

# Wellington RMAP Roads Committee Meeting #1

April 13<sup>th</sup> 2021



**DILLON**  
CONSULTING



# Agenda



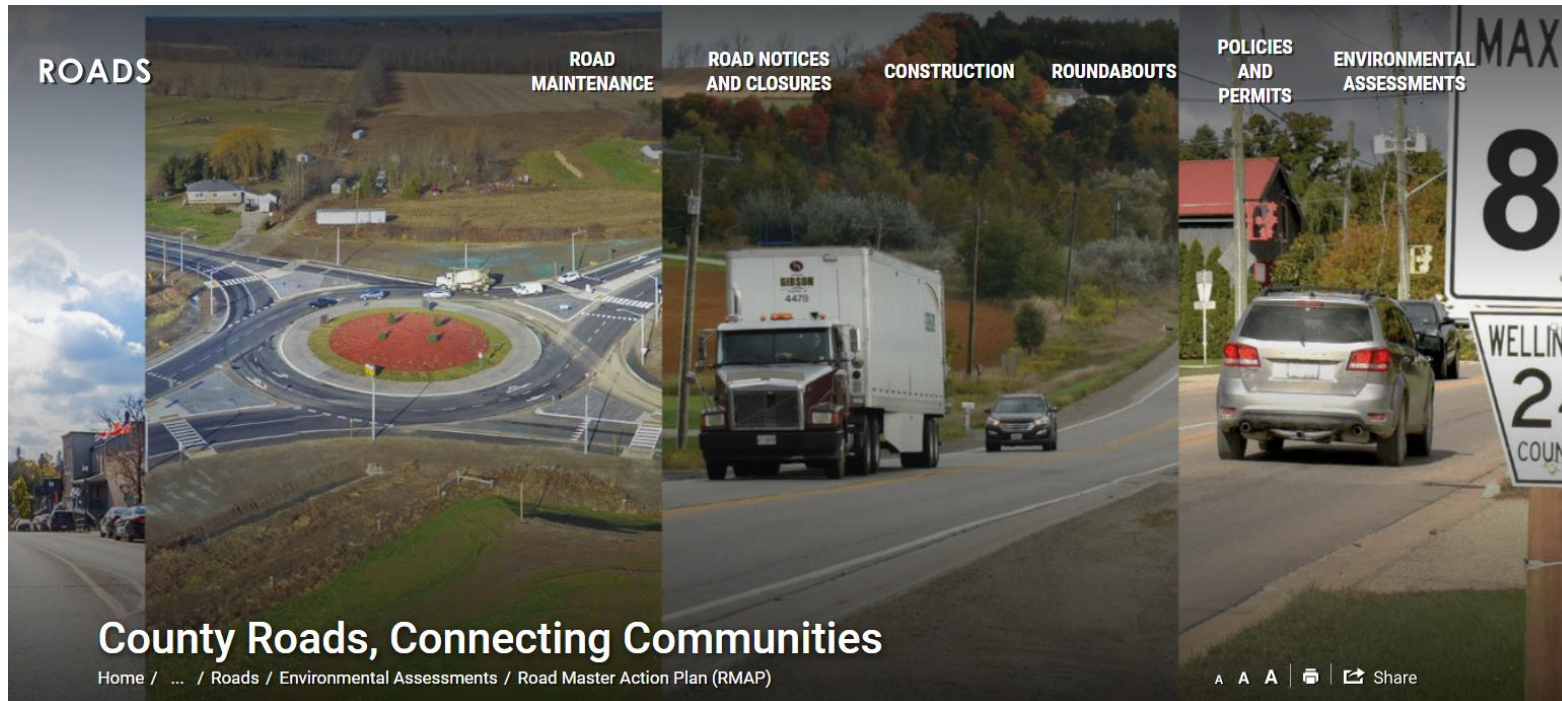
- Introductions
- Recap of Work to Date
- Summary of Engagement
- Vision and Goals
- Data-Driven Safety Strategy
- Speed Management Guidelines
- Next Steps

# Recap of Work to Date

COMPLETED	NEXT STEP
Vision and Goals	Use to frame recommendations
Develop 2041 Travel Demand Model	Identify problem statements and alternatives
Initial discussions on public transit in the County	Identify recommended next steps
Developed Data-Driven Safety Strategy and Speed Management Guidelines	Use to identify short-term improvements to intersections and corridors and present at May Roads Committee
Assessed need for intersection improvements based on safety and geometric issues	Present at May Roads Committee
Assess potential for road diet on WR46 through Aberfoyle	Confirm analysis and identify next steps
Initial round of engagement	Use feedback in development of the RMAP

# Round 1 of Public Engagement: Vision and Values Survey

- Total Responses: 103
- Webpage subscribers: 21
- Unique visitors (excluding returning visitors): 2,218
- Directed from social media: 911



# Vision and Goals Survey - Results

**Vision:** *To connect people and goods across the County safely, conveniently, efficiently and sustainably.*

Does the draft vision statement capture what matters for the RMAP?

More than 75% of respondents supported the draft vision



■ Yes ■ No

The survey also indicated that consideration for **health, environment, and inclusiveness of all modes of transportation** were key aspects that mattered to the public, and that they wanted to see reflected in the RMAP.

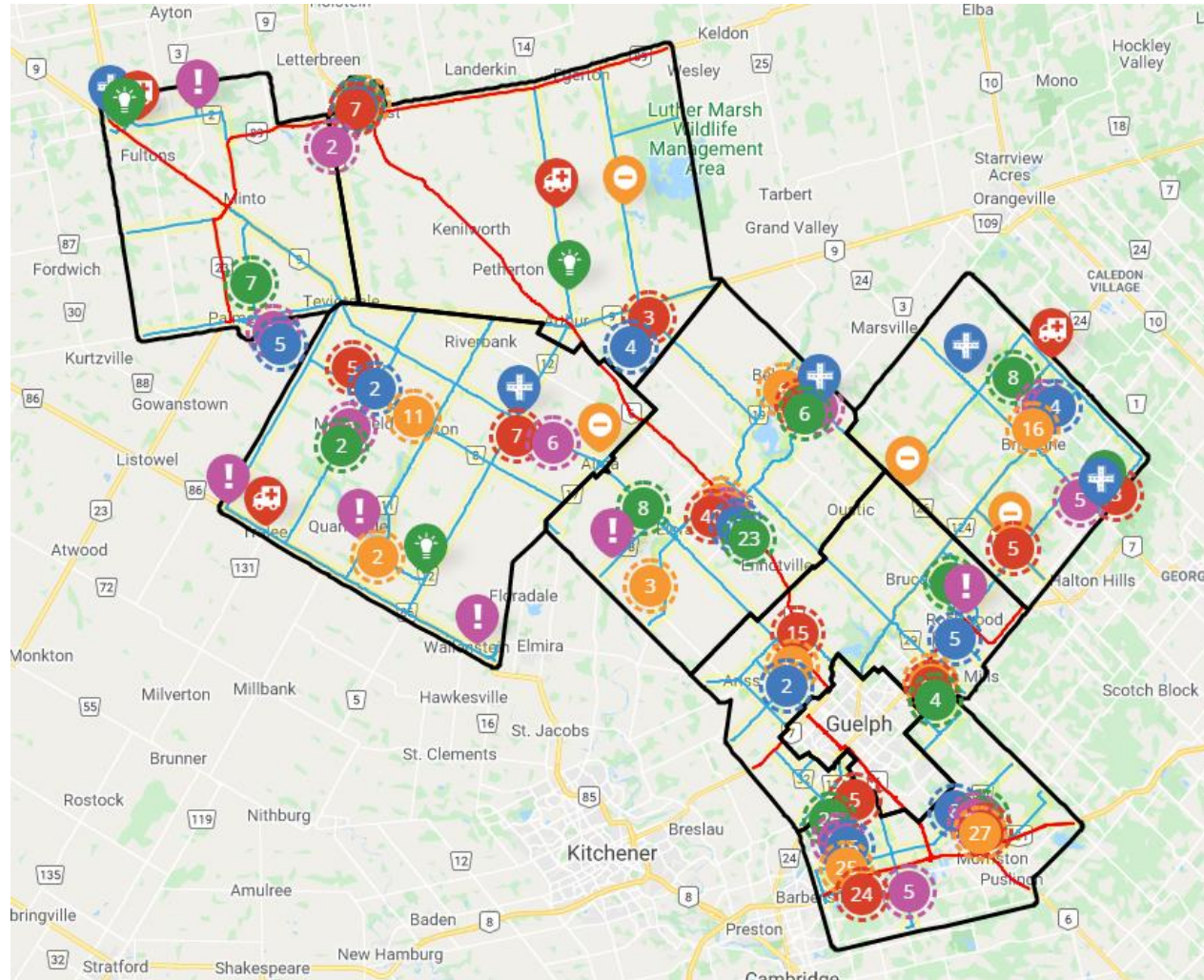
# Vision and Goals Survey - Results

Respondents were asked to prioritize the goals of the RMAP. The following is how they were ranked:

1. Create a Transportation Network with a Focus on Safety
2. Provide Sustainable and Equitable Mobility Options that Connect Communities
3. Be Proactive in Planning for Future Expansion of the County Road Network based on Complete Streets Principles
4. Make Investment Decisions that are Environmentally Responsible
5. Support Economic Development
6. Be Fiscally-Responsible When Making Investment Decisions
7. Develop Transparent Policy Tools that Guide Investment Decisions in the Transportation Network
8. Create a Culture of Collaboration with Municipal Stakeholders where the County Transportation Network Intersects with Areas of Local Importance

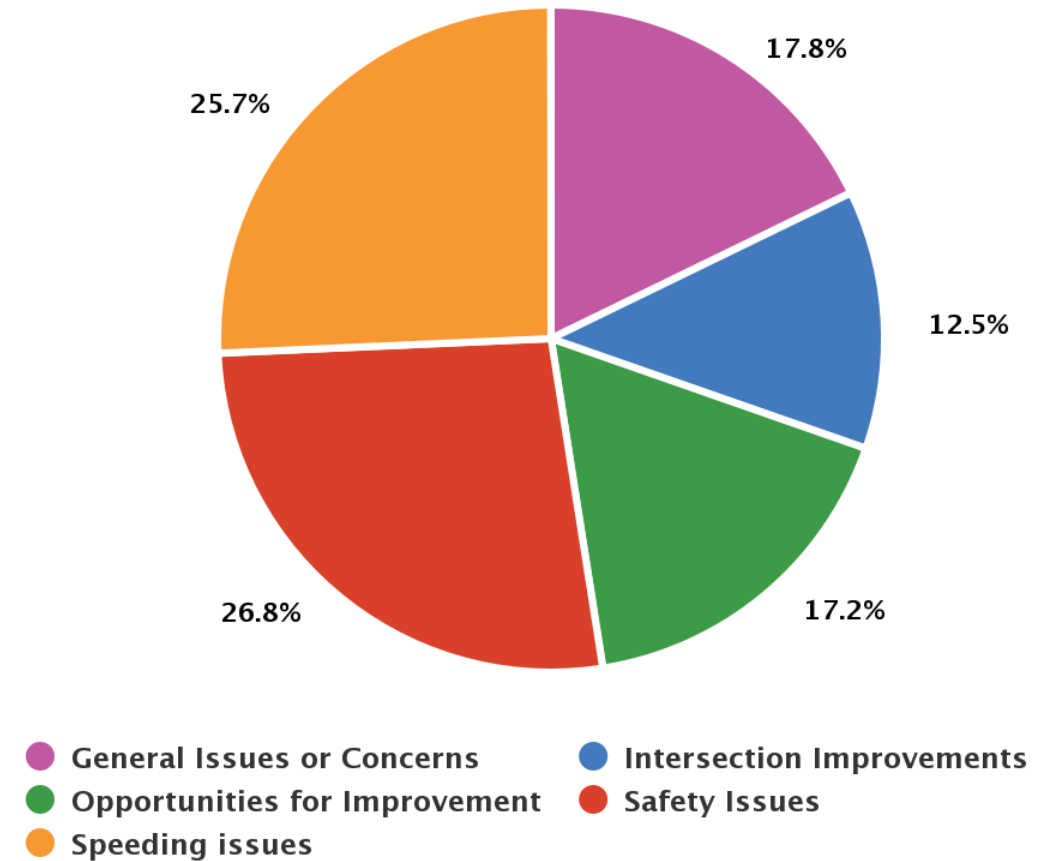
# Round 1 Engagement: Social Pinpoint Mapping Activity

- Total Visits: 3,967
- Total Comments: 601



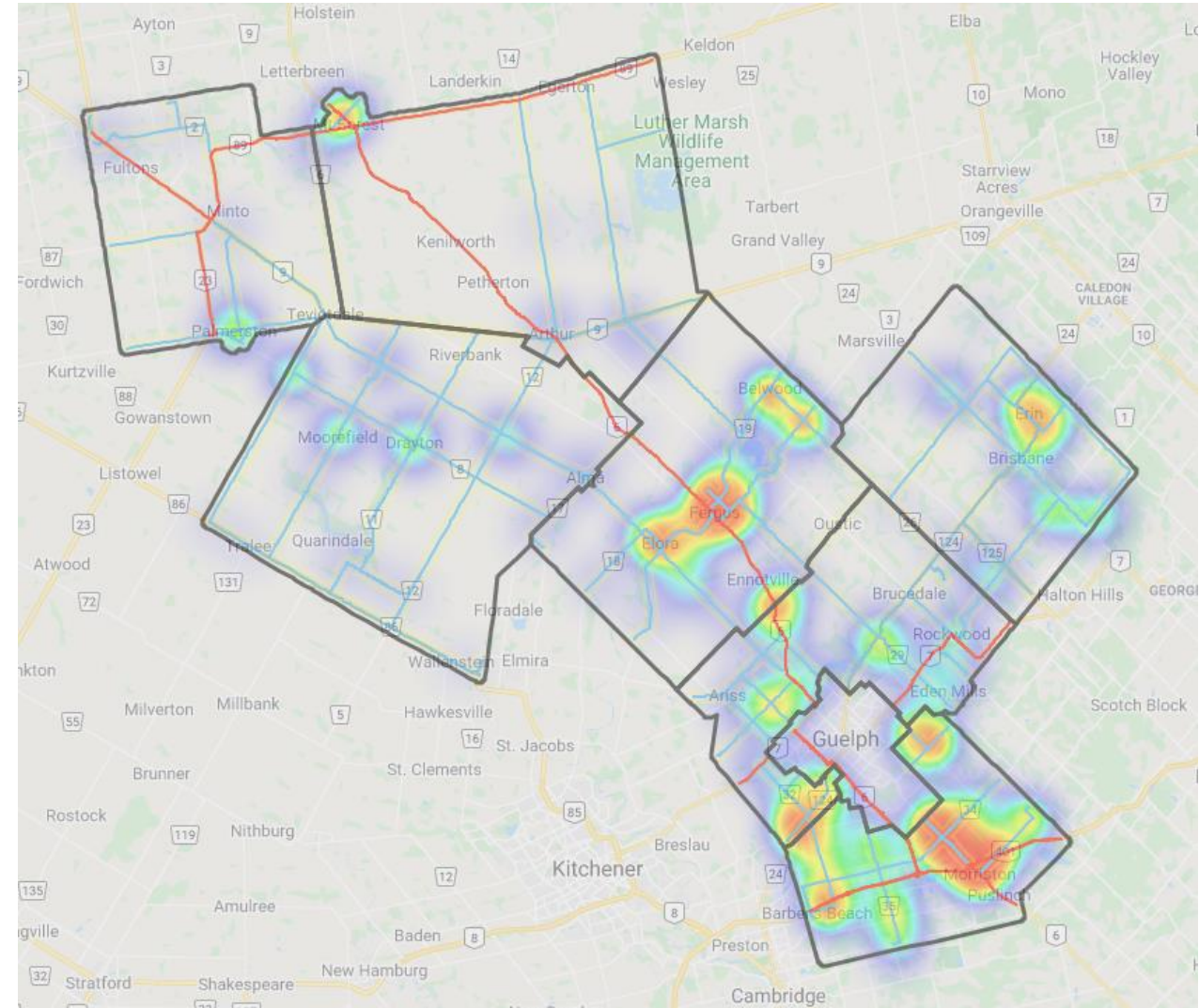
# Social Pinpoint Mapping Activity

- The comments were organized into 5 themes
- Speeding Issues and Safety Issues were the most common type of comments received



# Social Pinpoint Mapping Activity

- Heat map shows where comments were most concentrated
- A number of the comments with high attention were associated with:
  - Truck traffic – associated noise and environmental impacts
  - Visibility and sight lines, related to collisions
  - Turning radius for trucks and trailers
  - Pedestrian and cyclist safety – interaction with vehicle lanes and road crossings
  - Signal timing
  - Driveway access



# Data-Driven Safety Strategy - Overview

- Employs evidence-based data and models to provide an agency the ability to not only identify problem locations, but also quantify primary causes and safety impacts
- Brief prepared to provide overview and process guidelines for:
  - Addressing public complaints
  - Identifying problem areas
  - Identifying and evaluating mitigation alternatives

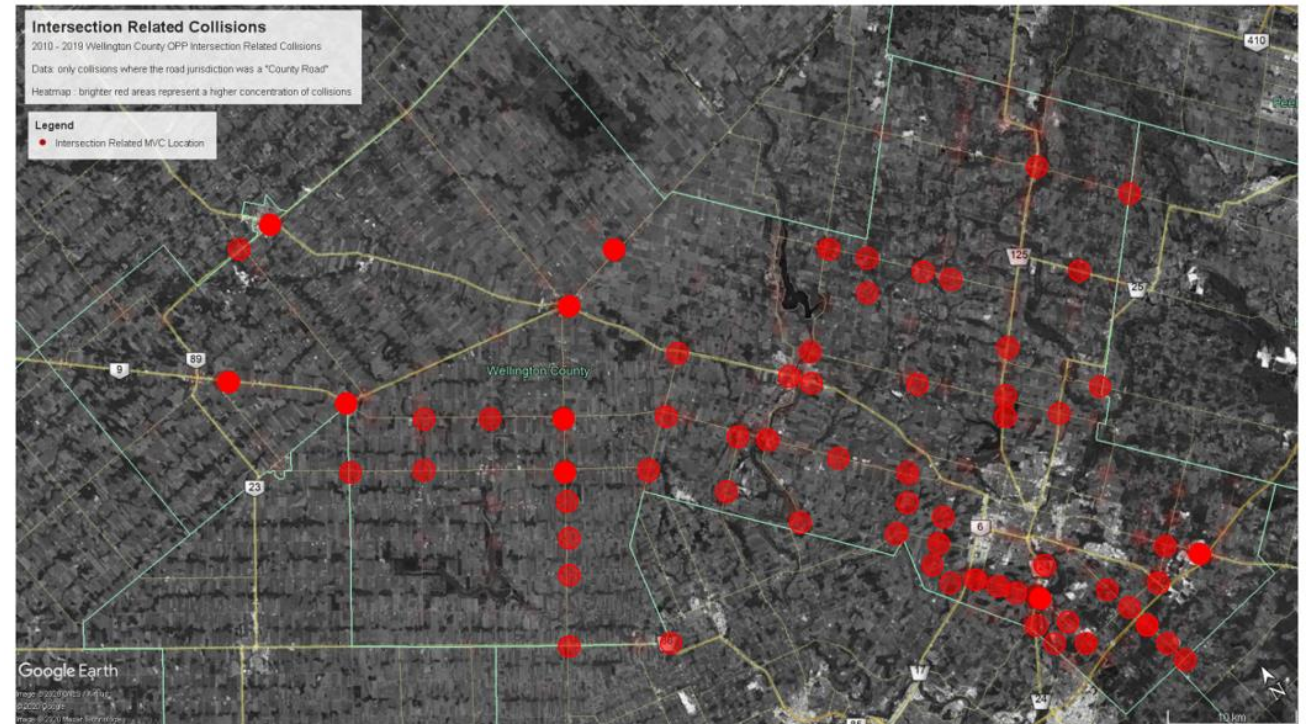
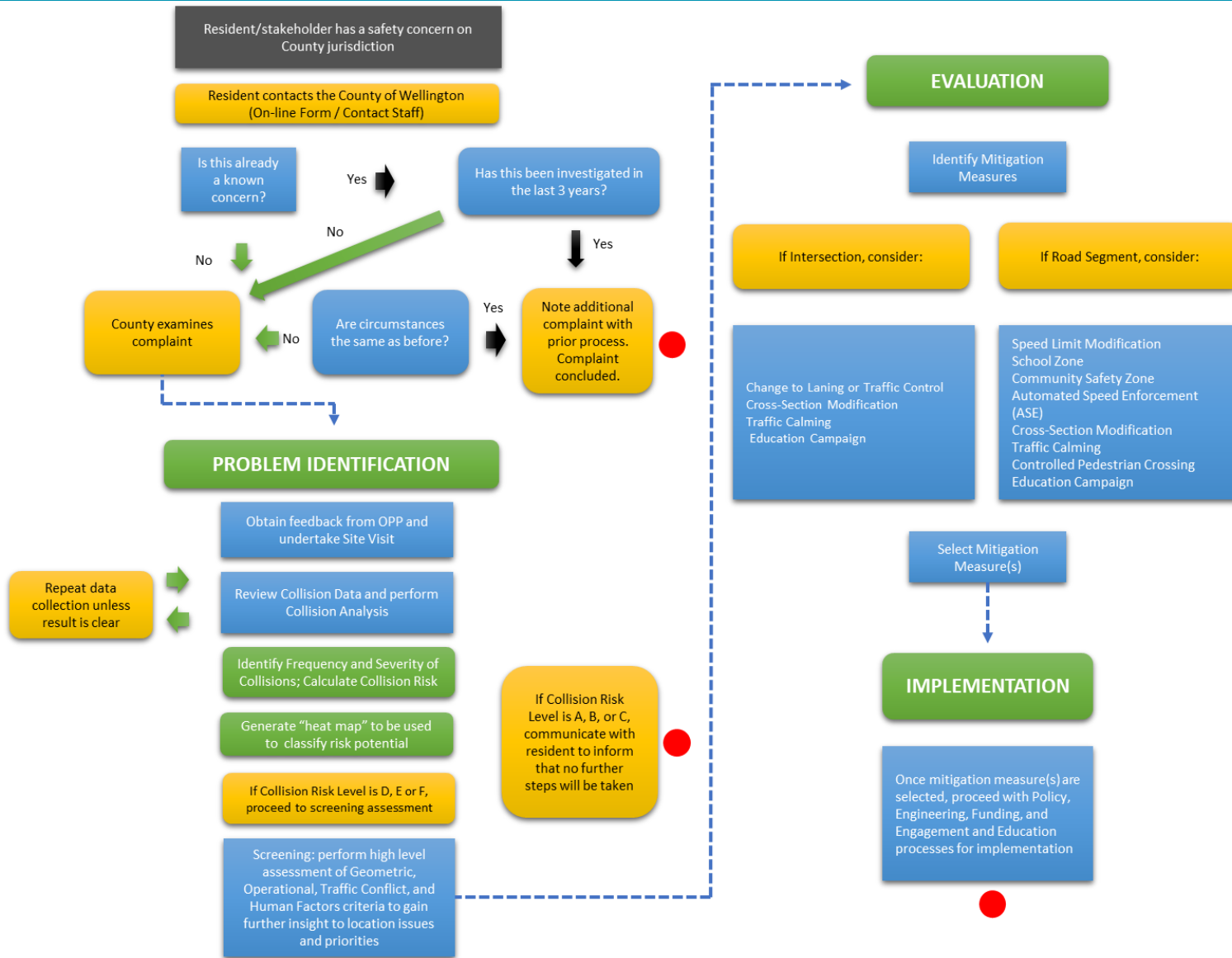


Figure 3: Heat Map of Collision Locations\*

\*Source: Ontario Provincial Police Analysis Report (with minor adjustments for graphic resolution)

# Data-Driven Safety: Strategy – Review Process



# Data-Driven Safety Strategy: Guideline Document

Document is organized to align with the safety review process:

- **FOUNDATIONS:** Identification of best practices and local policies
- **PROCESS:** Provide overview of Safety Review process
- **PROBLEM:** Identify the process and criteria for confirming problem areas
- **EVALUATION:** Describe how alternative mitigation solutions will be evaluated
- **IMPLEMENTATION:** Describe the implementation process
- **NEXT STEPS:** Define how this safety strategy will be used moving forward to identify and prioritize projects



## Canadian Guide to In-service Road Safety Reviews

The Canadian Road Safety Engineering Handbook (CRaSH)



January 2004



Safe Communities Wellington County: Strategic Plan

2018-2022



# Data-Driven Safety Strategy: Assessment Overview

## Safety strategy follows best practices:

- Transportation Association of Canada (TAC) – Canadian Guide to In-Service Road Safety Reviews
- Examples of strategies and applications from Ontario Municipalities (Guelph, Waterloo, London/Middlesex, Peel, Brant)
- Safe Communities Wellington County

## Problem Identification

- Collision Frequency Rating
- Collision Severity Rating
- Collision Risk Determination
  - Frequency vs Severity
  - Categorized from A: Lowest Risk Level through F: Highest Risk Level

## Evaluation of Counter Measures - Intersection

- Changes to Lane Provisions or Traffic Control
- Cross-Section Modification
- Traffic Calming
- Education Campaign

Frequency Rating	Severity Rating			
	Low	Medium	High	Extreme
Frequent	D	E	F	F
Occasional	C	D	E	F
Infrequent	B	C	D	E
Rare	A	B	C	D



# Data-Driven Safety Strategy: Assessment Overview *(continued)*

- **Evaluation of Counter Measures - Road Segment**

- Speed Limit Modification
- School Zone
- Community Safety Zone
- Automated Speed Enforcement (ASE)
- Cross-Section Modification
- Traffic Calming
- Controlled Pedestrian Crossing
- Education Campaign

- **Implementation Process**

- Policy
- Engineering
- Funding
- Education

- **Next Steps**

- Consultation (Staff, TAG, Roads Committee)
- Confirm/prioritize criteria and solutions
- Identify and prioritize projects



# Speed Management Guidelines

- Needed to define a transparent process to identify problems, assess impacts, evaluate appropriate mitigation, and implement appropriate improvements
- The elements of a Speed Management plan are identified as follows:
  - **Problem Definition** - Speed is acknowledged as a safety problem defined by the relationship of vehicle speed to collision outcome
  - **Implementation of Speed Limits** – The appropriate designation of speed zones on variable environment and road conditions
  - **Measures for Managing Speed** – Methods and measures required to provide effective speed management and create safe streets
  - **Creation of a Speed Management Programme** – Guide to a comprehensive programme of screening and implementation tools that foster good speed control appropriate for the adjacent community environment

# Speed Management Guidelines

## Posted Speed Limit Review

- The practice of setting the posted speed limit at the 85<sup>th</sup> percentile speed generally results in similar operating speeds between different vehicles in the traffic stream
- Posted speed limits that are set too low result in:
  - A significant number of “reasonable” drivers operating illegally
  - Place unnecessary burdens on law enforcement personnel
  - Lead to a lack of credibility of the posted speed limit
  - Result in increased tolerance by law enforcement agencies
- Posted speed limits should be technically set in accordance with the function that each road is designed to serve
- The strongest influence on a driver’s selection of travel speed is the physical appearance of the road
- Collision potential is lowest when the difference in operating speed between vehicles in the traffic stream is smallest
- Significant increases in enforcement levels are required to influence driver behaviour, and those effects tend not to result in a long-term resolution of the issue



# Speed Management Guidelines

## Posted Speed Limit Review

- *Canadian Guidelines for Establishing Posted Speed Limits* was developed in 2009 by the Transportation Association of Canada (TAC)
- In 2012, Wellington County Council approved the use of these TAC guidelines to establish posted speed limits throughout the County
- The TAC guidelines provides tools and guidance to evaluate and confirm the appropriate speed limit, and considers factors such as:
  - Horizontal & vertical geometry and pavement quality of the corridor
  - Overall cross-section of the corridor (lane widths, gravel shoulders, curb & gutter, etc.)
  - Exposure of pedestrians and cyclists along the corridor (presence of sidewalks, pathways, etc.)
  - Number of driveways, intersections, traffic control devices along the corridor
  - Presence of on-street parking



Canadian Guidelines for  
Establishing Posted Speed Limits



December 2009

# Speed Management Guidelines

## Community Safety Zones

Table 2: Community Safety Zone - Risk Component

Risk Factor	High (Score 3)	Medium (Score 2)	Low (Score 1)
Posted Speed (km/h)	40	50	60
Average Daily Traffic Volume	>10,000	5,000-10,000	<5,000
Number of Lanes (Both Directions)	>4	3 or 4	2
Presence of Community Facilities	School / Park (with playground)	Retirement Areas / Community Centre / Park (no playground)	None
Presence of Sidewalks	None	On one side	On both sides
Truck Volumes (as %)	>10%	5-10%	<5%
Pedestrians crossing (8 hrs)	>25	10-25	<10
Intersections/Entrances (per km)	>10	4-10	<4

## Speed Mitigation Warrant

Table B.1: Speed Profile Assessment

Street Information	Result
County Road Number	Wellington Road _____
County Road Name	_____
Segment (from where to where)	from _____ to _____
Lower-Tier Municipality	_____
Daily Number of Vehicles	_____ VPD
Heavy Vehicle %	_____ % Heavy Vehicles
Peak Hour Traffic Volume (both directions)	_____ VPH
Posted Speed	_____ km/h
School Zone	YES / NO
Posted + 15 km/h (abundance) Threshold	_____ km/h
Posted + 25 km/h (dangerous) Threshold	_____ km/h

Metrics	Data Collection	Prepare Speed Mitigation Plan?
Task Description	Insert collected speed	Was the data benchmark met? 85 <sup>th</sup> > posted + 15, 95 <sup>th</sup> > posted + 25
85 <sup>th</sup> percentile speed	_____ km/h	YES / NO
95 <sup>th</sup> percentile speed	_____ km/h	YES / NO
Outcome	YES NO	If one or both YES – Begin Developing a Speed Mitigation Plan If both NO - no Speed Mitigation Plan necessary and process ended

# Speed Management Guidelines

Tools available if further Speed Management is required:

- Regulatory Modifications
  - Speed Limit Adjustments
  - School Zones
  - Community Safety Zones (CSZs)
  - Automated Speed Enforcement (ASE)
- Geometric Modifications
  - Cross-Section Adjustments
  - Traffic Calming
  - Pedestrian Crossovers (PXOs)
- Education Campaigns

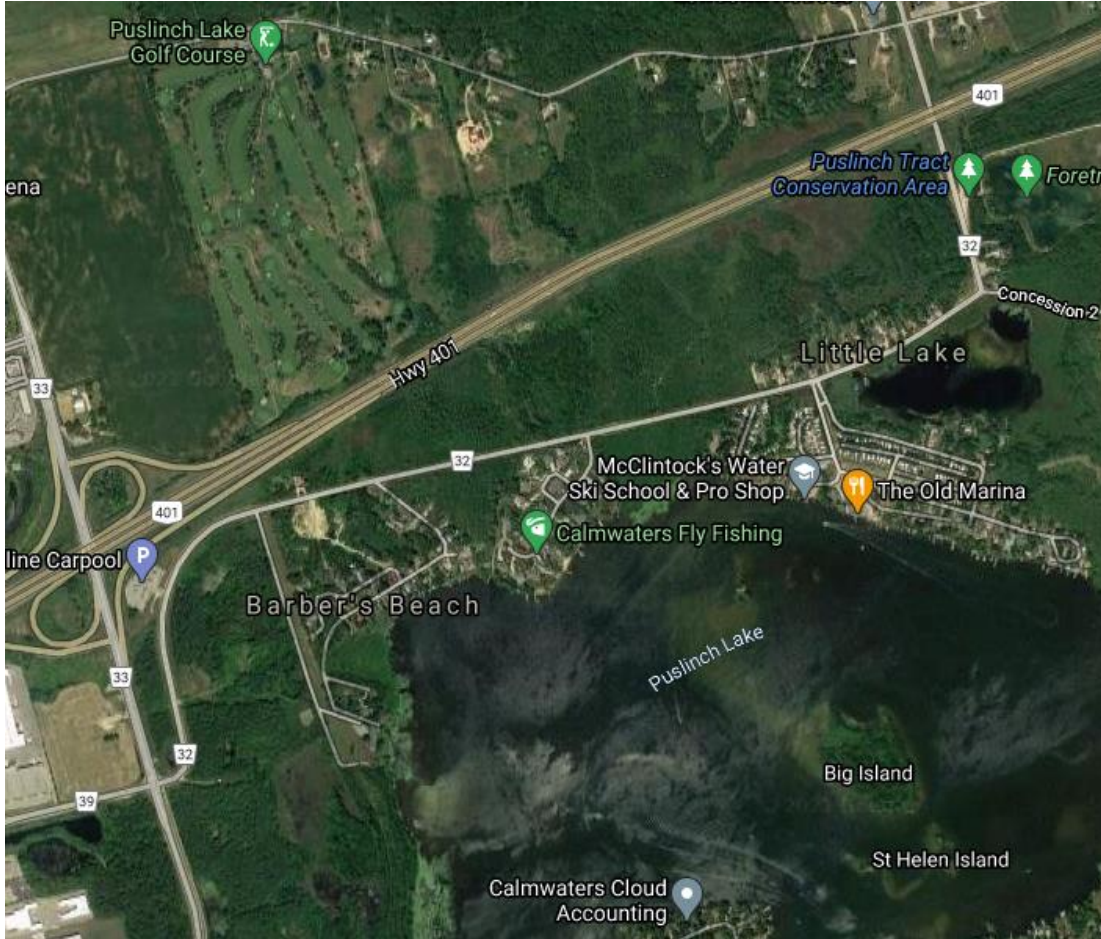


# Speed Management Guidelines – Case Studies

1. Wellington Road 32 (Wellington Road 33 - Concession 2)
2. Wellington Road 124 (through Brisbane & Erin)



# Speed Management Guidelines – Case Study #1: Wellington Road 32 (Lake Rd)



## Traffic Data:

- 6,907 vehicles per day (2019 count)
- Approximately 5% Heavy Vehicles
- Posted Speed Limit = 50 km/h.
- 85<sup>th</sup> Percentile Speed = 70 km/h
- 95<sup>th</sup> Percentile Speed = 77 km/h
- No Available Collision Data

## Corridor Context:

- Land-Use - mostly rural, few residential properties to east
- Cross-Section – rural with paved/gravel shoulders, no street-lighting, no sidewalks
- MTO Park & Ride at west end

# Speed Management Guidelines – Case Study #1: Wellington Road 32 (Lake Rd)



Looking East



Looking West


## Wellington Road 32 - Posted Speed Limit Review

Wellington Road 32 is a Rural, Undivided Major Arterial Road with 1 lane per direction

- TAC Risk-Based Assessment:
  - Geometry (Horizontal) – Medium Risk
  - Geometry (Vertical) – Lower Risk
  - Average Lane Width – Medium Risk
  - Roadside Hazards – Medium Risk
  - Pedestrian Exposure – Higher Risk
  - Cyclist Exposure – Higher Risk
  - Pavement Surface – Lower Risk
  - 6 intersections, 24 driveway accesses
  - Limited usage for on-street parking

# Speed Management Guidelines – Case Study #1: Wellington Road 32 (Lake Rd)

## Wellington Road 32 (Lake Rd)

		<b>Automated Speed Limit Guidelines</b>		Version: 10-Apr-09	
FORM A - Automated Speed Limit Guidelines Spreadsheet					
Name of Corridor:	Wellington Road 32				
Segment Evaluated:	Wellington Road 33 to Concession 2				
Geographic Region:	Southwestern Ontario				
Road Agency:	County of Wellington				
Road Classification:	Arterial	Length of Corridor:	2,440	m	
Urban / Rural:	Rural	Design Speed: (Required for Freeway, Expressway, Highway)		km/h	
Divided / Undivided:	Undivided	Current Posted Speed: (For information only)	50	km/h	
Major / Minor:	Major	Prevailing Speed: (85th Percentile - for information only)	70	km/h	
# Through Lanes Per Direction:	1 lane	Policy: (Maximum Posted Speed)	80	km/h	

RISK		Score	
A1	GEOMETRY (Horizontal)	Medium	6
A2	GEOMETRY (Vertical)	Lower	3
A3	AVERAGE LANE WIDTH	Medium	6
B	ROADSIDE HAZARDS	Medium	6
C1	PEDESTRIAN EXPOSURE	Higher	6
C2	CYCLIST EXPOSURE	Higher	9
D	PAVEMENT SURFACE	Lower	3
E1	NUMBER OF INTERSECTIONS WITH PUBLIC ROADS	Number of Occurrences	6
	STOP controlled intersection	0	
	Signalized intersection	1	
	Roundabout or traffic circle	0	
	Crosswalk	0	
	Active, at-grade railroad crossing	0	
E2	NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS	Number of Occurrences	6
	Left turn movements permitted	24	
	Right-in / Right-out only	0	
E3	NUMBER OF INTERCHANGES	Number of Occurrences	0
	Number of interchanges along corridor	0	
F	ON-STREET PARKING	Lower	1

Total Risk Score:

52

Recommended Posted Speed Limit (km/h):

As determined by road characteristics

70

As determined by policy

80

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

Comments:

## Posted Speed Limit Review:

TAC Recommended Rural Posted Speed Limit:  
**70 km/h (20 km/h higher)**

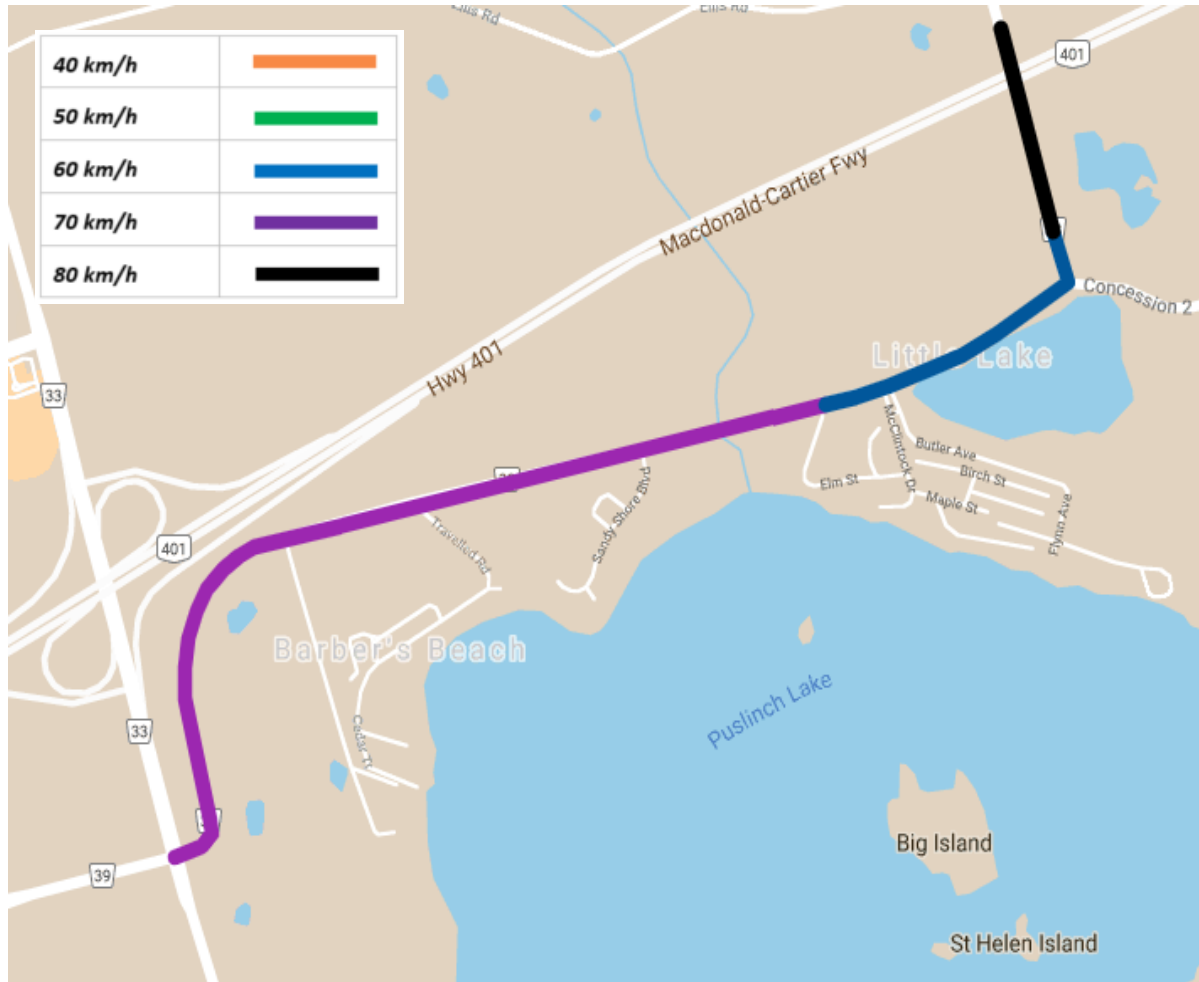
## Consider Context:

- Easterly Segment a bit more built out (single-family homes) with rollover curb and paved shoulders

TAC Recommended Urban Posted Speed Limit:  
**60 km/h (10 km/h higher)**

# Speed Management Guidelines – Case Study #1: Wellington Road 32 (Lake Rd)

## Wellington Road 32 (Lake Rd)



### Posted Speed Limit Recommendation:

- Increase westerly portion to 70 km/h
- Increase easterly portion to 60 km/h

Following the posted speed limit adjustment, should speeding remain and further speed management required, consider:

- School Zone → Not Applicable
- Community Safety Zone → Likely not applicable due to rural nature
- Pedestrian Crossing → some demand by McClintock Drive/Butler Avenue
- Traffic Calming → likely not applicable
- Road Cross-Section Adjustments → urbanize easterly portion of the corridor (curbs, multi-use pathway, street-lighting, etc.)

# Speed Management Guidelines – Case Study #2: Wellington 124



Fronting Brisbane Public School



Within Downtown Erin

## Posted Speed Limit Review:

Varies between a Rural and Urban, Undivided Major Arterial Road with 1 lane per direction

## Corridor Context:

Varies between fully rural (gravel shoulders) to fully urban (curb, gutter, sidewalks, street lighting) to partially urban (paved shoulders)



North of Erin

# Speed Management Guidelines – Case Study #2: Wellington 124

## Wellington Road 124 (Brisbane & Erin)



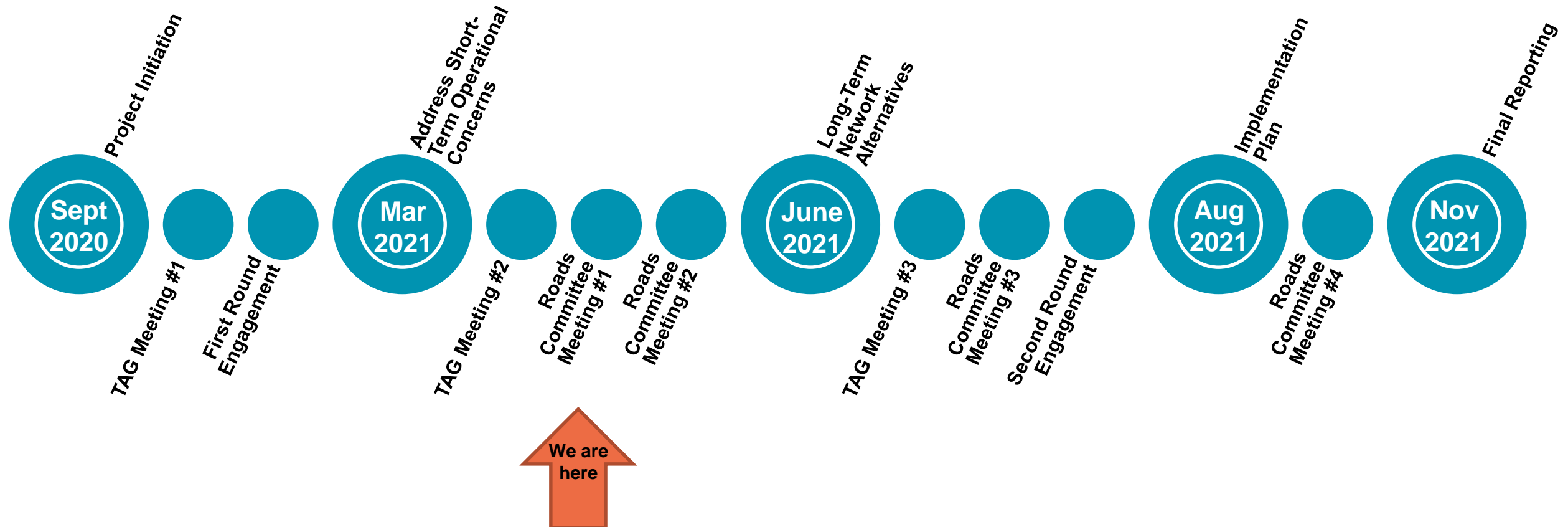
### Posted Speed Limit Recommendation:

- Adjust to 70 km/h through Brisbane and up to Erin
- Introduce '60 km/h when Flashing' School Zone fronting Brisbane Public School
- Increase to 50 km/h within majority of Erin
- Retain 40 km/h through downtown Erin
- Increase to 60 km/h at north end of Erin, including across Wellington Road 23

### Consider in Addition:

- Community Safety Zone → Through downtown Erin within retained 40 km/h zone
- Pedestrian Crossing → Within Erin (downtown, fronting fair grounds, at rail trail)
- Traffic Calming → Curb extensions both north and south of Downtown Erin (within 40 km/h and 50 km/h zones)
- Road Cross-Section Adjustments → urbanize portion of the corridor to extend west of Wellington Road 52 and north of the rail trail (curbs, multi-use pathway, street-lighting, etc.)

# Next Steps



# Thank you Questions?

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