

# Functional Design Study of PTH 1 and PTH 5 Intersection Improvements

**ROUND 1  
RIGHTS HOLDER & STAKEHOLDER MEETINGS**

SUMMER 2024



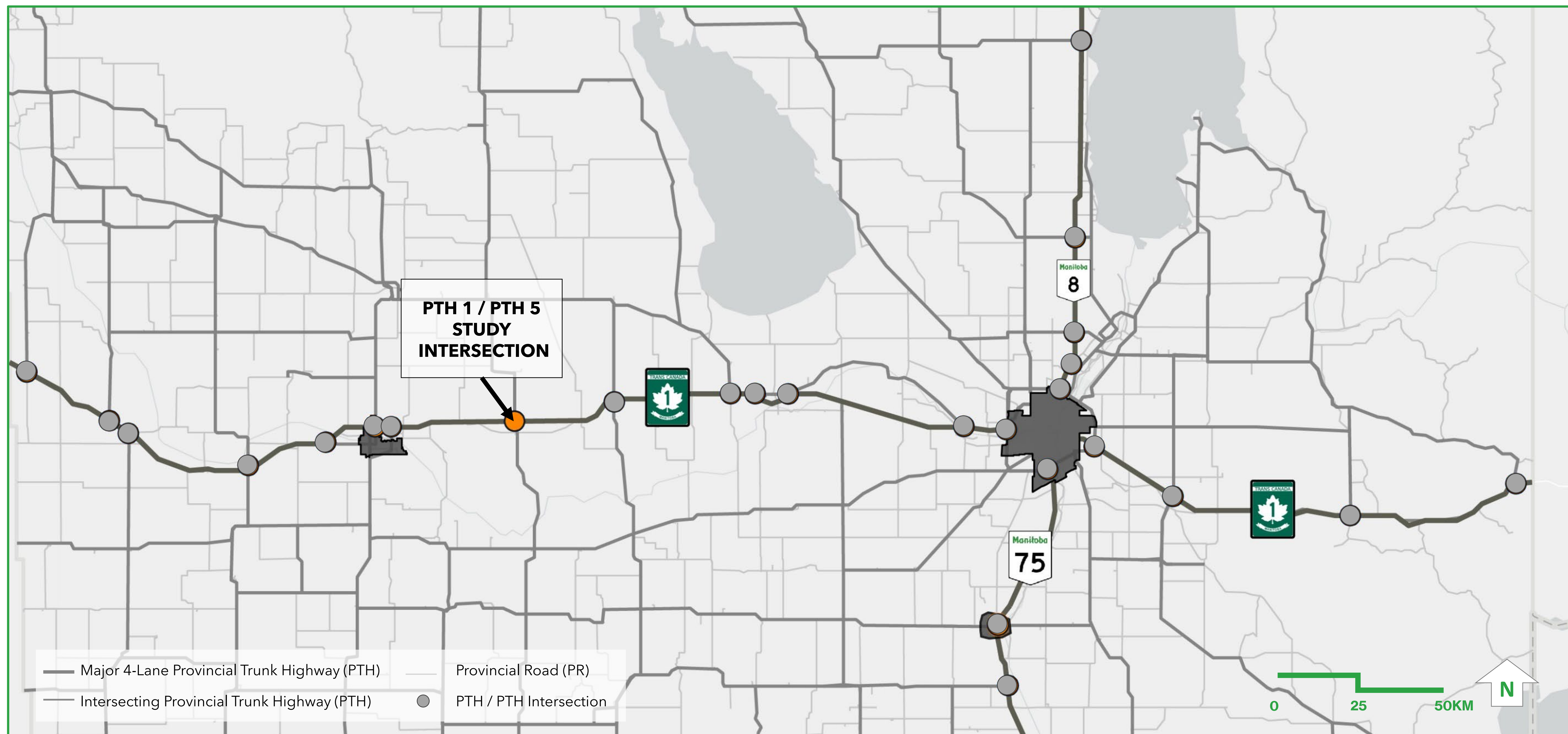
# Welcome

- Thank you for participating in the functional design study for potential intersection improvements at PTH 1 and PTH 5.
- The image at the right illustrates the general study area.
- The following slides provide an overview of the study process and objectives.
- The intent of this engagement is to:
  - Introduce the project;
  - Offer an opportunity for Rights Holders and stakeholders to provide early insight before design alternatives are developed; and
  - Share important details regarding the next steps for this project.



# Regional Highway Context

The map below illustrates the regional highway context surrounding the PTH 1 and PTH 5 study intersection.



# Project Team



**Manitoba Transportation and Infrastructure (MTI)**

Project Owner



**WSP**

Engineering Consultant

Larry Halayko, WSP Project Manager



**Landmark Planning & Design**

Public and Stakeholder Engagement Consultant

Donovan Toews, Engagement Lead

# Project Intent

- The goal of this functional design study is to identify a design that will improve intersection safety at PTH 1 and PTH 5.
- In June of 2023 this intersection was the site of a significant collision that resulted in the loss of 17 lives and impacts to many others. There have been subsequent collisions since this time.
- The Manitoba government is focused on supporting those affected by the collision and identifying preventative measures to avoid reoccurrences.



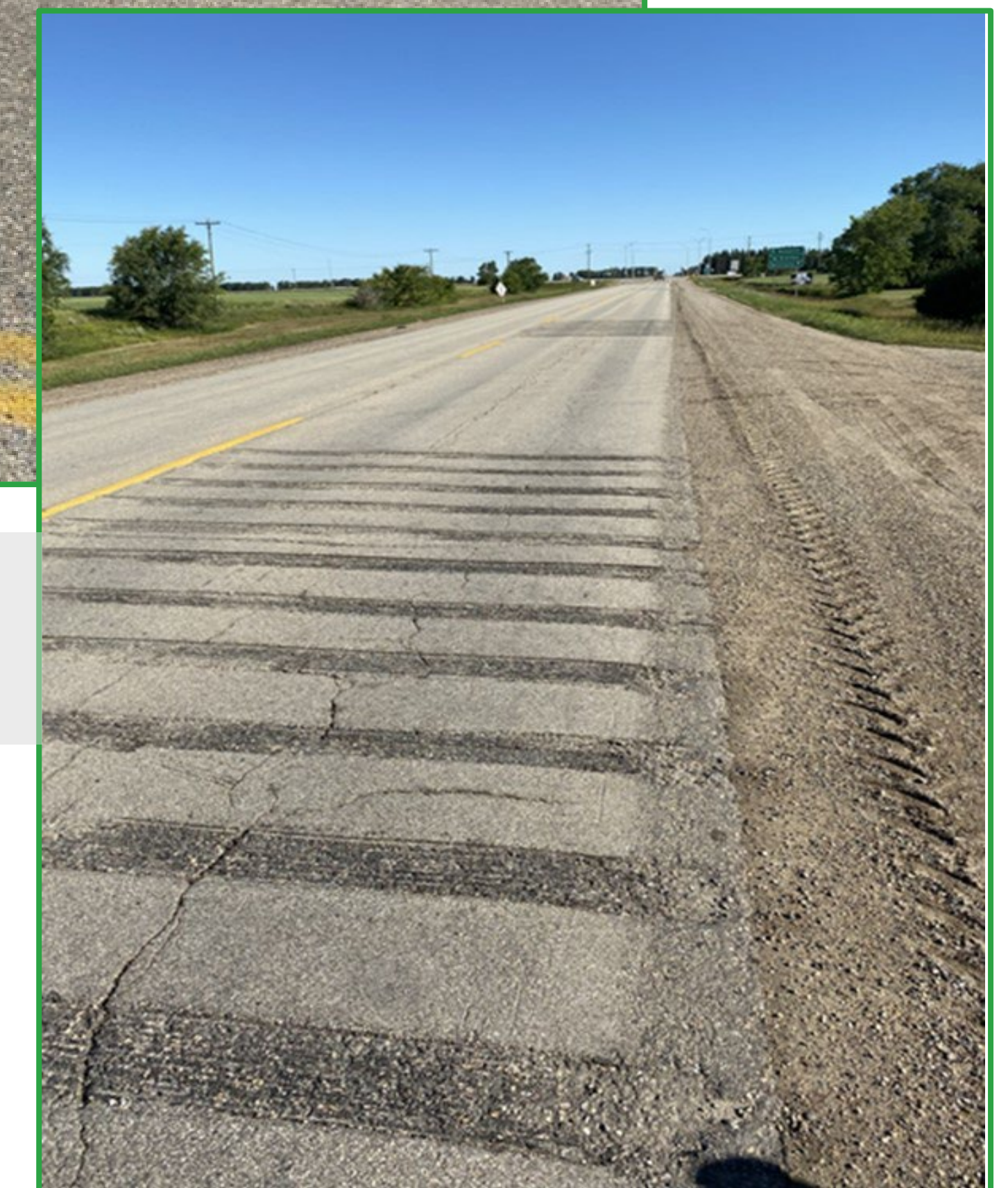
*PTH 1 and PTH 5 intersection looking north.*

# Road Safety Strategy

- In June 2023, Manitoba Transportation and Infrastructure (MTI) started work on a road safety strategy to identify potential improvements and to focus on engineering and road safety characteristics of the PTH 1 and PTH 5 intersection.
- As part of the strategy, the Manitoba government undertook a safety standards review, which resulted in the completion of refurbishments or enhancements of existing safety features, where required.
- Safety upgrades completed at the intersection include:
  - ✓ Installation of “Important Intersection” signs with flashing amber lights;
  - ✓ Installation of additional speed limit signs;
  - ✓ Refurbishment of existing transverse rumble strips on PTH 5;
  - ✓ Refurbishment of pavement markings at the intersection; and
  - ✓ Replacement of traffic control signage.



*Refurbished pavement markings at the intersection.*



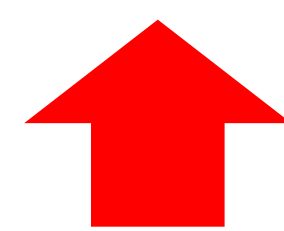
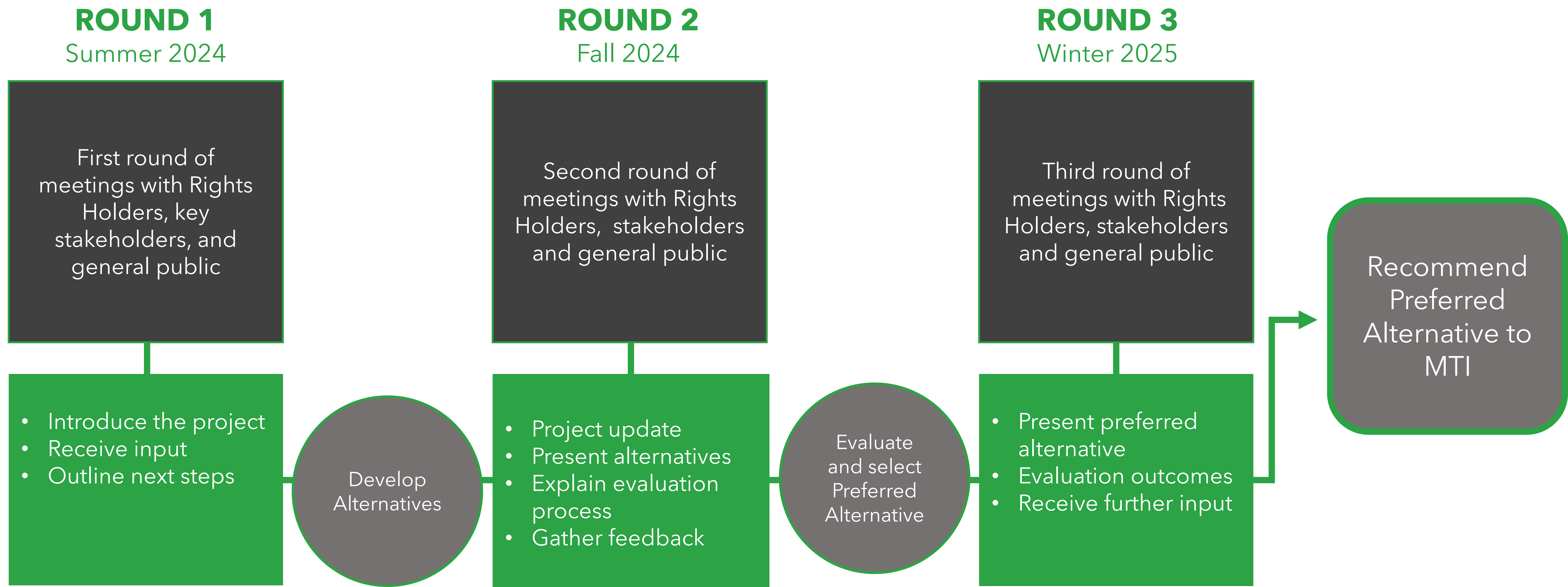
*Refurbished rumble strips north and south.*

# In Service Road Safety Review

- MTI's safety standards review was followed by an In Service Road Safety Review (ISRSR) with the purpose to identify safety issues associated with the intersection and to suggest potential safety enhancements for consideration.
- This review had multiple components including a preliminary field investigation, an operational and safety analysis, and recommendations for improvement options or countermeasures.
- The ISRSR recommendations include an implementation strategy identifying short-term, medium-term and long-term options for safety improvements.
- MTI is actively implementing all these recommendations, including the development of this functional design study.

# Engagement Process

The following diagram illustrates the engagement process:



**WE ARE HERE**



# Identified Rights Holders & Stakeholders

**There are many people and groups who may be interested in or affected by this project:**

- Impacted families and communities;
- Local residents and landowners;
- Adjacent agricultural operations;
- Emergency service providers;
- Manitoba Trucking Association;
- Rights Holders including Swan Lake First Nation and Manitoba Métis Federation;
- Local municipalities including the RM of North Cypress-Langford and Town of Carberry;
- Business owners;
- Local school divisions;
- Utilities in the vicinity;
- Local Trail or Recreation Groups; and
- Others as identified throughout the engagement process.

# Rights Holder & Stakeholder Interests

The study team needs to consider a number of factors in the design process, including;

- Safety and collision history;
- Traffic operations, including traffic flow;
- Local land use and access patterns;
- Impact to surrounding lands and residences;
- Existing infrastructure;
- Utilities;
- Environmental impacts;
- Cultural or heritage considerations;
- Emergency access and services;
- Capital and maintenance costs; and
- Other factors that may be identified through the engagement process.



*PTH 1 and PTH 5 intersection looking east.*

# Safe System Approach

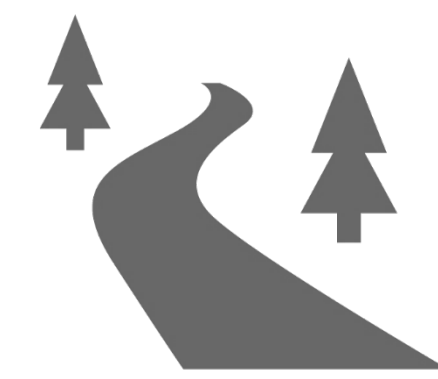
- The Safe System Approach is a framework adopted by the Transportation Association of Canada (TAC) to help improve road safety.
- Design alternatives for this intersection will follow the Safe System Approach to ensure best practice.
- The Safe System Approach recognizes people make mistakes and the roadway should be designed to help reduce the impact of those mistakes.



# Safe System Approach

This slide provides information on key Safe System Approach elements related to highway design that will guide this functional study:

## SAFE SYSTEM APPROACH



### Safe Road Design

Designs should provide road users with a chance to:

- Make decisions
- React and recover from mistakes
- Survive collisions in the event of mistake

**GOAL:** Designs that protect for mistakes



### Safe Speeds

Speed is selected by drivers based on visual cues:

- Roadway cross section
- Presence of driveways and intersections
- Surrounding land use
- Speed limit signage

**GOAL:** Not too fast and not too variable



### Safe Land Use Planning

Support development adjacent to highways while promoting safety through:

- Provincial land use planning
- Driveway and intersection management standards
- Traffic impact studies

**GOAL:** Reduce conflicts and control movements

# Intersection Types

**The In Service Road Safety Review ('the Safety Review') recommended the development of a functional design study to review intersection alternatives.**

- This functional design study will advance the review process to the next stage to identify a preferred intersection alternative.
- Characteristics and examples of a range of intersection types are provided in subsequent boards.

## ISRSR Highlighted Intersection Types:

- Widened Intersection
- RCUT - Reduced Conflict U-Turn
- Roundabout

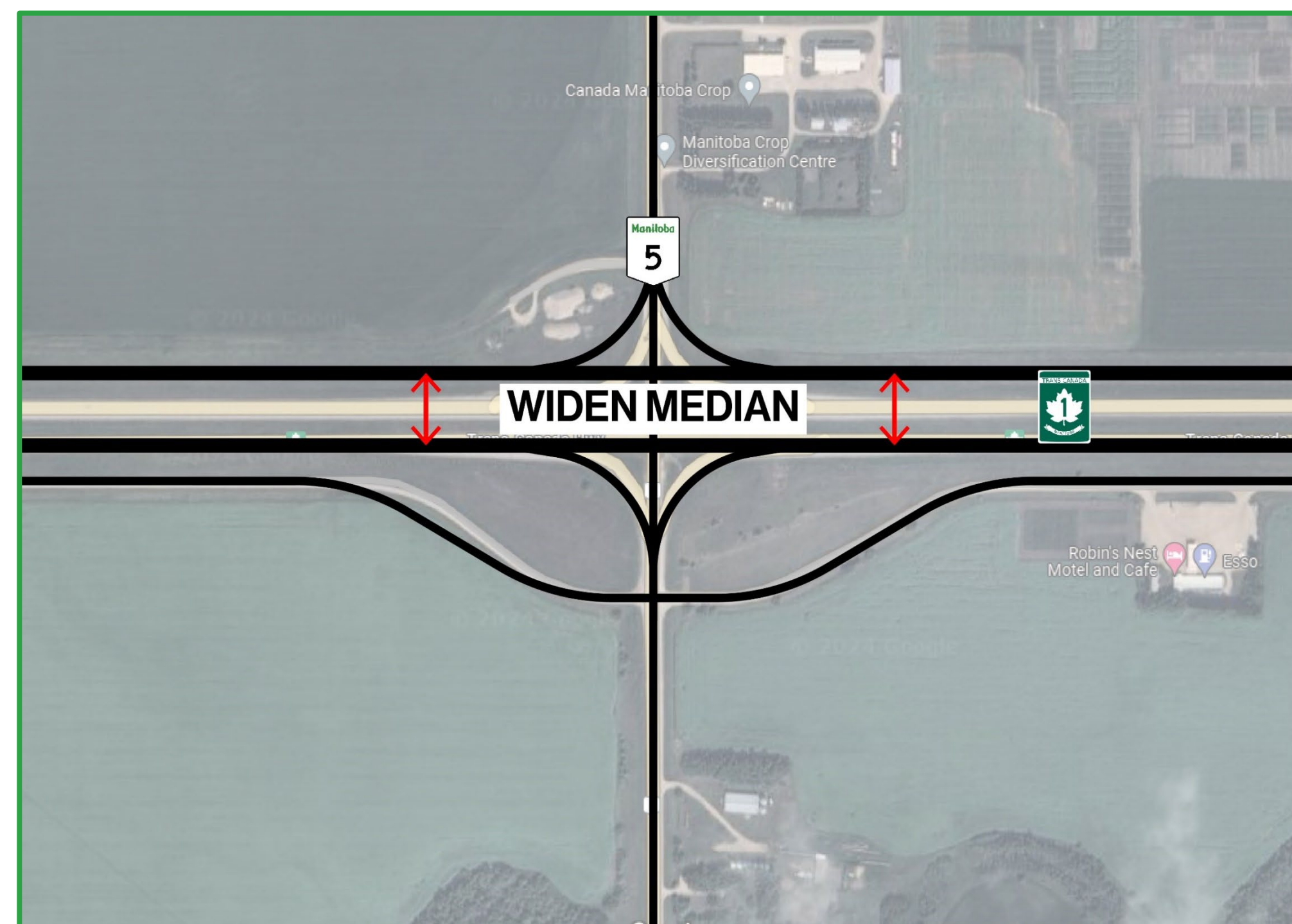
## Additional Potential Intersection Types:

- Grade Separated Interchange
- Signalized Intersection
- Restricted Left/Jug Handle
- Split Intersection
- Offset-T Intersection
- Median U-Turn (MUT)

# Potential Intersection Types

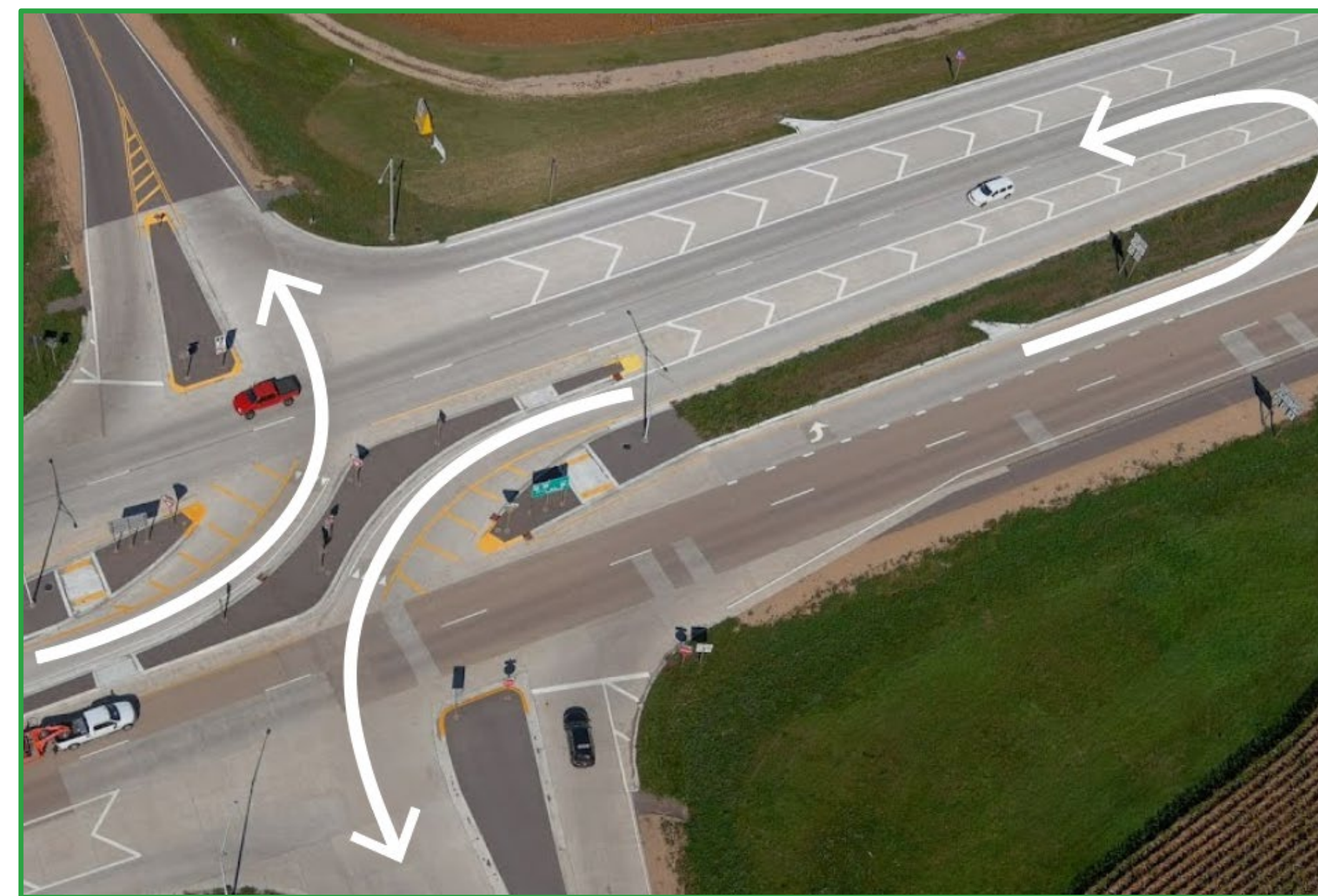
This slide illustrates potential rural intersection treatments identified by the Safety Review. These intersection options will be further assessed in order to select one.

## Widened Intersection



- Collision frequency decreases as the median width increases.
- A wider median helps to clearly mark and guide drivers within it, making it easier to navigate and stay on the right path.
- Wider medians allow drivers to stop safely in the middle to decide on turns, reducing risks of collisions.

## RCUT - Reduced Conflict U-Turn



- Drivers making right-turns and U-turns only need to watch for traffic approaching from one direction at a time.
- Enhances safety by eliminating left-turn and through movements from the minor road, requiring drivers to U-turn instead. Turn lanes are provided to accommodate safer left-turns from major to minor roads.
- RCUT intersections reduce the overall number of conflict points at an intersection including severe right-angle conflicts.

## Roundabout



- Roundabouts feature a central circular median around which traffic moves in a circular motion.
- Vehicles travel in a mostly free-flow and continuous movement.
- Roundabouts reduce the number of conflict points including severe right-angle conflicts.
- Driver workload is reduced at this type of intersection.

# Other Intersection Types

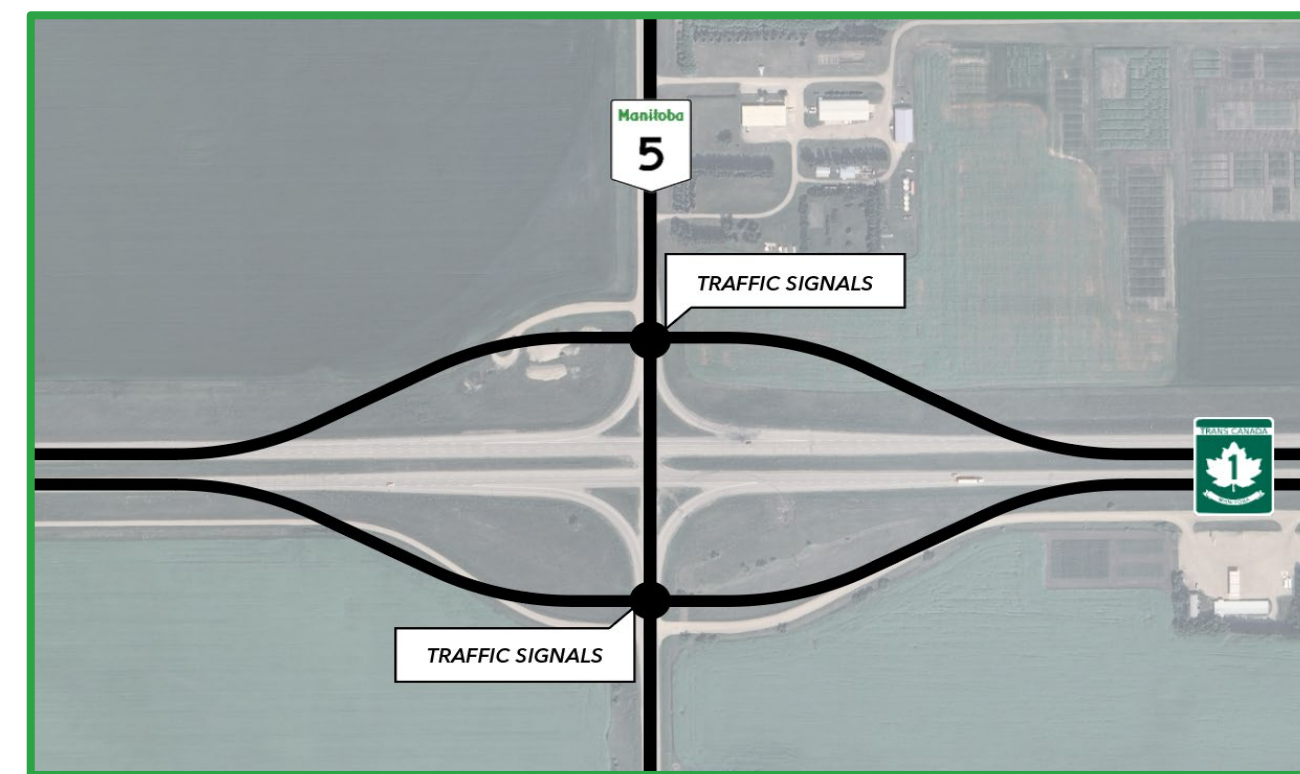
This slide illustrates other additional types of potential rural intersection treatments that have been considered and are presented for discussion purposes:

## Grade Separated Interchange



An interchange completely separates vehicle movements.

## Split Intersection



This intersection replaces a typical four leg intersection with two separate at grade intersections along the minor road.

## Signalized Intersection



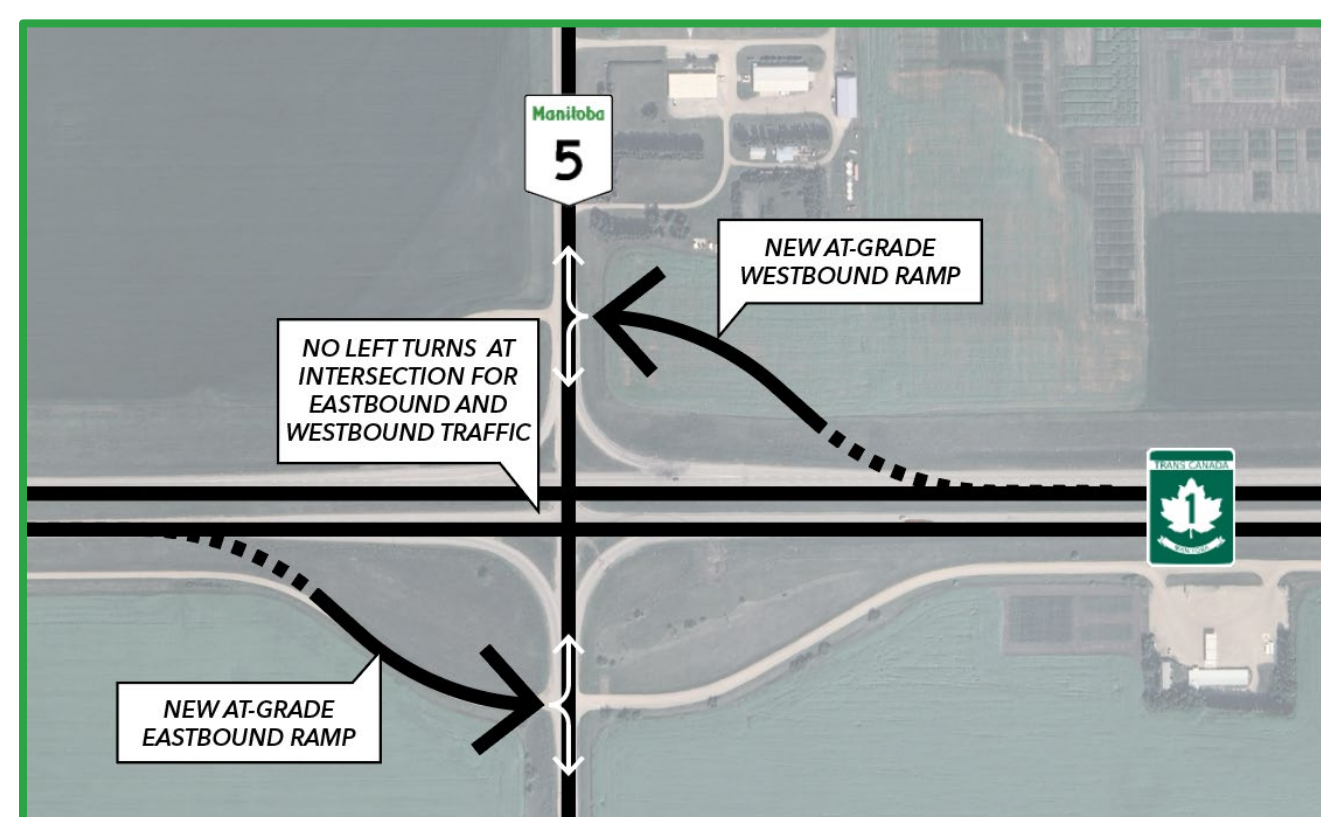
Traffic signals assign right-of-way for traffic approaching the intersection.

## Offset-T Intersection



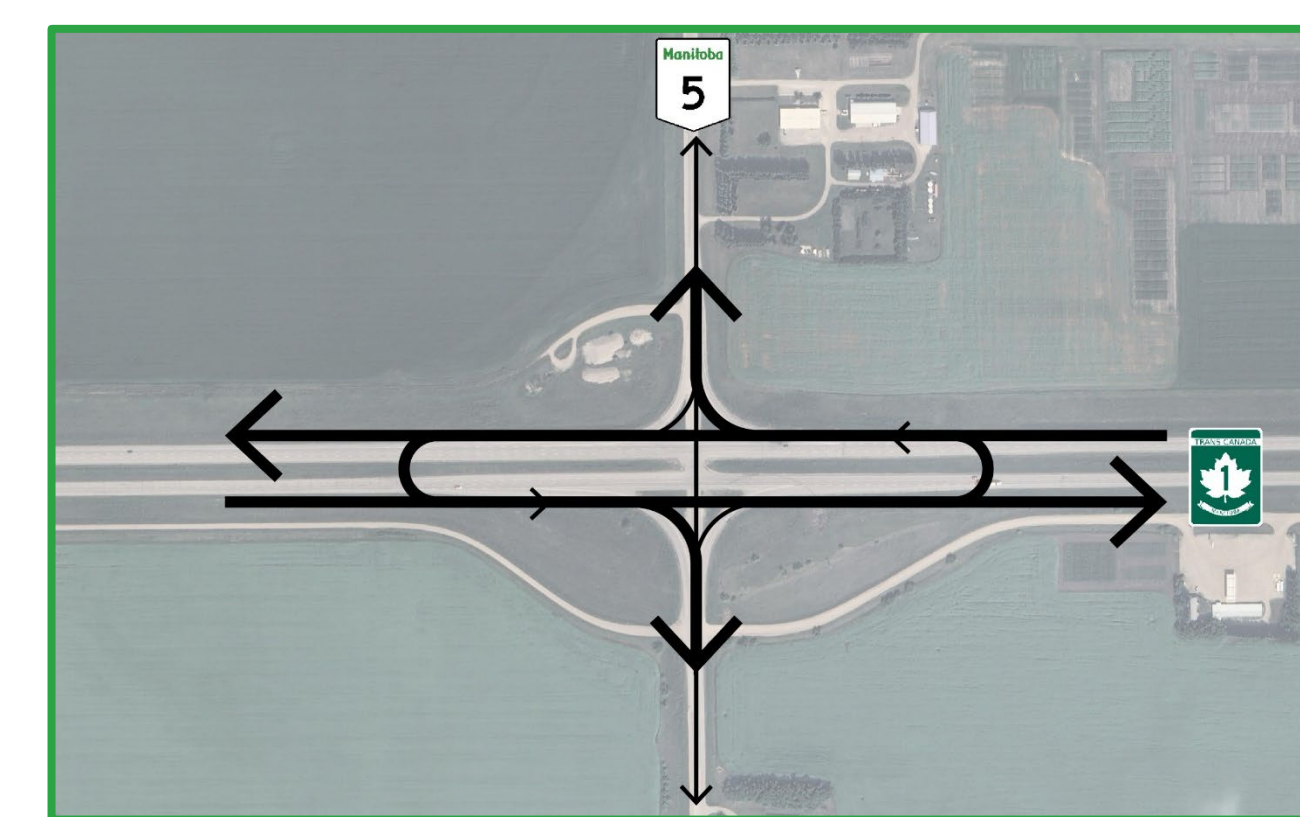
Minor road approaches are offset by a minimum distance, eliminating right-angle conflicts.

## Restricted Left / Jug Handle



Jug handle intersections feature at-grade ramps for turns and/or U-turns.

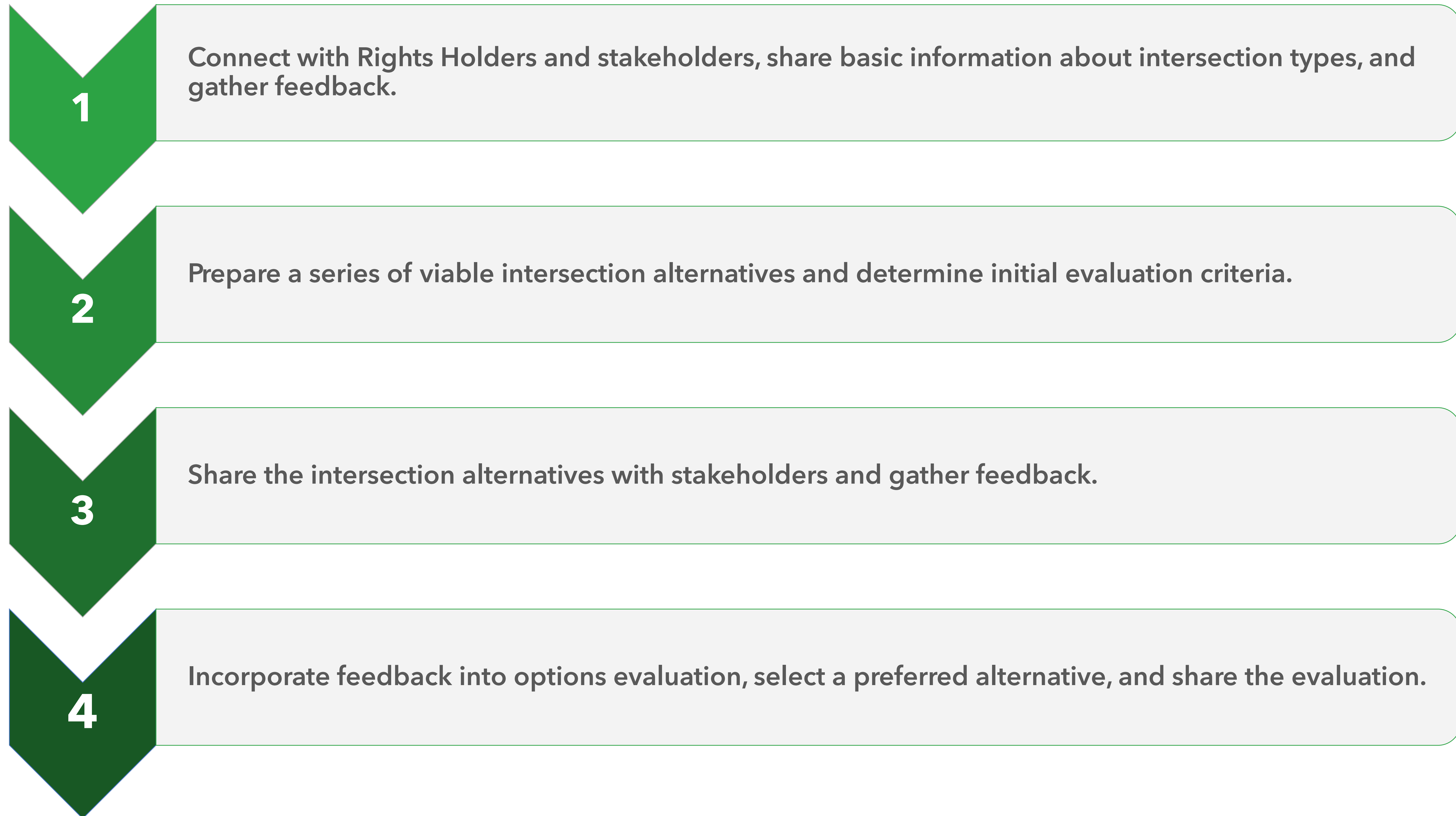
## Median U-Turn (MUT)



This intersection eliminates direct left-turns from the major road and/or minor road approaches.

# Decision Making Process

This slide outlines the decision-making process involved in the design study, illustrating the steps to select the preferred alternative for recommendation to MTI:





# Key Question

What key concerns do you feel the study team should be aware of before further identifying and evaluating alternatives?

Your feedback will help the team identify topics of importance and specific information that can be incorporated into the preparation and evaluation of intersection alternatives.



*PTH 1 and PTH 5 intersection looking southwest.*

# Next Steps

- Thank you for participating in this process.
- We will review the feedback from today's meeting and work to incorporate it into the early stages of the study where possible.
- We will conduct a series of follow-up engagement meetings in Fall 2024.
- In these meetings we will present alternatives for potential intersection improvements before evaluating and selecting a preferred alternative.

# Thank You. Questions?

Thank you for attending today's meeting. Your feedback is important to us, so please fill out an online comment sheet at the following link:

<https://www.surveymonkey.com/r/PTH1andPTH5Improvements>



**If you have any further questions, please contact:**

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