

TO: Qualified Professionals, prospective homeowners, builders, and developers in the Cheekeye Fan

FROM: District of Squamish, Development Services

DATE: July 14, 2017

RE: Interim Development Strategies on the Cheekeye Fan

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The Cheekeye Fan is identified in the District of Squamish Official Community Plan (OCP) as a debris flow / debris flood hazard area. Schedule D1 of the OCP includes a map of the Cheekeye Fan hazard zones. Policies in the OCP state that there will be no permanent development in zones 1 and 2 and that any building development in zones 3 and 4 must be accompanied by a Debris Flow Management Plan and require implementation of appropriate mitigation measures.

In addition, according to provincial legislation and the District's OCP, any development on hazard lands requires a report by a qualified professional (QP) certifying that the land is safe for the intended use. In the case of the Cheekeye Fan, the QP would likely be involved in the Debris Flow Management Plan and mitigation measures. Any actions stipulated in the QP report are captured in a "save harmless" restrictive covenant in favour of the municipality.


The OCP also states that the flood hazard zones identified in Schedule D1 are based on past geotechnical studies and may be reviewed when new natural hazard and risk management information becomes available.

New information has emerged recently as a result of a large proposed development project on the Fan. An Expert Panel was convened to recommend the hazard characteristics that should be used to evaluate mitigation and appropriate land uses. They recommended specifics around the hazard and that all forms of mitigation, singly or in combination, should be considered and carefully evaluated to protect existing development and to possibly allow some new development on the Cheekeye Fan.

The Cheekeye Fan hazard context therefore, is currently undergoing considerable review on two fronts:

1. A Council motion on March 3, 2015 directed staff to begin the Expert Panel recommended evaluation of fan-wide debris flow / debris flood mitigation measures.
2. A Council motion on March 24, 2015 put new Interim Policies for development in place until new hazard mapping and associated development controls are in place.

The focus of this memo is on the Interim Policies (#2 above) as they affect all development including rezoning, subdivision, development permits and building permits within the Cheekeye hazard area identified on Schedule D1 of the OCP (see Attachment 1).



**Interim Policy:** All in-stream applications (applications the District of Squamish accepted fees for prior to March 24, 2015) will continue to be processed pending QP safety certification. All new applications received since March 24, 2015, will be processed pending QP safety certification for minor and major repairs, extensions, reconstruction or new buildings and subdivisions up to and including 3 lots or 3 new dwelling units. Applications for rezoning, and for subdivision greater than the 3 lot or 3 dwelling unit threshold will not be processed until new hazard mapping and associated development controls are in place.

In the interim, and prior to the District issuing updated hazard mapping and associated development controls, QPs assessing projects in the area exposed to the Cheekeye Fan debris flow and debris flood should be aware of the following background information and studies at a minimum.

1. Cheekeye River Terrain Hazard and Land Use Study, Thurber and Golder., 1993
2. Preliminary Design Report for Cheekeye Fan Deflection Berms, KWL., June 2003
3. Debris Flow Simulation, BGC, 2007
4. Debris Flow Risk Assessment, BGC, 2008
5. Debris flow simulations on Cheekeye River, Journal of the International Consortium on Landslides, British Columbia, Jakob et al., 2012
6. Report of the Cheekeye River and Fan Expert Review Panel, Expert Panel #1, April 23, 2014
7. Cheekeye River and Fan Landslide Risk Tolerance Criteria, Expert Panel #2, June 8, 2015
8. Assessment of Mitigation Alternatives for Cheekeye Fan, KWL, April 2016

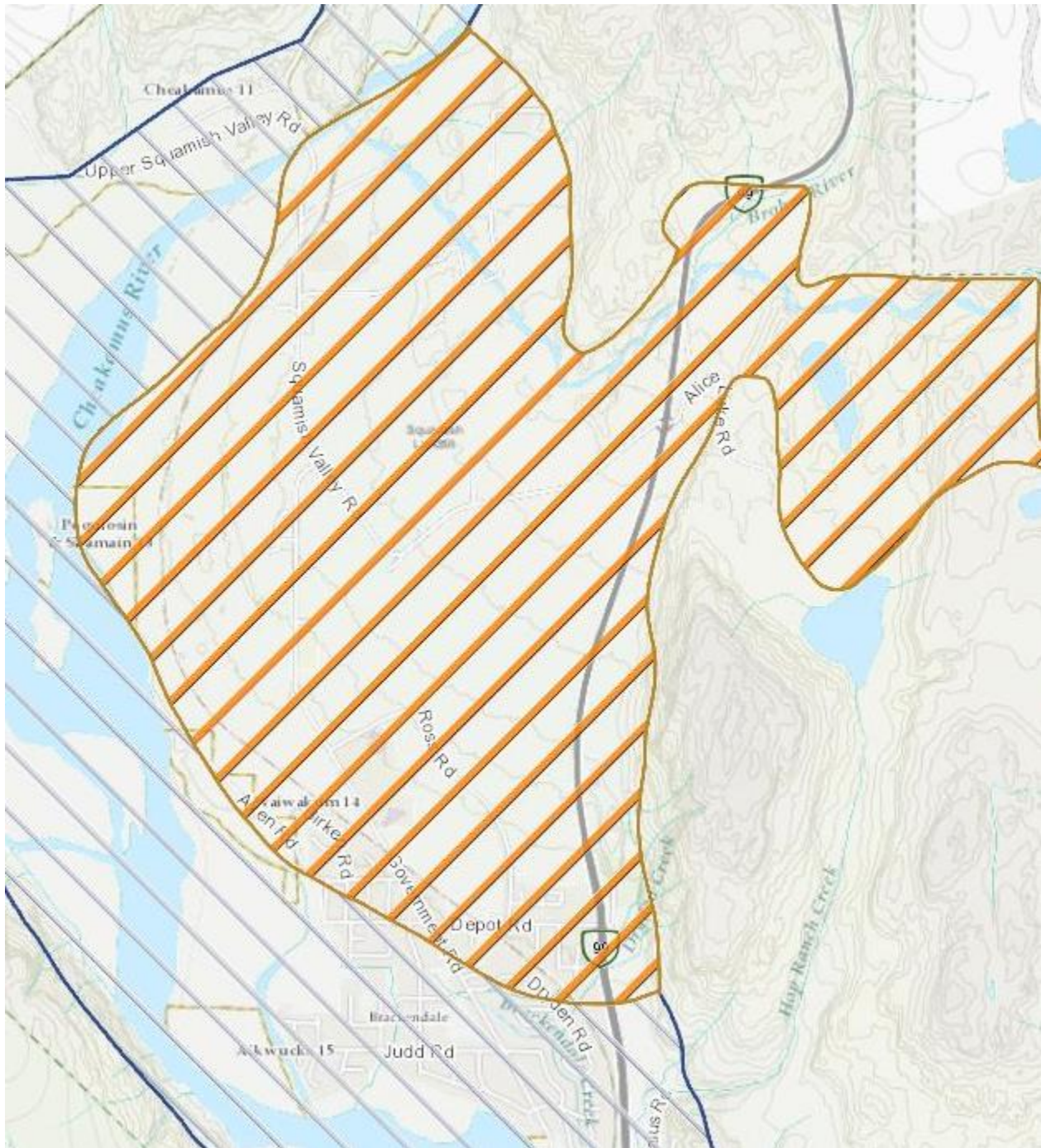
Most reports can be accessed on the District website: <https://squamish.ca/business-and-development/home-land-and-property-development/cheekeye-fan/>

Based on new information about the extent of the Cheekeye Fan debris flow area, QP safety certification will also be required for projects within zone C5 of the Cheekeye Fan as identified on Schedule D-1 of the forthcoming Official Community Plan (see Attachment 2). QP's will be required to review the aforementioned studies when completing hazard/risk assessments.

**Attachments:**

1. Figure 1: OCP Cheekeye Hazard Area
2. Schedule D-1: Draft Official Community Plan

**Attachment 1**



**Figure 1.** Excerpt from OCP Schedule D1 showing Cheekeye Fan Debris Flow / Debris Flood Hazard area





# SQUAMISH

Official Community Plan

## Schedule D-1

Flood & Debris Flow Hazard Areas

**DRAFT**

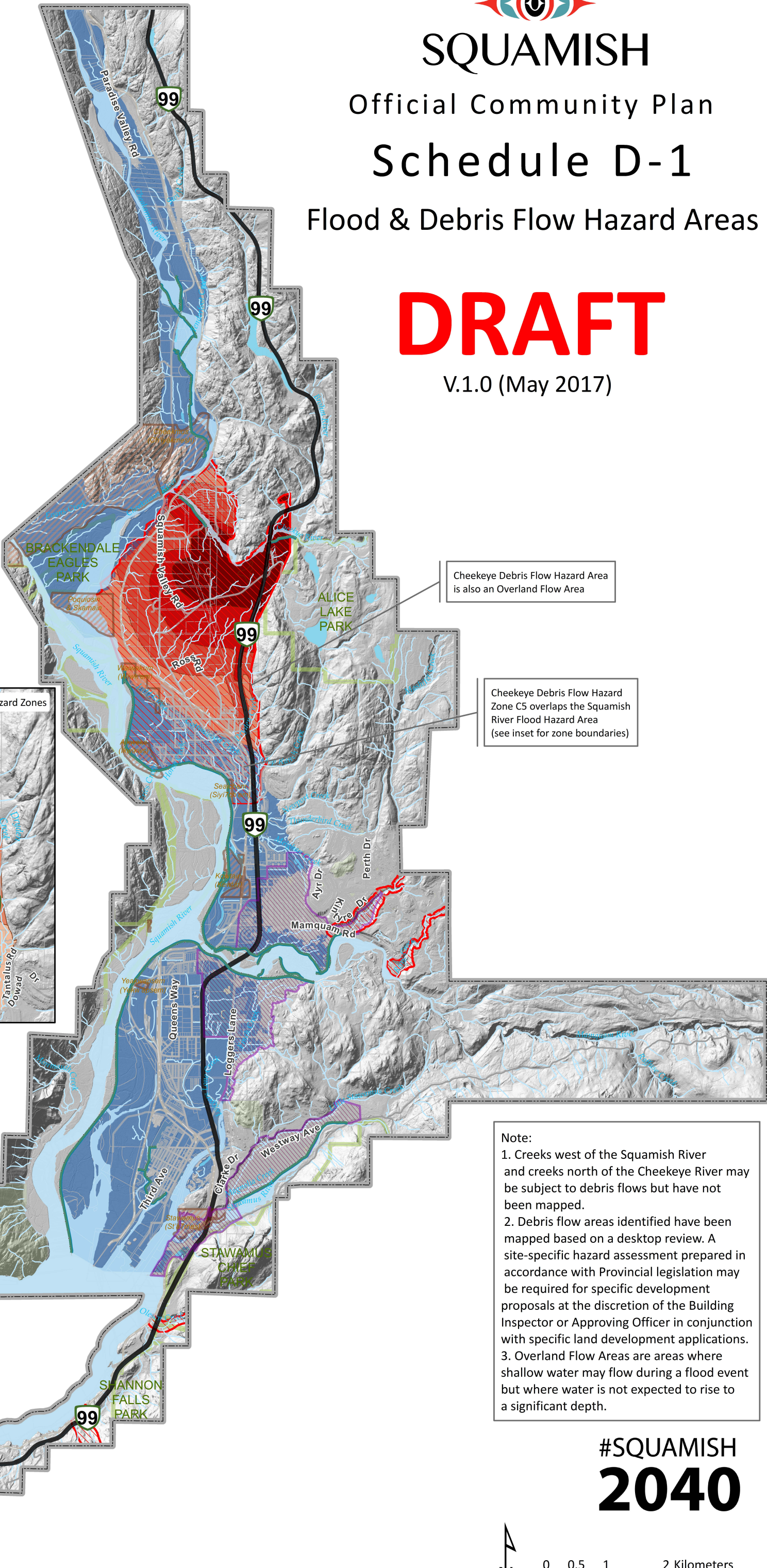
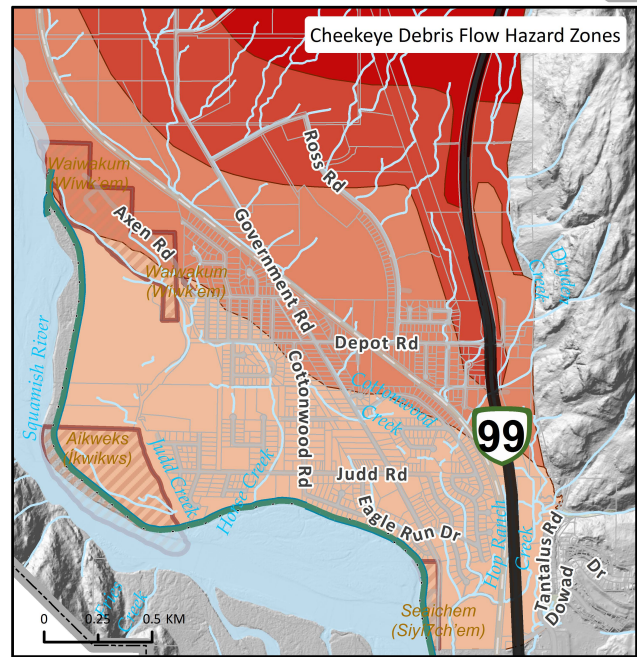
V.1.0 (May 2017)

### Legend

- Municipal Boundary
- Dike
- Overland Flow Areas
- Squamish Nation Reserve
- Debris Flow Hazard Area
- Flood Hazard Areas

### Debris Flow Hazard Zone

- C1
- C2
- C3
- C4
- C5



Cheekeye Debris Flow Hazard Area is also an Overland Flow Area

Cheekeye Debris Flow Hazard Zone C5 overlaps the Squamish River Flood Hazard Area (see inset for zone boundaries)

Note:

1. Creeks west of the Squamish River and creeks north of the Cheekeye River may be subject to debris flows but have not been mapped.
2. Debris flow areas identified have been mapped based on a desktop review. A site-specific hazard assessment prepared in accordance with Provincial legislation may be required for specific development proposals at the discretion of the Building Inspector or Approving Officer in conjunction with specific land development applications.
3. Overland Flow Areas are areas where shallow water may flow during a flood event but where water is not expected to rise to a significant depth.

#SQUAMISH  
**2040**



0 0.5 1 2 Kilometers