the study. The EIA includes a desktop review and ecological field surveys to supplement existing information where practical.
- **PTH 3 Independent Road Safety Audit** – This report provides the results of an independent road safety audit of the proposed functional design and identifies possible risk factors and risk mitigations.
- **PTH 3 Traffic Operations and Safety Review Report** – This report includes the traffic volumes and operational analysis for the existing road network, future road network alternatives and future recommended alternative for PTH 3, as well as the results of the in-service road safety review and the development of potential safety countermeasures a safety countermeasure implementation strategy for PTH 3.

- **PTH 3 Access Management Plan** – This report describes the access connections between PTH 3 and the adjacent lands for the Initial and Ultimate stage designs.

1.4 PUBLIC ENGAGEMENT

The stakeholder and public engagement strategy for this Study included three phases of engagement:

- **Phase 1 – Stakeholder Identification and Communication:** Introduced the project to key stakeholders, communicated the project's scope and timing, and gathered initial feedback on the project, including specific constraints within the study area. This phase also includes introducing the project to the general public.
- **Phase 2 – Present Design Alternatives:** Presented the design alternatives to stakeholders and the public and obtained feedback on the alternatives.
- **Phase 3 – Present Preferred Design Alternative:** Presented the preferred design alternative to the public and stakeholders and presented the rationale for the decision related to the preferred design alternative.

PHASE 1 PUBLIC ENGAGEMENT SUMMARY

Phase 1 engagement included a combination of virtual and in-person meetings that took place in May 2023. Feedback was recorded through a combination of meeting notes, annotated table maps and an exit survey. Feedback was received regarding study priorities and anticipated development (including infrastructure projects) to be considered.

Generally, stakeholders were supportive of the project (and particularly the twinning of PTH 3) given the existing safety concerns and access challenges, the amount of recent and anticipated development in the study area, and nearby ongoing and anticipated infrastructure projects that will impact the study area. However, concerns were expressed (by landowners and business owners in particular) regarding potential impacts to private properties, including property acquisition and changes to access. Feedback received during Phase 1 was considered in developing the design alternatives.

PHASE 2 PUBLIC ENGAGEMENT SUMMARY

Phase 2 engagement included a combination of virtual and in-person meetings that took place in November 2023. Presentation boards and an online survey, accessible to the general public, followed in February of 2024. Feedback was recorded through a combination of meeting notes, annotated table maps and a survey.

Generally, stakeholders were supportive of improvements to safety and traffic flow. Concerns related to property impacts and agricultural vehicle access were expressed by the RM of Macdonald, landowners, and business owners. The municipality also expressed concern regarding impact to future development. The City of Winnipeg identified that Options 2A and 2B both rely on a future extension of Abinojii Mikanah, the timeline of which and associated costs are undetermined. The survey indicated a preference for Option 1 based on the perceived effect on personal property or business, traffic movement, and access. Concerns were expressed regarding the overall project cost, land impacts, lack of active transportation infrastructure, number of additional signal-controlled intersections, and the environmental impact of facilitating commuter traffic into the City of Winnipeg. Feedback received during Phase 2 was considered in the selection of the preferred design alternative.

PHASE 3 PUBLIC ENGAGEMENT SUMMARY

Phase 3 engagement included a combination of virtual and in-person meetings that took place in September 2024. Feedback was recorded through a combination of meeting notes, annotated table maps, and a survey.

Generally, stakeholders were supportive of the preferred alternative. The City of Winnipeg noted the importance of coordinating work at the municipal boundary near Brady Road. The RM of Macdonald asked for costs associated with any required relocation of municipal infrastructure / utilities to be accounted for as part of this project. Several stakeholders inquired as to how land identified for future transportation corridors / interchanges will be protected from development.

Generally, survey respondents indicated that the Initial preferred design would have a very positive or positive impact on access (71 percent), traffic movement (58 percent), and personal property or business (55 percent). A much smaller portion of respondents indicated the Initial preferred design would have a negative or very negative impact on access (16 percent), traffic movement (16 percent), and personal property or business (17 percent). About a quarter of respondents indicated that the design would have a neutral impact on traffic movement, personal property or business.

Similar to the Initial preferred design, over half of respondents indicated that the Ultimate preferred design would have a very positive or positive impact on access (67 percent), traffic movement (62 percent), and personal property or business (50 percent). Less than a quarter of respondents indicated that the Ultimate preferred design would have a negative or very negative impact on access (17 percent), traffic movement (16 percent), and personal property or business (21 percent).

Feedback received during Phase 3 was considered in the finalization of the functional design study.

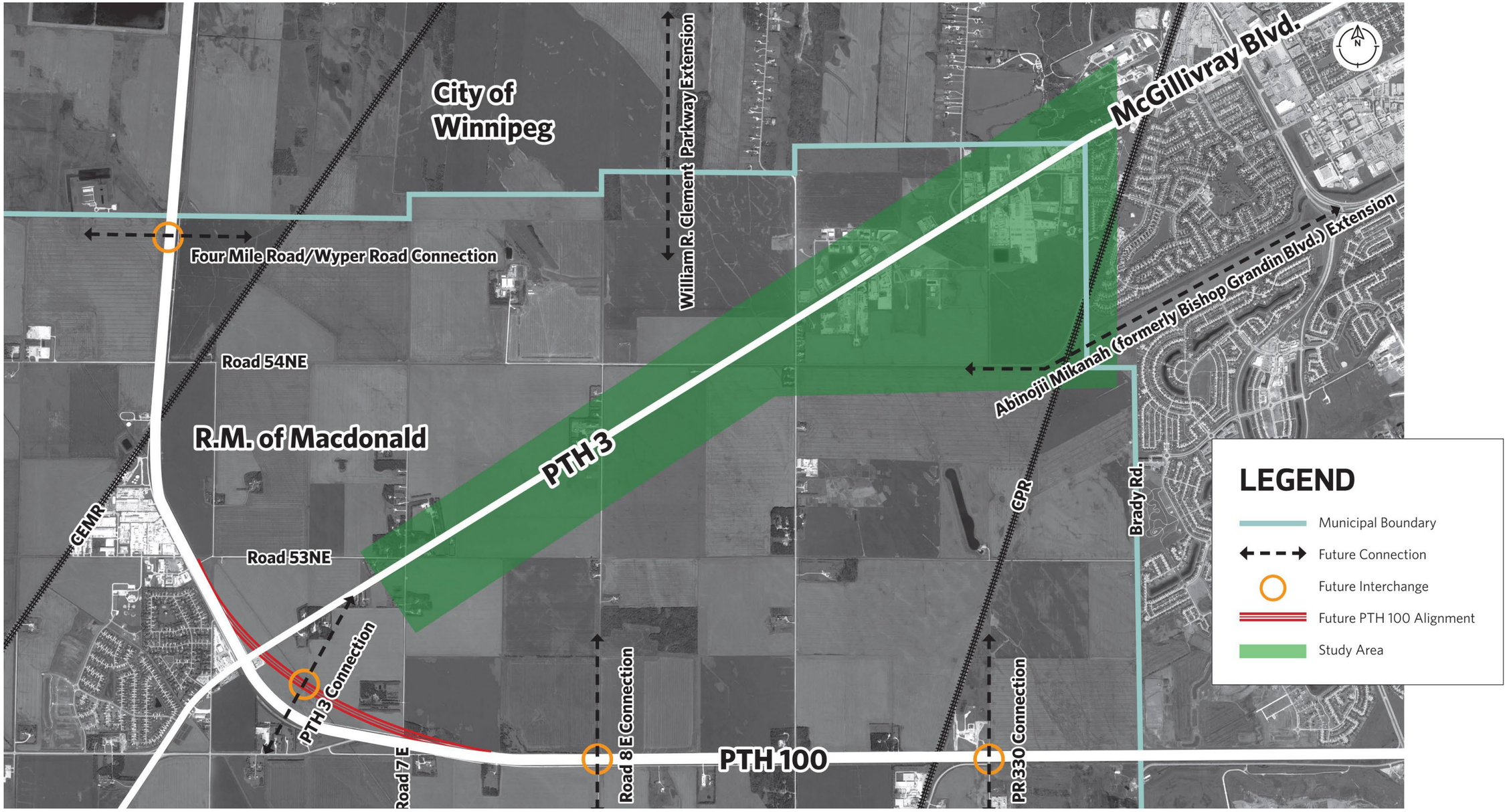


Figure 1-1: PTH 3 Study Area

2 EXISTING CONDITIONS

The existing conditions review was conducted to gain an understanding of the study area. The following sections summarize the reviews, investigations and analyses that were conducted. More details for these sections are provided in the *PTH 3 Functional Design Study: Functional Design Report*.

PROPERTY BOUNDARIES & LANDOWNERS

Property boundaries within the study area and landowners who may be impacted by the project were identified. Parcel data for the City of Winnipeg and the rural municipalities is publicly available. The RM of Macdonald and City of Winnipeg were contacted to obtain land ownership information for certain properties. The parcel and land ownership information was used throughout the study to consult with landowners whose properties were within the study area and identify directly impacted properties and landowners.

LAND USE & DEVELOPMENT PLANS

The study area includes land within the City of Winipeg or RM of Macdonald. The study included a review and analysis of relevant Development Plan designations and policies, and any Secondary Plans from the City of Winnipeg and the RM of Macdonald.

TRANSPORTATION PLANS

The Winnipeg Metropolitan Region and the RM of Macdonald were contacted to obtain available information regarding their transportation plans. The Winnipeg Metro Region Plan 20-50 and the Macdonald-Richot Development Plan No. 2/22 were reviewed as part of this study.

ROADWAY NETWORK

PTH 3 is the continuation of McGillivray Boulevard within Winnipeg. The study area for this project includes PTH 3 from the Winnipeg city limit just west of Brady Road southwest to just prior to PTH 100. PTH 3 is currently a two-lane undivided highway with a speed limit that starts at 100 km/h east of PTH 100 and transitions to 80 km/h west of South Landing Drive and transitions again to 70 km/h west of Brady Road. Connections to PTH 3 within the study area are currently accommodated at signalized or unsignalized intersections. MTI will be constructing a new interchange at PTH 3 and PTH 100 at the study area limit in the near future.

TRAFFIC OPERATIONS & SAFETY

A traffic operations and safety review was conducted to identify and review any existing operational and safety issues and provide recommendations for the functional design. The review included traffic counts, existing and forecast traffic volumes, traffic analysis, inventory of existing traffic data collection stations, historical collision review, inventory of roadside hazards and safety devices, existing guide signs review and an in-service road safety review. The results of the traffic operations and safety review are summarized in the *Traffic Operations and Safety Review Report*.

ACTIVE TRANSPORTATION

While existing pedestrian and cycling facilities within and adjacent to the study area are limited, there are several proposed pedestrian and cycling facilities that are recommended in the City of Winnipeg's *Pedestrian and Cycling Strategies*, the *RM of Macdonald Outdoor Recreation Facilities and Trails Master Plan*, and the *Enterprise Centre Area Transportation Plan*. For this study, active transportation accommodation within the highway right-of-way was considered for the cases of logical route connectivity; however, no additional right-of-way will be obtained for pedestrian and cycling facilities. MTI does not plan or design pathways within the right-of-way, but will allow adjacent municipalities to do so, in consultation with MTI. Crossings of PTH 3 were considered as appropriate.

UTILITIES

The PTH 3 study area contains various major and minor utilities above and belowground which needed to be considered in the design. This included the following:

- Manitoba Hydro aboveground and underground power, underground gas, and transmission lines;
- BellMTS underground communications;
- Rogers underground communications;
- Valley Fiber underground communications; and
- RM of Macdonald watermain, low pressure sewer, lift station, and forcemain.

LAND DRAINAGE

Existing drainage conditions were analyzed using LiDAR data, water routes from Natural Resources Canada, and culvert configurations to delineate drainage catchments adjacent to the current PTH 3 roadway alignment. Additionally, information from a topographic survey conducted as part of the study was incorporated to verify the information from other sources, where possible, and provide more detailed information at critical locations.

The catchments north of PTH 3 generally drain southeast, while those south of PTH 3 drain northeast towards the Lot 16 Drain. Conveyance within the catchments is by roadside ditches with crossings consisting of corrugated metal culverts, concrete culverts, and bridges. The study area ultimately discharges into the Lot 16 Drain with three notable PTH 3 crossings at Road 54 NE, Road 9 E, and Road 10 E. That crossing at Road 54 NE is a third order drain, while the other two are second order drains.

The Lot 16 Drain starts near the Canadian National (CN) Railway, continues east along La Verendrye Road, crosses PTH 3 and the Canadian Pacific Kansas City (CPKC) Railway, and then enters the City of Winnipeg to ultimately discharge into the Red River. The drain crosses PTH 3 between Road 8 E and LaSalle Road and eventually a service road, the CPKC Railway, and Brady Road.

ENVIRONMENTAL & HERITAGE RESOURCES

A desktop review of available biophysical and socioeconomic information for the study area was completed in March 2023. The desktop review entailed an examination of aerial photographs, applicable federal and provincial government databases, environmental reports, and information requests from provincial, federal, and non-governmental database managers / specialists.

Field reconnaissance site visits were conducted in June 2023 via roadside visual assessments. Data collected was used to further aid in characterizing current environmental conditions within the study area for use in the Environmental Assessment (EA) Plan. The key objectives of the field surveys were to obtain basic information on the vegetation cover / habitats present in the study area, obtain representative photographs of the study area to document site conditions, and identify potential environmental effects and constraints, including areas of potential habitat for species of conservation concern that have potential to occur within the study area, areas of heritage / cultural importance, and areas of potential environmental contamination.

3 PTH 3 ALIGNMENT OPTIONS

Three alignment options were developed for the PTH 3 corridor. Each of the options include both Initial and Ultimate road network alternatives to illustrate how PTH 3 would connect to future roadways within the study area, as well as future planned interchanges on PTH 100.

ALIGNMENT OPTION 1

Alignment Option 1, shown in **Figure 3-1** and **Figure 3-2**, expands the existing two-lane undivided PTH 3 to a four-lane divided facility following the existing PTH 3 corridor and connecting directly to McGillivray Boulevard.

Option 1: Initial

- PTH 3 will be a four-lane divided roadway. The alignment of PTH 3 will be shifted to the south just east of Road 7E to minimize impacts to existing properties at Road 8E. This shift will allow the existing PTH 3 lanes to be used as a service road to provide access to those properties. The alignment will then return to the existing PTH 3 alignment just west of Loudoun Road.
- Major intersections will be signalized.
- Minor intersections will be stop controlled.
- Direct access to private properties will be closed, and alternative access to the remaining intersections with PTH 3 will be provided via service roads or internal road networks.

Option 1: Ultimate

- PTH 3 will be a four-lane divided roadway as outlined in the Initial scenario above.
- The Future Highway Connection to the WRCP extension will be constructed to connect to the Future Highway Connection to the Abinojii Mikanah extension.
- The Initial signalized intersection at Loudoun Road / La Salle Road will be removed and replaced with a Diamond interchange at the intersection of the Future Highway Connection to the WRCP extension and PTH 3 to accommodate the forecast traffic volumes at an acceptable level of service. The Diamond interchange will be located immediately west of the designated Enterprise Centre area development.
- Connections between PTH 3 and PR 330 and Road 8E will be added.

ALIGNMENT OPTION 2A

Alignment Option 2A, shown in **Figure 3-3** and **Figure 3-4**, realigns PTH 3 south of the existing alignment and connects directly to the future Abinojii Mikanah extension in the City of Winnipeg.

Option 2A: Initial

- PTH 3 will be a four-lane divided roadway and will be realigned starting west of Road 8E to connect directly to the future Abinojii Mikanah extension.
- The old section of PTH 3 connecting to McGillivray Boulevard will remain.
- Major intersections will be signalized.

Option 2A: Ultimate

- PTH 3 will be a four-lane divided roadway as outlined in the Initial scenario above.
- A Diamond interchange will be provided at the PTH 3 intersection with the Future Highway Connection to the WRCP extension to accommodate the forecast traffic volumes at an acceptable level of service. The Diamond interchange will be located immediately west of the designated Enterprise Centre area development,
- Connections to PR 330 and Road 8E at the Perimeter Highway (PTH 100) will be included.

ALIGNMENT OPTION 2B

Alignment Option 2B, shown in **Figure 3-5** and **Figure 3-6**, realigns PTH 3 south of the existing alignment and connects directly to the future Abinojii Mikanah extension.

Option 2B: Initial

- PTH 3 will be a four-lane divided roadway and will be realigned starting east of Road 8E to connect directly to the future Abinojii Mikanah extension.
- The old section of PTH 3 connecting to McGillivray Boulevard will remain.
- Major intersections will be signalized.

Option 2B: Ultimate

- PTH 3 will be a four-lane divided roadway as outlined in the Initial scenario above.
- A Diamond interchange will be provided at the future intersection with the Future Highway Connection to the WRCP extension to accommodate the forecast traffic volumes at an acceptable level of service. The Diamond interchange will be located immediately west of the designated Enterprise Centre area development.
- Connections to PR 330 and Road 8E at the Perimeter Highway (PTH 100) will be included.

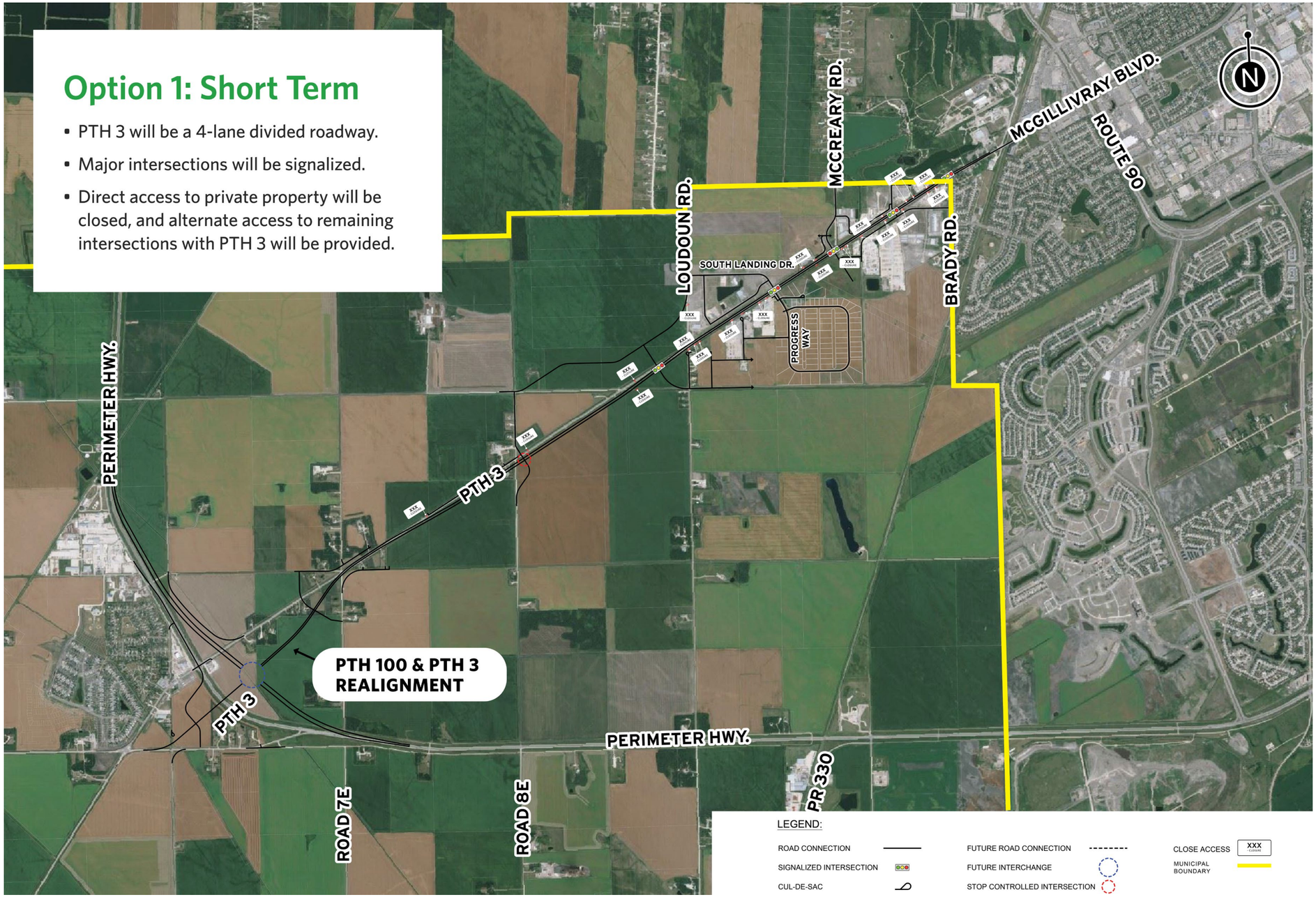


Figure 3-1: Alignment Option 1 – Initial

Option 1: Long Term

- PTH 3 will be a 4-lane divided roadway.
- Major intersections will be signalized.
- An interchange will be provided at the intersection with the extension of William R. Clement Pkwy/Abinojii Mikanah.
- Connections to PR 330 and Road 8E at the Perimeter Hwy (PTH 100) will be included.

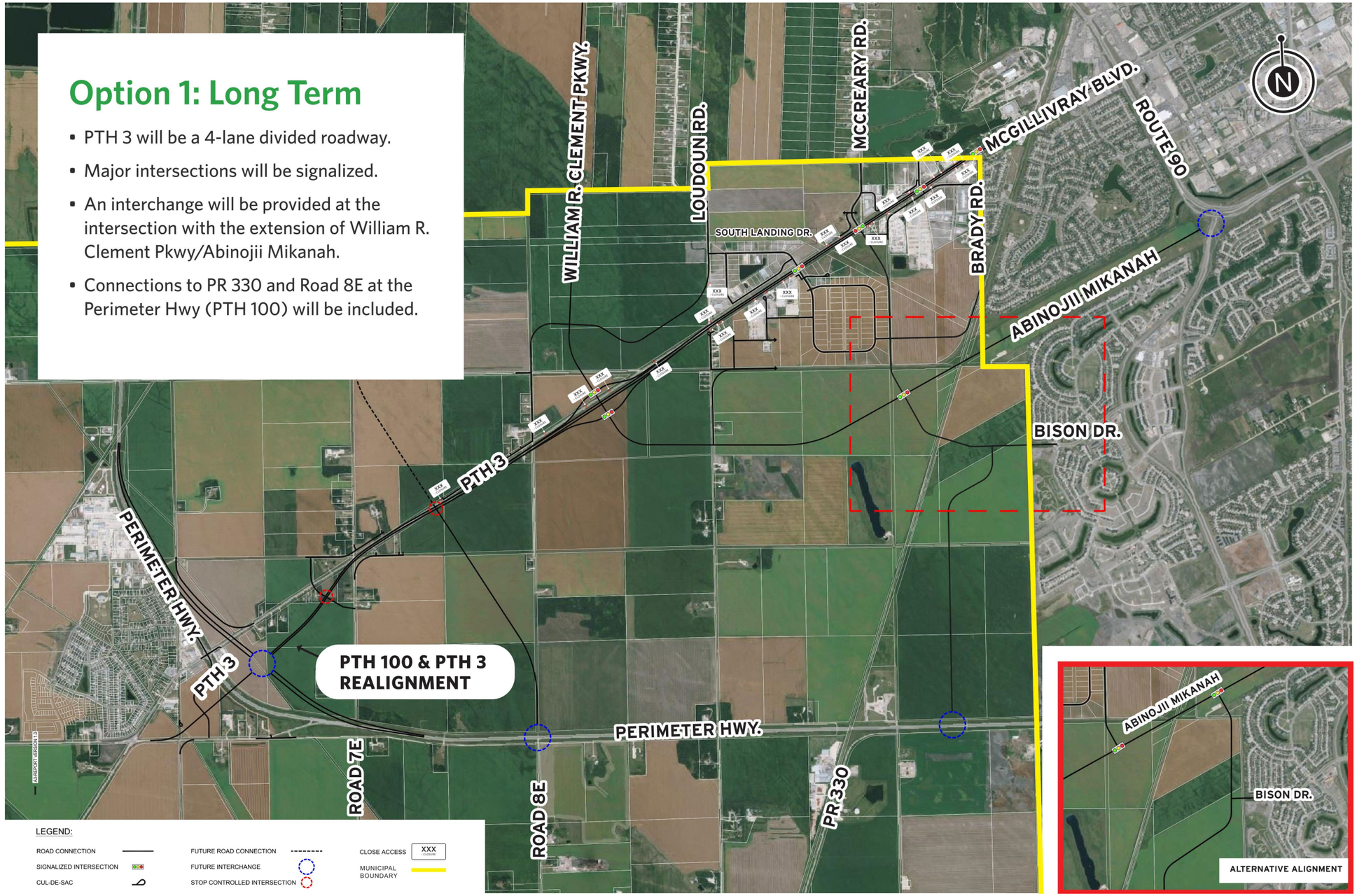


Figure 3-2: Alignment Option 1 – Ultimate

Option 2A: Short Term

- PTH 3 will be a 4-lane divided roadway and will be realigned starting west of Road 8E to connect directly to Abinojii Mikanah.
- The old section of PTH 3 connecting to McGillivray Blvd. will remain.
- Major intersections will be signalized.

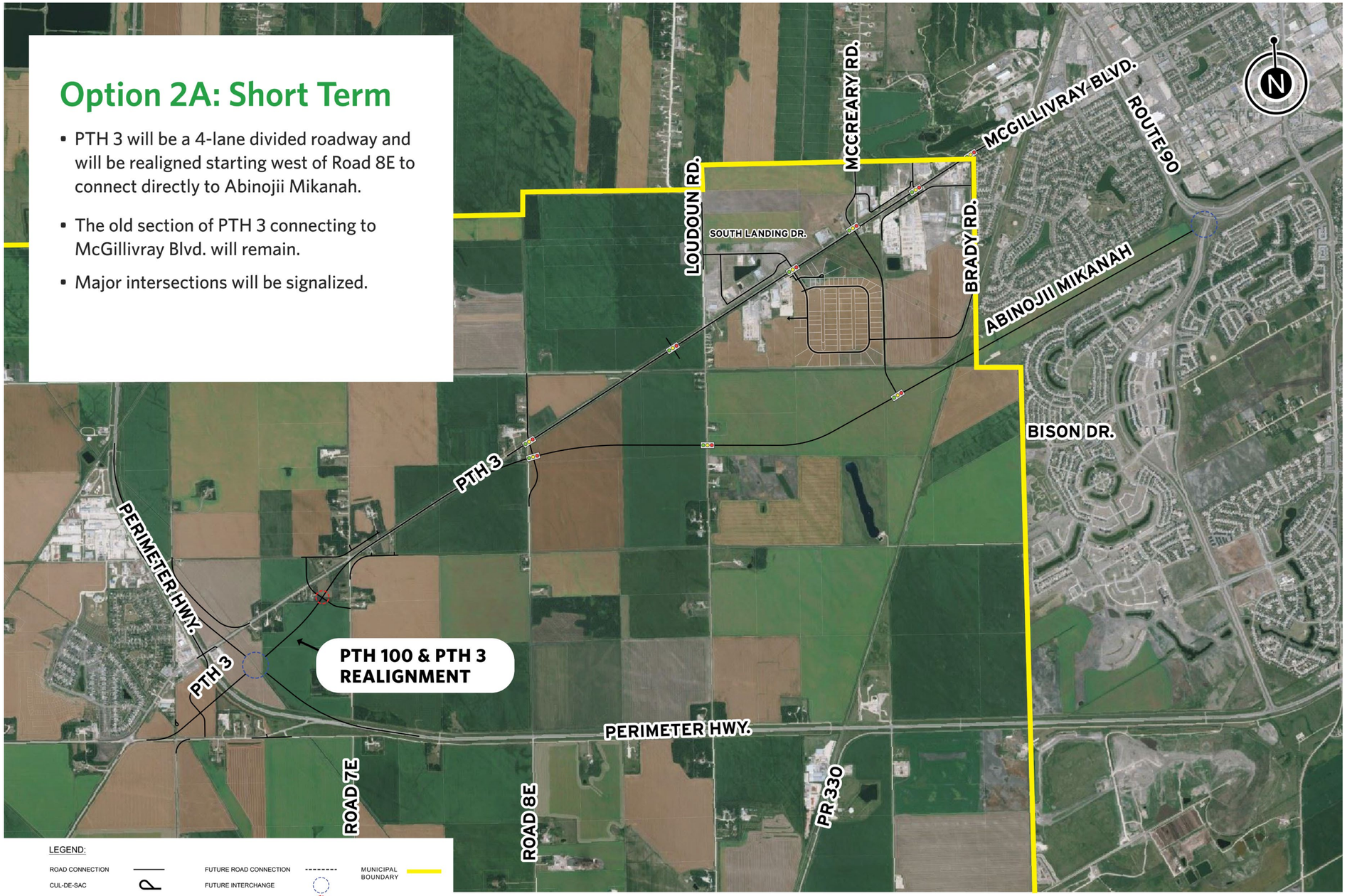


Figure 3-3: Alignment Option 2A – Initial

Option 2A: Long Term

- PTH 3 will be a 4-lane divided roadway and will be realigned starting west of Road 8E to connect directly to Abinojii Mikanah.
- The old section of PTH 3 connecting to McGillivray Blvd. will remain.
- Major intersections will be signalized.
- An interchange will be provided at the intersection with the extension of William R. Clement Pkwy/ Abinojii Mikanah.
- Connections to PR 330 and Road 8E at the Perimeter Hwy (PTH 100) will be included.

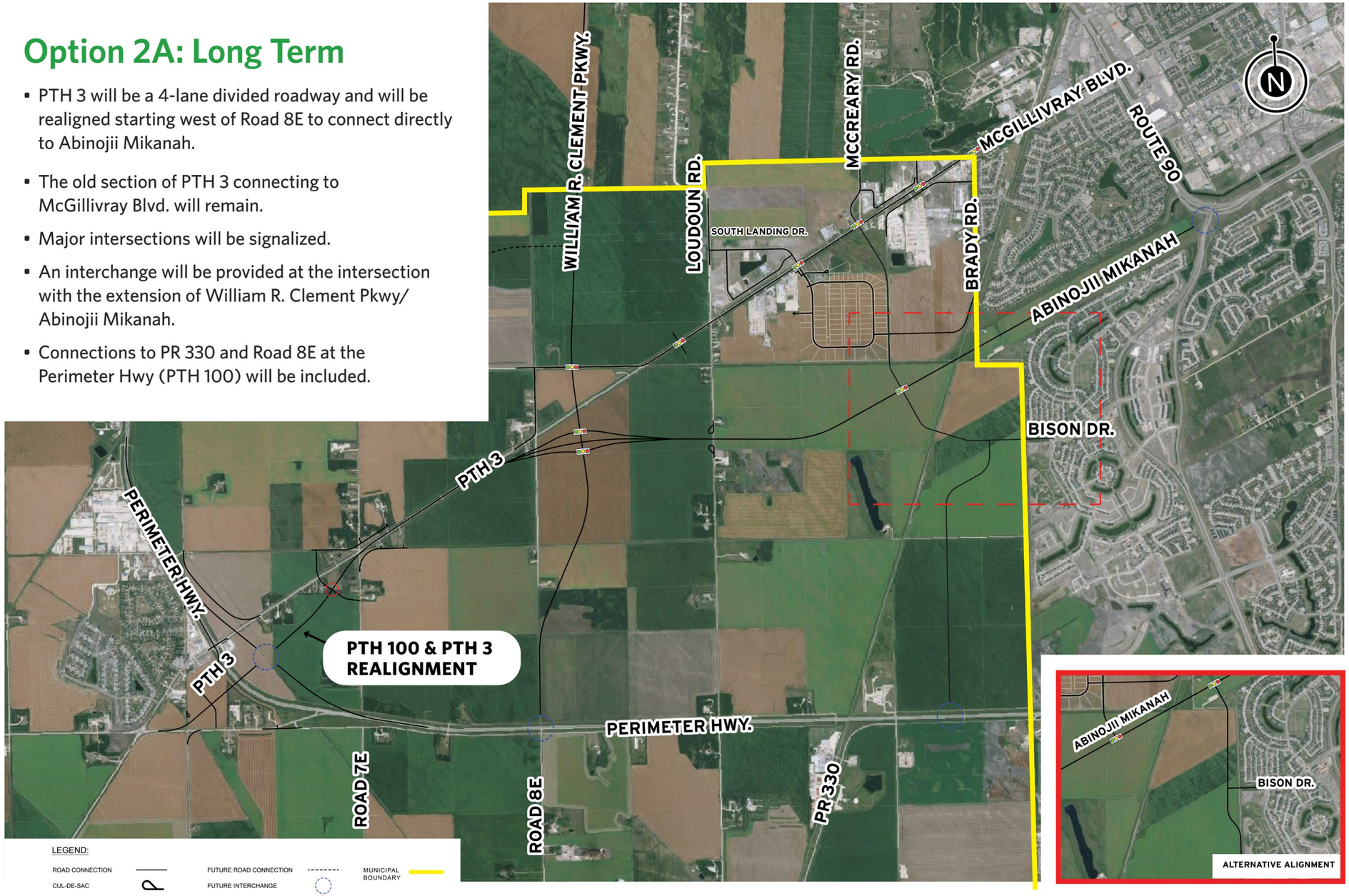


Figure 3-4: Alignment Option 2A – Ultimate

Option 2B: Short Term

- PTH 3 will be a 4-lane divided roadway and will be realigned east of Road 8E to connect directly to Abinojii Mikanah.
- The old section of PTH 3 connecting to McGillivray Blvd. will remain.
- Major intersections will be signalized.

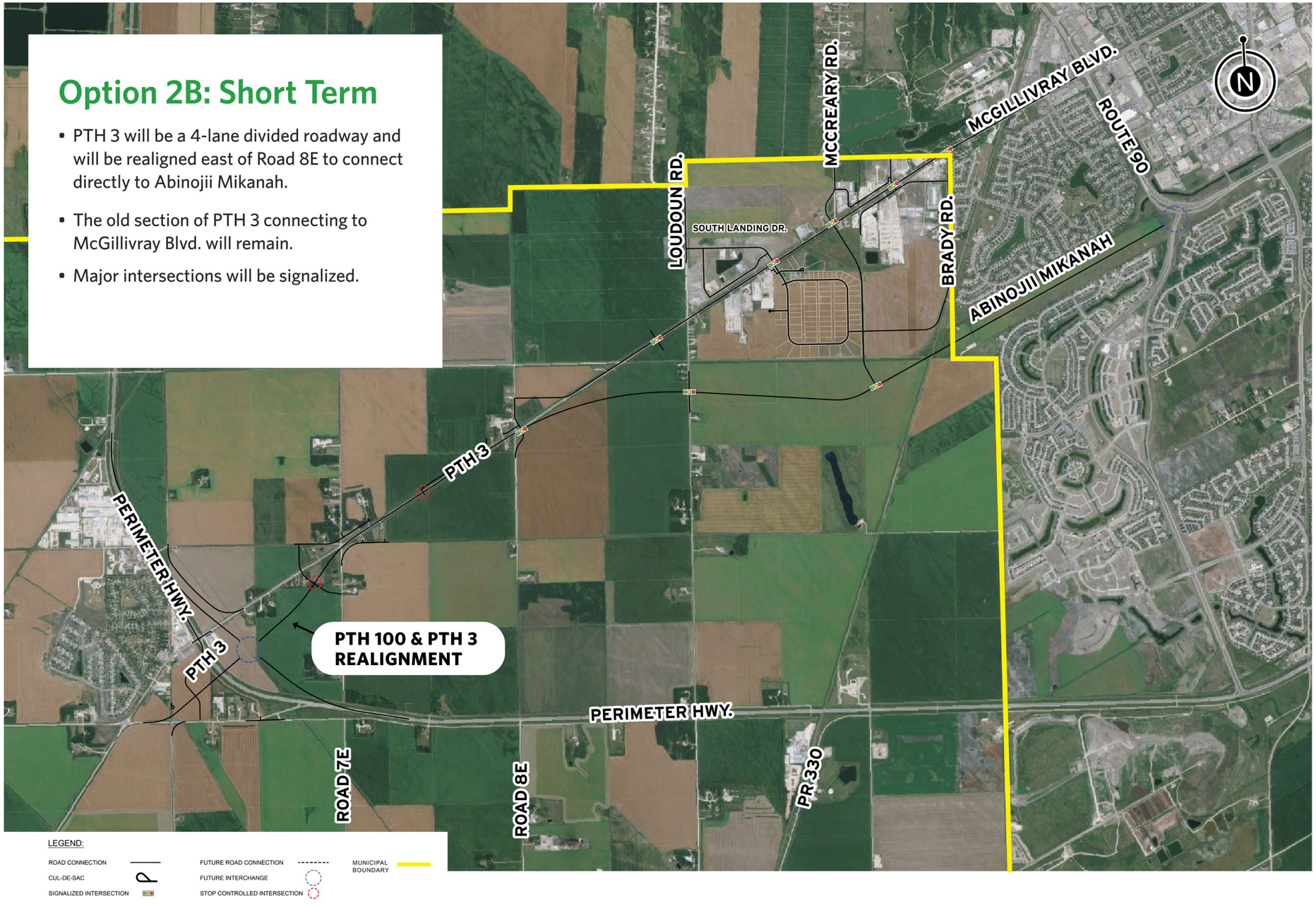


Figure 3-5: Alignment Option 2B – Initial

Option 2B: Long Term

- PTH 3 will be a 4-lane divided roadway and will be realigned east of Road 8E to connect directly to Abinojii Mikanah.
- The old section of PTH 3 connecting to McGillivray Blvd. will remain.
- Major intersections will be signalized.
- An interchange will be provided at the intersection with the extension of William R. Clement Pkwy/ Abinojii Mikanah.
- Connections to PR 330 and Road 8E at the Perimeter Hwy (PTH 100) will be included.

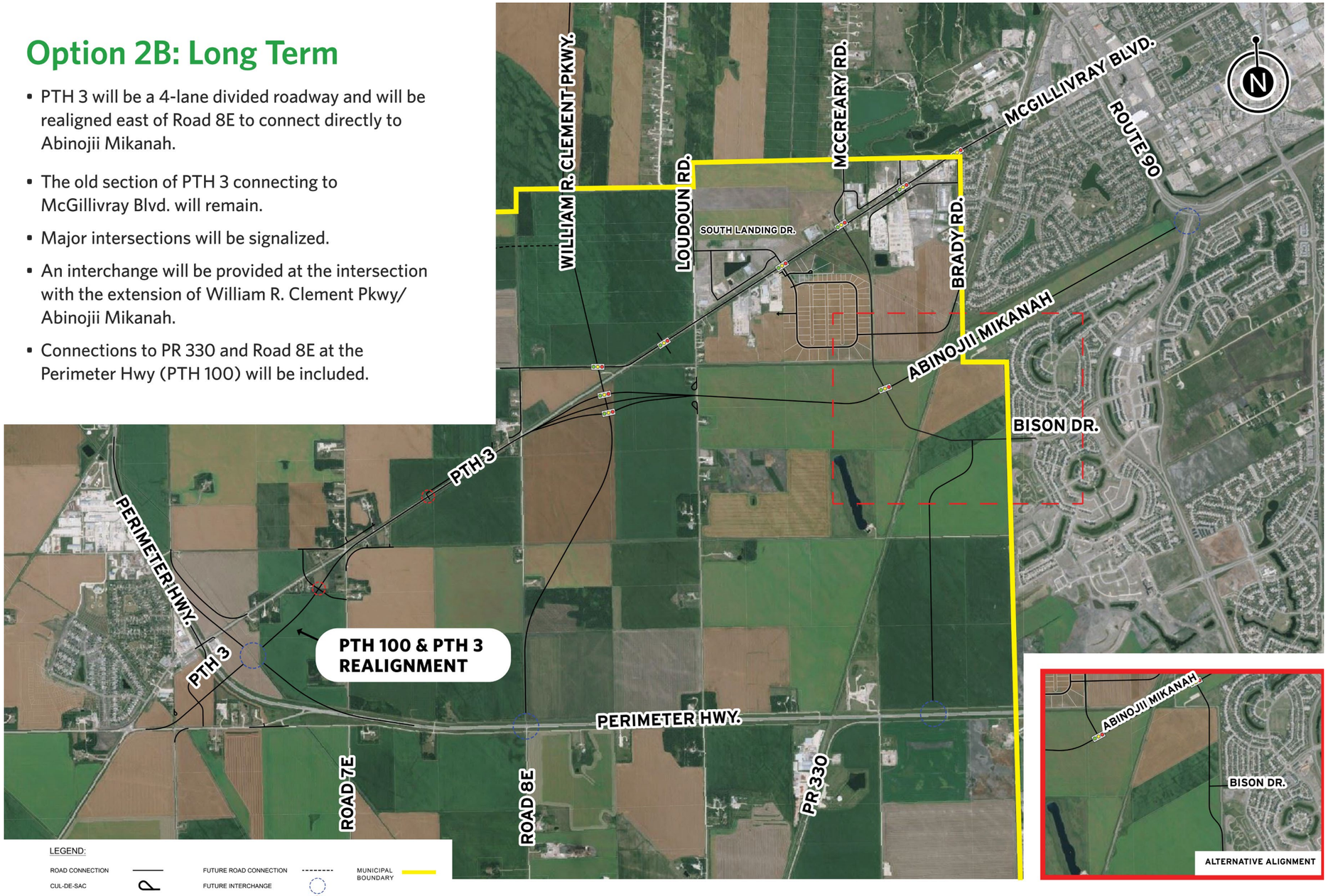


Figure 3-6: Alignment Option 2B – Ultimate

4 RECOMMENDED ALIGNMENT

The PTH 3 options were evaluated based on engineering and transportation criteria, community and socioeconomic impacts, environmental impacts, and cost. Overall, the three options scored fairly closely with each other.

Option 1, twinning PTH 3 on its existing alignment connecting to McGillivray Boulevard, was ranked the highest of the three options. Option 1 ranked highest in terms of land related impacts, cost factors, environmental impacts and inter-jurisdictional collaboration; however, will be more challenging to construct than the other two options. There are also some drainage and utility concerns that will need to be addressed during design and construction.

Option 2A, a four-lane PTH 3 roadway realigned starting west of Road 8E, and Option 2B, a four-lane PTH 3 roadway realigned starting east of Road 8E, and connecting directly to the proposed Abinojii Mikanah extension at the Winnipeg city limit, were ranked very similarly. Options 2A and 2B ranked higher than Option 1 in terms of traffic operations and geometry, drainage and utilities, and community considerations; however, they have more significant land, access and environmental impacts, and will be more costly to construct. In addition, significant inter-jurisdictional collaboration with the City of Winnipeg will be required to proceed with Option 2A or Option 2B as the Abinojii Mikanah extension is required for these options.

Option 2A ranked slightly higher than Option 2B. Option 2A was scored slightly higher than Option 2B in terms of geometry, drainage and compatibility with the future road network, while Option 2B was scored slightly higher than Option 2A in terms of access impacts. The rest of the criteria were ranked the same.

Option 1 was scored highest of the three options evaluated and is also the only option that can move forward without the extension of Abinojii Mikanah in the city of Winnipeg, the timing of which is unknown. Therefore, Option 1: PTH 3 connecting to McGillivray Boulevard, was recommended for the PTH 3 corridor.

5 FUNCTIONAL DESIGN

A full functional design was developed for the recommended alignment for PTH 3, which expands the existing two-lane undivided PTH 3 to a four-lane divided facility following the existing PTH 3 corridor and connecting directly to McGillivray Boulevard in Winnipeg. The proposed Initial alignment is composed of two sections, a high-speed rural section to the west (**Figure 5-1**) and a lower speed semi-urban section to the east (**Figure 5-2**).

The proposed alignment, shown in **Figure 5-3** and **Figure 5-4**, ties into the functional alignment for the PTH 100 – PTH 3 Interchange project at the west end of the study limit. McGillivray Boulevard within the City is currently a 2-lane facility from Brady Road to approximately 1 km east where it becomes a 4-lane divided urban roadway. For the purposes of this study, the functional plan transitions to a 2-lane cross section at the City limit; however, further discussions with the City of Winnipeg during the detailed design stage are recommended to investigate opportunities to develop a continuous 4-lane divided facility.

The Ultimate alignment, shown in **Figure 5-5**, was developed to accommodate the Future Highway Connections to the Abinojii Mikanah and WRCP extensions. The timing of these future extensions is unknown; however, provision has been made to connect these at a common point on PTH 3 via a future interchange to accommodate the forecast traffic volumes at an acceptable level of service. It should be noted that the Future Highway Connections to the Abinojii Mikanah and WRCP extensions within the RM of Macdonald could be constructed in advance of the roadway extensions within the city of Winnipeg if required as the transportation system builds out to accommodate development within the RM.

TRAFFIC OPERATIONS AND SAFETY REVIEW

The PTH 3 Initial and Ultimate designs were analysed with the forecast traffic volumes to confirm acceptable operations with the proposed designs. The Initial scenario features higher traffic volumes on PTH 3 than the Ultimate scenario, as in the Ultimate scenario some traffic is diverted to the Future Highway Connections to the Abinojii Mikanah extension and the WRCP extension. All intersections in the Initial and Ultimate scenarios for the preferred alternative feature an acceptable level of service. The Initial alignment features some high critical movement volume-to-capacity (v/c) ratios and delays towards the east end of the study area near the City limits. Traffic operations are improved in the Ultimate alignment on PTH 3 with fewer critical movements with high v/c ratios and none exceeding capacity, and fewer critical movements operating at LOS F.

An in-service road safety review was conducted of PTH 3 in the study area in accordance with the TAC Canadian Guide to In-service Road Safety Reviews. A risk-based evaluation was applied to identify a prioritized list of road safety issues. Using this prioritized list of road safety issues, and results from a cost-effectiveness assessment of potential countermeasures, short, medium, and long-term implementation options were developed based on the time and level of development needed for countermeasure implementation.

The results of the traffic operations and safety review are summarized in the *Traffic Operations and Safety Review Report*.

ROAD SAFETY AUDIT

A Road Safety Audit (RSA) of the preferred functional design of PTH 3 was undertaken by an independent third-party engineering consultant, Fireseeds North Infrastructure. The Road Safety Audit procedures were consistent with the Transportation Association of Canada – Canadian Road Safety Audit Guide. The Road Safety Audit report included general comments and the results of the comments were incorporated into the functional design of PTH 3 as deemed appropriate.

ACCESS MANAGEMENT

An access management plan was prepared to address the connections between PTH 3 and the adjacent lands for the Initial and Ultimate stage designs. The plan looks to improve the safety and efficiency of PTH 3 by reducing and controlling access points and provide acceptable ingress and egress from lands adjacent to PTH 3 in the study area. The strategy is further detailed in the *PTH 3 Access Management Plan Report*.

ACTIVE TRANSPORTATION

No additional right-of-way was obtained for pedestrian and cycling facilities as part of this study. As pathways and sidewalks are a local government responsibility, MTI does not plan or design pathways within the right-of-way, but will allow adjacent municipalities to do so, in consultation with MTI. Given that there are plans to add multi-use pathways along PTH 3 and the Future Highway Connection to the Abinojii Mikanah extension, it is recommended that the future interchange and signalized intersections be designed to allow for the future accommodation of pedestrians and cyclists.

HIGHWAY GUIDE SIGNAGE PLAN

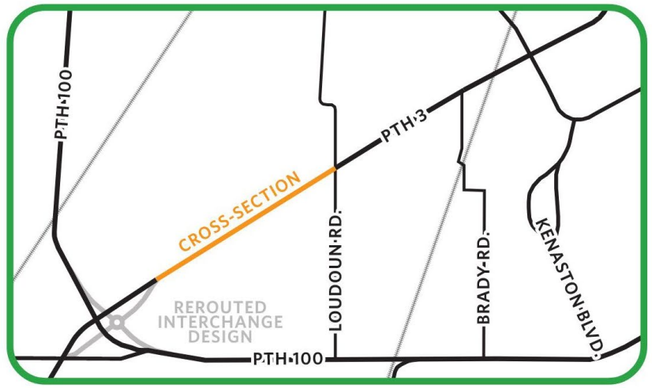
A highway guide signage plan was developed for the PTH 3 Initial and Ultimate stages. The signage plan includes signage drawings that identify the location, messaging and structural type for each of the guide signs along PTH 3 and connecting roadways, and also includes recommendations for the guide signage for the Future Highway Connections to the Abinojii Mikanah / WRCP extensions. The signage plan is in conformance with the *Manual of Uniform Traffic Control Devices for Canada* and includes four main types of highway guide signage for PTH 3 (advance guide signs, exit direction signs, gore signs and advance street name signs). The signage recommendations are consistent with MTI's current practices and consider the characteristics of the connecting roadways / highways and surrounding land uses.

ILLUMINATION PLAN

An illumination plan was developed for the Initial and Ultimate stages of the proposed PTH 3 twinning from Road 7E to Brady Road. All signalized intersections will be illuminated, including all right-turn acceleration lanes on PTH 3. In addition, the PTH 3 / Future Highway Connection to the WRCP extension / Future Highway Connection to the Abinojii Mikanah extension interchange will be fully illuminated. Continuous lighting needs along PTH 3 and the Future Highway Connection to the Abinojii Mikanah extension are mainly driven by the presence of traffic signals at the intersections and should be reviewed at the time of construction.

PTH 100 to Loudoun Road

Typical rural cross-section with a depressed median in the agricultural area along PTH 3.



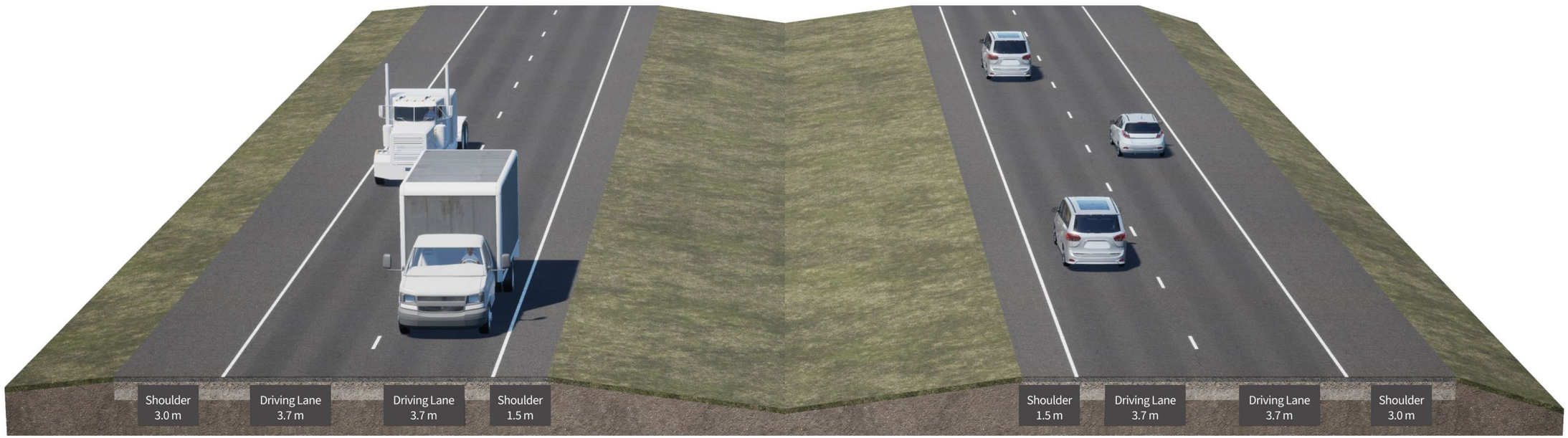
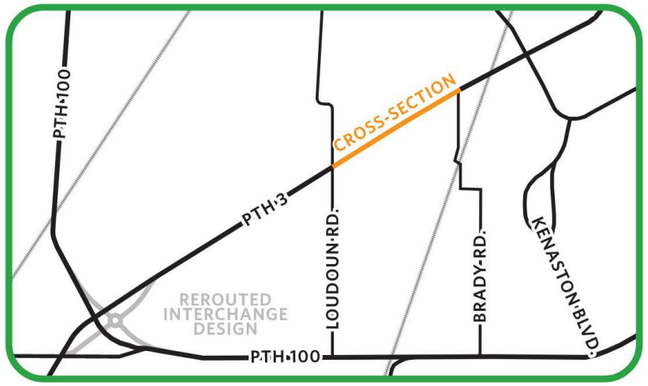


Figure 5-1: Preferred Design Cross Section – Rural Section

Loudoun Road to Brady Road

Typical semi-urban cross-section with a raised median in the industrial development area along PTH 3.



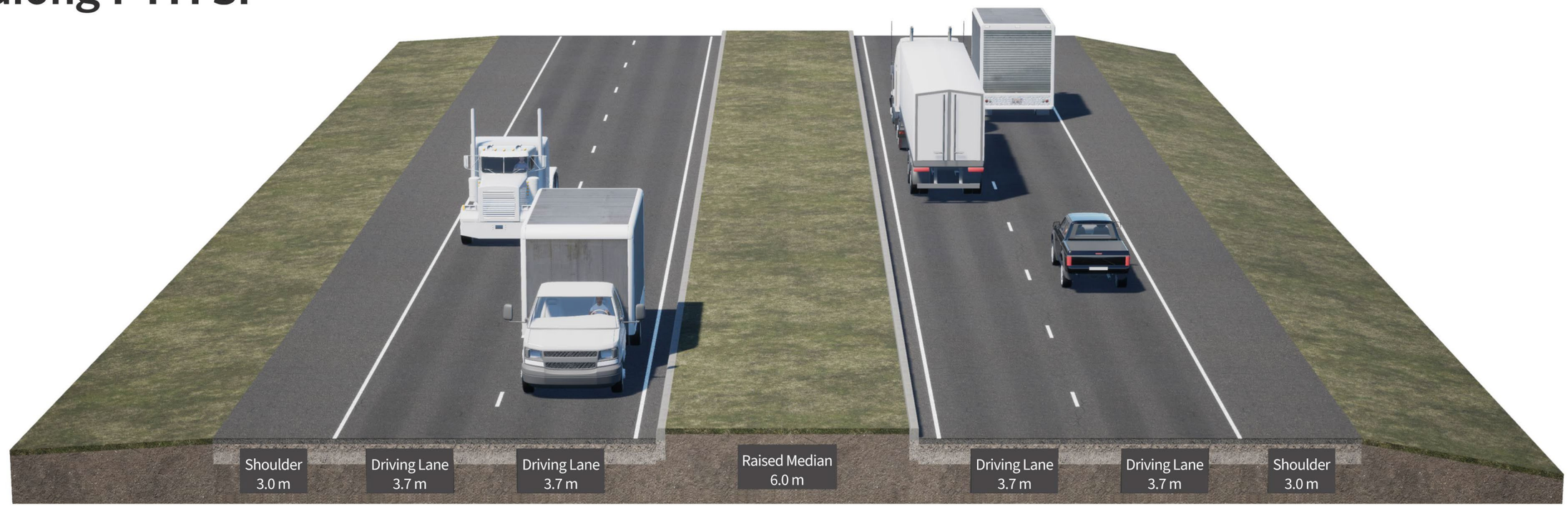


Figure 5-2: Preferred Design Cross Section – Semi-Urban Section

4-Lane Divided Roadway

- PTH 3 will be a 4-lane divided roadway.
- Major intersections will be signalized.
- Direct access to private property will be closed, with alternative access provided to remaining intersections.

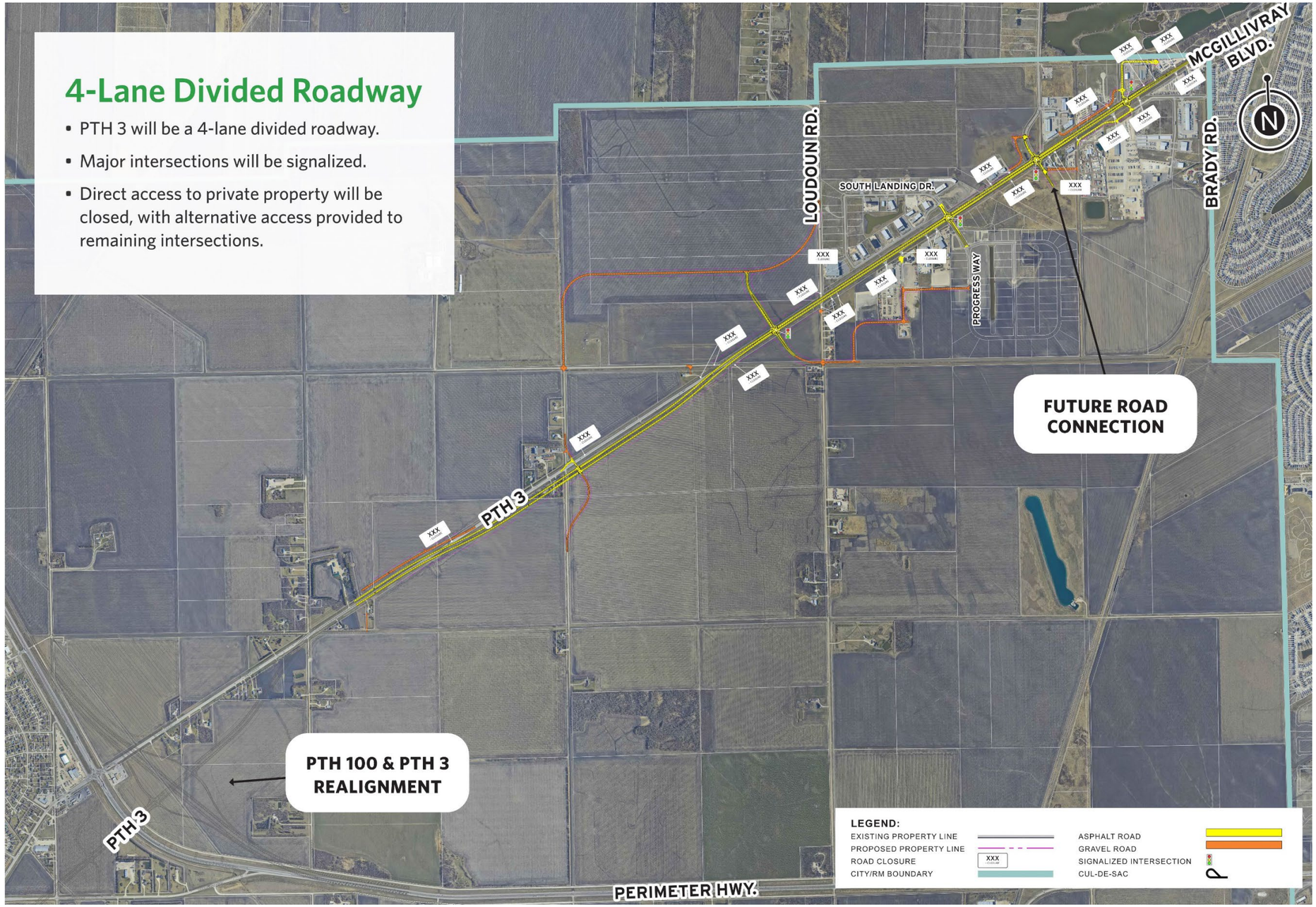


Figure 5-3: Initial Alignment

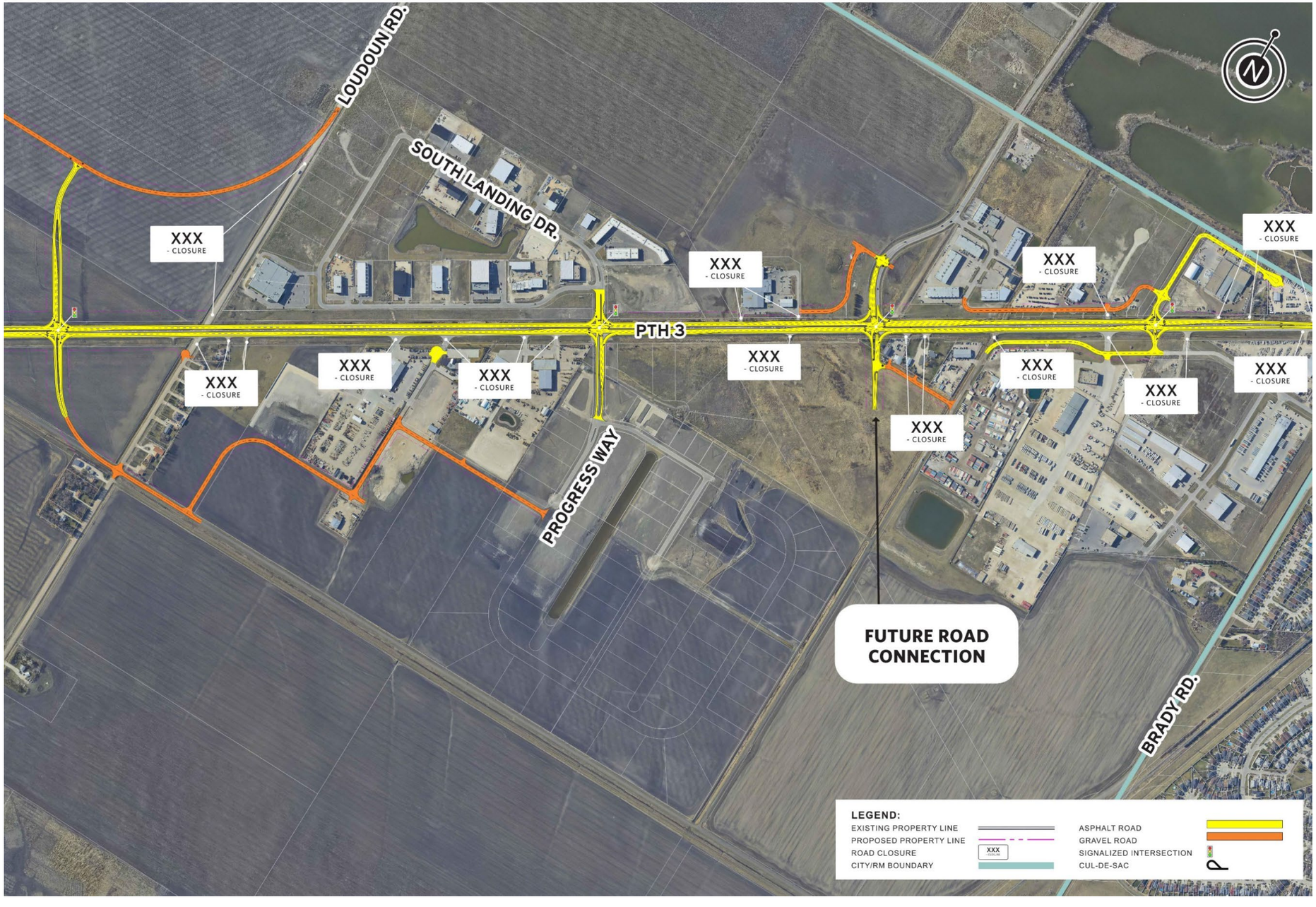


Figure 5-4: Access Management with Signalized Intersections

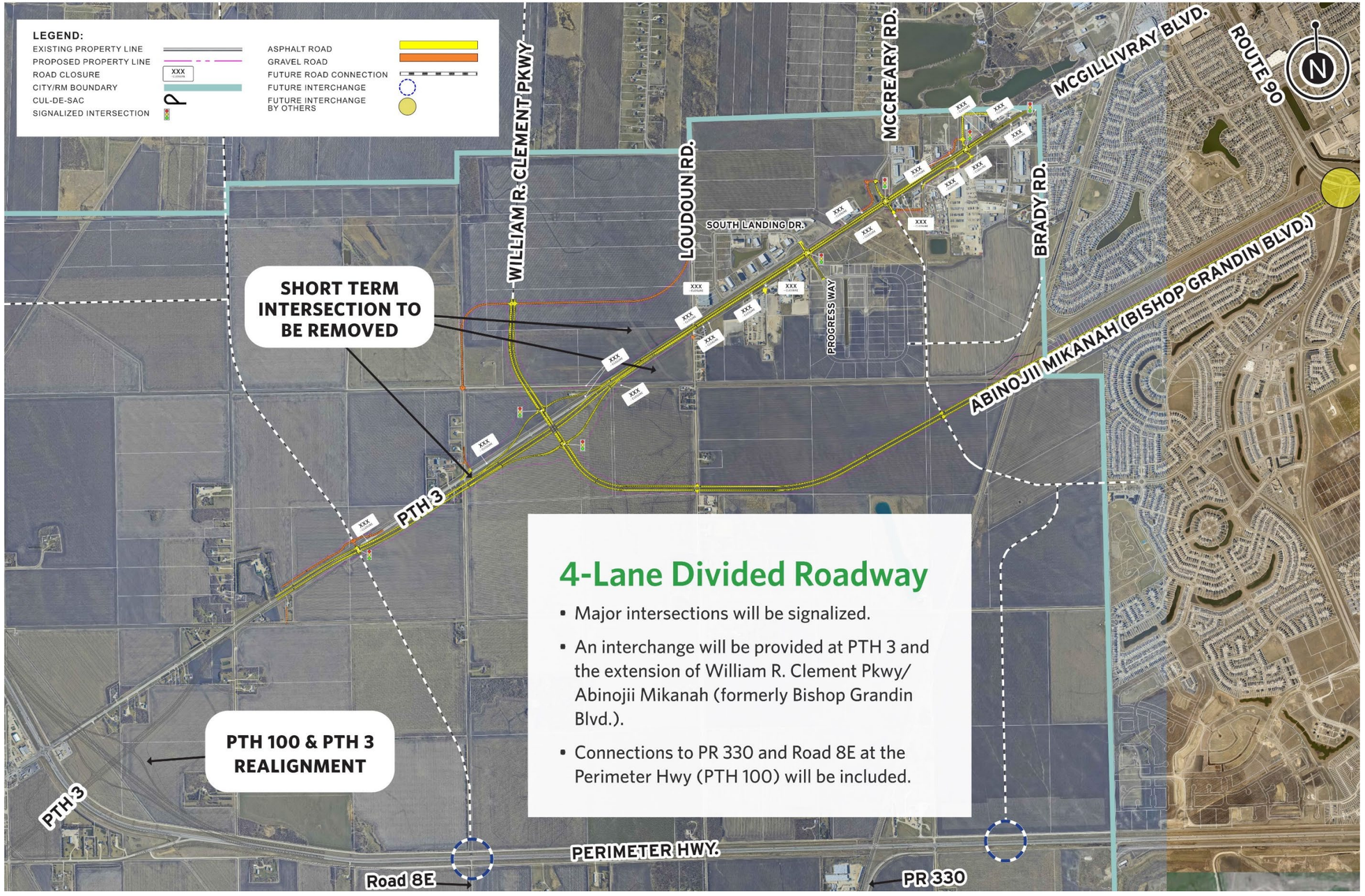


Figure 5-5: Ultimate Alignment

UTILITY RELOCATIONS

The proposed widening of PTH 3 associated with the Initial scenario will primarily affect telecommunications, namely BellMTS and Valley Fiber, while simultaneously avoiding Manitoba Hydro Power, Manitoba Hydro Gas, Rogers, and the RM of Macdonald's water and sewer mains. The widening of PTH 3 through currently signalized intersections will require relocation of those signals. The embankment for the proposed interchange in the Ultimate plan will conflict with several existing utilities that will need to be relocated. The Future Highway Connection to the Abinojii Mikanah extension is mostly through undeveloped lands, minimizing utility conflicts; however, it crosses major Manitoba Hydro gas lines near Brady Road.

DRAINAGE PLAN

Initial and Ultimate functional drainage designs were developed for PTH 3. With the Initial design, where PTH 3 is widened, the surrounding land drainage has been generally designed to follow the same patterns as the existing, albeit with the latest catchments and resulting design flows. Three drains cross PTH 3 within the study area, but none require relocation with the Initial design—only resizing and / or lengthening based on the wider roadway.

The Ultimate design includes an interchange at PTH 3 and the Future Highway Connections to the WRCP and Abinojii Mikanah extensions; however, the general existing drainage patterns can be maintained, where the roadside ditches along PTH 3 convey to one of the three crossing drains. With the Future Highway Connection to the Abinojii Mikanah extension, its roadside ditch conveys northeast to the Lot 16 Drain. The runoff collected by these new roadside ditches is currently being collected by the Lot 16 Drain eventually, so the overall catchment for the Lot 16 Drain, which is the outlet for the entire study area, remains the same before and after the proposed roadworks, only the routing is affected. The Ultimate design required the relocation of the Lot 16 Drain where it crosses the CPKC Railway. The proposed crossing location has been sized in accordance with MTI and typical CPKC Railway Standards; however, the applicable railway requirements will need to be confirmed during detailed design.

NOISE ASSESSMENT

Noise modelling was undertaken for PTH 3 alongside existing residential development. The *City of Winnipeg Noise Policy* was used as a guide to evaluate the need for sound attenuation at the residential properties. Based on the findings of the analysis, noise mitigation measures are not required as part of the PTH 3 modifications.

ENVIRONMENTAL ASSESSMENT

The environmental desktop and field investigation findings completed for the project have been incorporated into an environmental assessment report. Overall impact from the Initial and Ultimate alignment options are anticipated to be low. Key sensitivities / concerns identified for the project include the presence of several Species of Conservation Concern near the Ultimate alignment of the Future Highway Connection to the Abinojii Mikanah extension, Initial and Ultimate alignments will require a license as a Class 3 development under the Environmental Act, and a heritage resources re-screening will be required for the Ultimate alignment and potential assessments or monitoring for heritage resources may also be required.

CONSTRUCTION STAGING AND MAINTENANCE OF TRAFFIC

Preliminary construction staging plans have been developed for the Initial functional design. The functional design retains the existing 2-lane alignment between Brady Road and Loudoun Road as the eastbound carriageway of the new 4-lane divided facility. West of Loudoun Road, all 4-lanes are constructed on a new alignment to the south of the existing highway before tying back into the existing highway at Road 7E. This arrangement is beneficial to construction staging as the construction can be undertaken away from the existing traffic lanes, except at tie-in locations and at intersections. New service road connections will be constructed first to permit private property access to be redirected to the intersection locations.

RIGHT-OF-WAY AND LAND ACQUISITION

Plans outlining the right-of-way requirements have been developed based on the preferred functional design and MTI's standards for right-of-way protection. There are 48 impacted properties totaling approximately 216 acres in the RM of Macdonald (42 impacted properties) and City of Winnipeg (six impacted properties). Of these 48 impacted properties, one is already owned by the Province of Manitoba, four are owned municipally (either by the RM of Macdonald or the City of Winnipeg) and three are owned by utility or rail companies. The remaining 40 impacted properties are privately owned.