Information Bulletin

PTH 1 AND PTH 5 ROAD SAFETY STRATEGY
January 2024

Preamble

On Thursday, June 15, 2023, a tragic highway collision occurred at the intersection of Provincial Trunk Highway (PTH) 1 and PTH 5 north of Carberry, Manitoba. Since the day of this event, the Manitoba government has been focused on supporting those affected by the collision and identifying intersection improvements to reduce the risk of similar events in the future.

Project Overview

Manitoba Transportation and Infrastructure (MTI) developed a road safety strategy led by a safety strategy team to identify potential improvements and to focus on engineering and road safety characteristics of the PTH 1 and PTH 5 intersection.

The road safety strategy also identifies systemic and proactive measures in the department's operations to identify and manage potential road safety issues across provincial highway network. "Safe System" principles will guide the development of these measures. More information about "Safe System" principles can be found at the following link:

2017-2020 Manitoba Road Safety Plan: Road to Zero

Vision Zero and the Safe System Approach: A Primer for Canada (PRM-VZSS-E)

This information bulletin only provides information related exclusively to the PTH 1 and PTH 5 intersection as shown below.

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Goals for the PTH 1 and PTH 5 Intersection

Objective 1: MTI Standards Review

A review of the intersection was undertaken immediately after the June 15, 2023 collision which confirmed that the intersection's safety features generally meet MTI's standards. MTI completed the refurbishment or enhancement of the existing safety features, where required.

The purpose of this review was to improve the visibility of the intersection and to heighten driver awareness.

Objective 2: In-Service Road Safety Review

An engineering service provider has conducted an In-Service Road Safety Review identifying options for short-term, medium-term and long-term safety improvements. Based on the review:

a. MTI will implement additional short-term safety improvements as soon as possible following the In-Service Road Safety Review.

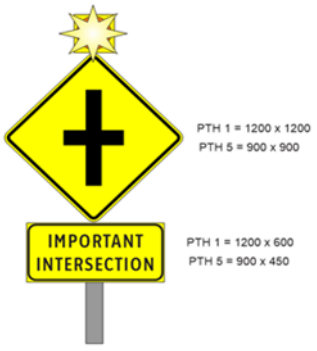
b. Medium-term and long-term intersection improvement options will form the basis of further design to address all safety issues identified in the In-Service Road Safety Review. These intersection improvement options will be considered as part of the functional design to select the preferred option prior to detailed design and construction.

Current Status

Objective 1: MTI standards review - Complete

MTI has identified and completed the following work:

- Installation of "Important Intersection" signs.
- On August 18, 2023, MTI installed signs with a flashing amber light on PTH 1 and PTH 5 ahead of the intersection.



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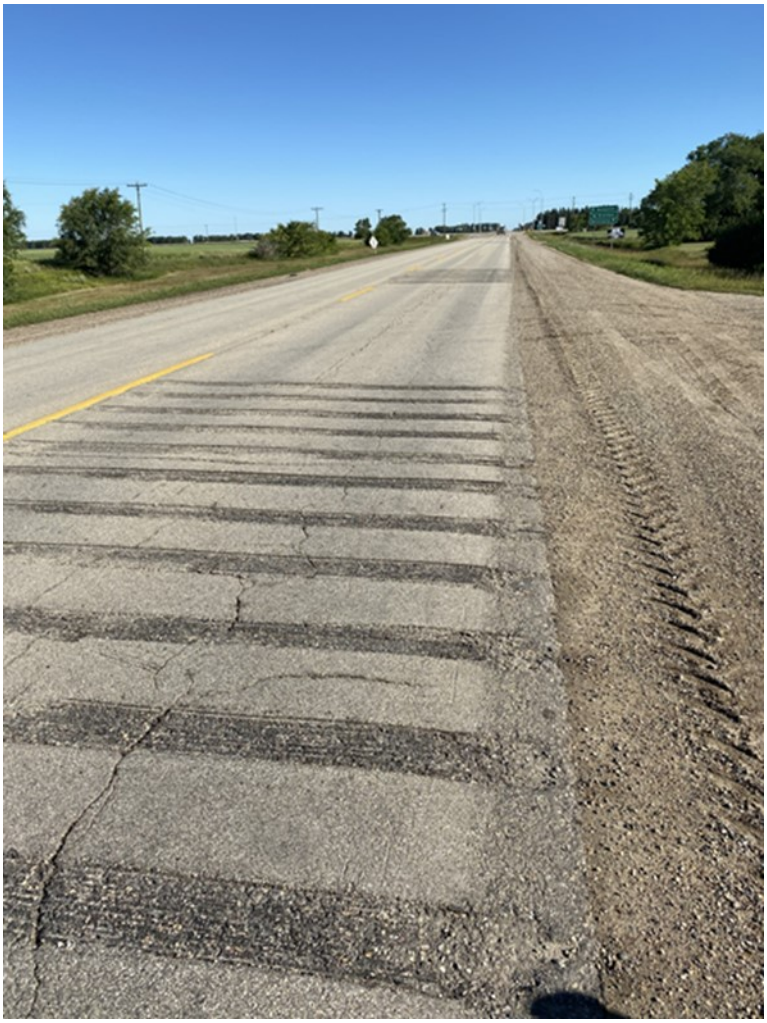
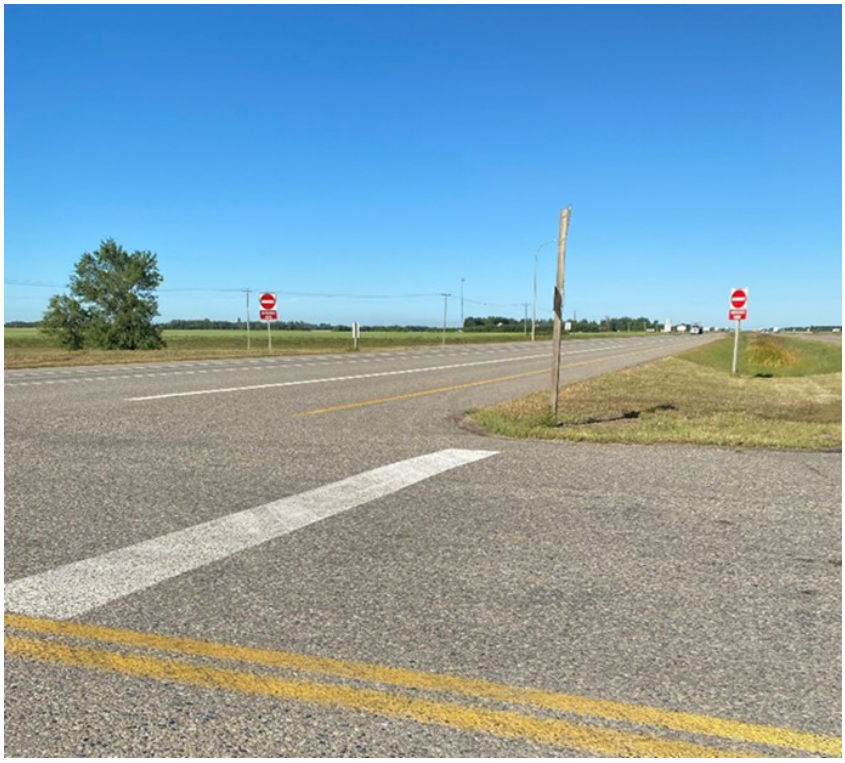
- Installation of additional speed limit signs.
  - The department installed these signs to reinforce the 100 kilometres per hour (km/h) speed limit on PTH 1 in the vicinity of the intersection.

- Refurbished the existing transverse rumble strips on PTH 5.
  - MTI refurbished the rumble strips on PTH 5 north and south of PTH 1.



- The department refurbished the pavement markings at the intersection.



- Replacement of traffic control signage.
  - The department assessed the existing signage quality at the intersection and replaced signs as required.

Objective 2: In Service Road Safety Review – Complete

In early July 2023, MTI hired WSP Canada (an engineering service provider) to conduct an In-Service Road Safety Review. This review has multiple components including a preliminary field investigation, operational and safety analysis as well as recommendations for short-term, medium term and long-term options or countermeasures. This information is included in the Final Report and Executive Summary.

- At the end of July 2023, the preliminary field investigation to collect information about the intersection layout and use was completed.

- The operational and safety analysis included:
  - **Collision analysis:** Using the last ten years of collision data provided by MTI, WSP Canada conducted a collision patterns and trends analysis to develop a clear understanding of the road safety performance characteristics at the PTH 1/ PTH 5 intersection.

- **Geometric review:** Based on the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads and local design standards, a review of geometric design elements was completed. The focus of this review was to identify any correlations that may exist between the intersection's infrastructure characteristics and collision occurrence.
- **Operational Analysis:** A traffic operational analysis was undertaken to identify operational issues that may be contributing to collision risk at the intersection. In addition, an assessment of vehicle speeds on PTH 1 and PTH 5 approaching the intersection was completed to determine if the current posted speed limits are appropriate for the existing conditions.
- **Conflict Assessment:** Using video recordings collected from several locations at the intersection, a traffic conflict analysis was conducted for the intersection. This analysis examined near-miss events between road users to gain an understanding of the probable causes of potential collisions. The results from this analysis provided useful information on near-miss data, stop-sign compliance and traffic volume data.
- **Human Factors Assessment:** An analysis of human factors was conducted to identify possible human factors issues at the intersection. The analysis examined factors such as driver workload, visual complexity, effectiveness of safety features and factors influencing driver decisions.

- The final report and executive summary including recommendations are complete and available at MTI's official website at:

Transportation and Infrastructure Project Information

Next Steps:

- The In-Service Road Safety Review recommendations include an implementation strategy which identifies short-term, medium-term and long-term options for safety improvements.
- MTI will implement short-term improvements, where practical and as soon as possible following the In-Service Road Safety Review. Improvements that are in conflict with or expected to be part of the future intersection improvement project (e.g., additional turning lanes), will not be implemented at this time.
- In the medium-term, there are three (3) intersection alternatives that reduce collision risk and are identified as options for further consideration as part of the functional design:
  - widened median intersection.
  - reduced conflict intersection or restricted crossing U-turn (RCUT) intersection.
  - roundabout.
- The Manitoba government has approved an intersection improvement project in anticipation of this further design phase.

- The functional design phase of the project will include a review and evaluation of the three options before confirming the final design for the new intersection. Safety is the key consideration of both the functional design process and the final decision on design.
- Public engagement will be a part of the functional design phase.

Project Schedule:

- Short-term improvements – to begin Spring 2024
- Functional design – tender to be issued in January 2024
- Detailed design and land acquisition – early 2025
- Construction – late 2025 or early 2026
- Anticipated completion – Fall 2026

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Frequently Asked Questions

1) Why does MTI need to study the intersection before acting?
Any long-term solution for improvements should address all safety issues at the PTH 1/ PTH 5 intersection; not just the safety issues that may have contributed to the June 15, 2023, collision. More importantly, the solution should not aggravate safety issues that are unknown. All safety issues need to be fully understood before designing and constructing a long-term solution so they can be appropriately addressed.

2) How will MTI study the intersection?
MTI is undertaking an In-Service Road Safety Review to understand how road users are navigating the intersection and to identify safety concerns. This safety review is expected to lead to further future design work. See response to question 5) below for further information.

3) What is an In-Service Road Safety Review?
An In-Service Road Safety Review is a fact-finding study that is intended to identify all safety issues at a particular location on the highway network. It will also point out potential countermeasures to address the identified safety issues.

4) Who is conducting the In-Service Road Safety Review for PTH 1 and PTH 5?
MTI's consultant, WSP Canada Inc., is conducting this review under the guidance of MTI's safety strategy team.

5) What happens at the conclusion of the In-Service Road Safety Review?
The recommended implementation strategies of the In-Service Road Safety Review will be used to develop an implementation plan. The implementation strategies developed in the In-Service Road Safety Review will identify short-term, medium and long-term improvement options for the intersection. The short-term options, where practical, will be implemented, as soon as possible. In this case, the In-Service Road Safety Review has recommended three options for consideration as part of the functional design. The detailed design and construction phases of the project will follow the functional design phase.

6) Where is the In-Service Road Safety Review available?
The Report and Executive Summary can be found at MTI's official website at: MTI Project Information

7) Why doesn't MTI simply reduce the speed limit through the intersection area?
There are visual cues other than speed limit signs that communicate an appropriate travelling speed to road users. These include features like road width, presence of accesses, surrounding land use, and upstream speed limits.

Industry experience shows that simply reducing the speed limit through a specific area is not effective in the absence of other significant intersection modifications or changes to the surrounding area. Furthermore, compliance with the speed limit might be also an issue as some road users travel much faster than the posted speed limit.

Reducing the speed limit only, may create further safety concerns due to road users travelling at a wide variety of speeds. For example, road users crossing the intersection will be faced with cross traffic that travels at varying speeds. This may lead to situations where motorists find it difficult to estimate the speeds and distance of these vehicles, especially at higher speeds, which increases the risk of collisions.

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