



Highway Safety Corridors Reduce Motor Vehicle Injuries and Fatalities

A Review of Initiatives in the U.S. and B.C.

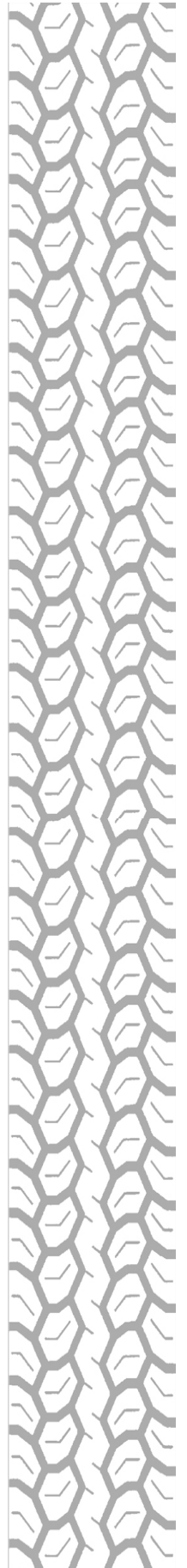


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SECTION I – Highway Safety Corridors

Safety corridors are stretches of highways or paved roads plagued by frequent motor vehicle accidents, injuries, and fatalities. They are deemed dangerous because extreme topography and weather situations combine with other factors such as driver inattention, inexperience, and distractions to create unfavourable driving conditions. Designated highway safety corridors are labelled with signs to warn drivers of the risks involved in driving on them, and to inform drivers about efforts to enforce traffic laws and increased vehicle inspections.

Highway safety corridors have been established in a number of U.S. states, including California, New Jersey, New Mexico, Oregon, Pennsylvania, Virginia, and Washington. Each state has its own set of regulations and requirements to designate a highway safety corridor, but they share a common objective—to lower the number of accidents, injuries, and deaths on dangerous sections of highways.

While other countries do not have formal safety corridor programs, some (such as Australia and New Zealand) analyze existing highway safety problems using a Road Safety Audit (RSA).

Highway Safety Corridor Components

Designation

Designating a section of highway as a safety corridor is based on specific criteria. Each of the U.S. states that have established a highway safety corridor program uses different measurements to designate safety corridors.

Common factors used to select portions of highways include roadways with high degrees of occurrence of accidents, injuries, and fatalities (see Appendix 1 – Designation Criteria Table).

Enforcement

All current highway safety corridor programs have a form of enhanced law enforcement. Enhanced enforcement includes an increase in fines for moving violations such as speeding, tailgating, and changing lanes improperly.

Oregon and California doubled moving violations within a highway safety corridor. Virginia's maximum fines for speeding in a safety corridor are \$500, and reckless driving and driving under the influence fines are \$2,500. The rationale is that significantly larger fines will curb unsafe driving practices. Other states, such as Washington and North Carolina, have not increased fines in highway safety corridors; but they still provide enhanced enforcement.

Education

A vital component of a highway safety corridor program is educating drivers about its importance. Education is not limited to drivers. It can also include community groups and local police departments with an interest in truck and road safety. Agencies coordinating highway safety corridor programs will often use the media to educate drivers about the corridors—what they are and how they work.

Roadside signs alert drivers to when they are driving in a designated corridor. Along the way, signage reminds truck and other drivers of dangerous corners, grades, or blind spots.

Coordination

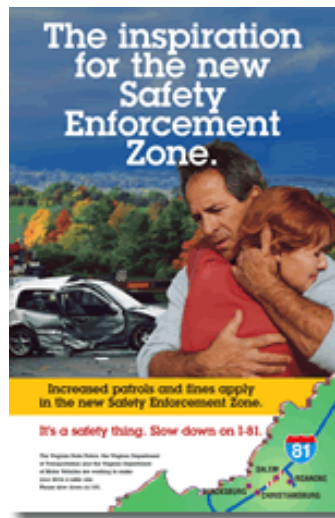
U.S. corridor programs use a multi-disciplinary approach. Local stakeholders are involved in the selection, enforcement, and education of highway safety. In Oregon, the state department of transportation works in cooperation with enforcement, education, media, and community groups to develop and implement a safety corridor in the local area. Such involvement brings broader ownership and creates incentive for the program to be successful and effective.



Figure 1: Highway Safety Corridor Road Signage



Figure 2: Examples of Educational Methods and Materials



SECTION II – Safety Corridor Objectives and Selection Requirements

Objectives

There are a number of **objectives** inherent in successful highway safety corridor programs:

- To reduce the incidence of collisions that result in injury or loss of life
- To educate truck drivers and drivers about safe driving practices, particularly in the safety corridors
- To implement engineering improvements to improve safety along highway corridors
- To enhance and target enforcement of moving violations in the highway safety corridor

For these objectives to be met, collaboration between various levels of government and agencies is essential. Programs based in the United States have succeeded because of cooperation between state and local governments, enforcement authorities, regulatory agencies, media organizations, and community groups. Each participating group helps fulfill some aspect of the overall objectives (listed above).

Of particular importance is community involvement, where businesses and local governments are part of the education and enforcement aspects of the safety corridor program. For example, a high level of community involvement could prompt law enforcement agencies to offer extra patrols or media organizations to broadcast messages about safe driving practices.

Public hearings provide an appropriate way for people to express their concern and support for a safety corridor project. These hearings can also identify members of the community who would be willing to participate in a highway safety corridor taskforce, which could also include government representatives, school officials, and representatives of safety groups.

Selection Requirements

Limited funding sometimes allows only a few corridors to be designated at a time. Because of this, strong community involvement and local agency funding are key to the selection and maintenance of a corridor system.

Experience from the safety corridor programs currently running in the U.S. has shown that successful programs must meet the following **requirements**:

- A selection process for nominating corridors, which includes a designated overseeing agency
- A defined set of selection criteria to determine what portions of highways will be designated as safety corridors
- A review process to measure the effectiveness of highway corridors and to ensure they achieve objectives
- A commitment from government authorities to improve highway engineering along designated corridors
- A commitment from enforcement officials to patrol for traffic offenders and enforce fines along safety corridors
- An educational program that provides information to truck drivers and other drivers about safety corridors

Effectiveness of Highway Safety Corridors

While the structure and administration of highway safety corridors take many forms, studies conducted by U.S. agencies show that, regardless of form, the overall effect of the corridors is a lower rate of accidents and a higher rate of safety.

A 2001 report from the Oregon State University Transportation Research Institute states that truck-at-fault crashes for 1999-2000 decreased 11 percent on Oregon’s highway safety corridors, and crashes for 2000-2001 decreased 39 percent. Through the two periods, there was an overall decrease of 45 percent in truck-at-fault crashes.

Virginia’s first highway safety corridor, established in 2004, occurred on a major trucking corridor (approximately 30 percent trucks in the traffic stream) in a mountainous area. As a result of this program, crash data from the first nine months of the program should approximate a 15 percent decrease in the total number of crashes and a 45 percent decrease in the number of injury/fatal crashes.

(See Table 1 for a summary of the impact of highway safety corridors.)

Table 1 – Summary of Highway Safety Corridor Effectiveness

State	Date Initiated	Program Description	Program Impact
California	1992	Safety corridors with increased fines	<ul style="list-style-type: none"> • Collision rates reduced 11% to 37% • Injury collision rates reduced 13% to 47%
Washington	1993	Safety corridors without increased fines	<ul style="list-style-type: none"> • Collision rates reduced 9% to 30% per corridor
Oregon	2001	Safety corridors with increased fines	<ul style="list-style-type: none"> • Truck-at-fault collision rate reduced 45%

(Sources: Virginia Transportation Research Council, *Highway Safety Corridors: National Experiences and a Possible Framework for Virginia*, April 2003. Oregon State University Transportation Research Institute, *Evaluation of Oregon’s Commercial Vehicle Safety Plan for FFY-01, Final Report*, December 2001.)

SECTION III – Truck Safety Corridors in B.C.

The trucking industry is a valuable contributor to the economy of B.C. and Canada. In 2002, the industry contributed 5.4 percent of the province's gross domestic product and accounted for 15.7 percent of the country's commercial transportation sector. Unfortunately when trucking incidents or motor vehicle accidents occur, everyone is affected, directly or indirectly. Directly, the result leaves a significant impact on the trucking industry, through loss of life, money, and reputation. And indirectly consumers are affected through the increased price of transported goods.

Research on U.S. highway safety corridors was of particular interest to British Columbia in considering the development of truck safety corridors for the province.

The Canyon Truck Safety Corridor



The Fraser Canyon (the "Canyon" as it's referred to by locals) is the gateway to the east and north of B.C., and spans 192 kilometres of the most scenic highway in Canada. The Canyon, which was the beginning of the historic Gold Rush Trail, follows the mighty Fraser River through Hell's Gate and beyond.

This mountainous highway requires an alert, cautious driver familiar with the requirements of driving in adverse conditions, including steep hills, tight curves, and all types of weather and

road conditions.

In 1997, the Fraser Canyon Traffic Safety Committee was formed to act as an advisory group to deal with safe transportation and obtain input from communities and agencies that work and reside along this highway. This group believed that one of the most significant causes of serious and fatal collisions was aggressive driving. A project team was formed to research methods of addressing the needs in the Canyon. As a result of the findings, the Fraser Canyon Watch program was developed.

The Fraser Canyon Watch program was established in 2000. It was modelled after other successful "Record and Report" programs in B.C. The program involved partnerships with police, local and provincial governments, Insurance Corporation of British Columbia (ICBC), Telus, businesses, and all local communities. Posters and stickers were developed and installed in phone booths, truck stops, restaurants, and all points of business. In 2003, highway signs were erected to alert motorists to record and report aggressive driving behaviour to the police.

This highway does not have cell phone coverage, and the program encouraged motorists who witnessed aggressive driving behaviour to record information, pull into one of the community's businesses, and call 1-888-801-8884. Hope Royal Canadian Mounted Police (RCMP) Highway Patrol committed resources to house the telephone line and follow up on information received.

Early in 2004, the committee noted an increase in the crash



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rate and, as a result, the Fraser Canyon Truck Crash Review Committee (FCTCRC) was formed to review the available statistics. The committee was then asked to conduct further research and develop a plan for reducing the number of incidents in the Canyon.

The collision histories of Highway 1 (Hope to Cache Creek), Highway 3 (Hope to Princeton), and Highway 5 (Hope to Merritt), from 1996–2002 were compared. Research revealed that Highway 1 had the highest number of truck-related incidents resulting in serious injury and fatality.

Based on a three-E approach (Engineering, Education, and Enforcement), the following actions were taken as a result of activities by the Fraser Canyon Traffic Safety Committee and the Fraser Canyon Truck Crash Review Committee:

- ICBC provided funding for shoulder rumble strips and other road improvements, including roadside delineation, roadside barricades, and overhead rollover signs. ICBC also commissioned studies for engineering improvements at specific collision sites.
- The RCMP's Fraser Valley Traffic Services Department and Southern Interior Traffic Services (in Ashcroft) increased enforcement, focusing on speed and aggressive driving in critical areas with a proven collision history.
- The Commercial Vehicle Safety and Enforcement Branch of the Ministry of Public Safety and Solicitor General scheduled more vehicle safety checks.
- The Ministry of Transportation moved and changed speed advisory signs, and performed the roadwork funded through ICBC.

- WorkSafeBC has coordinated development of a Canyon Hazards survey for truck drivers and an awareness and education plan.

These actions are the first steps in forming B.C.'s and Canada's first truck safety corridor. Plans are being made to implement key steps in creating the corridor, including:

- Refining its review process to measure the effectiveness of truck safety corridor
- Continuing to work with ICBC and Ministry of Transportation to improve highway engineering along the canyon
- Publicizing the RCMP's commitment to patrol for traffic offenders along the corridor
- Developing an educational program that provides information to truck drivers and other drivers about the canyon truck safety corridor.

The long-term plan is to use the canyon as model for other truck safety corridors in the province. TruckSafe believes that implementing initiatives such as this will have direct impact on serious injuries and deaths among all of BC's road users.



Figure 3: Example of a shoulder rumble strip

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East, Amy and Paul Montagne. *Evaluation of Oregon's Commercial Vehicle Safety Plan for FFY-01, Final Report*. Oregon State University Transportation Research Institute. December 2001.

East, Amy and Paul Montagne. *Evaluation of Oregon's Commercial Vehicle Safety Plan for FFY-02, Final Report 2002*. Oregon State University Transportation Research Institute. December 2002.

Fontaine, Michael D. *Highway Safety Corridors: National Experiences and a Possible Framework for Virginia*. Virginia Transportation Research Council. April 2003.

Web links for California Highway Safety Corridor Program

www.chp.ca.gov/html/corridor.html

www.chp.ca.gov/html/hwy4.html

www.chp.ca.gov/html/interstate8.html

Web links for New Jersey's Highway Safety Corridor Program

<http://www.state.nj.us/transportation/press/2003releases/052203a.htm>

<http://www.i95coalition.org/whats-new.html>

Web links for New Mexico's Highway Safety Corridor Program

http://www.nhtsa.dot.gov/people/outreach/safedige/Fall2003/Fall03_W07_NM.htm

http://nmshtd.state.nm.us/upload/contents/436/safety_corridor.pdf

Web links for Oregon's Highway Safety Corridor Program

www.oregon.gov/ODOT/MCT/SAFETY.shtml

www.oregon.gov/ODOT/HWY/REGION1/

Web links for Pennsylvania's Highway Safety Corridor Program

www.pacode.com/secure/data/067/chapter214/chap214toc.html

www.dot.state.pa.us/penndot/districts/district4.nsf/041020-s3-corridor-fines.htm

www.poconorecord.com/local/rxf54536.htm

www.dailyitem.com/archive/2004/0202/local/stories/06local.htm

Web links for Virginia's Highway Safety Corridor Program

www.virginiadot.org/comtravel/ct-highway-safety-corridor.asp

www.virginiadot.org/comtravel/ct-highway-safety-des-zones.asp

www.virginiadot.org/comtravel/ct-highway-safety-corridor-data.asp

www.virginiadot.org/comtravel/ct-highway-safety-corridor-criteria.asp

Web links for Washington's Highway Safety Corridor Program

www.wsdot.wa.gov/commission/news/2003/CorridorSPRecog.htm

www.wsdot.wa.gov/regions/olympic/communications/archived/tips/?refname=20040813%20Olympia%20Traffic%20Cameras,%20SR%207%20Safety%20Meetings,%20New%20Tacoma%20Striping.html

Appendix 1 – Designation Criteria Table

State	Designation Criteria Used
<p>California</p>	<p>Authority and Responsibility:</p> <ul style="list-style-type: none"> • State Legislature <p>Selection Criteria:</p> <ul style="list-style-type: none"> • No clear set of standards has been applied to designate safety corridors <p>Highway Safety Corridor Review Criteria:</p> <ul style="list-style-type: none"> • Unavailable <p>Decommissioning Criteria:</p> <ul style="list-style-type: none"> • Unavailable
<p>New Jersey</p>	<p>Authority and Responsibility: New Jersey’s Commissioner of Transportation</p> <p>Selection Criteria:</p> <ul style="list-style-type: none"> • Selection of a highway safety corridor is based on study of: <ul style="list-style-type: none"> ▪ Accident rates ▪ Fatalities ▪ Traffic volume ▪ Other highway traffic safety criteria <p>and recommendations made by New Jersey’s “Safety Impact Teams”</p> <p>Highway Safety Corridor Review Criteria:</p> <ul style="list-style-type: none"> • Department of Transportation monitors highway data over a one-year period to chart progress <p>Decommissioning Criteria:</p> <ul style="list-style-type: none"> • Unavailable

State	Designation Criteria Used
<p>New Mexico</p>	<p>Authority and Responsibility: New Mexico Department of Transportation</p> <p>Selection Criteria:</p> <ul style="list-style-type: none"> • Engineering studies are used to determine the need for safety zones based on crash and fatality data. • State and local law enforcement, district engineers, and emergency medical, and fire service personnel analyze crash rates and other local data. • Problem roadway segments are identified, ranked, and partitioned according to the appropriate Transportation District. • District program managers work with local law enforcement to initiate a Safety Corridor STEP which may include special safety corridor signing, radar speed signs, double fines, increased visible traffic enforcement, and a focused public information and education campaign. <p>Highway Safety Corridor Review Criteria:</p> <ul style="list-style-type: none"> • Projects run on a three-year review cycle with a focus on reducing crashes and fatalities in the targeted locations. <p>Decommissioning Criteria:</p> <ul style="list-style-type: none"> • Unavailable
<p>Oregon</p>	<p>Authority and Responsibility:</p> <ul style="list-style-type: none"> • Oregon’s Department of Transportation <p>Selection Criteria:</p> <ul style="list-style-type: none"> • Selection is based on: <ul style="list-style-type: none"> ▪ A three-year average of vehicle collisions that is 110 percent above the three-year state average for similar types of highways ▪ A priority from local or state police to add at least 50 extra hours a month of enforcement on the corridor ▪ A decision on the length of the corridor that is manageable for enforcement and education, generally between four to 30 miles <p>Highway Safety Corridor Review Criteria:</p> <ul style="list-style-type: none"> • Department of Transportation reviews corridors that have been nominated by outside stakeholders, and once a corridor has been designated, its status is reviewed every year <p>Decommissioning Criteria:</p> <ul style="list-style-type: none"> • Once a safety corridor’s three-year collision rate drops below 110 percent of the state collision average, then the corridor is decommissioned, with the agreement of local stakeholders

State	Designation Criteria Used
<p>Pennsylvania</p>	<p>Authority and Responsibility:</p> <ul style="list-style-type: none"> • Pennsylvania’s Department of Transportation <p>Selection Criteria:</p> <ul style="list-style-type: none"> • Traffic incidents and engineering investigations, where a five-year period of crashes exceeds the number or rate of crashes for similar highways • Safe requirements needed for patrolling by enforcement officers and stopping violators, and a written commitment from police agencies to provide sustained enforcement activity <p>Highway Safety Corridor Review Criteria:</p> <ul style="list-style-type: none"> • Unavailable <p>Decommissioning Criteria:</p> <ul style="list-style-type: none"> • Unavailable
<p>Virginia</p>	<p>Authority and Responsibility:</p> <ul style="list-style-type: none"> • Virginia’s Department of Transportation in conjunction with Virginia State Police and the Department of Motor Vehicles <p>Selection Criteria:</p> <ul style="list-style-type: none"> • Selection of a highway safety corridor is based on: <ul style="list-style-type: none"> ▪ Crash frequency (which, weighted by severity, should be 50 percent above the regional average for the highway system) ▪ Overall vehicle crash rate (which should be at least 25 percent above the regional average for the highway system) ▪ Truck involved crash rate (which should exceed the average crash rate for that region for all vehicles on the highway system) ▪ Enforcement capability ▪ Roadway characteristics <p>Highway Safety Corridor Review Criteria:</p> <ul style="list-style-type: none"> • Commissioner of program holds at least one public hearing that is held at least 30 days before a designation is implemented <p>Decommissioning Criteria:</p> <ul style="list-style-type: none"> • One year after initial designations have been created, the Department of Transportation will establish criteria to decommission a safety corridor

State	Designation Criteria Used
<p>Washington</p>	<p>Authority and Responsibility:</p> <ul style="list-style-type: none"> • Washington Traffic Safety Commission in conjunction with Virginia State Police and the Department of Motor Vehicles <p>Selection Criteria:</p> <ul style="list-style-type: none"> • Washington Traffic Safety Commission works in collaboration with the Department of Transportation and Washington State Patrol to select corridors <p>Highway Safety Corridor Review Criteria:</p> <ul style="list-style-type: none"> • Safety program uses low-cost engineering improvements and local partnerships to develop plans for education, enforcement, and engineering <p>Decommissioning Criteria:</p> <ul style="list-style-type: none"> • Unavailable

Appendix 2 – Fraser Canyon Truck Crash Review Committee

Member	Organization
Delwyn Drew	RCMP
Barry Eastman	Ministry of Transportation
Lance Labby	Human Resources and Skills Development Canada – Labour Programs
Paul Landry	British Columbia Trucking Association
Pam McDermid	Commercial Vehicle Safety and Enforcement
Greg Mulvihill	Bobell Group of Companies
Warren Nelson	RCMP (Retired)
Jane Player	WorkSafeBC (Workers' Compensation Board of British Columbia)
Fergus Savage	Insurance Corporation of British Columbia
Roberta Sheng-Taylor	WorkSafeBC (Workers' Compensation Board of British Columbia)
Kathy Tull	WorkSafeBC (Workers' Compensation Board of British Columbia)
Al Stott	RCMP
Suzanne Watson	National Safety Code
Mike Weightman	Insurance Corporation of British Columbia
Marlene Yemchuk	Human Resources and Skills Development Canada – Labour Programs