

Going the Extra Mile for Safety



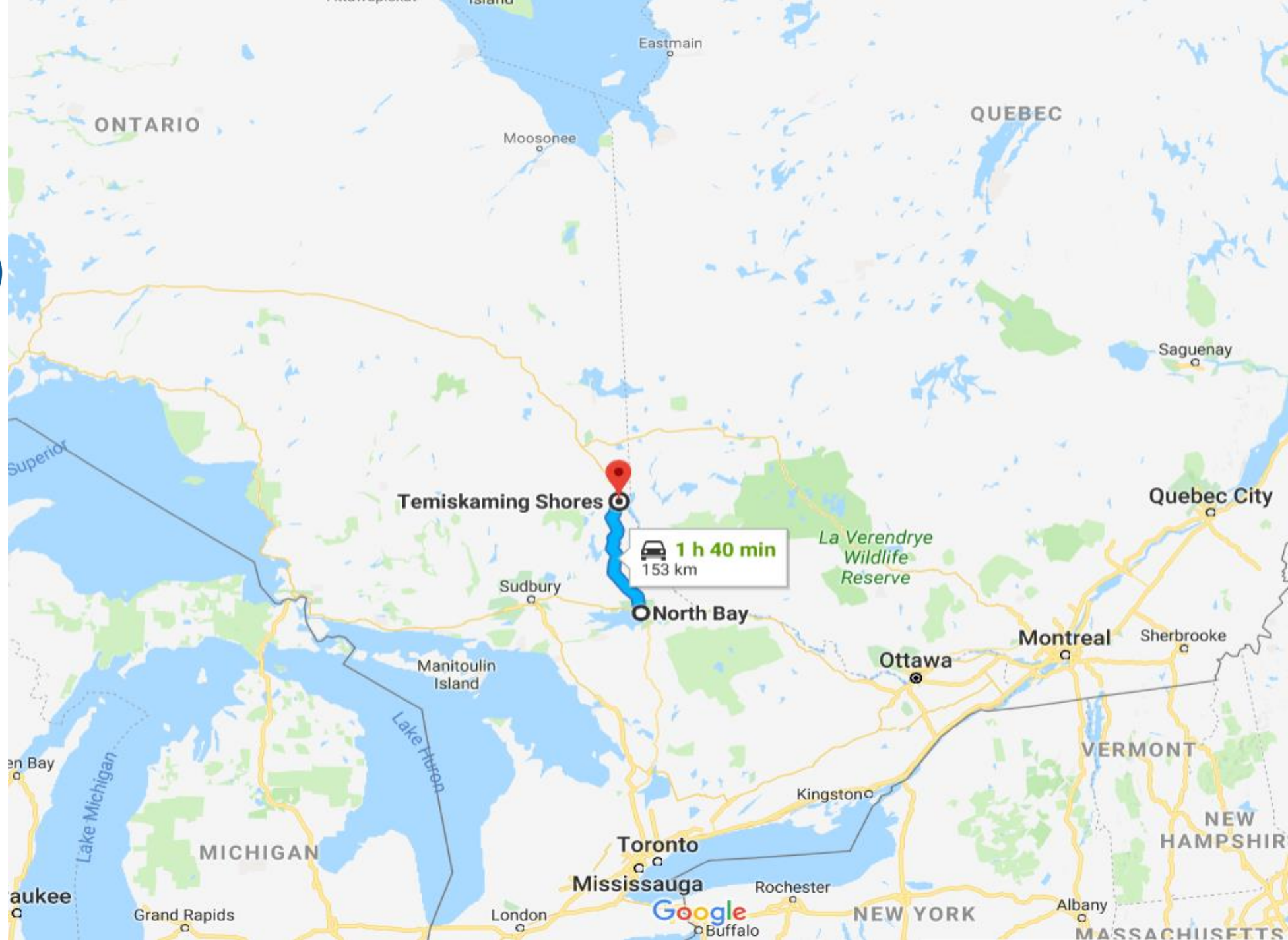
2+1 PILOT PROJECT



Road Safety Advocacy
Committee

Sub- Committee of
Temiskaming Shores Area
Chamber of Commerce

Advocating for a 2+1 Pilot
Project





Supporters

- FONOM
- City of Temiskaming Shores
- NOMA
- TMA
- OGRA
- TSACC

Highways 11 and 17

Vital link for residents and businesses in Northern Ontario

Significant Agricultural and Mining Expansion which is serviced by Highway 11

Route of choice for cross country commercial traffic with 25% truck traffic

Some sections are busy commuter corridors

2+1 Roads



Investigated 2+1 road model extensively from sources around the world

Traveled to Sweden and Ireland to meet with many experts and toured 2+1 roads



Thanks to Trafikverket in Sweden



- 4 days of tours and meetings
- 2- 2+1 construction sites
- Great hospitality and information



Thanks to Transport
Infrastructure Ireland



- Two days of meetings and tours
- One day attending traffic safety conference
- Wonderful hospitality and extremely valuable information

Winter Fact Finding Trip



VISION ZERO/Safe System

Innovative Road Safety Program

Established in Sweden 1997

Has now been adopted in other
countries and cities around the
world

VISION ZERO/Safe System

Designing safe roads for humans
that make mistakes

Focuses on preventing fatalities
and serious Injuries

No one should die on the road
network

VISION ZERO/Safe System

Vision Zero Design reduces kinetic energy

Creates forgiving roads and streets

Creates self explaining roads and streets

Vision Zero Results

Location	Road related fatalities per 100,000 population
SWEDEN	1.8
Southern Ontario	3.6
Canada	5.2
Northern Ontario	8.0

2+1 Roads

Were a Result of VISION ZERO

Were the most significant road safety improvement on rural roads in Sweden

Ireland followed Sweden's example in 2004 with a pilot project

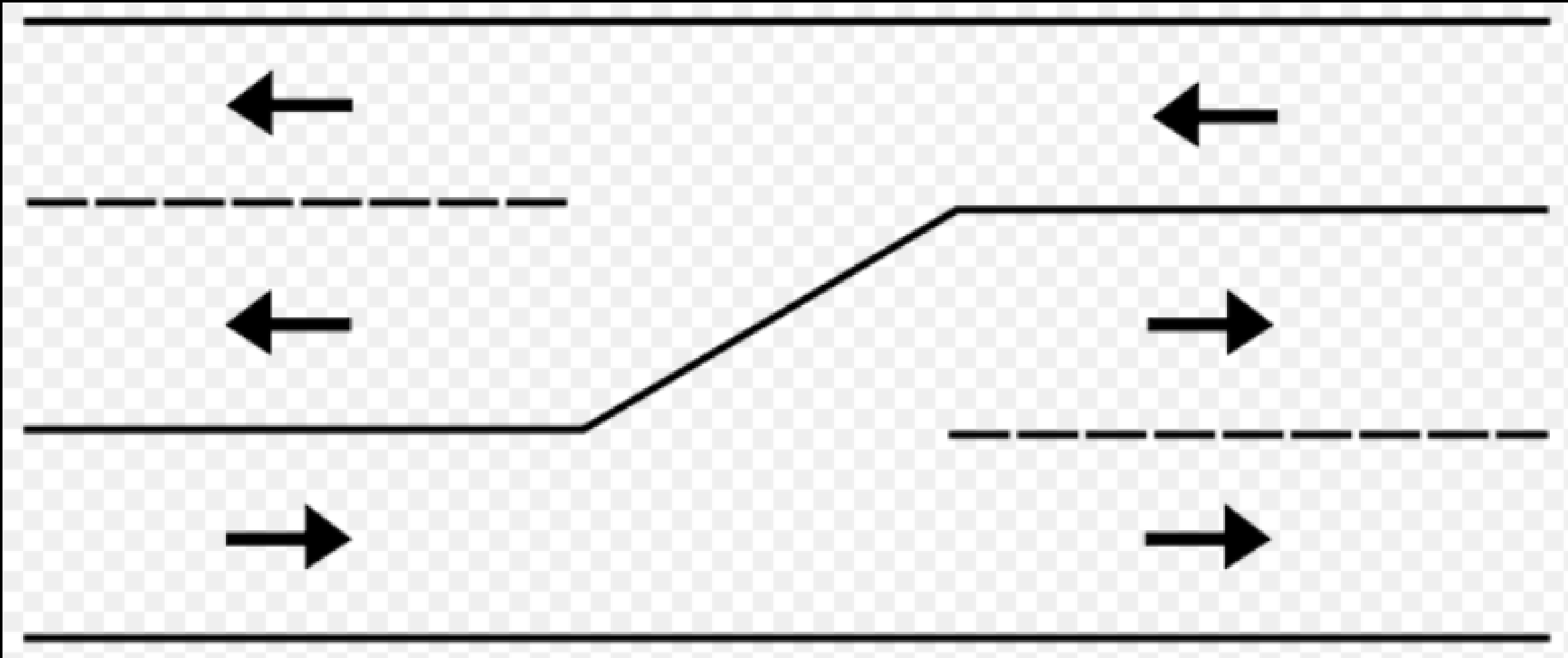
13m Swedish highway before 2+1 conversion



13m road after conversion to 2+1



2+1 Road Profile



Wire Rope Barrier



Wire Rope Barrier





Nordic Road Safety - Sweden

Irish 2+1 Road



A1

Tabbimoble, New South Wales

Google

Street View

2+1 Road NSW
Australia

A1



Google



2+1 Road Finland



At Grade Intersections



1+1 where required

Gamleby Bridge



2+1 Construction Site - Sweden



Road Maintenance



COMMERCIAL TRUCKING





2017/01/03 05:46:02



2017/01/04 05:51:45









14.67V / 4.15V
-0.03 / 0.02 / 0.05

1080p / 30fps / MIC ON
DATE: 2014/06/27 TIME: 14:24:23

All-Weather solution to crossover crashes

Most fatal crashes occur in good weather

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graph TD; A[Most fatal crashes occur in good weather] --> B[Speeds are high, distraction is high]; B --> C[In winter slippery roads may causes vehicles to slide across the centreline]; C --> D[2+1 roads prevent these crossover crashes in all conditions and can continue to prevent fatal crashes when snow removal is difficult.];
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Speeds are high, distraction is high

In winter slippery roads may causes vehicles to slide across the centreline

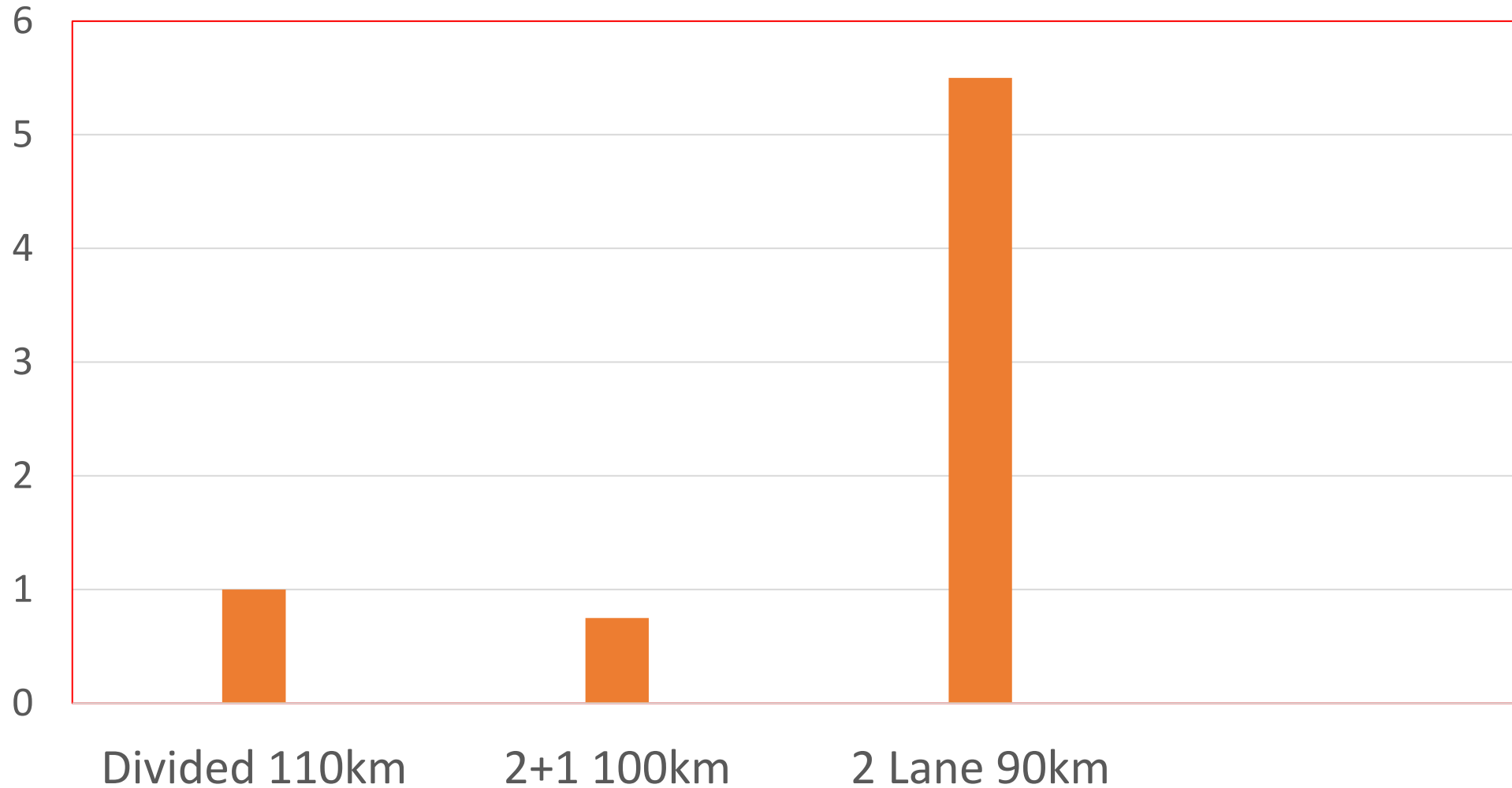
2+1 roads prevent these crossover crashes in all conditions and can continue to prevent fatal crashes when snow removal is difficult.

2+1 Road Safety Results

Carllsson - 2009

Reduction in Fatalities	79%
Reduction in Motorcycle fatalities	40-50%

Relative Risk of Dying – 3 road types



A. Vadeby – 2015- VTI - Sweden

Expansion to 2+2



Another Road Model Needed

We do not have a safe road option in North America between lower volume 2 lane undivided highways and freeways

Rural areas still experience 55% of fatal crashes

2+1 roads can fill that gap for the thousand of kilometers of 2 lane roads with volumes between 2000 and 15,000 vpd that currently have unacceptable fatality and serious injury rates

Cost Advantages

Estimated Twinning Cost – \$8-9 million/km

2+1 estimate 2.5 to 3million/km

Built on same road platform or slightly wider

No need to bypass towns and villages

Reduction of Long Road Closures

Drastic reduction in fatality investigations

A lane will likely be available should one direction be blocked

Depending on design barriers can be removed for short distances

Emergency services will still have good access

What is the cost of a road closure?



What is the
cost of this?

Safety must
be #1 priority



2+1 Roads - Summary

Safety results equivalent to divided highways

Low cost

Less Environmental Impact

Design flexible to terrain

Restricted areas 1+1

Expansion opportunities 2+2

Effective on rural road networks

Continue to be built around the world

Ontario
Government
has
committed
to a 2+1
pilot project

Working Group
established site
selection criteria

MTO team did an
excellent job on the
site selection process

December 2021 Announcement

First 2+1 Highway Pilot in North America



Premier projet pilote de route 2+1 voies en Amérique du Nord



Thank you

To Minister Caroline Mulroney
and her excellent staff for
looking at the data and seeing
how 2+1 roads will save lives in
Northern Ontario

To the MTO for being committed
to moving ahead with this
project

To the many experts across
Canada and around the world
who are committed to Safe
System design and who have
provided valuable information to
us with the goal of making roads
safer.

John Vanthof our MPP in
Temisakming for his support

To my colleagues on the GEMS
committee and all our partners
for providing continual support.

Thanks to NPI for this opportunity



Links

<https://www.youtube.com/watch?v=OlKHxHF7X1g>

tsacc.ca/gems

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