



Preventing serious traffic-related injuries and encouraging active transportation: Challenges and opportunities

Cross Canada Cycle Tour Society (Fraser Valley Branch) AGM

December 14, 2023

Tobin Copley, MA - Lead, Injury Prevention & Safety Promotion BCCDC / Fraser Health

Land Acknowledgement



I acknowledge that Fraser Health provides care on the traditional, ancestral and unceded territories of the Coast Salish and Nlaka'pamux Nations and is home to six Métis Chartered Communities.

Outline



Challenges



An approach for
improvement



Options and
opportunities



Discussion

Challenges



WHAT MAKES CANADIANS SICK?

50%

YOUR LIFE

INCOME
EARLY CHILDHOOD DEVELOPMENT
DISABILITY
EDUCATION
SOCIAL EXCLUSION
SOCIAL SAFETY NET
GENDER
EMPLOYMENT/WORKING CONDITIONS
RACE
ABORIGINAL STATUS
SAFE AND NUTRITIOUS FOOD
HOUSING/HOMELESSNESS
COMMUNITY BELONGING

25%

YOUR HEALTH CARE

ACCESS TO HEALTH CARE
HEALTH CARE SYSTEM
WAIT TIMES

15%

YOUR BIOLOGY

BIOLOGY
GENETICS

10%

YOUR ENVIRONMENT

AIR QUALITY
CIVIC INFRASTRUCTURE



THESE ARE CANADA'S SOCIAL DETERMINANTS OF HEALTH #SDOH

Population Health:

We have the potential to
reduce road trauma

and

Improve the health of our
population

Prevention is better than cure: Transport's role in keeping people healthy



Opportunity for easy,
everyday physical
activity



Wellbeing benefits
of keeping
connected & active

Enabling access to...



... healthcare



Improving air quality
through technology &
behaviour change



Tackling loneliness
and social isolation



...healthy activities



Building healthy
travel habits for life



Staying
independent



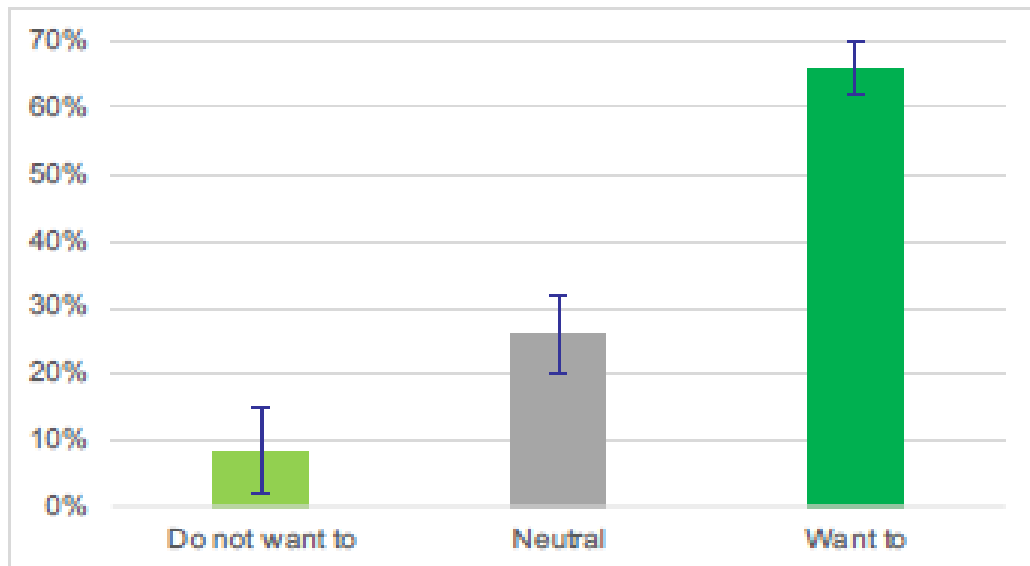
...shops selling
healthy, affordable
food

Urban Transport group (2019)

People want to be more active in their neighbourhood

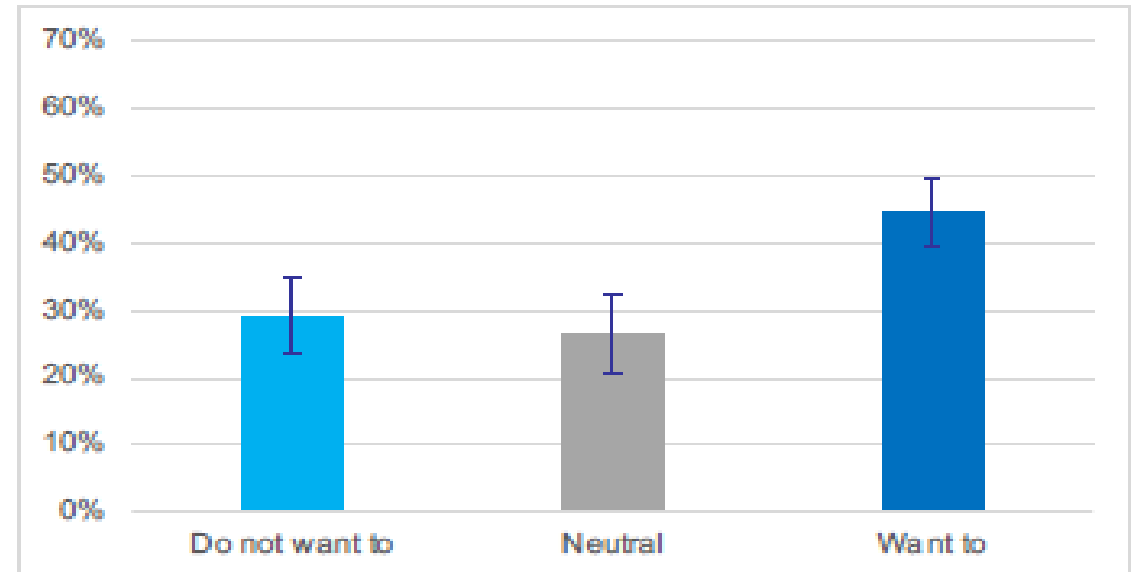
Walking and Running

- **66%** wanted to walk or run more in their neighbourhood



Cycling

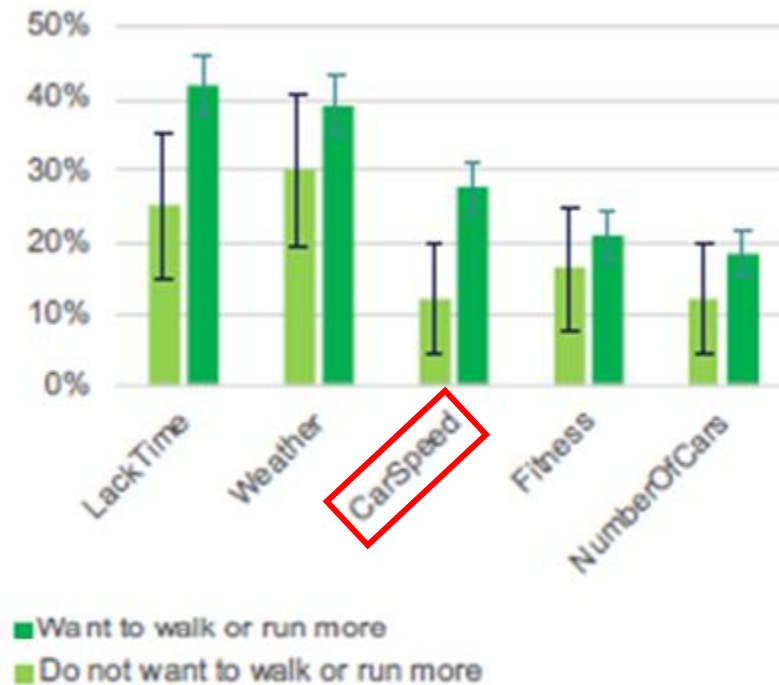
- **44%** wanted to cycle more in their neighbourhood



Traffic deters neighbourhood activity

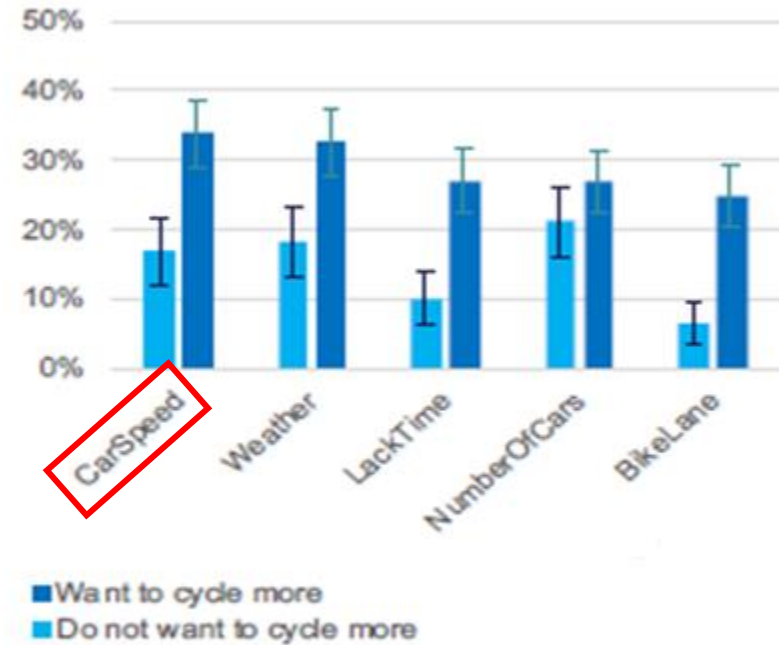
Walking

Speed deters **almost 30%** of those who want to walk more



Cycling

Speed deters **over 30%** of those who want to cycle more



Safety concerns deter active transportation choices



Road safety and the burden of injury

More than

79,000

British Columbians are injured in road crashes each year

Every year in BC, more than

2,500

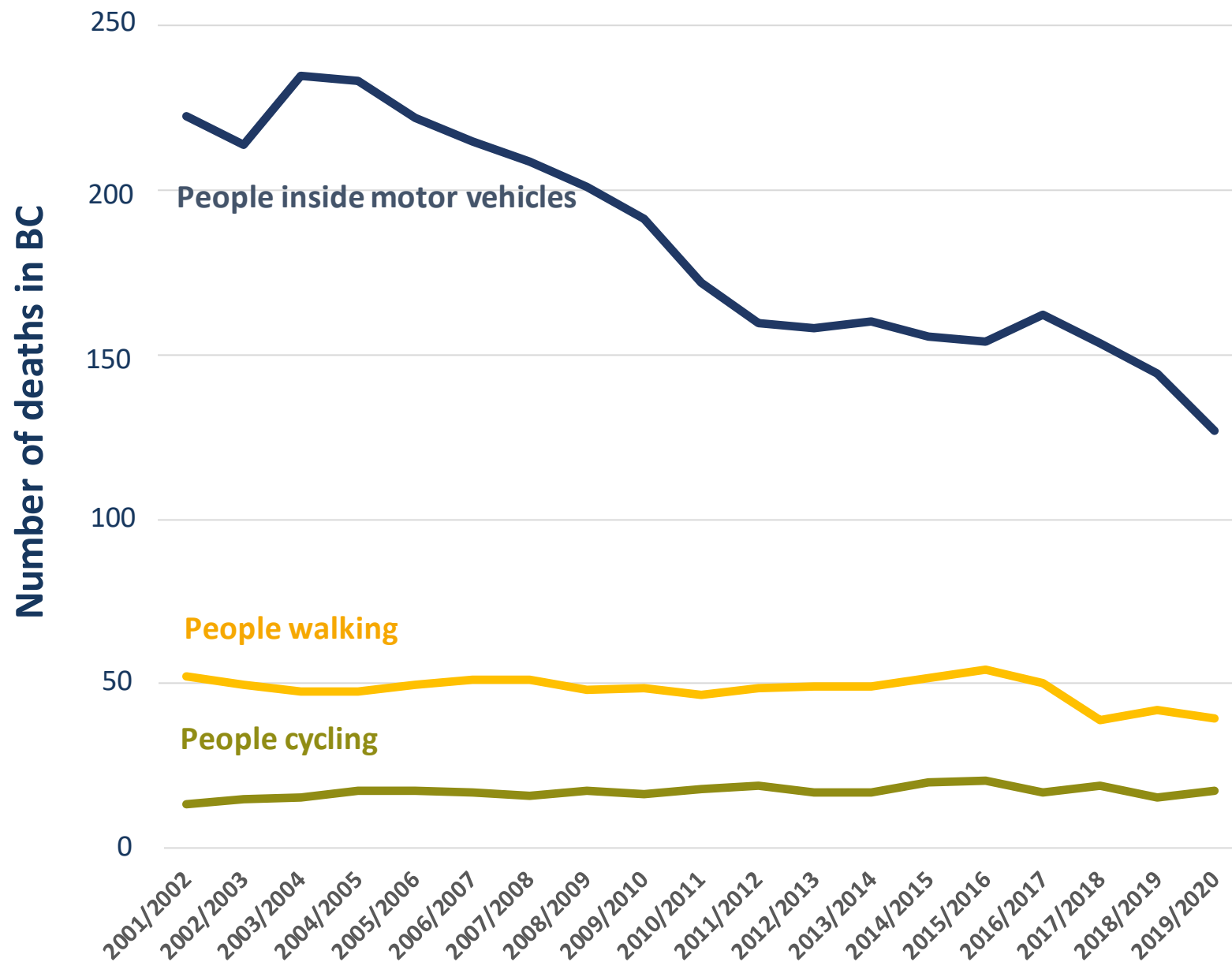
People are hospitalized

Almost

300

People die from road-related crashes

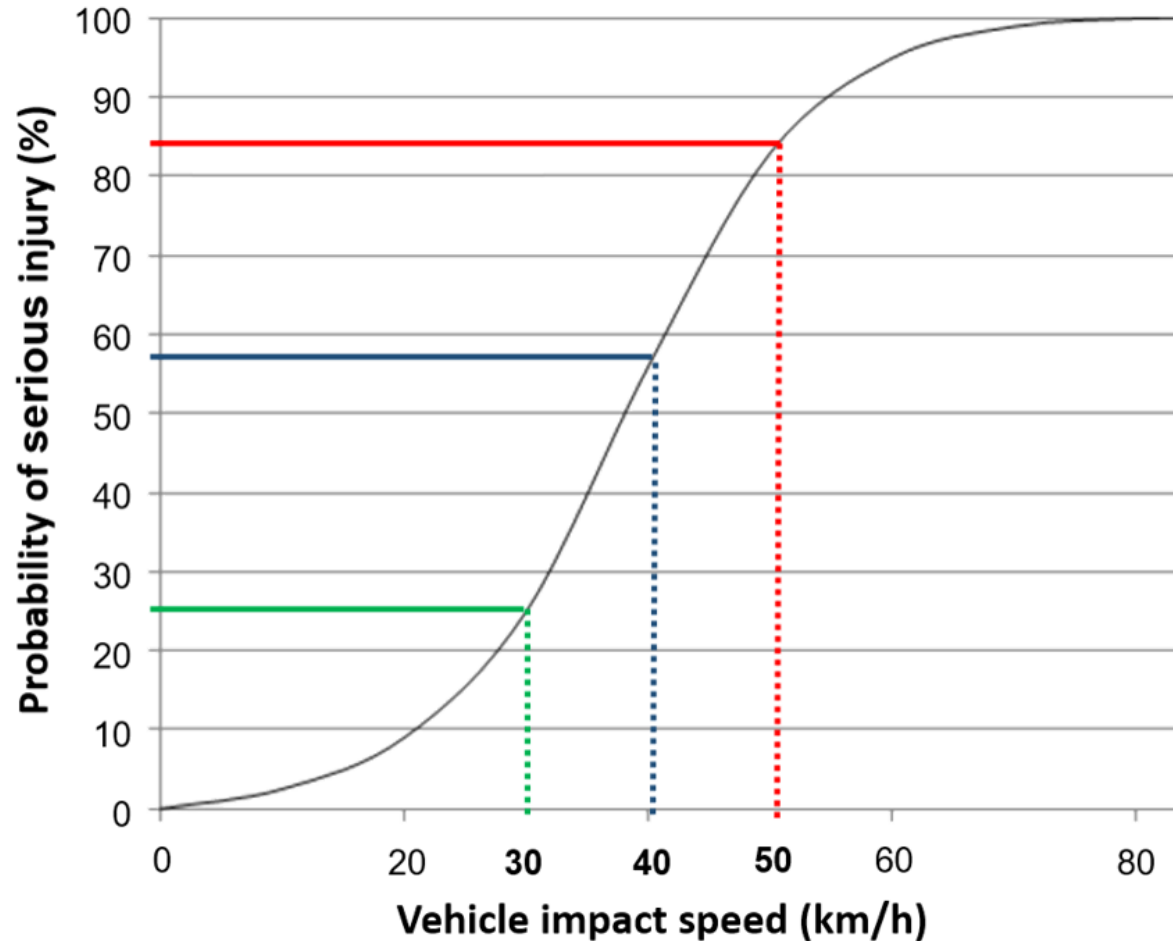
Need to improve safety for people who walk or cycle



FAST & FURIOUS CROSSROADS



The role of speed



Vehicles are increasingly unsafe (If you're outside of them)



<https://www.treehugger.com/pickup-trucks-are-4-times-as-likely-to-kill-pedestrians-when-turning-5222881>



<https://twitter.com/ictwulander/status/1477774012617043969>

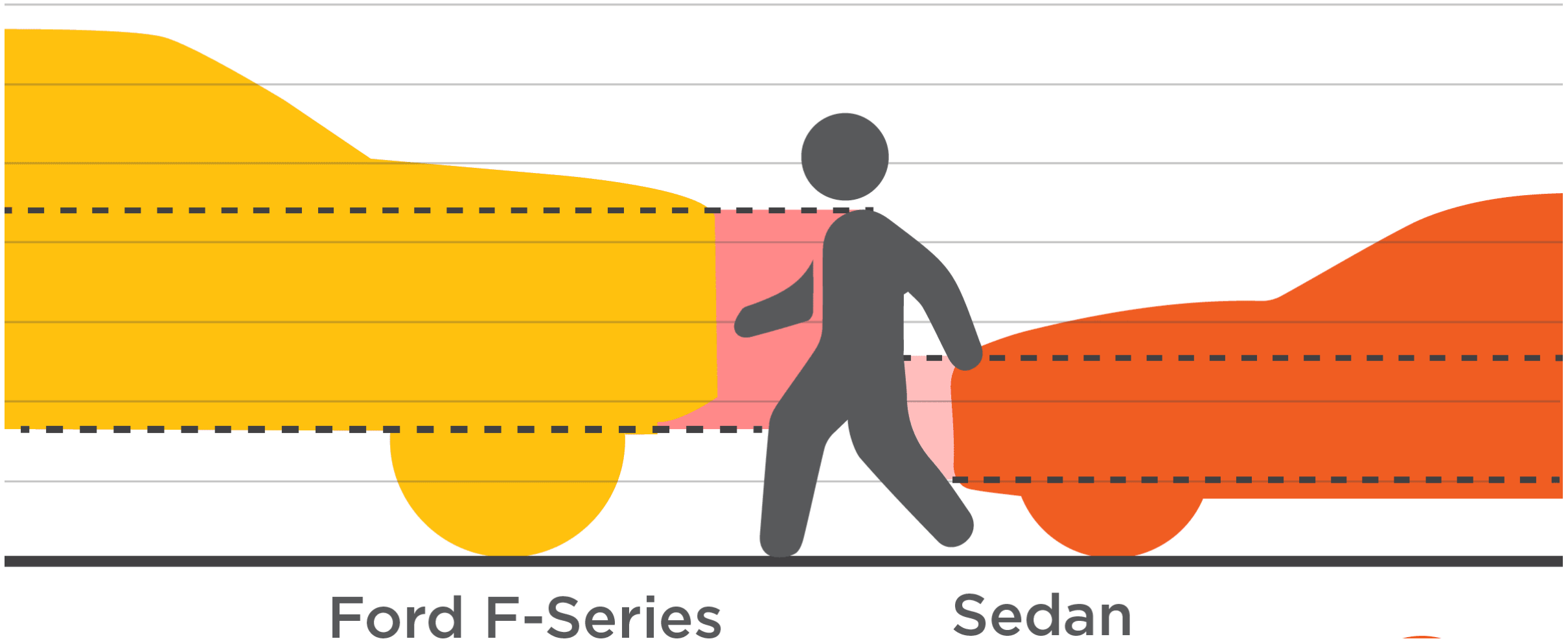


<https://twitter.com/ajlatrace/status/1495124630868213764>



<https://viewpointvancouver.ca/2022/04/27/despite-pedestrian-deaths-serious-injury-province-ignores-request-for-slower-municipal-streets/>

Vehicle design

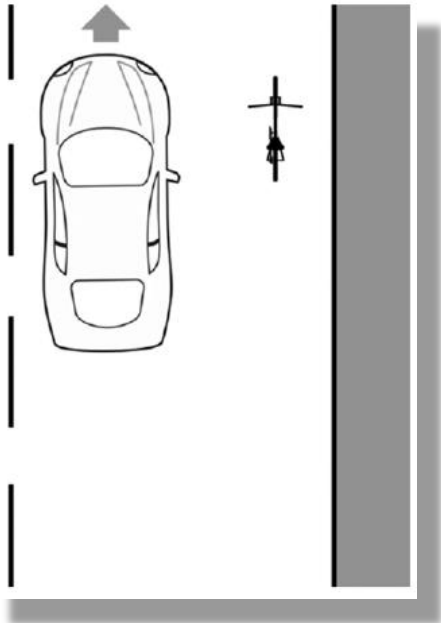


Infrastructure design & safety

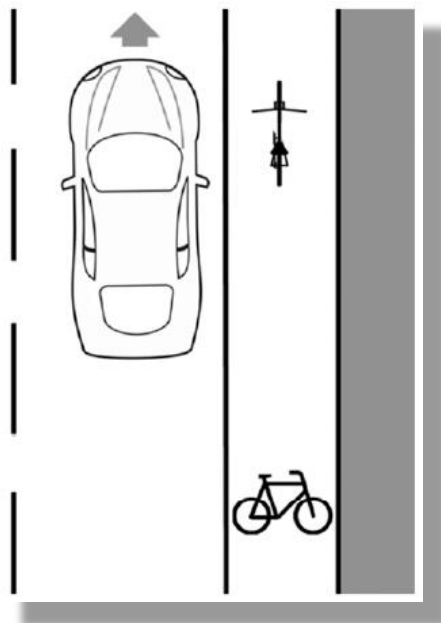
Up to 60 km/h zones: One in 17 passing events was a close (<100cm) pass

Over 60 km/h zones: One in three passing events was a close (<150cm) pass

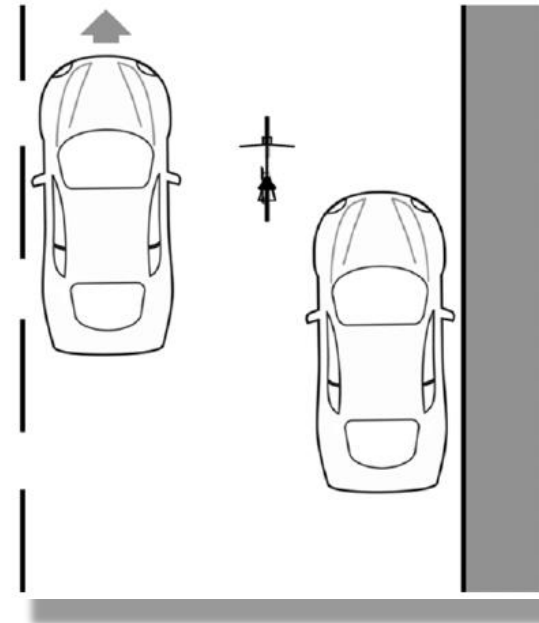
No bike lane
No parked cars
(Reference)



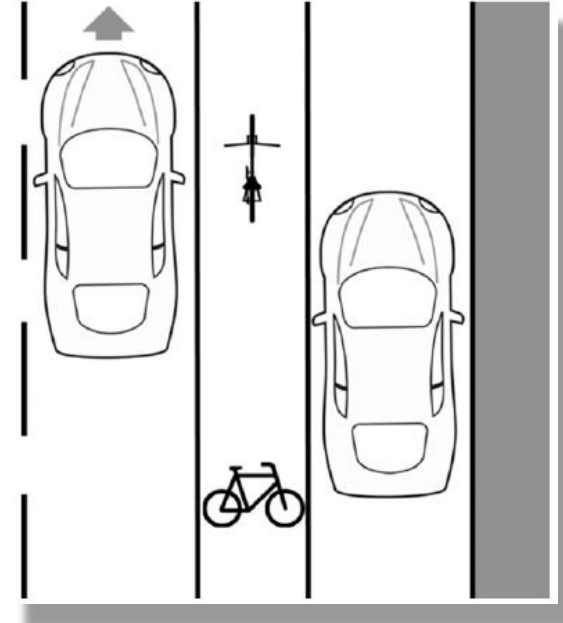
Bike lane
No parked cars
27cm less



No bike lane
Parked cars
30cm less



Bike lane
Parked cars
40cm less

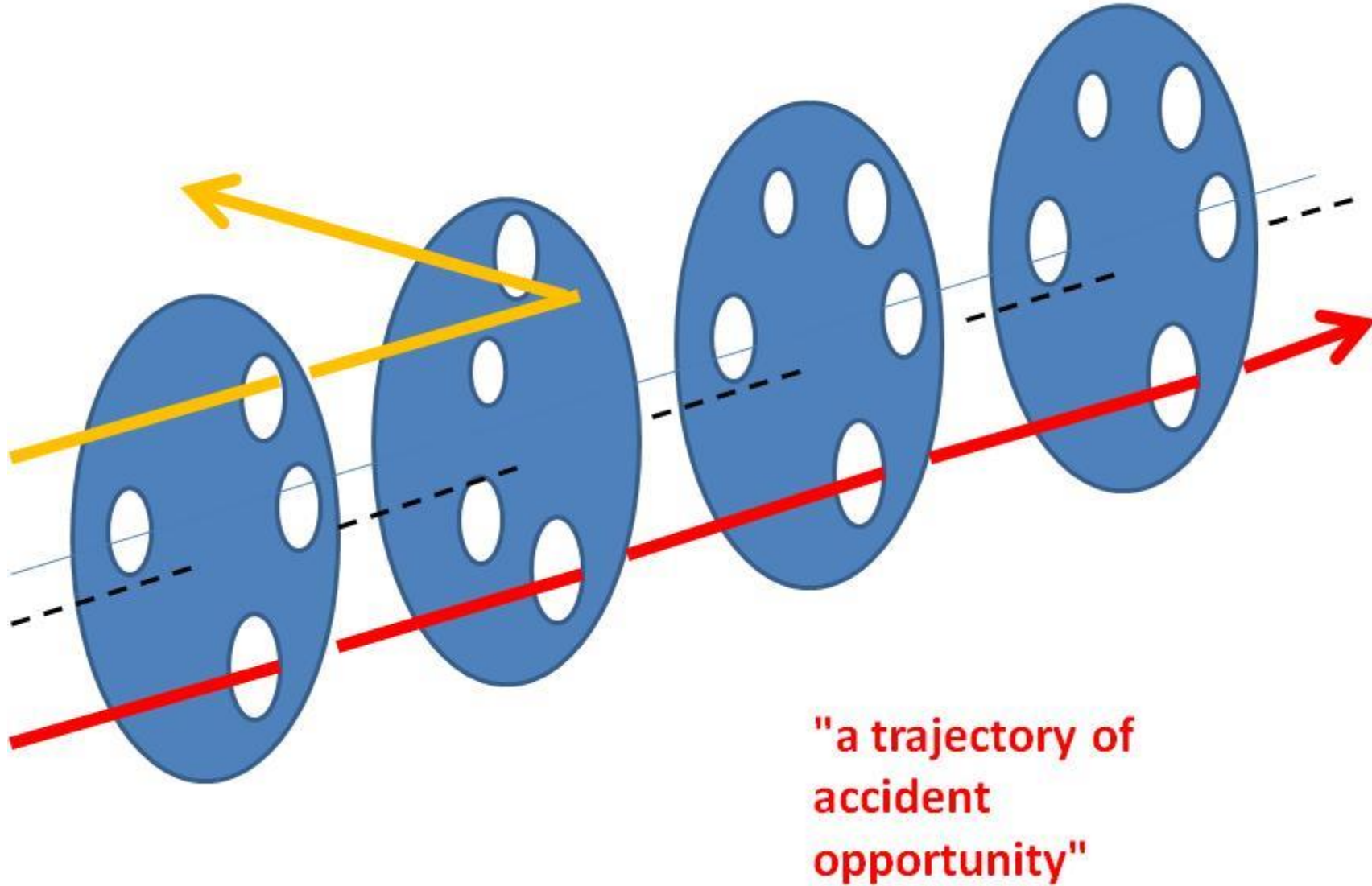


Systems thinking

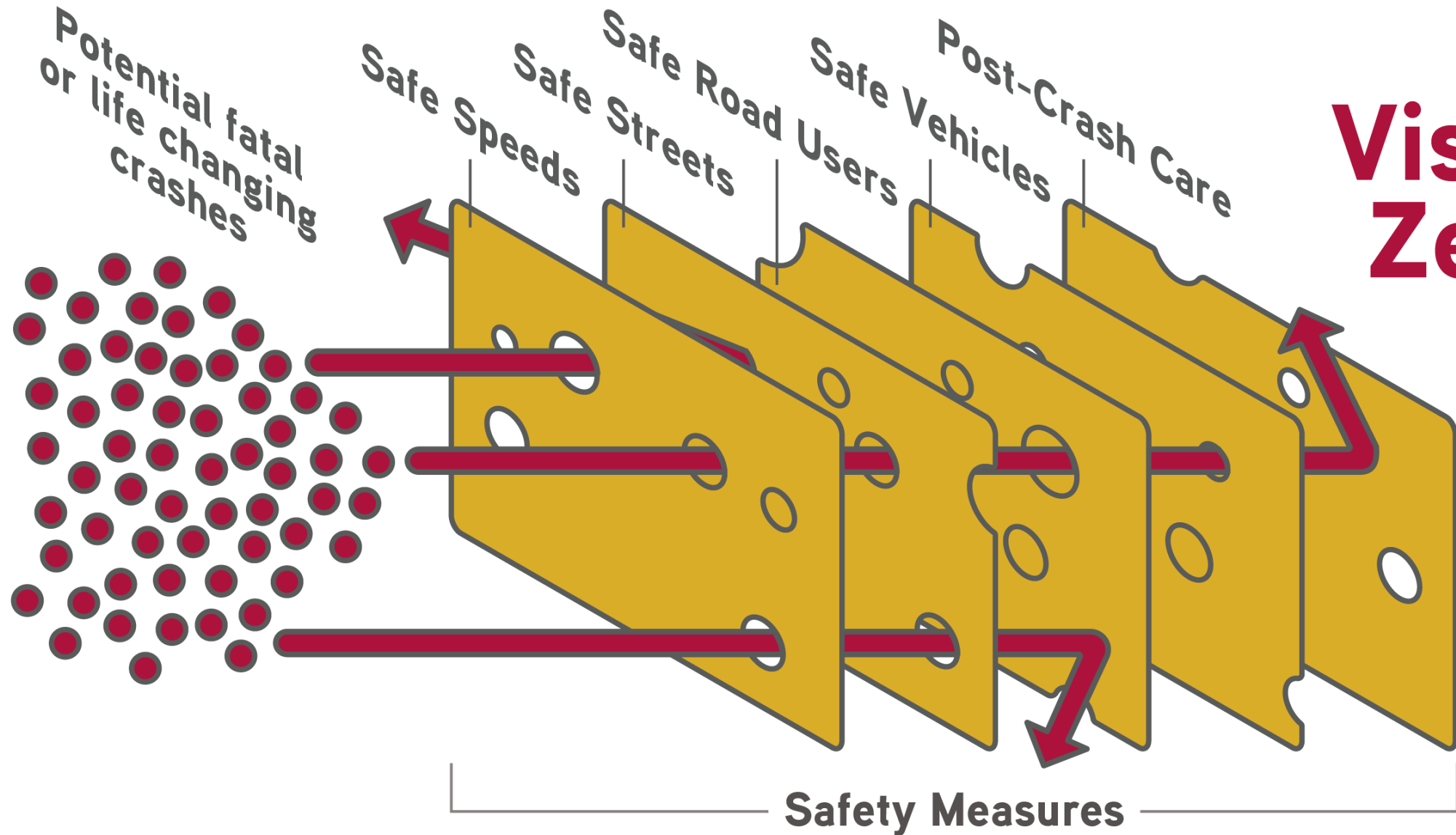
An approach for improvement



Reason's Swiss Cheese Model



Vision Zero



Redundancy is Essential

What is Vision Zero?

“A Vision Zero approach means that serious injury and death while travelling on roads is not acceptable.”



Serious injuries

Deaths on the road

Vision Zero Approach

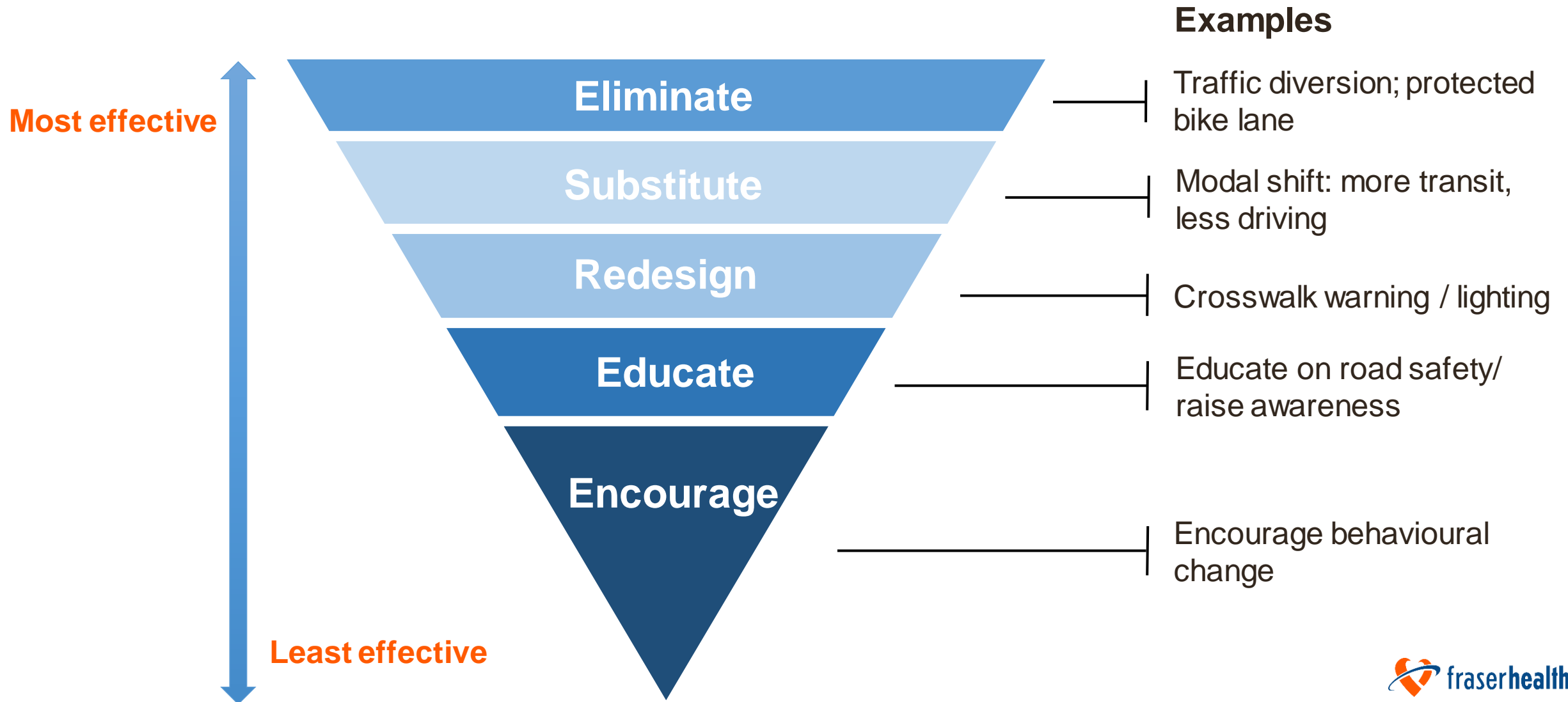
No one should
be harmed on
the roads

Serious injuries,
disabilities, and
deaths on the
roads are
**preventable
occurrences**

**Proactive
response** to
road safety (e.g.
predict
unsafe/faulty
road designs to
prevent harm)

Road
intervention is
inexpensive

Intervention Effectiveness



Opportunities

#1: Improve speed enforcement

North Vancouver teen caught going nearly 200 km/h on the Upper Levels Highway

The driver, who had a learner's licence, was racing with another vehicle, says RCMP

Cheryl Chan

Published Oct 02, 2023 • Last updated 3 days ago • 1 minute read

☐ 44 Comments



North Vancouver RCMP clocked a vehicle at 199 km/h on the Upper Levels Highway near Lonsdale Avenue last Friday. PHOTO BY NORTH VANCOUVER RCMP

A 19-year-old driver has been slapped with \$1,500 in fines after he was caught speeding at nearly 200 km/h on a North Vancouver highway.

- Reviews show inverse relationship between enforcement and injurious crashes
- Manual enforcement:
 - Resource-intensive
 - Can be dangerous
 - Isn't feasible in many locations
 - Requires focus on fastest speeders; encourages “modest speeding”

Automated safety cameras



- Automated devices record speed & location
- Tickets issued when parameters violated
- Not just intersections!
 - Speed zones (e.g., schools)
 - Highway high crash locations
 - Point-to-point (average speed over distance)

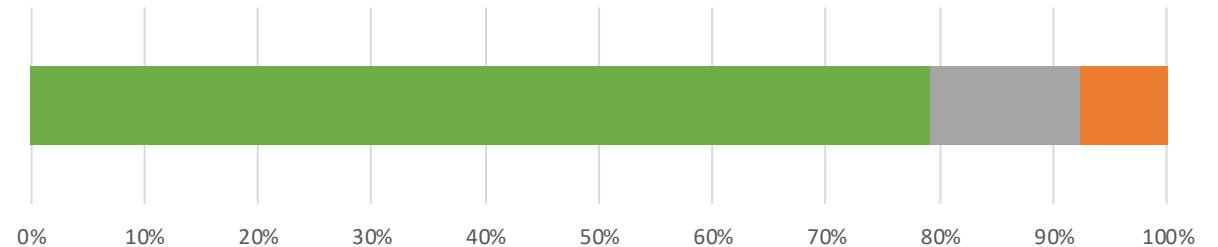
Why *automated* enforcement?



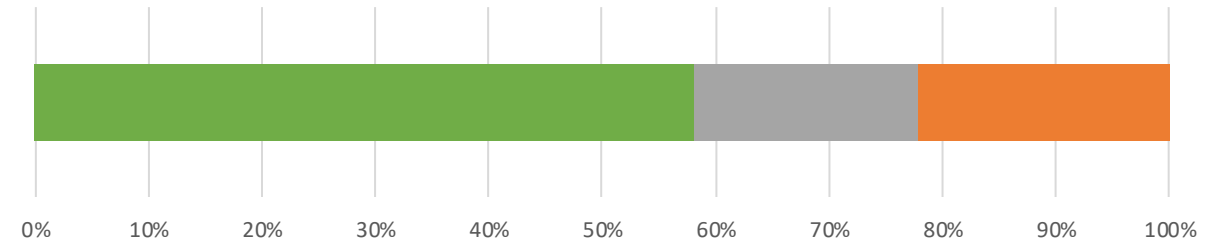
- Highly effective in reducing collisions, injuries and fatalities (10-50% reductions)
- Can address pervasive speeding (10-20 km/h over the speed limit)
- Can be conducted where traditional enforcement is difficult
- Safer for everyone
- Not constrained by availability of police resource
- Can free up police officers for other tasks

Public opinion in Fraser Health

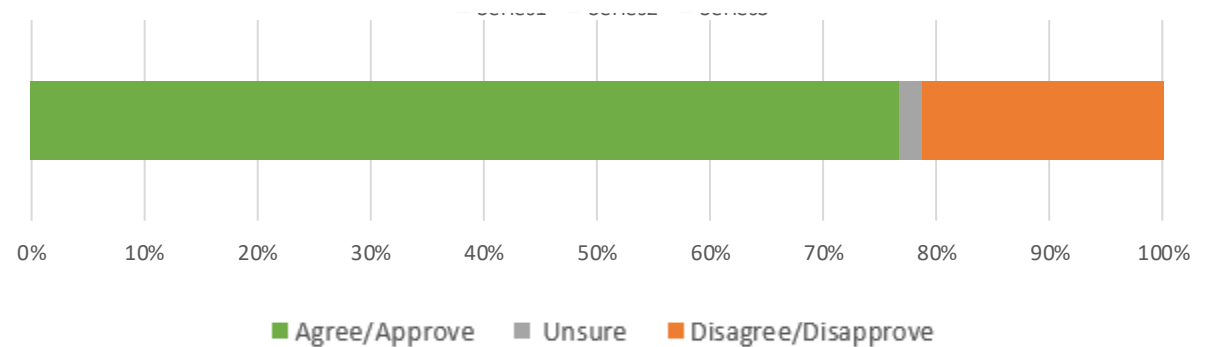
It is important to respect speed limits
because it makes travel safer for everyone
(BCCDC March 2023)



Speed-on-green enforcement at intersections
(BCCDC March 2023)



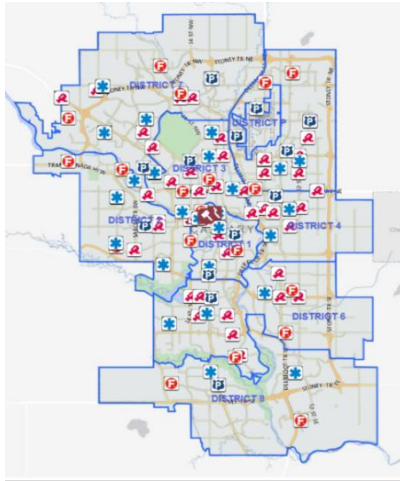
Speed-on-green enforcement at intersections
(Fraser Valley)
(ResearchCo Nov 2023)



■ Agree/Approve ■ Unsure ■ Disagree/Disapprove

Four critical elements for acceptability

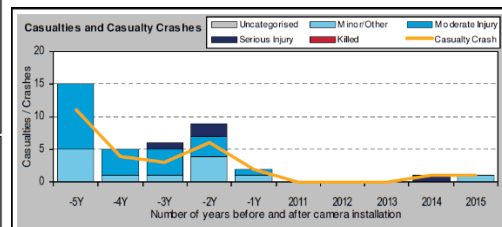
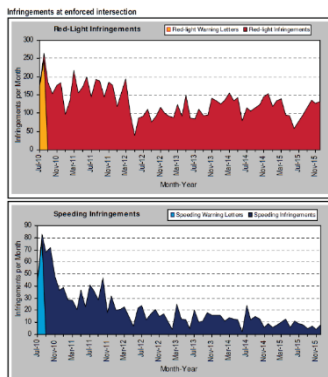
No surprises



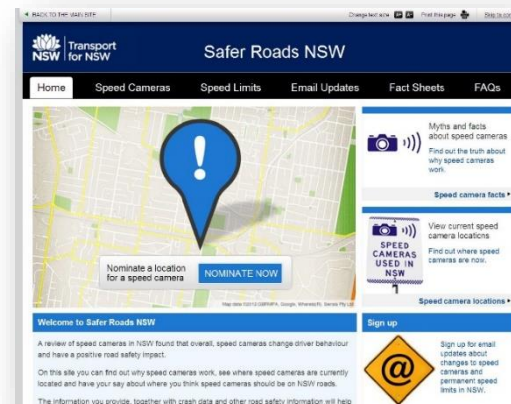
Revenue transparency



Camera effectiveness



Community engagement



Step 2 Reason for suggesting location

Please provide a brief summary of the reason(s) for suggesting this location *

Number of characters left: 500

Municipal motions on safety cameras

- **Sept 7th: Victoria**
- **Oct 16th: Langley City**
- **Nov 1st: Vancouver**
- **Nov 6th: City of North Vancouver**
- **Nov 27th: Richmond**
- **Dec 11th: New Westminster**

#2: Design the road system for people (not cars)



<https://www.surrey.ca/renovating-building-development/engineering-infrastructure/capital-construction-program/protected>



BC Active Transportation Design Guide 2019

Make low-cost road safety improvements



Reduced speeds,
cost/per sign: ~\$500



Solar powered speed-
feedback sign: ~\$15,000



Churchill curbs, bollards to
calm traffic/eliminate parking
near crosswalks/improve sight
lines: ~\$500



Turn Calming: ~\$4 - \$6,000

Rapid Rectangular
Flashing Beacon (RRFB):
~\$10 - \$20,000



Raised Crosswalk:
~\$20,000



Protected turning
movements: ~\$200 - \$3,000



Leading pedestrian
interval: ~\$2,000



Simple treatments for safer streets

Measure	Average reported CRF (%) across studies
Reduced speeds	10% reduction (for 5% reduction in mean speed)
Speed feedback sign	9% reduction
Traffic calming	31% reduction
Turn calming: tighten turning radius	N/A, however NYC reports 20% reduction
RRFB	59% reduction (for pedestrians)
Raised crosswalk	37% reduction
Protected turning movements	55% reduction
Leading pedestrian interval	25% reduction (for pedestrians)

Source: Crash Modification Factors Clearinghouse funded by US DOT FHWA and maintained by University of North Carolina Highway Safety Research Center.

#3: Change the laws

- Anticipated Spring 2024
- New provisions requiring drivers to exercise care when pedestrians and cyclists are using the roadway
- Minimum lateral passing distance
- Requiring speed limiters for heavy vehicles


Transportation and Infrastructure

Motor Vehicle Act changes will improve road safety

Translations

 繁體中文

 Français

 ਪੰਜਾਬੀ

Share



News Release

Victoria

Wednesday, April 5, 2023 1:55 PM

Media Contacts

Ministry of Transportation and Infrastructure

Media Relations

250 356-8241

More from this Ministry



(flickr.com)

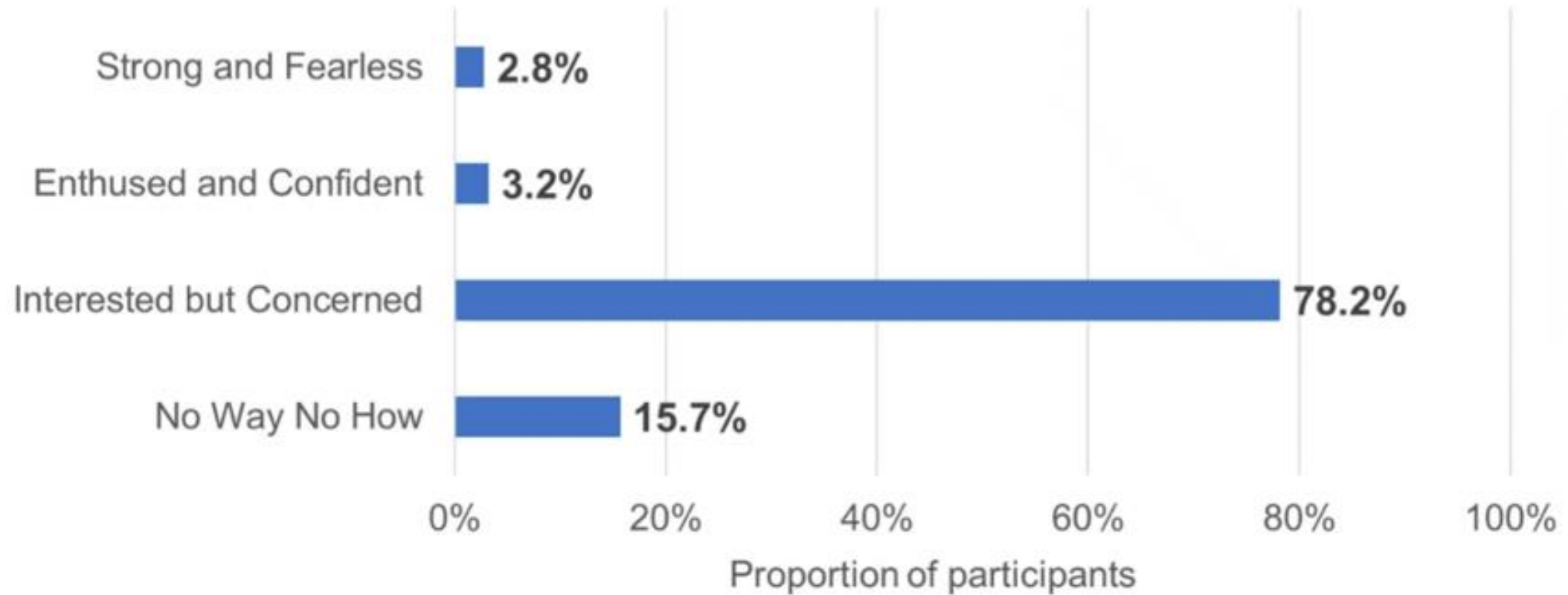
Rob Fleming, B.C. Minister of Transportation and Infrastructure, tabled Bill 23,

#4: Support the “Interested but concerned”

- Can't just build for people already riding!
- “Vehicular cycling” approach set bike riding equity back a generation



Latent demand for cycling is huge



#5: BC Vision Zero grant program



A grant up to **\$20,000** per project

Grant that supports governments and organizations to improve road safety in their communities



Protect vulnerable road users from serious injury, disability or death

To date the program has awarded **\$1,594,653** for **103** projects in **91** communities across BC

Bonus: Research!

Pedestrian and Cyclist Deaths Coroner Review Study



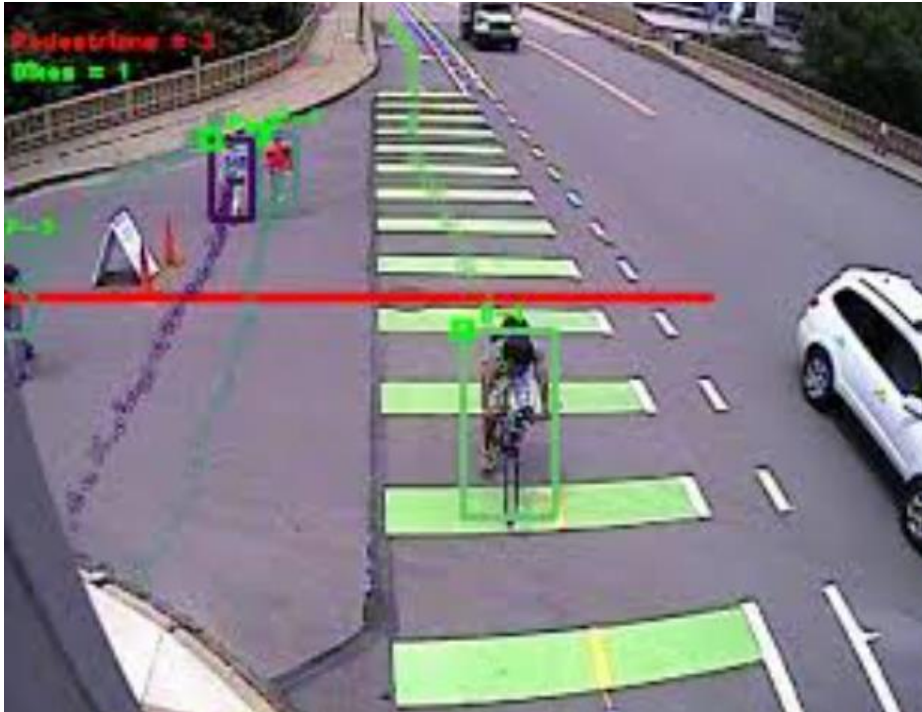
Measuring cycling passing distance



- Establish for the first time in BC an estimate of the lateral passing distance drivers give when passing cyclists.
- Passing distance is a critical factor in actual and perceived safety
- Provides a baseline to evaluate impact of new cycling passing distance law



Cycling passing distance – stationary camera study



- Traffic camera footage of road segments without separated cycling infrastructure
- Computer vision techniques auto detect vehicles and cyclists

Cycling passing distance – *in situ* study



MONASH
University



- Record passing distances on-bike using ultrasound as cyclists ride their normal routes



Discussion

Thank you!

For any questions, please contact me at
tobin.copley@fraserhealth.ca