



**Vancouver  
Geotechnical  
Society**  
A Local Section of the  
Canadian Geotechnical  
Society

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**NOTICE OF UPCOMING TECHNICAL PRESENTATION**  
**Thursday, 14 March 2024**

**TOPIC: Geohazards from the November 2021 atmospheric river - learnings from Indigenous and Western science**

**SPEAKERS: Carie-Ann Lau, M.Sc., P.Geo. (BC, AB) Senior Geoscientist, BGC Engineering.**

Carie-Ann Lau is a Senior Geoscientist at BGC Engineering Inc. Her expertise is in airphoto and lidar interpretation, debris flow and debris flood geohazard and risk assessment, post-wildfire assessments, terrain interpretation, and glaciated soil engineering geology. Carie-Ann's consulting focus is on landslides and floods and the risk they pose to First Nations, local governments, and infrastructure. She completed the aerial damage surveys and infrastructure mitigation triage after the 2021 wildfire season and the November 2021 flooding in British Columbia. Carie-Ann supports First Nations and communities in recovery and resiliency efforts following the 2021 wildfire and flood disasters.

Carie-Ann grew up in the grasslands of central Alberta exploring swamps and trees. As an undergraduate, she was excited by the idea of geohazards and wound up on the west coast at SFU. After a few "wrong place, right time" encounters with geohazards, she solidified her career path as a geoscientist. As a settler working in a geotechnical engineering firm, Carie-Ann works with her clients to inform resiliency in a changing climate through the integration of Indigenous knowledge and Western science.

**Rick McKamey, Willow Creek Environmental Services**

Rick McKamey is a Principle of Willow Creek Environmental Services contracted by Leq'á:mel First Nation's Lands and Natural Resources Department to assist in development of the Environmental and Technical Programs delivery of Stewardship of the Lands, Rights and Title as identified in the Leq'á:mel First Nation Land Code and the Declaration of Rights of Indigenous Peoples Act. Rick is a descendant of the Matsqui First Nation residing on Leq'á:mel First Nation (LFN) Lands with his wife Susan, member of the LFN. He is father to 4 children, grandfather of 12 and great-grandfather of 3. Rick is a noted Elder and Knowledge Keeper of the LFN with deep history, experience, and involvement of the ecosystems his Nation's hold to standards of the Earth Mother.

Presently he works for his community in development of the Guardians programs, is a strong voice and member of the Canadian Guardian Network and most recently representing the BC Wide Guardians Network. His passion and traditional values, blended with his cultural, historical, and traditional knowledge as an Elder has supported his Nations efforts in developing a formidable Guardian and Monitoring Program within their Traditional Territory. His blended knowledge has had him deeply involved in the EMCR atmospheric river initiatives delivering his Nation's message and his expertise to mitigating challenges faced by the changing climate impacts in the mid slopes of their territory. His traditional knowledge coupled with western education drives his passion to increase climate change awareness, adaptability and resilience.

**CONTENT:** The November 2021 atmospheric river caused more than 1,300 geohazards to be triggered in southern British Columbia. Many of these geohazards were sourced from watersheds that had experienced previous cumulative damages, such as wildfires, logging, and resource road construction. These geohazards were sources of sediment that entered mainstem rivers and contributed to flood and bank erosion damages to communities, infrastructure, and ecological systems. The geohazards and associated damages of the November 2021 atmospheric river are examples of cumulative watershed issues that Indigenous communities have long expressed concerns about. Watersheds draining into Leq'á:mel First Nation have been heavily logged and frequently produce sediment-laden flooding. During the November 2021 atmospheric river, Leq'á:mel experienced damages to critical ecological habitat, community infrastructure, and critical facilities. As we learn from the November 2021 atmospheric river and apply these learnings to resilient community planning, geotechnical practitioners can benefit from integrating Indigenous knowledge about geohazards and watershed management practices.

**DETAILS:** **Location:** Centennial Room, Executive Hotel, 4201 Lougheed Highway, Burnaby, BC V5C 3Y6  
**Social Hour:** 5:30 to 6:30 pm (drinks available at the hotel bar)  
**Technical Presentation:** 6:30 to 7:30 pm (No need to RSVP)  
**Dinner:** 8:00 pm (\$20 will be charged for dinner). If you would like to stay for dinner, please RSVP to Ibrahim Kawasme via email ([Ibrahim.Kawasme@kiewit.com](mailto:Ibrahim.Kawasme@kiewit.com)) or at the door.