

## DPA 1 - Gravel Pit Areas

### Location

DPA 1 applies to gravel pit areas within the Sandy Hook, East Porpoise Bay and West Porpoise Bay neighbourhoods as shown on Map Schedules D1-D3.

### Category:

- Protection of the natural environment, its ecosystems and biodiversity.
- Protection of development from hazardous conditions.

### Justification

Any redevelopment in previous gravel pit areas requires geotechnical assessment to ensure lands can be safely used for residential or other purposes. Geotechnical hazards frequently exist in the redevelopment of gravel pit areas, as steep slopes may be prone to local sliding and slipping, and loose and exposed materials within the gravel pits are subject to erosion. Gravel pits often contain loose, fine textured materials which, when exposed to the elements, are subject to erosion. Fine sands and silts can enter watercourses and damage aquatic habitats. Single storm events can result in the erosion of large quantities of unconsolidated fine sands, resulting in burial of spawning beds, deterioration of habitats, and filling of swamps and marshes. Erosion of sands may also cause negative impacts to marine habitats in creek estuaries through burial and

changes in the course of the stream. Sediment laden streams may have sufficient energy to transport materials to the ocean, where, with reduced velocities, the sediment load is deposited. Biotic habitats may be impacted while reduced water quality may affect recreational diving. These gravel pit areas and associated access roads or modifications to actual drainage courses, may provide significant sources of material for debris flow or flood activity.

### Exemptions

General exemptions for natural hazard/environmental protection DPA's 1-5 apply. (Note: gravel extraction and mining activities are provincially regulated and exempt from DP requirements).

### Guidelines

1. No subdivision or construction of buildings, structures or other uses of land, including clearing, removal of soil, trees or vegetation, or other alteration of the land, is permitted in DPA 1 except in accordance with a development permit issued by the District of Sechelt.



✘ *Loose, unconsolidated materials are subject to erosion.*

2. Structures, roads or infrastructure should not be located in areas with potentially unstable slopes.
3. The extent of clearing should be minimized, and new vegetation established on any disturbed soils or steep slopes.
4. Proposed developments within gravel pit areas shall evaluate and address the potential for erosion, soil or slope instability and identify any impacts on adjacent properties or downstream watercourses. Measures that will minimize erosion, sediment discharge and establish slope stability must be clearly determined in advance of any development.
5. Drainage works and septic effluent should not be discharged onto steep slopes to avoid erosion, and should not discharge directly into creeks.

6. Prior to any development or alteration of the land in previous gravel pit areas, a report from a Qualified Professional engineer or geoscientist with appropriate education, training and experience to conduct landslide or other risk assessments is required. The report shall provide:
- (a) a detailed analysis of slope and soil conditions on the site and adjacent areas, identifying any potential hazards, including areas with erosion, sediment discharge or stability concerns;
  - (b) confirmation of the suitability of the proposed development, with detailed site specific recommendations, including building setbacks or building envelopes;
  - (c) construction recommendations for servicing including septic disposal fields, management of stormwater flows and location of roads or driveways;
  - (d) detailed plans and description of any required works and actions necessary to mitigate any potential hazards or establish slope stability and ensure protection of structures;
  - (e) details of any monitoring actions required;
  - (f) assessment of any impacts to downstream watercourse habitats, and any actions required to minimize or mitigate such impacts.
  - (g) meet the report guidelines for *Legislated Landslide Assessments for Proposed Residential*

*Development in British Columbia* published by the Association of Professional Engineers and Geoscientists of British Columbia, March 2006. <sup>4</sup>, including submission of Schedule D (Landslide Assessment Assurance Statement) to specify that the land may be safely used for the use intended.

7. A Development permit issued for lands in DPA 1 may:
- (a) Specify areas of land that must remain free of development, except in accordance with any conditions contained in the permit;
  - (b) Specify natural features or areas to be preserved, protected, restored or enhanced;
  - (c) Require construction of stability or protection measures, including planting or retaining vegetation or trees, or other works, in order to control drainage, control erosion, protect banks or to protect aquatic habitat or other natural features;
  - (d) Require in any area that contains unstable soils that no septic system, drainage or water system be constructed;
  - (e) Establish conditions and requirements that vary the permitted use and density of land that may be subject to hazard, but

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<sup>4</sup><http://www.apeg.bc.ca/ppractice/documents/ppguidelines/guidelineslegislatedlandslide1.pdf>

only as they relate to health, safety or protection of property from damage.

- (f) Impose conditions on the sequence and timing of construction;
  - (g) Require security to ensure completion of permit conditions.
8. Lands in DPA 1 may also be located within DPA 2 (Watercourse hazards/habitat) and DPA 5 (Steep Slopes). Guidelines for those DPA's should also be referenced.