

GEOTECHNICAL HAZARD ANALYSIS

Requirements for geotechnical analysis of geotechnical hazard areas.

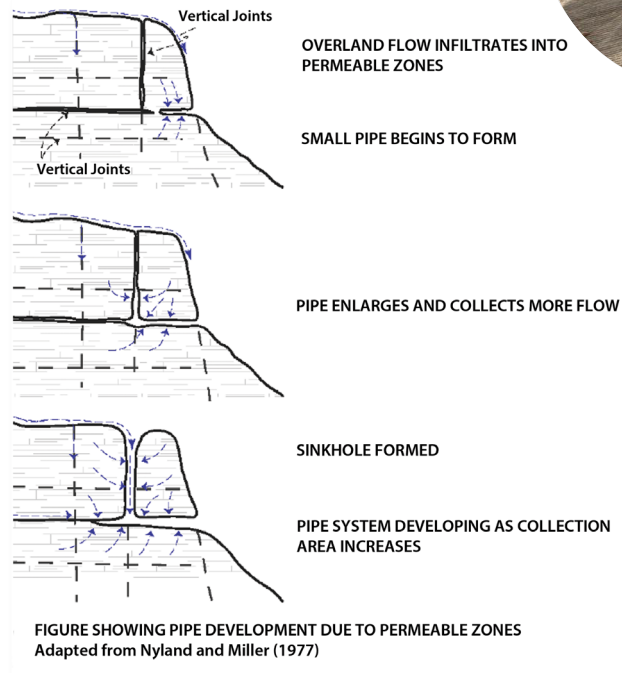
Bulletin No. 23-01

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PURPOSE

The following information is provided to outline the requirements for geotechnical investigation to address the known geotechnical hazard areas within the City of Penticton. The City of Penticton requires all developers and builders to ensure the land that they develop or build on is safe for the intended use. This bulletin does not replace the responsibility of a qualified Geotechnical Engineer to take all reasonable steps during their review.

The City of Penticton has identified specific hazard areas that need to be considered by the Engineer of Record for all development and building projects. This bulletin is to provide guidance on the potential impact on a project across different hazards areas, this includes the level of geotechnical investigation and the potential for the development to be limited in some way by the geotechnical conditions.



REFERENCES & BACKGROUND

1. [Building Bylaw No. 2021-21](#) – Part 9, Part 12 & Part 27
2. [Subdivision & Development Bylaw No. 2004-81](#) – Section 00400 - Roads
3. [Slope Stability Review for - The City of Penticton](#): Dated September 2022
4. [Professional Practice Guideline: – Geotechnical Engineering Services for Building Projects](#) –EGBC
5. [Professional Practice Guideline: – Landslide Assessments In British Columbia](#) - EGBC

IMPLEMENTATION

Prior to the submission of a development application, or building permit, the owner/agent is to review the hazard mapping to determine the level of geotechnical investigation required to address the known geotechnical hazard. The City may not provide any development approvals without the Geotechnical Hazard investigation being completed.

The specific geotechnical hazard can require limits to be placed on land that may impact some developments or may require additional civil works to address the hazard. These limits, or additional works, need to be determined to ensure the proposed development is safe and what the construction requirements are.

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DESIGN CRITERIA

The geotechnical investigation required to address the known Geotechnical hazard is outlined in this section.

The owner/developer is to review the Geotechnical Hazard mapping on the City of Penticton's mapping (<https://mapping.penticton.ca/parcel-viewer/>) to determine the level of geotechnical investigation required for the property to be developed. The areas of known hazard have been identified into three categories:



1 Standard Geotechnical Investigation

Comment

- The development has a low likelihood of geotechnical hazard impacting the development.

Requirement

- Geotechnical assessment requirements in support of Building Permit applications are required in accordance with **Professional Practice Guideline: Geotechnical Engineering Services for Building Projects**. *(Required at time of building permit)*

2 Detailed Geotechnical Investigation

Comment

- Certain types of development may be subject to a rigorous review and limitations on development or land use may be required.
- It is expected that additional works may be required to develop the property.
- A slope hazard within a given lifetime is possible. Signs of previous events, such as vegetation damage may not be easily noted.

Requirement

- Geotechnical assessment requirements in support of Building Permit applications are required in accordance with **Professional Practice Guideline: Geotechnical Engineering Services for Building Projects**. *(Required at time of building permit only)*
- A site-specific landslide assessment in accordance with the landslide assessment **Professional Practice Guideline: Landslide Assessments In British Columbia** shall be completed in support of any development application.
- This could include recommendations for hazard mitigation measures to allow for safe development of the property.
- The assessment may include an intrusive geotechnical site investigation to characterize site subsurface conditions and may include provisions for slope and/or groundwater monitoring.
- The assessment shall include of a Landslide Assessment Assurance Statement (Appendix D), as per the **Professional Practice Guideline: Landslide Assessments in British Columbia**.

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3 Extensive Geotechnical Investigation

Comment

- Certain types of development may be considered unsuitable on the subject property and/or the development may be subject to a rigorous review and limitations.
- It is expected that additional work will be required to develop the property.
- Natural instability is present. A slope hazard can likely happen within the appropriate lifetime of a person or typical structure. Events are clearly identifiable from deposits and vegetation but may not appear fresh, not be easily noted.

Requirement

- Geotechnical assessment requirements in support of Building Permit applications are required in accordance with **Professional Practice Guideline: Geotechnical Engineering Services for Building Projects**. *(Required at time of building permit only)*
- A site-specific landslide assessment in accordance with the landslide assessment **Professional Practice Guideline: Landslide Assessments in British Columbia** shall be completed in support of development applications.
- The assessment shall require an intrusive geotechnical site investigation to characterise site subsurface conditions and may include provisions for slope and/or groundwater monitoring.
- The assessment may also include review of ground conditions beyond the subject property and recommendations for registered legal covenants.
- The assessment shall include of a Landslide Assessment Assurance Statement (Appendix D), as per the **Practice Guideline: Landslide Assessments in British Columbia**.

Any geotechnical investigation report must clearly identify that it has been completed in accordance with the **Professional Practice Guideline: Landslide Assessments in British Columbia**.

It must be noted that additional geotechnical investigation may be required as part of project design, permit review, development approval or construction.

GROUNDWATER

The impacts of groundwater on development is significant across all of Penticton. The requirement for Geotechnical investigations to locate groundwater and determine its impact on the intended use is clearly outlined in the EGBC Professional Practice Guideline - Geotechnical Engineering Services for Building Projects. This includes identifying the groundwater depth and management plan. It is the expectation of the City of Penticton that all geotechnical investigations determine the presence and impact of groundwater.



Have Questions? We're here to help. Please contact the Development Services

📞 (250) 490-2501 or ✉️ development@penticton.ca

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