



Hazard Resilience Index (HRI)

Accidents

Airplane Crashes
 Marine Accidents
 Motor Vehicle Crashes
 Train Derailments

Accidents

Please refer to the Hazard Resilience Index Instructions (HRI) document for more information on using this document.

Airplane Crashes^{1 2 3}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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Yes	No	Need More Info	Not Applicable	FACTORS	This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Airplanes flying in the vicinity of the airport use “ground proximity warning systems” (systems that notify pilots when their aircraft is at risk of colliding with the ground or an obstacle).	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based airplane crash exercises have taken place in the community-at-large (e.g., table-top or full-scale exercises)	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Control operations are in place to prevent bird strikes (for example, wildlife hazard assessment, management, removal, etc.). For more information see <i>Best Management Practices for Airport Wildlife Control</i> by the Bird Strike Committee USA (2007).	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flight paths over the community are minimized.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Local airport operators follow safe workplace practices and have a clean safety record.	<input type="checkbox"/>



Hazard Resilience Index

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Local airport operators have an up-to-date Emergency Response Plan.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Local airport operators have conducted a Hazard Identification and Risk Management assessment as recommended by Transport Canada.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Local airport operators have tested their Emergency Response Plan.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Local airport operators use and practice "System Management Systems" as approved by Transport Canada.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pilots check regularly with weather and storm forecasting agencies such as Environment Canada	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has in place regulations to limit tall buildings in the vicinity of an airport.	<input type="checkbox"/>

Marine Crashes ^{4 5}

Hazard Resilience Rating	High Resilience <input type="checkbox"/>	Low Resilience <input type="checkbox"/>	Need More Info <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
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Yes	No	Need More Info	Not Applicable	FACTORS	This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Boaters and fishers check regularly with weather and storm forecasting agencies such as Environment Canada	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based marine crash exercises have taken place in the community-at-large (e.g., table-top or full-scale exercises)	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dangerous areas to boats (e.g., submersed rock outcroppings) are well marked on charts and have buoys or other visible devices to indicate the danger to boaters.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If applicable, harbor masters are familiar with the harbour and are available to board and navigate ships.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Marinas and communities have warning system in place to notify boat operators of potential heavy fog or storms.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most boat owners have taken a boat safety course and boating test for the Canadian Boating License or Pleasure Craft License as mandated by Transport Canada.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most boat owners keep their boats well maintained.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most boaters and fishers check regularly with weather and storm forecasting agencies such as Environment Canada.	<input type="checkbox"/>

Motor Vehicles Crashes ⁶

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

Yes	No	Need More Info	Not Applicable	FACTORS	This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Centre line guardrails, safer intersections and wider road shoulders are in place in problematic areas.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based motor vehicle (including school buses) accident exercises have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises)	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Local bars practice adequate monitoring of patrons who may be driving.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most motorists check regularly with weather and storm forecasting agencies such as Environment Canada especially before venturing out on isolated and rural roads.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reduced speed limits and/or lower speed zones are in place where appropriate.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify police, fire and ambulance personnel of poor driving conditions.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify residents of poor driving conditions.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is police enforcement which targets impaired drivers. .	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Young drivers are adequately supervised and “dry” graduations are promoted by the local schools.	<input type="checkbox"/>

Train Derailments ^{7 8}

Hazard Resilience Rating High Resilience Low Resilience Need More Info Not Applicable

Yes	No	Need More Info	Not Applicable	FACTORS	This factor is important to my community
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based train derailment exercises have taken place in and the community-at-large (e.g., table-top or full-scale exercises).	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Contrasting materials are in place to clearly mark rail crossings.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	People do not play or walk along railroad tracks. Furthermore, access to tracks is limited and secure.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Railway companies have avoided operating trains in areas subject to avalanches, landslides, ice jam flooding and other potential hazards. .	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Railway warning systems are visible prior to reaching the crossing.	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community is working with <i>Operation Lifesaver</i> , a national public education program for railway safety, which works with communities to reduce rail collisions.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Trains are not overloaded with too many railway cars (longer train loads result in great risk of accident).	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify train operators of poor operational conditions.	<input type="checkbox"/>

References

¹ Australian Government: Civil Aviation Safety Authority. (1999).

² Transport Canada. (2004). TP 14135 - Safety Management Systems for Small Aviation Operations - A Practical Guide to Implementation. Retrieved May 15, 2011 from <http://www.tc.gc.ca/eng/civilaviation/publications/tp14135-1-menu-2078.htm>

³ Plane Crash Info. Statistics. Retrieved May 20 2011 from <http://www.planecrashinfo.com/cause.htm>

⁴ Federal Emergency Management Agency. (2011). Before Winter Storms and Extreme Cold. U.S. Department of Homeland Security. Retrieved from http://www.fema.gov/hazard/winter/wi_before.shtm

⁵ Federal Emergency Management Agency. (2011). Before Winter Storms and Extreme Cold. U.S. Department of Homeland Security. Retrieved from http://www.fema.gov/hazard/winter/wi_before.shtm

⁶ Transport Canada. (2005). Road Safety 2010: Making Canada's Roads the Safest in the World. Retrieved May 2, 2010, from <http://www.tc.gc.ca/media/documents/roadsafety/rsv2005se.pdf>

⁷ Federal Emergency Management Agency. (2011). Before Winter Storms and Extreme Cold. U.S. Department of Homeland Security. Retrieved from http://www.fema.gov/hazard/winter/wi_before.shtm

⁸ Federal Emergency Management Agency. (2011). Before Winter Storms and Extreme Cold. U.S. Department of Homeland Security. Retrieved from http://www.fema.gov/hazard/winter/wi_before.shtm