

Technical Memorandum

Terrane Geoscience, Inc • 2089 Maitland St. Halifax, NS B3K2Z8 • 902.407.5720

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, Deer Ridge and Prairie Valley 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., completed field assessments for Deer Ridge and the north side of Prairie Valley on August 18, 2026.

The Bald Range Fire started on August 7, 2026 and at the time of this memorandum 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 the Deer Ridge and north side of Prairie Valley neighbourhoods and the immediate surroundings, which is located west of downtown Summerland (See Figure 1).

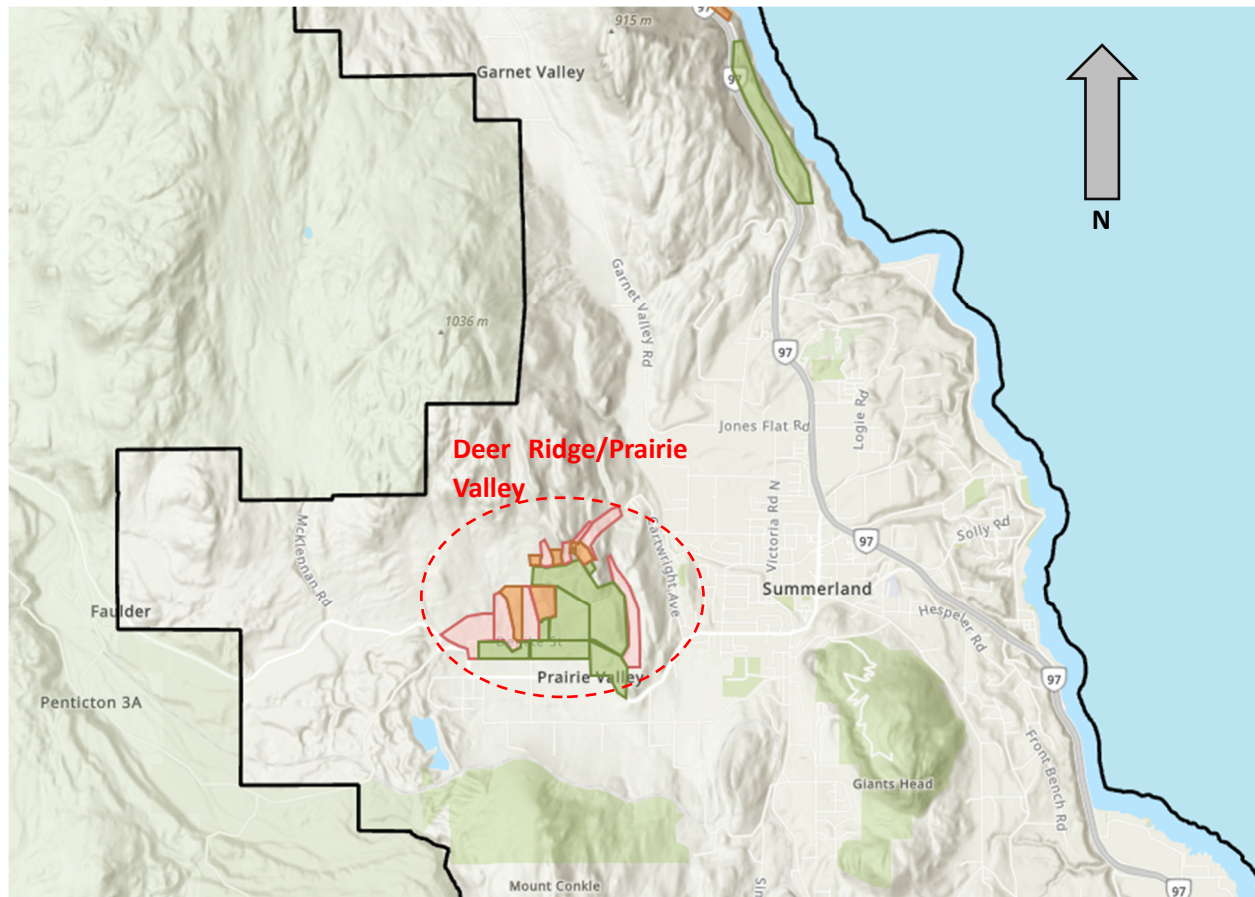


Figure 1 - Site Location (from DoS Spatial Viewer)

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 the Deer Ridge and north Prairie Valley neighbourhoods on August 18, 2026.

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

- The south portion of Deer Ridge, including all homes on Summergate Dr, Sunset Pl, Sunset Crt, and the majority of Morrow Ave were unburnt.
- The Summerland solar farm was not directly impacted by the wildfire, however the upper portion of the drainage in which it is situated was burnt, and therefore it may be impacted by wildfire related secondary hazards (Photo 1).
- On two properties at the east end of the Hermiston Dr (13455 and 13462) the dwellings are situated above the wildfire impacted slopes and gullies. However, other areas of the property including the driveways were impacted and may be impacted by future rain events (Photos 2 and 3).
- In the area upslope (north) of Hermiston Dr slopes above the homes were burnt to varying degrees of intensity. Some areas appear to have drainages that may flow directly toward homes, however the catchment area of the drainages was not determined. (Photos 4-5).
- The area upslope of properties on Denike St and Morrow Ave was impacted by the fire, however in areas outside of potential drainage paths the slope is not steep enough to cause hazards that would impact the homes below (Photo 6).
- A possible drainage path was noted above 14918 and 14904 Denike St which may pose potential debris flow/debris flood hazards post wildfire (Photo 7)
- A large gully which extends a significant way up the mountain was heavily burnt and extends through 15302 Denike St and has a possible runout zone into 15015 Denike St (Photo 8).
- The area upslope of 15912 and the west portion of 15815 Denike St has multiple burnt drainage paths which may pose potential debris flow/debris flood hazards. (Photo 9)

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.

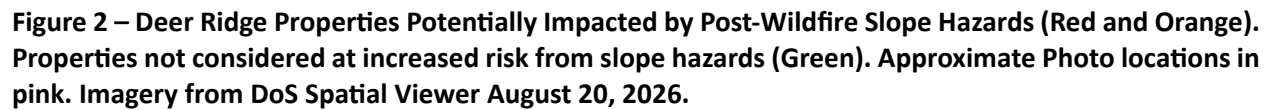




Figure 3 – Deer Ridge and Prairie Valley Properties Potentially Impacted by Post-Wildfire Slope Hazards (Red and Orange). Properties not considered at increased risk from slope hazards (green). Approximate Photo locations in pink. Imagery from DoS Spatial Viewer August 20, 2026.

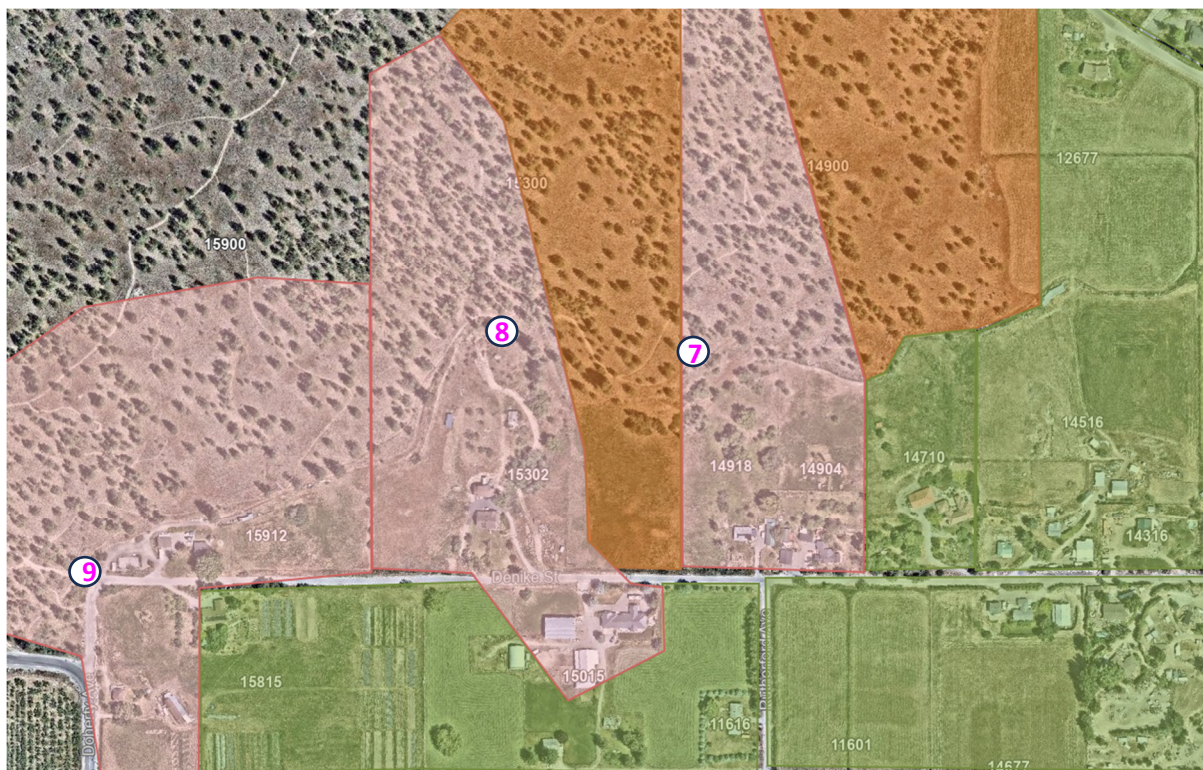


Figure 4 – Prairie Valley North Properties Potentially Impacted by Post-Wildfire Slope Hazards (Red and Orange). Properties not considered at increased risk from slope hazards (Green). Approximate Photo locations in pink. Imagery from DoS Spatial Viewer August 20, 2026.

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,

Closure

Please contact us with any questions, comments or concerns.

Regards,

Terrane Geoscience Inc.



2026-08-21

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Appendices

Appendix A Photo Log



Photo 1. Looking down (east) into the gully which drains south to the solar farm.



Photo 2. Looking west from 13455 Hermiston Dr down a burn gully.

Client:

District of Summerland

Project:

Deer Ridge and Prairie Valley North
Preliminary Slope Hazard Assessment



YY/MM/DD 2026-08-18

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Design

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Photo 3. Burned slope below the house on 13462 Hermiston Dr looking west.



Photo 4. Upslope (north) of Hermiston Dr looking north.

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Photo 5. Slope uphill (west) of Hermiston Dr looking west.



Photo 6. Slope uphill (north) of Denike St, west of McKlarty PI looking northwest.

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Photo 7. Slope upslope (north) of 14918 and 15904 Denike st, looking northeast at potential drainage paths.



Photo 8. Looking down (southwest) the burnt gully towards 15304 (right) and 15015 (left) Denike St.

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Photo 9. Gully upslope (northwest) of Denick St and Doherty Ave, looking northwest.

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