

# Hazard Resilience Strategies

## Accidents

Airplane Crashes  
Marine Accidents  
Motor Vehicle Crashes  
Train Derailments

### Airplane Crashes

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- Ensure 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).
- Ensure the community has a means to consult Traditional Knowledge holders and subject matter experts on aircraft hazards and historical challenges associated with flight paths near communities and resolutions to such challenges.
- Ensure the community has in place regulations to limit tall buildings in the vicinity of an airport.
- Ensure community-based airplane crash exercises have taken place in the community-at-large (e.g., table-top or full-scale exercises)
- Ensure control operations are in place to prevent bird strikes (for example, wildlife hazard assessment, management, removal, etc.); research is conducted to ensure operations follow current best practices
- Ensure flight paths over the community are minimized and appropriate/necessary.
- Ensure local airport operators follow safe workplace practices and have a clean safety record.
- Ensure local airport operators have an up-to-date Emergency Response Plan.
- Ensure local airport operators have conducted a Hazard Identification and Risk Management assessment as recommended by Transport Canada.
- Ensure local airport operators have tested their Emergency Response Plan through exercises and after action reviews.
- Ensure local airport operators use and practice “System Management Systems” as approved by Transport Canada.
- Ensure pilots check regularly with weather and storm forecasting agencies such as Environment Canada.
- Ensure pilots are experienced in identifying water conditions and/or ice conditions for safe landing and take-off; provide regular training opportunities.

## Marine Crashes

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- Ensure boaters and fishers check regularly with weather and storm forecasting agencies such as Environment Canada.
- Ensure community-based marine crash exercises have taken place in the community-at-large (e.g., table-top or full-scale exercises).
- Ensure 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.
- Ensure, if applicable, that Port Authorities are familiar with the harbour and are available to board and navigate ships.
- Ensure marinas and communities have warning systems in place to notify boat operators of potential heavy fog or storms.
- Ensure marinas and communities have information available to guide boats to safer or sheltered areas if caught in bad weather.
- Ensure 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.
- Ensure systems are in place to monitor boat owners and the safety/maintenance of their vessels, especially for passenger vessels; Transport Canada courtesy checks are available seasonally to provide guidance on compliance with boating regulations.
- If applicable, ensure ferry operators are monitored for compliance with standards from relevant authorities (e.g., Transport Canada).
- If applicable, ensure ferry dock authorities participate in emergency exercises.

## Motor Vehicles Crashes

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- Ensure centre line guardrails, safer intersections and wider road shoulders are in place in problematic areas.
- Design and plan general road maintenance practices to reduce risk of accidents (e.g., snow removal). Special attention is paid to gravel roads following heavy rainfall and to ice roads in warmer weather periods; reserve budget allocations are available to ensure maintenance of safety to all road users.
- Ensure community-based motor vehicle accident exercises (including school buses) have taken place in schools and the community-at-large (e.g., table-top or full-scale exercises).
- Ensure local bars practice adequate monitoring of patrons who may be driving.
- Ensure most motorists check regularly with weather and storm forecasting agencies such as Environment Canada especially before venturing out on isolated and rural roads, or for long voyages.
- Ensure reduced speed limits and/or lower speed zones are in place where appropriate.
- Ensure there is a warning system in place to notify emergency response personnel of poor driving conditions, including on ice roads from the community to the mainland (where applicable).
- Ensure there is a warning system in place to notify residents of poor driving conditions.
- Ensure there is police enforcement which targets impaired drivers in and around the community.
- Ensure young drivers are licensed and adequately supervised when driving and ensure “dry” graduations are promoted by the local schools.

- Ensure appropriate signage is posted and visibility of the signs is maintained so motorists know how or when to use winter roads, including road opening notifications and conditions throughout the season.
- Ensure signage is posted and visibility of signs is maintained to identify snowmobile and all-terrain vehicle crossings.
- Ensure snowmobile trails contain signage to warn operators of ice and ensure snowmobilers know how to identify unsafe ice (e.g., grey ice on open water is unsafe).

## Train Derailments

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- Ensure community-based train derailment exercises have taken place in and around the community-at-large (e.g., table-top or full-scale exercises).
- Ensure Saw Bucks are made of contrasting materials and are in place to clearly mark rail crossings.
- Ensure people know not to play or walk along railroad tracks. Furthermore, access to tracks is limited and secure.
- Ensure railway companies have avoided operating trains in areas subject to avalanches, landslides, ice jam flooding and other potential hazards near your community.
- Ensure railway warning systems are visible prior to reaching the crossing.
- Ensure the community has presentations of *Operation Lifesaver* to raise rail safety awareness and to promote safe behavior around rail lines to avoid vehicle collisions and pedestrian accidents. Ensure trains are not overloaded with too many railway cars (longer train loads result in great risk of accident).
- Ensure there is a warning system in place to notify train operators of poor operational conditions or possible hazards.

## References

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