



Hazard Resilience Index (HRI)

Power and Water Outages

Power Outages
Water Outages

Power and water Outages

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

Power Outages ^{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"/>	All critical facilities (e.g., Emergency Operations Centre) have back-up generators in place.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All dairy farmers who have essential power needs (e.g., automatic milking machines) have back-up power supplies or plans to milk cows over an extended power outage	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All farmers who have essential power needs (e.g., greenhouses) have back-up power supplies.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All residents who have essential power needs (e.g., on a respirator) have back-up power supplies.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bushes, trees and branches that are growing too close to power lines have been pruned.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based power outage 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"/>	Construction and excavation workers know to check for overhead and underground wires.	<input type="checkbox"/>



<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Critical power lines are located underground	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most businesses have back-up generators in place and ready to be used	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Most residents have back-up generators in place and ready to be used	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There is a warning system in place to notify community residents of a potential power outage and how to reduce non-essential power usage (e.g., turn-off unnecessary appliances, limit heavy usage to non-peak hours)	<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 a potential power outages	<input type="checkbox"/>

Water Outages ^{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"/>	Back-up generators are in place at pump stations to ensure equipment continues to operate in an extended power outage.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Community-based water outage 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"/>	Inspectors perform regular safety checks of farm and residential wells	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inspectors perform regular safety checks of water reservoirs or silos	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inspectors perform regular safety checks of water treatment and distribution systems	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has replaced all gray cast iron pipes.	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has plans in place for water distribution should the community experience a loss of potable water	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has policies in place to limit non-essential water usage during times of drought	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The community has updated old and worn out pipes, or pipes made from gray cast iron to prevent pipeline failure in the future	<input type="checkbox"/>

References

¹ BC Hydro. (2010, 26, March). Pruning Near Power Lines. Retrieved May 16, 2011, from http://www.bchydro.com/safety/vegetation_and_powerlines/pruning_near_powerlines.html

² Mao, D. Marti, J.R., & Srivastava, K.D. (2009). Mitigating blackout along the cascading pathways. 2009 IEEE Conference on Technologies for Homeland Security, 151-156.

³ BC Hydro. (2010, 25 March). Home Outage Preparation. Retrieved May 16, 2011, from http://www.bchydro.com/news/power_outages/home_outages.html

⁴ Makar, J.M. & Kleiner, Y. (2010). Maintaining water pipeline integrity. Natural Resource Council Canada. Retrieved February 16 2011 from <http://www.nrc-cnrc.gc.ca/obj/irc/doc/pubs/nrcc43986/nrcc43986.pdf>

⁵ Melchers, Robert E. (2002). Safety and risk in structural engineering. Prog. Structural Engineering Mater, 4, 193-202.