

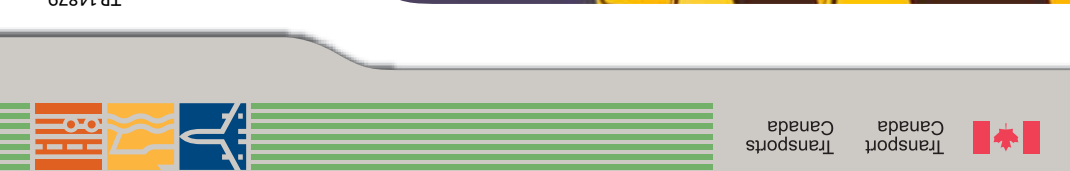
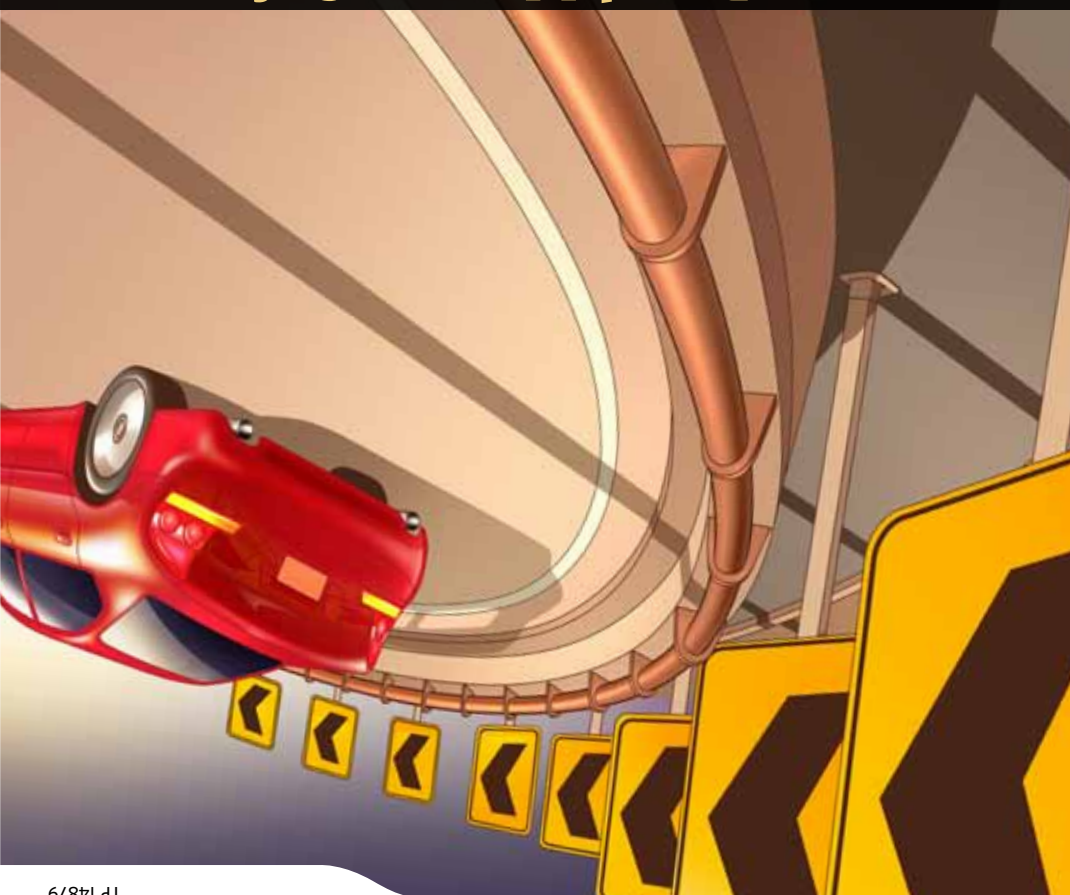
www.tc.gc.ca/roadsafety

For more information, visit:

- 1 Transport Canada: Road Safety Benchmarks Over Time <http://www.tc.gc.ca/roadsafety/tp/14328/menu.htm>
- 2 National Cooperative Highway Research Program Research Results Digest 299 http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rrd_299.pdf
- 3 Federal Highway Administration: Toolbox of Countermeasures and Their Potential Effectiveness for Pedestrian Crashes http://safety.fhwa.dot.gov/ped_bike/ped_bike_tcppc/
- 4 Federal Highway Administration: Toolbox of Countermeasures and Their Potential Effectiveness for Roadway Departure Crashes <http://safety.fhwa.dot.gov/tools/ctf/briefs/rtdwdepartissue.htm>

Road Map to Safety

Keeping Canadians safe through improved road design



Keeping Canadians Safe Through Improved Road Design

Road Map to Safety


Have you ever driven over rumble strips and wondered how many lives they have saved? Or perhaps you have noticed roundabouts being installed near your home and wondered why they are safer than intersections with stop signs or traffic signals.

These are just two examples of road safety-engineering countermeasures that help reduce serious injuries and fatalities.


This brochure illustrates and describes how road infrastructure improves safety. Please take time to read and learn just how much Canada is doing to keep road users safe.



1 Railway Crossing Warning Devices
Warning signs and devices, such as flashing lights and crossing gates along the roads near railroad tracks, regulate, warn or guide traffic. They alert drivers and other road users to the presence of railroad tracks and to the possibility of an approaching train. They can reduce the overall collision rate by up to 84 per cent and the fatal crash rate by 91 per cent.¹




2 Positive Guidance
Drivers can safely drive the roadway with the help of signs, object markers, safe speed advisory signs and a clear view of the road ahead. Positive guidance can help reduce collisions by 10 to 30 per cent.¹



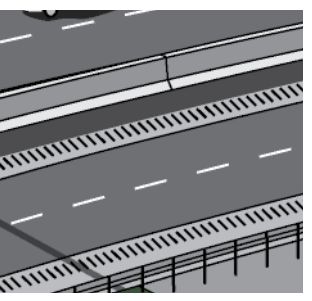
3 Street Lighting
Street lighting helps road users see and avoid possible hazards. Night collisions can be reduced by up to 75 per cent with proper street lighting.¹




4 Divided Highways
Divided highways separate opposing directions of traffic by a central barrier or strip of land. This reduces the number of often fatal head-on crashes. Changing highways from undivided to divided can help reduce overall collisions by up to 60 per cent.¹




5 Shoulder Rumble Strips
Shoulder rumble strips help prevent single-vehicle run-off-road crashes. The noise and vibrations generated by driving over them work together to warn inattentive or drowsy drivers travelling on or too close to the shoulder of the road. These are often used on freeways and rural roads and can reduce single-vehicle run-off-road crashes by nearly 20 per cent.²




6 Energy-Absorbing Barrier Ends
Energy-absorbing treatments on the ends of guardrails reduce the chance of serious injury. They are able to absorb much of the force of a crash and can reduce deaths by up to 78 per cent, and injuries by up to 68 per cent.¹




7 Rigid Barriers
Rigid barriers placed at the shoulder or median keep drifting vehicles from leaving the roadway and having a more serious crash. They can reduce deadly crashes by up to 52 per cent.¹



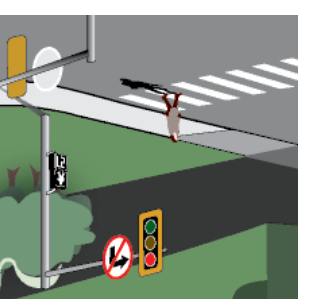
8 Curve Flattening
Flattening curves means making them less sharp, reducing a driver's requirement to change speeds. Research shows that drivers are safer when they don't have to react to large differences in the alignment of the road. Flattening sharp curves can reduce crashes by up to 55 per cent.¹



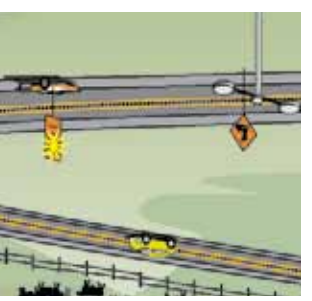
9 Intersection Channelization
A channelized intersection reduces the risk of crashes by properly guiding drivers through an intersection with separate turning movements, with painted areas or raised medians. Exclusive left-turn lanes have reduced crashes from 19 to 48 per cent and exclusive right-turn lanes have reduced crashes from 8 to 26 per cent.²



16 Work Zone Safety
Proper signs, and guidance and warning devices near work zones, are key to keeping drivers and workers safe.




17 Pedestrian Signals
Countdowns on crossing signals help pedestrians decide whether or not to cross a street by showing them how much time remains on the signal phase. Adding these countdown signals can reduce pedestrian collisions by up to 25 per cent.³



18 Centreline Rumble Strips
The noise and vibrations generated by driving over centreline rumble strips work together to warn inattentive or drowsy drivers that they are too close to the centre of the road, and to prevent head-on crashes. They are used on rural two-lane roads and can reduce head-on crashes on these roadways by 21 per cent.²



14 Roundabouts
A roundabout is an intersection where traffic flows in a counter-clockwise circle around a centre island. Changing intersections with stop signs or traffic signals to roundabouts can reduce the number of all crashes by 40 per cent, and fatal and injury-related crashes by 80 per cent.²




13 Limiting Intersection Angles
Roadways that meet at strange angles may reduce drivers' sight distance and make it hard for them to stay in their proper lanes when turning. Re-aligning the roadway improves safety.




15 Passing Lanes
A passing lane can be added to a two-lane highway for a limited length of road. It gives drivers a chance to safely pass slower moving vehicles, reducing the temptation to take risks. Passing lanes can reduce all crashes by up to 38 per cent and severe crashes by up to 29 per cent.¹



11 Breakaway Devices
Breakaway devices such as breakaway light poles reduce the risk of serious injury when vehicles hit them. By breaking away at the base, drivers don't hit a strong unyielding object. They save lives and can reduce serious injuries by up to 30 per cent.¹



10 Protected Left-Turn Phases
Crashes between vehicles making left turns and vehicles going through an intersection are among the most dangerous. Left-turn only traffic signal phases can reduce the risk of a crash by at least 25 per cent.¹

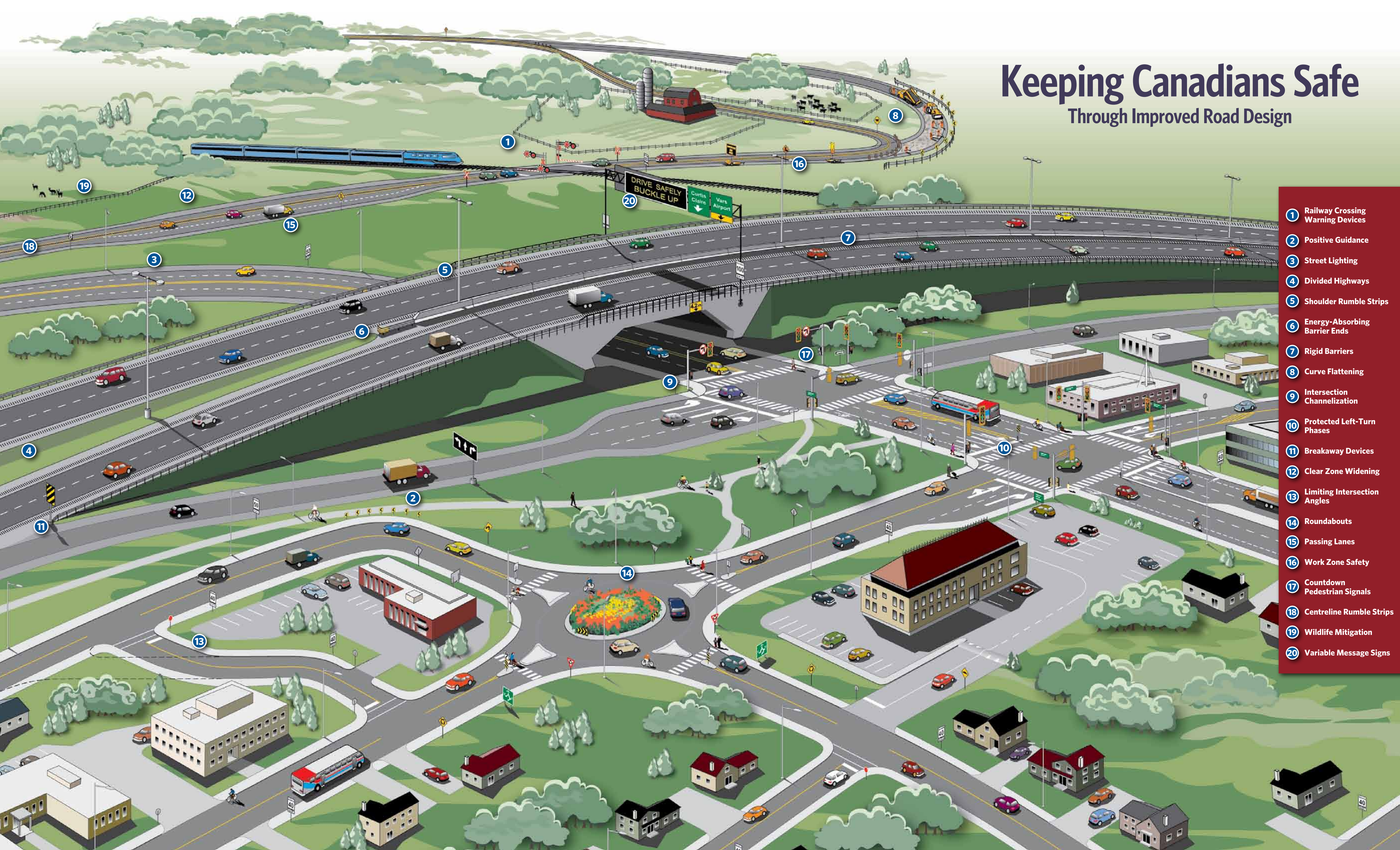


12 Clear Zone Widening
A clear zone is the roadside or median area space for drifting vehicles. Making clear zones wider can prevent crashes or make them less serious. Wide clear zones will reduce collisions by up to 44 per cent.¹



Keeping Canadians Safe

Through Improved Road Design



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