



Promoting Safe Use of Roads and Pathways for Active Transportation

A Review of Canadian Promising Practices





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- CATEGORY: Safety Initiatives

ABSTRACT

- Intention - to analyze and promote safety of AT (active transportation) users (aka vulnerable road users - VRUs)
- Sponsored by the Public Health Agency of Canada

- Discusses
  - details and outcomes of the study
  - focusing mainly on how community decision makers can best educate, engage and protect VRUs
  - using informal, passive safety education tools

- Full report on this study is available online from the UBC Sustainable Transport Safety Research Laboratory


Promoting Safe Use of Roads &
Pathways for Vulnerable Road Users:
A Review of Canadian Promising Practices
Prepared by:
a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA
Interior Health

MOTIVATION

- Governments at all levels across the globe
  - are promoting active transportation (AT - walking, bicycling)
  - in pursuit of socially, environmentally and economically sustainable communities
- The UN World Health Organization and Canadian road authorities declared 2011 to 2020 as 'the Decade of Action for Road Safety'
- Community planners and engineers are planning and building more walkable and bike-able communities
- Counterproductive rise in injuries among AT users (aka vulnerable road users – VRUs).
- The social & economic costs of VRU injuries are significant
- Hence, with an intention to analyze and promote the safety of AT users this study was carried out on the safe use of roads and pathways for AT

DEFINITIONS

- Focus on **'informal, passive safety education practices**' as opposed to formal VRU education practices (e.g., classroom formal courses)
- These include -
  - websites and brochures as the initial user reference points and
  - self-educating infrastructure as the primary point of influence
  - Self-educating infrastructure by its nature guides its user into proper and safe conduct (e.g., painted arrows educate drivers to watch out for cyclists).
-
- The terms **'active transport (AT) users'** and **'vulnerable road users (VRUs)'**
  - include only pedestrians and cyclists
  - are used interchangeably but have the same meaning as defined above

- **'Promising' Practices**
  - are defined as those that communities themselves believe meet or exceed goals for safety education effectiveness and measures of effectiveness

- **Critical success factors**
  - were identified as those common to programs that were deemed to be promising, but did not guarantee a success.

OBJECTIVES

1. To conduct a comprehensive review of relevant sources
   - to identify promising Canadian practices promoting safe use
   - by VRUs of off/on-road facilities, especially shared-use facilities

2. To identify informal, passive AT safety education and enforcement programs
   - that enable and encourage user understanding and compliance
   - from an injury-prevention perspective

3. To assimilate all collected data into a final report
   - for community decision-makers - councillors, planners, engineers, public health practitioners, and
   - for other road safety stakeholders

What are ‘good’ practices, and how ‘good’ are they?

METHODOLOGY

- Employed an expedited, full-population sampling carried out in three parts:
  1. Primary information sources were identified via website scans of nearly 300 Canadian communities and Literature review
  2. Key informants were interviewed from a broad range of communities and organizations across Canada
  3. Finally, a national toolbox was assembled of promising informal, passive AT educational strategies, augmented by international literature for comparison

Website Scans

- 300 Canadian communities out of a total of 690 communities across Canada
  - at least one small, medium, and large community from each province/territory

- Where opportunities permitted, other communities were added to the total (e.g., Complete Streets, Safe Communities, Green Communities)

- 15-minute explorations on each website to try to replicate how a typical VRU might search initially for information

Interviews

- The 65 most VRU-active websites were identified as possible interview candidates
- The response rate on interview requests averaged 65%
  - lowest for small/medium size cities at 62%, and
  - highest for national/provincial organizations at 69%
- 38 communities agreed for interviews
- Average of ten interviews in each size category were conducted, providing a reasonable cross-section sample.

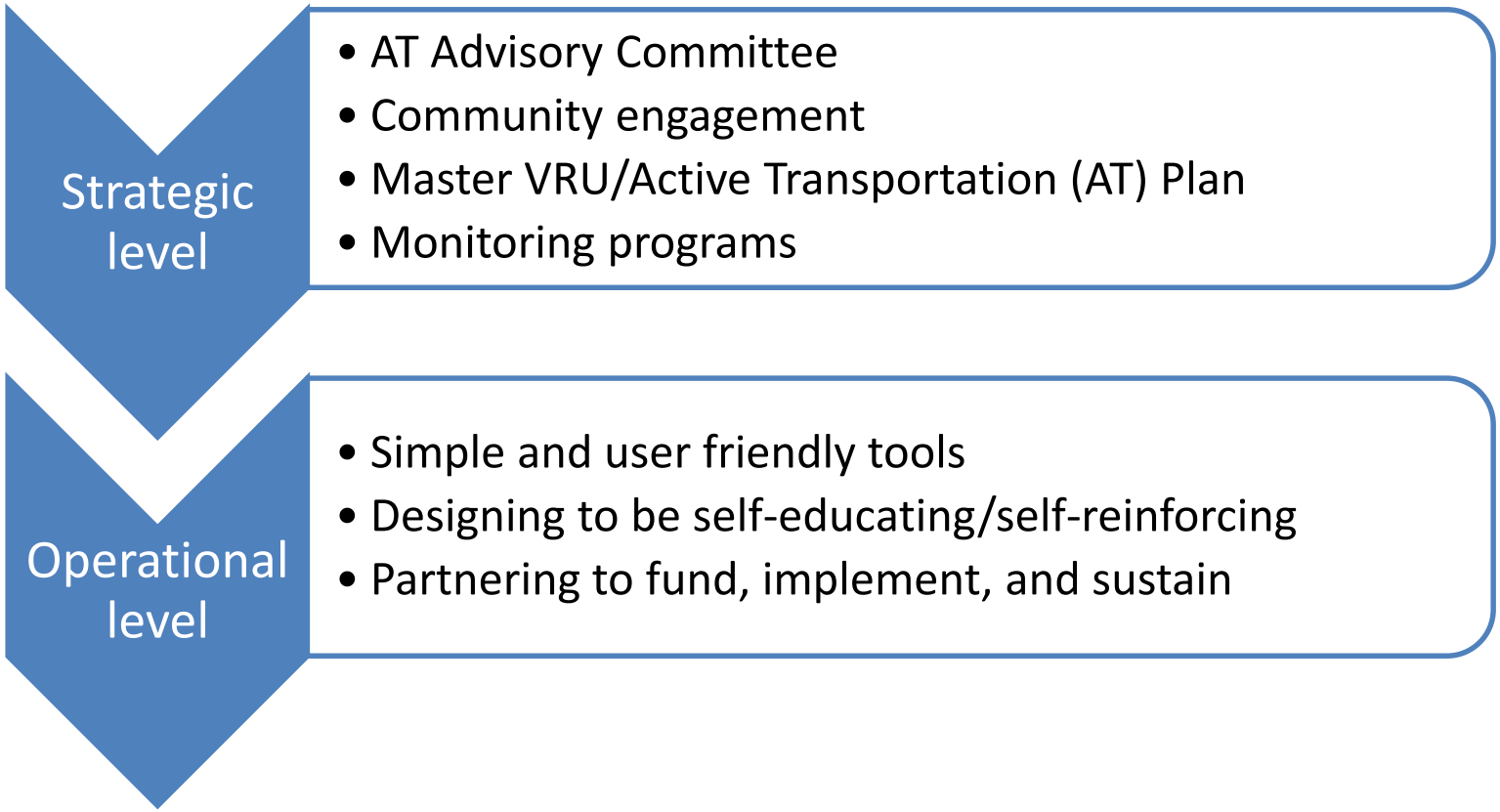

YT
NT
NU
Whitehorse
Yellowknife
BC
AB
SK
MB
ON
QC
NB
PE
NL
NS
Edmonton
Saskatoon
Nanaimo
Kelowna
Banff
Canmore
Vancouver
Langley
Kimberley
Medicine Hat
Moose Jaw
Winnipeg
Pinawa
Thompson
Fort Frances
Haliburton/Dysart and Others
Ottawa
Cornwall
Halton Hills
Guelph
Thames Centre
Notre-Dame-des-Prairies
Quebec
Saguenay
Moncton
Saint John
Halifax
Cape Breton
Antigonish
Clarenville
St. John's
Legend
46 Cities
Large
Medium
Small
National Water
Provincial Boundary
N
W
E
S
Meters
0
310,000
620,000
1,240,000

RESULTS

1. critical success factors (CSFs)
2. tools
    a. peer learning safety tools
    b. self-educating infrastructure
        i. bicycling safety tools,
        ii. pedestrian safety tools
        iii. traffic calming tools
        iv. shared pathway aiding tools
3. communicating safety tools

1. CSFs

- identified as those common to programs that were deemed to be promising, but did not guarantee a success



2a. Peer Learning Safety Tools

- present opportunities for interactions, mentoring, and communicating at either a peer age, and/or travel mode demographic

Peer Learning Safety Tools

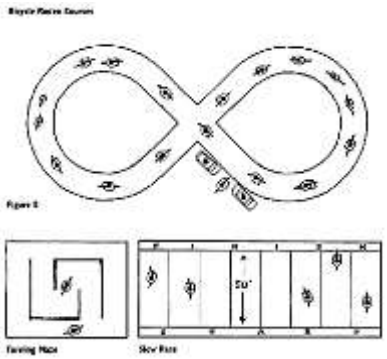
- *Mountain Bike Skills Park* (Courtesy: City of Kimberley)

Peer Learning Safety Tools

- *Safe Routes to School*
  - to create a safe environment for youth who either walk or cycle to school
- *Bike to Work Week, Crossing Guards, Trail Ambassadors, Bike Safety Week*
  - 25 % of students would walk if they didn't have to walk alone,
  - 23 % would ride their bikes if there were improved bike routes

Peer Learning Safety Tools

- *Positive Tickets* to VRU's doing good things like wearing a helmet
- *Bike Rodeos*



- *Pace Cars (Courtesy: City of Edmonton)*

2b. Self-Educating Infrastructure

i. Bicycling Safety Tools

Self-Educating Infrastructure

- *Activated warning signs*

- *Colored Bike Lanes*
  - A Danish study by Jensen in 2008 found that the use of one blue bike lane crossing reduces intersection crashes by 10 % - 30%

Self-Educating Infrastructure

- *Volume Counters* (Courtesy: City of Montreal, Courtesy: City of Ottawa)

- *Elephant's Feet* (aka cross bikes indicate on-street crossing corridors for bicycles)
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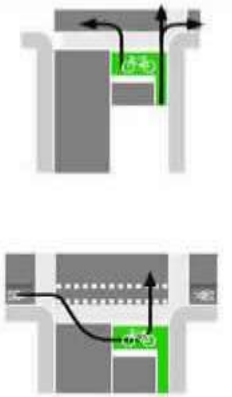
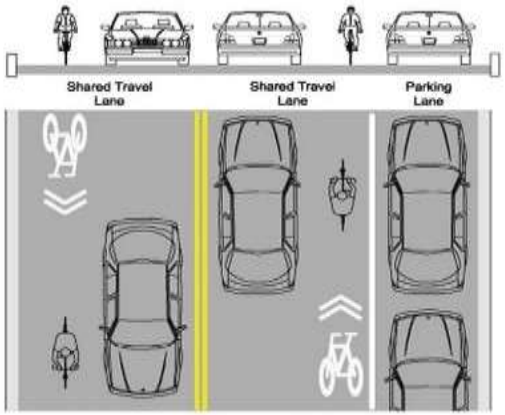
Self-Educating Infrastructure

- *Bike boxes*



- *Sharrows (*shared-use markings) (Courtesy: City of Chilliwack)

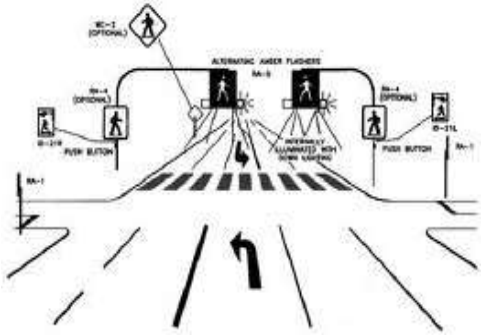


Self-Educating Infrastructure

ii. Pedestrian Safety Tools

Self-Educating Infrastructure

- *Activated Cross Walk Lighting*
- *Tactile Strips*
- *Exclusive Pedestrian Phase*
- *Activated flashing lights* (Courtesy: City of Vancouver, City of Surrey)



Self-Educating Infrastructure

- *Countdown Signals*

- *Audible crosswalks*

For the hearing impaired, Whistler, Medicine Hat, and Edmonton provide speakers that 'tweet-tweet' or 'cuckoo' depending on which direction has a 'walk' signal.

Self-Educating Infrastructure

iii. Traffic Calming Tools

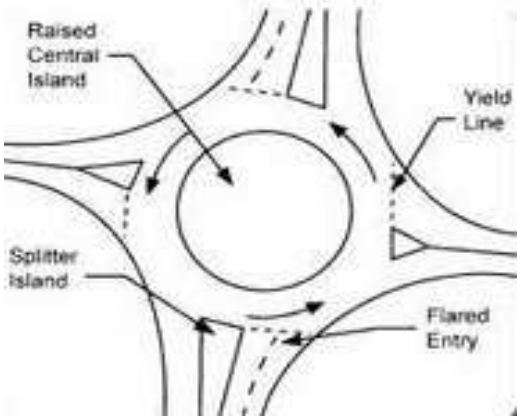
Self-Educating Infrastructure

- *Speed Reader Boards* (Courtesy: City of Kamloops)
- *Speed Limits*

Self-Educating Infrastructure

- *Curb/Corner Bulges*
- *Raised Crossings*

- *Modern Roundabouts*



Self-Educating Infrastructure

iv. Shared Pathway Aiding Tools

Self-Educating Infrastructure

- *Shared bikeways*
- *Share-the-Road Campaigns*

3. Communicating Safety Tools

- Describe how educational practices are portrayed to the community, using:
  - print media - monitoring reports; booklets, manuals; newspaper ads, tray liners
  - online media - downloadable print media; web pages; facebook; surveys; twitter; videos
  - public media - campaign street signs; workplace talks; billboard, radio, bus and TV ads

OTHER OBSERVATIONS

MONITORING

- communities lacked science-based monitoring
- goals and estimates of effectiveness were not clear
- reflects a general lack of awareness
- community practitioners were proactive
- no literature on monitoring costs

- TOURISM: plays a dominant influence
- COMMUNITY SIZE: plays a lesser role

RECOMMENDATIONS

- *Monitoring*
  - While communities in Canada could start adopting practices similar to those promising practices identified through this research,
  - further work is required to develop practical and economically feasible, science-based, community monitoring systems for these existing promising practices.

RECOMMENDATIONS

- *Professional Development*
  - Practitioners should be offered professional development opportunities (e.g., on-line webinars in program monitoring and evaluation),
  - More targeted and creative informal, passive educational strategies are required that effectively educate pedestrians and cyclists where they travel.

RECOMMENDATIONS

- *Selection*
  - Practitioners should establish a cross-Canada collaborative network, leveraging existing networks where available (e.g., the Federation of Canadian Municipalities),
  - to accelerate advancement of knowledge, the state of science-based practice, and, ultimately, improvements in AT safety

RECOMMENDATIONS

- *Monitoring Costs*
  - future research should address the identified lack of monitoring costs of informal, passive AT safety education practices

RECOMMENDATIONS

- *CSFs*
  - Future research should be conducted, using the observed CSFs to validate their significance and influence over program success


THINK