

Technical Memorandum

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Via Email:	Joe Mitchell <jmitchell@summerland.ca>
To:	Joe Mitchell, Director of Works and Infrastructure, Deputy CAO
From:	Brittany Linnett, P.Eng., Senior Geotechnical Engineer
cc:	Bobby Williamson, Manager of Development Service
Date:	August 21, 2026
Re:	Preliminary Slope Hazard Assessment, Callan Rd and Bridgeman Rd Summerland, BC
Project No.	2605393

Introduction

Brittany Linnett, P.Eng. of Terrane Geoscience Inc (Terrane) was contacted by Bobby Williamson of the District of Summerland (DoS), on August 16, 2026 regarding slope hazard assessments for areas of Summerland impacted by the Bald Range Fire. From information discussed in a meeting on August 16, 2026 there are multiple areas of Summerland where the Bald Range Fire burnt slopes uphill of homes, potentially causing dangerous conditions. A consulting rate sheet was requested and provided by Terrane on August 16, 2026. Brittany Linnett, P.Eng., field assessments for Callan Rd and Bridgeman Rd were completed on August 18 and 19, 2026.

The Bald Range Fire started on August 7, 2026 and at the time of this memo had burned 24,096 Hectares including portions of the Hunters Hill, Cartwright, Garnet Valley, Deer Ridge, and outlying areas of the DoS. This memorandum focuses on Callan Rd and Bridgeman Rd and the immediate surroundings, which is located on the north side of Summerland, east of Highway 97 (See Figure 1).

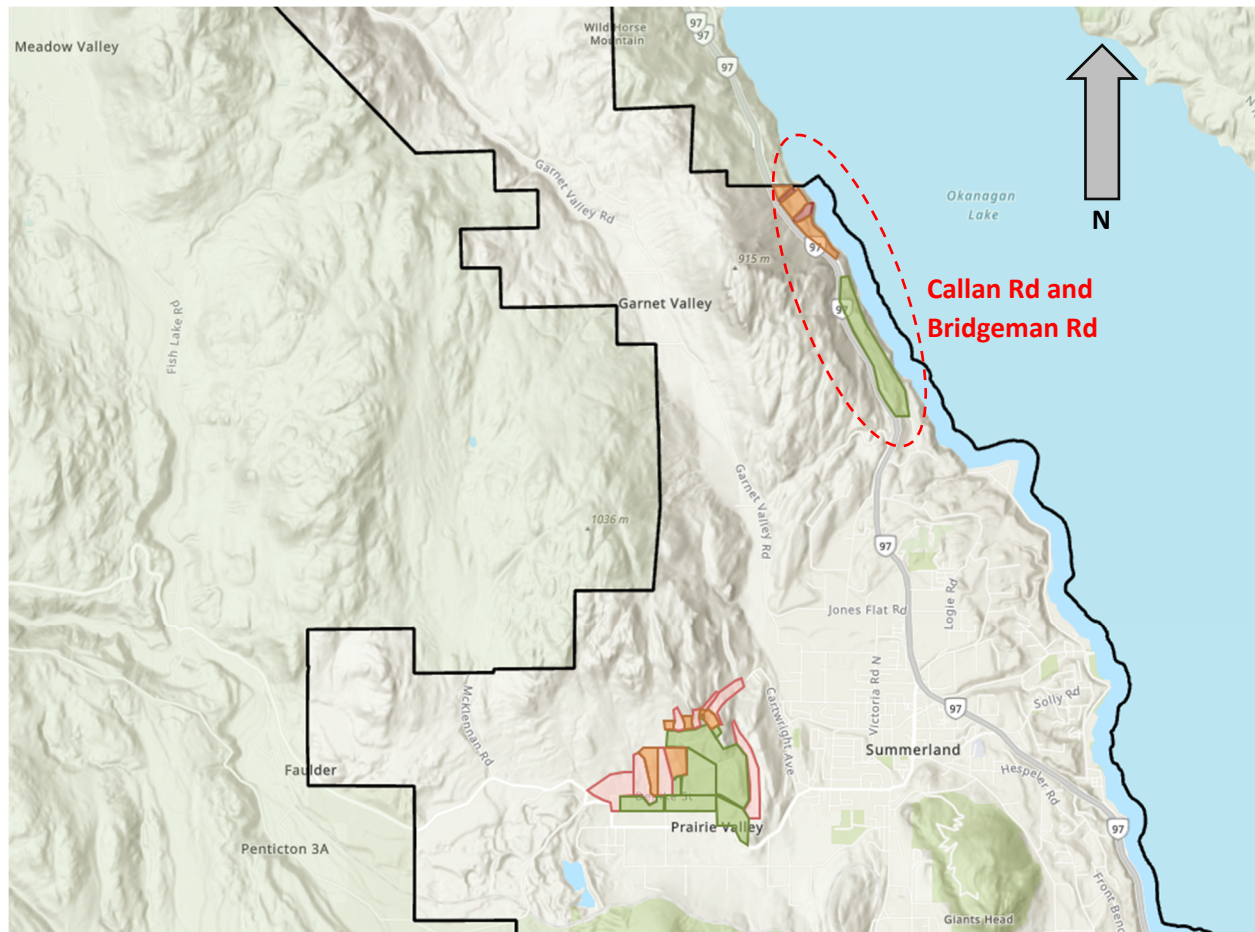


Figure 1 - Site Location (from DoS Spatial Viewer)

Scope of Work

The following scope of work was discussed on August 16, 2026:

- Site Visit - A senior geotechnical engineer site visit to observe the slope conditions, burn impacted areas, and slopes around potentially impacted homes.
- Initial *Re-entry Criteria* memorandum - Observations from the site visit summarized and hazard criteria applied as needed to the impacted areas for potential evacuations or other measures, as well as potential long-term recommendations.

Site Visit Observations

Brittany Linnett, P.Eng. completed a site reconnaissance of Bridgeman Rd on August 18, 2026 and Callan Rd on August 18 and 19, 2026.

The following observations were noted (Note – Photos are included in Appendix A attached):

- Bridgeman Rd appeared to be unaffected by the wildfire. Burnt areas were noted on the west (high) side of Highway 97, but potential debris is unlikely to affect properties on the low (east) side. There are no homes on the west side of Highway 97 in the Bridgeman Rd area (Photo 1).
- Callan Rd had extensive impacted areas both above and below Highway 97. Only the portion of Callan Rd within the DoS (south and east of the Hwy 97 intersection) are included in this memorandum.
- Fire intensity in the impacted area of Callan Rd varied (Photos 2-5).
- Two existing gullies were noted in the burned area, with one potential runout zone impacting a house and buildings on 24605 Callan Rd (Photo 4).

Recommendations

In the meeting with DoS, rainfall triggers for post wildfire debris flows and slope instability were discussed. Generally, post wildfire slopes are vulnerable to debris flows and/or landslide hazards during high intensity and/or prolonged rainfall events.

Statlu Environmental Consulting developed rainfall trigger guidelines which are detailed in the report “*Wet Weather Shutdown Criteria*” for the MFLNRORD Southern Engineering Group, dated April 29, 2021. For the purposes of the initial hazard assessment these criteria developed for the southern interior of British Columbia are considered to be applicable.

Table 1 details rainfall intensity and total shutdown criteria for different zones. In the case of wildfire experienced within the last 3 years the “Identified Unstable Conditions” triggers are recommended.

Table 1 - Proposed Shutdown Criteria (from Stalu, 2021)

Zone	Zone (annual precipitation)	Time Period			
		One hour	12 hour	24 hour	48 hour
1	Very wet (1,500 mm to 3,000 mm)	N/A	28 mm	35 mm	60 mm
2	Wet (1,100 mm to 1,500 mm)	N/A	25 mm	30 mm	50 mm
3	Average (600 mm to 1,100 mm)	10 mm	22 mm	25 mm	40 mm
4	Dry (100 mm to 600 mm)	8 mm	18 mm	20 mm	30 mm
5	Identified Unstable Conditions	6 mm	10 mm	15 mm	20 mm

For the purposes of the initial assessment and re-entry criteria development it is Terrane's recommendation that homes immediately downhill of fire impacted slopes, or downslope of fire impacted drainages, are evacuated if the Zone 5 precipitation criteria are met (Table 1). Impacted properties in the Cartwright neighbourhood are shown in Figures 2, 3, and 4, below. Red areas have a higher risk of long term impacts due to slope height and or/grade, runoff channels, or known historic drainages.



Figure 2 – Bridgeman Rd Properties. Properties not considered at increased risk from slope hazards (Green). Approximate Photo locations in pink. Imagery from DoS Spatial Viewer August 20, 2026.

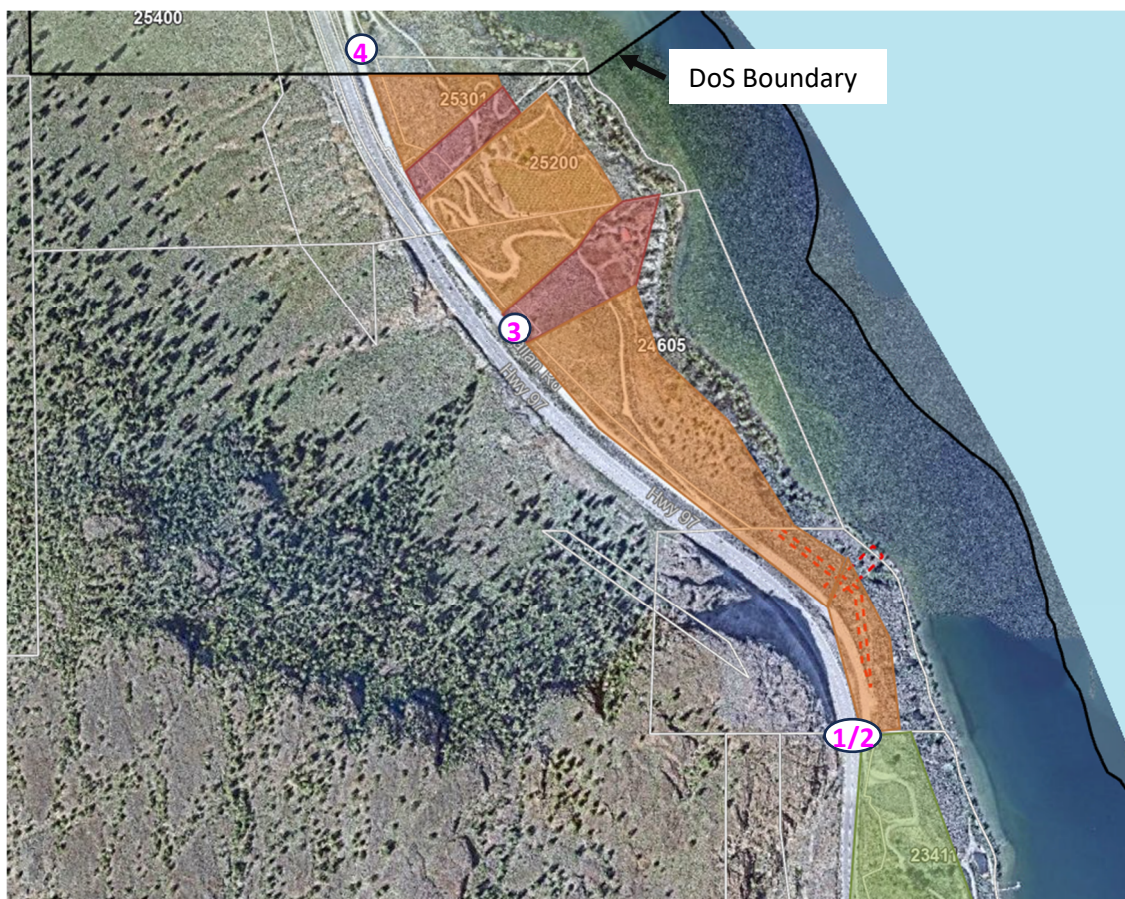


Figure 3 - Callan Rd Properties Potentially Impacted by Post-Wildfire Slope Hazards (Red and Orange). Properties not considered at increased risk from slope hazards (green). Approximate Photo locations in pink. Imagery from DoS Spatial Viewer August 20, 2026.

The following recommendations apply to the rainfall and evacuation criteria:

- Impacted properties should remain evacuated until 24 hours after the end of the rain event for 1 hour, 12 hour, and 24 hour criteria, or 48 hours after the end of the rainfall event if the 48 hour criteria is exceeded (see Table 1), or after an assessment by a qualified professional engineer.
- A rainfall gauge with remote monitoring and alarm capabilities should be placed within 2.5 km and 150 m of elevation of the impacted areas. If remote monitoring is not available, then the gauge should be checked hourly during significant rainfall. Snowmelt is not included in the criteria detailed in this memo.

In addition to measures resulting from the exceedance of rainfall criteria, the public and DoS should remain aware of other indicators of geotechnical instability. These can include but are not limited to:

- Pulses of sediment-laden (turbid) water in streams, especially in gullies,
- Streams suddenly drying up when conditions are otherwise wet,
- Constant small rock falls,

- Cutslope slumps that block ditches and/or roads,
- Tension cracks appearing in road fills or slopes,
- Recent avalanches, landslides, or debris flows or their deposits observed that were not present during the previous day; and,
- Diverted streams with flow appearing in new stream courses that were previously dry.

If any of these indicators of instability are observed, potentially impacted properties should be evacuated until a qualified professional engineer has assessed the site.

Properties not highlighted were not included in the site reconnaissance at the time of this memo. Potentially dangerous tree assessment, fire hazard, and other non-geotechnical hazard assessments are not included within the scope of this memo.

Long term slope stability and potential debris flow/debris flood hazards should be assessed by a Qualified Geotechnical Engineer prior to removal of the rainfall evacuation criteria noted above. Terrane would be happy to provide these services if requested.

Closure

Please contact us with any questions, comments or concerns.

Regards,

Terrane Geoscience Inc.



Brittany Linnett, P. Eng.

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A handwritten signature in blue ink, appearing to read "T. Gilman".

Tony L Gilman, M.Sc., P.Eng, P.Geo

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Appendices

Appendix A Photo Log



Photo 1. From the south end of Callan Rd, looking south toward Bridgeman Rd. No significant burn impact on the east of Hwy 87 from this point south.



Photo 2. South end of Callan Rd, looking north. Beginning of burn area.

Client:

District of Summerland

Project:

Callan and Bridgeman Preliminary Slope Hazard Assessment



YY/MM/DD 2026-08-20

Prepared BL

Design

Reviewed TLG

Approved

Title:

Photographs – TGI 1-4

Project #:

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Photo 3. Callan Rd intersection looking southeast.



Photo 4. From Callan Rd looking east down a burned gully at 24605 Callan Rd.

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