



Calgary



CITY OF CALGARY
RECEIVED
IN COUNCIL CHAMBER

SEP 30 2020

ITEM: 7.2 TT2020-1036
Distribution

CITY CLERK'S DEPARTMENT

Neighbourhood Speed Limits Review

SPC Transportation and Transit

TT2020-1036 | 30 September 2020

Purpose of Review

- Goal: To increase **safety** by reducing **operating speeds** in residential areas.
- Tool: Change the unposted speed limit
 - Supported by: design standards, traffic calming and retrofits, education and awareness, enforcement
- Options: 1) Default speed of 30 km/h
2) Default speed of 40 km/h
- Apply to: Residential Roads and/or Collectors
- Provide business cases for scenarios to assist decision

Neighbourhood Roadways

‘Neighbourhood’ is the term we use to refer to the areas where people live, mostly along Residential and Collector roadways

Residential roadway

- Road in front of most houses
- No centre line (typical)
- Less traffic



Photo Source: Google Street View

Collector roadway

- Residences, school sites, malls, transit routes, snow routes, centre line or with median
- More traffic

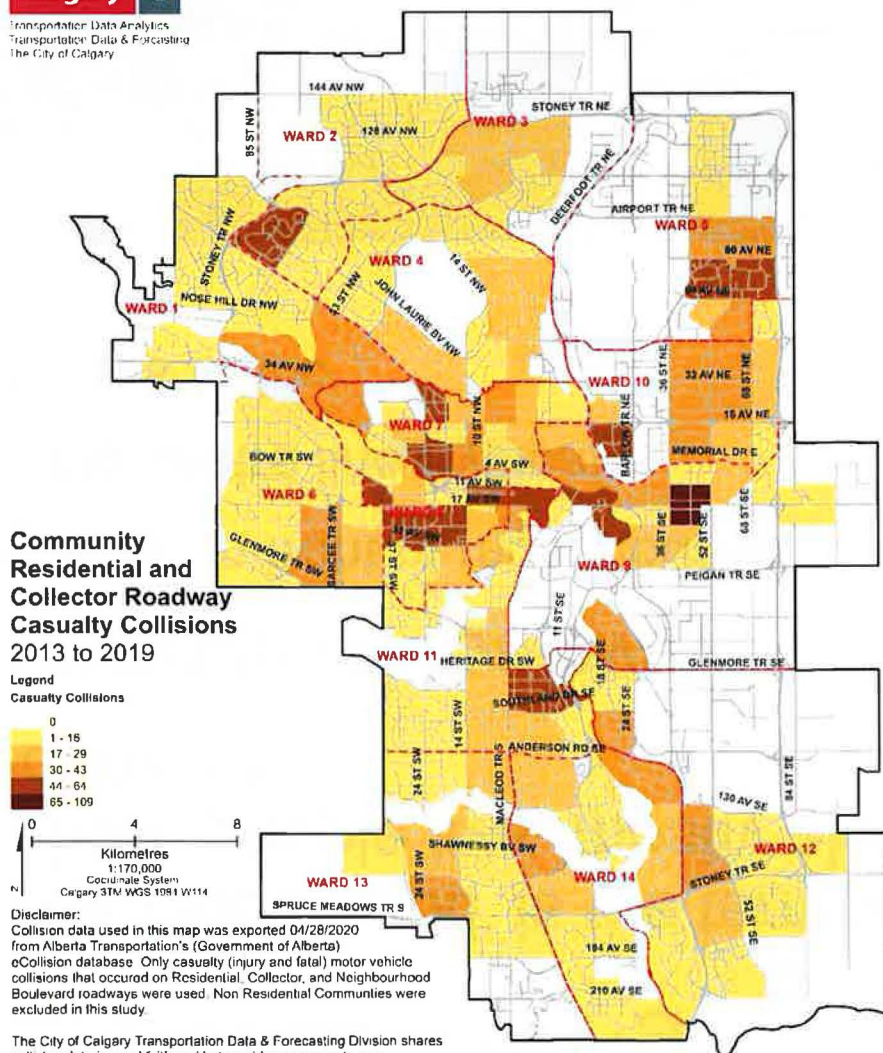




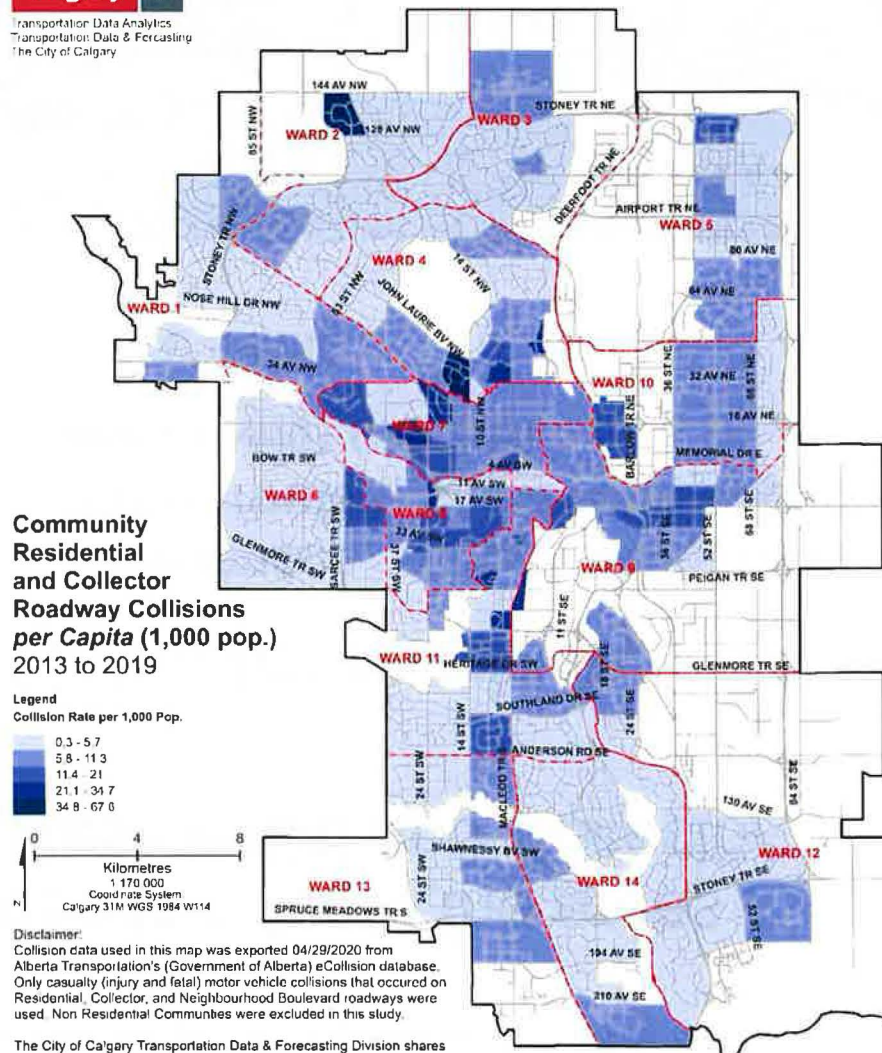
Neighbourhood Collisions



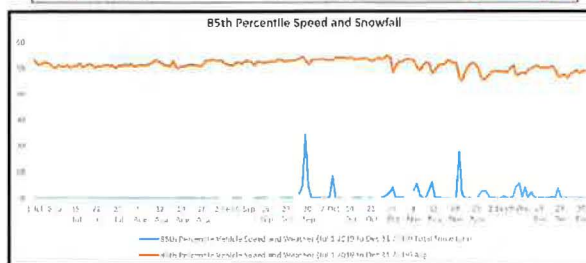
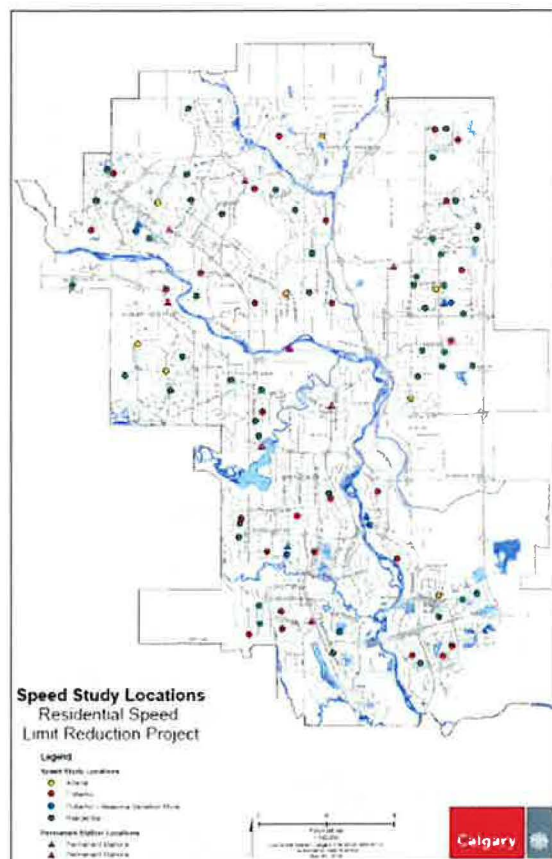
Transportation Data Analytics
Transportation Data & Forecasting
The City of Calgary



Transportation Data Analytics
Transportation Data & Forecasting
The City of Calgary



Neighbourhood Speeds



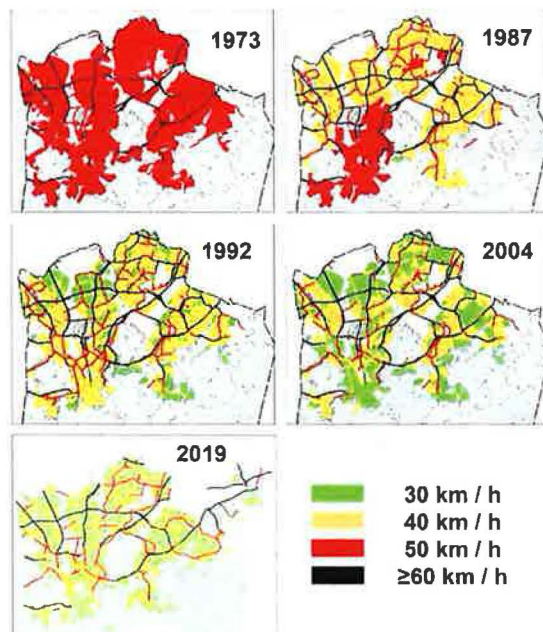
Spot speeds collected at 91 sites and 4 permanent speed observation sites

In general, Collector roads observed have operating speeds consistent with expected traffic speeds in a 50 km/h speed limit area.

In general, Residential roads observed have operating speeds consistent with expected traffic speeds in a 40 km/h speed limit area.

We know we have roads that are worse and have historically focused on those but they do not address system wide issues.

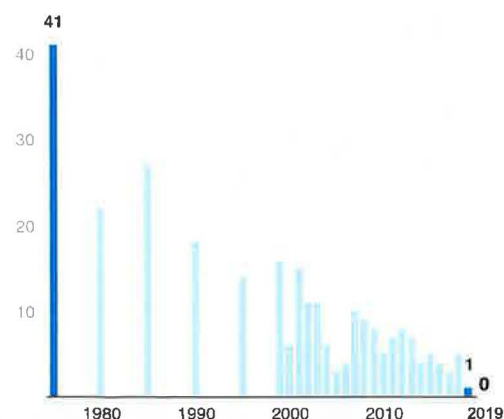
Global and Local Scan



Edmonton is proceeding with 40 km/h bylaw November 4

Montreal, Vancouver, Surrey, and Toronto are all working on lower neighbourhood speeds.

United Nations has endorsed vehicle speeds of 30 km/h where vulnerable road users interact with Vehicles



Helsinki and Oslo:
The first European capital cities to achieve zero pedestrian and cyclist fatalities

Six Scenarios

	Residential Street	Collector Road
Scenario 1	30 km/h	30 km/h
Scenario 2	30 km/h	50 km/h (posted)
Scenario 3	40 km/h	40 km/h
Scenario 4	30 km/h	40 km/h (posted)
Scenario 5	40 km/h	50 km/h (posted)
Scenario 6	Maintain existing	Maintain existing

Summary of Considerations

Short term action

Residential: 40 km/h

Collector: 50 km/h

Bylaw/Signage Only

- ✓ Reduce collisions by 90-450 per year
- ✓ Low capital cost
- ✓ High compliance
- ✓ Bylaw consistent with Edmonton
- ✓ Signals commitment to change

Long term vision

Residential: 30 km/h

Collector: 40 km/h

Bylaw and road design changes

- ✓ Reduce collisions by 810-1630 per year (eventually)
- ✓ Build over time
- ✓ Realistic given length of collectors, importance to Transit / services
- ✓ Build new communities better from the start

Implementation Plan



Implementation for effective date of April 4, 2021 will include:

- Bylaw process with public hearing at Council November 2.
- Education and awareness
- supporting signage changes (including roadway review process)
- Design guideline update and work to build and retrofit to safer standard

Updating Design Standards



Images: NACTO 2020

Establishing design standards for Collector Roads at 40 km/h and Residential Roads at 30 km/h will ensure that as we build the city, we will be building the safe and comfortable environments that residents are asking for.

Administration Recommendation:

That the SPC on Transportation and Transit recommend that Council:

1. Give three readings to the proposed City of Calgary Standard Speed Limit Bylaw to change the unposted speed limit from 50 km/h to 40 km/h within the city limits.
2. Direct Administration to post 50 km/h speed limit signs on existing Collector roadways unless or until a credible environment for a slower speed limit is provided.
3. Direct Administration to work with industry partners to revise Collector standards to support 40 km/h roadways and to revise Residential standards to support 30 km/h roadways, and to apply those standards in new communities and for retrofit projects on existing city roadways.



Supplementary Slides

Citizen Feedback

- Pedestrian Strategy input
- Citizen Survey results
- Traffic Calming requests
- Feedback to individual Councillors
- Citizens voting with their feet

Technical Advisory Team

- External experts
- Verify and refine project work

Council

- Meetings and drop-in sessions

Internal Stakeholders

- Transit, W&R, Fleet, etc.
- Understand possible impacts

Implementation

Residential Speed Limit Review - Cedarbrae Signage

Scenario 5 - Unposted 40 km/h & Collectors Posted 50 km/h



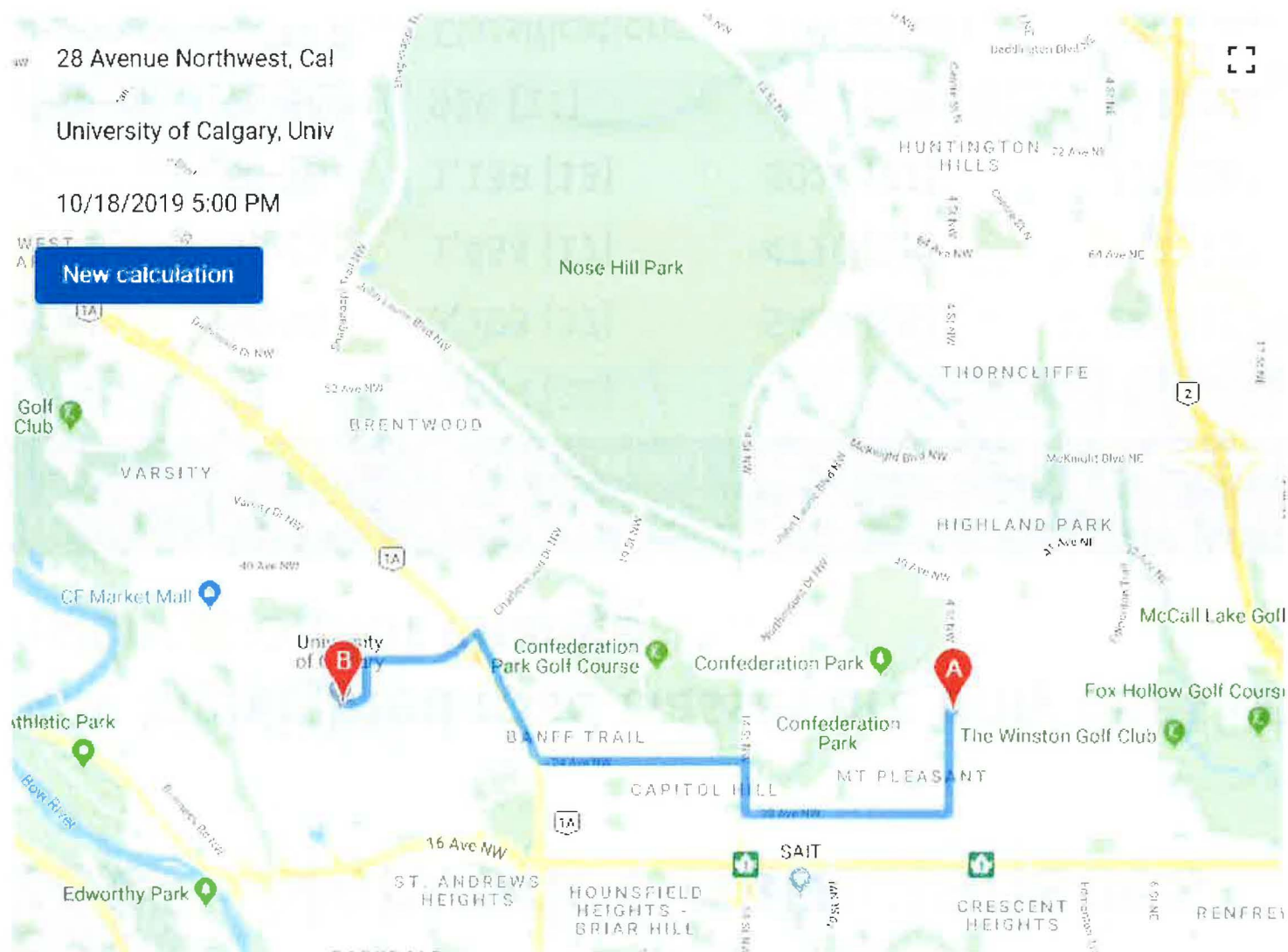
Distance: 7.1 km

Duration for current speeds: 13 min.

ETA for scenario 1: 15 min with 3.8 km impacted.

ETA for scenario 2: 14 min with 0.4 km impacted.

ETA for scenario 3: 14 min with 3.8 km impacted.



Network Characteristics

- Yellow highlighted road classes are only ones under consideration for change

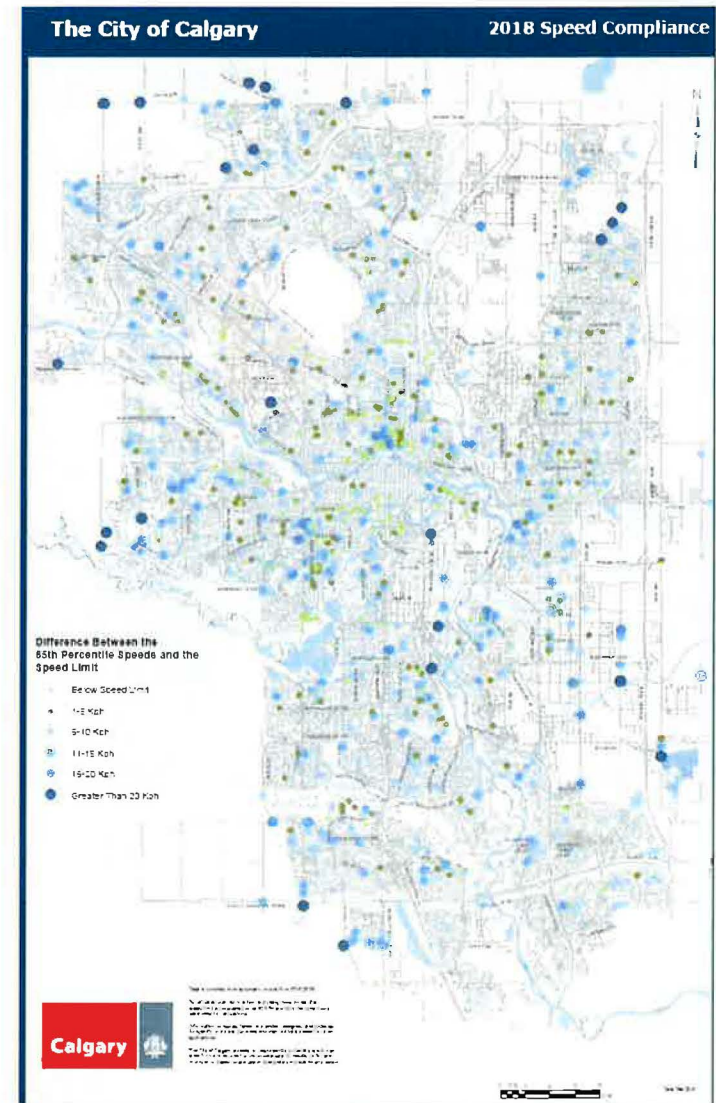
Road Class	Speed (km/h)	Length (km) [% of network]	Total Collisions [% of network]	Fatal and Injury Collisions
Alley	15	1,850 [22]		
Residential	30-50	3,203 [37]	5404 [15]	271 [10]
Collector	50-60	1,454 [17]	4710 [13]	391 [15]
Arterial	60-70	1,139 [13]	8010 [22]	777 [30]
Skeletal Roads	70-110	930 [11]	6912 [19]	612 [24]
Collisions on other CTP Road Classifications			11,259 [31]	540 [20]

- 475 km of playground zones in communities
- A small proportion of a typical trip is on residential or collector roads

Contributing Factors to Collisions

Contributing factors

- Alcohol impairment 13-20%
- Distraction 20-30%
- Unsafe Speed 25-40%
- Vehicle factors ~1%
- Medical incident <1%
- Failing to yield right of way 45-70%
(70% of pedestrians has ROW overall and 90% at traffic signals/flashing devices)
- Speed is the major factor for collision severity, regardless of contributing factors

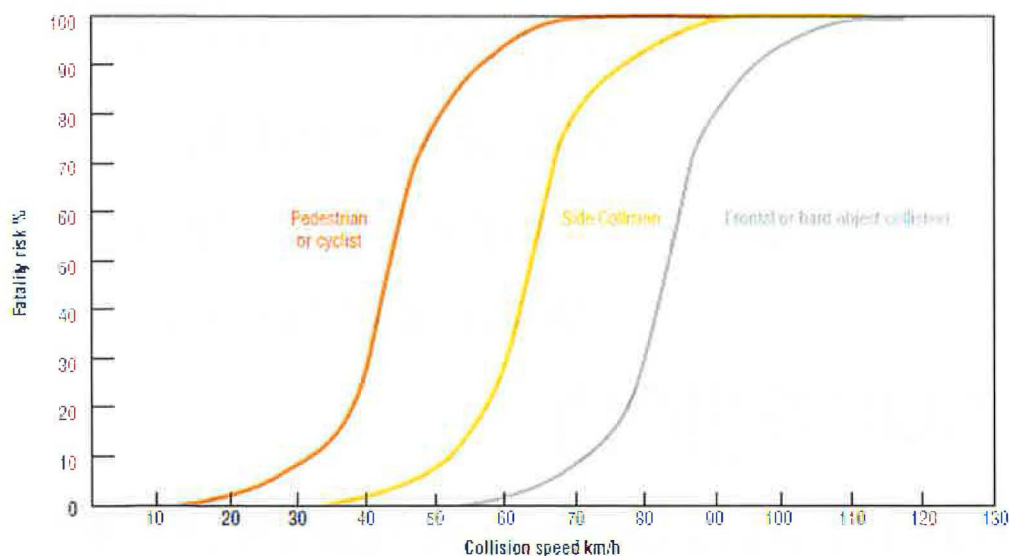


Controlling Impact Energy

1% increase in speed → ~ 2% increase in collisions, ~3% increase in injuries, ~4% increase in fatal collisions. (power model , i.e. exponential, relationship)



Figure E1: Fatality Risk for Three Major Collision Types and Different Impact Speeds



Harmonizing Regulations and simplifying motorist expectations PGZ

The average traffic speed in playground zones decreased from 36 km/h to 30 km/h.

The number of injury collisions involving pedestrians within playground zones decreased by 33%, with a 70% decrease between 5:30 p.m. and 9:00 p.m.

The collision rate decreased from 0.049 to 0.011 collisions per million vehicle kilometers of travel.

More than 80% of the respondents find it easier to remember the zone times with single zone type that is consistent throughout the year.



Playground zones:

30 km/h

7:30 a.m. to 9:00 p.m.,

7 days a week, year-round.

Societal disbenefit of collisions

- Societal cost of collisions (2018):
 - Fatal \$7,121,750
 - Injury \$172,950
 - Property Damage Only \$13,930
- Total value of collisions 2018 \$1.19 Billion

Jurisdictional Scan

- Montreal 40 km/h speed limit since 1999, currently evaluating reduction to 30 km/h in many areas
- Hamilton, ON, moving to 40 km/h in neighbourhoods over next 3 years
- Many smaller communities in Alberta have lower speed limits (e.g. Airdrie 30km/h, Okotoks 40 km/h, Sylvan Lake 40 km/h)
- Vancouver, BC is advancing 30 km/h pilot on neighbourhood roads
- Edmonton evaluating 40 km/h default with 30 km/h in core zone
- London, Ontario investigating speed limits of 40km/h or lower
- Boston, USA reduced speed limit to 25 mph (~40 km/h) without changing environment and found negligible operating speed change
- Cities in Sweden, United Kingdom and the Netherlands have implemented 30 km/h (20 mph in UK) in neighbourhoods with physical changes and are leaders with respect to urban traffic safety. Safety improvements on known studies illustrate large collision reductions from small speed change
- Auckland, NZ moving to 30 km/h in CBD and 40 km/h on many roads