ATTACHMENT C

CITY OF NANAIMO

GUIDELINES FOR THE COMPLETION OF GEOTECHNICAL REPORTS

1. INTRODUCTION

These Guidelines present the City of Nanaimo's (City) expectations for geotechnical assessments and reports related to the development of private lands within the City. The Guidelines identify the City's standard geotechnical design criteria in relation to natural hazards, seismic design, slope stability and timeframe considerations. Background information is provided to outline the local geotechnical setting. Geotechnical reporting expectations and requirements are provided for Geotechnical Reporting Documents (GRD) that are submitted in support of development and permit applications.

The City, in discharging its duties as the Approving Officer and/or Building Official, must be authorized by the Qualified Professional or Engineer of Record to rely on the particular GRD when making a decision on a development or building permit application. It is acknowledged that ground and groundwater conditions can vary from those expected and that changes may be required to the design and construction recommendations given in the GRD. Provision is made in the Guidelines for the City to require a Completion Report at the end of construction to document significant changes and/or geotechnical improvements that may have been undertaken to mitigate potential hazards.

These Guidelines are not intended to be prescriptive nor are they intended to serve as a substitute for engineering judgement and experience. It is anticipated that variations in the application of the Guidelines may be required for certain specific projects.

2. SCOPE OF GUIDELINES

These Guidelines apply to the practice of geotechnical engineering in relation to the legislated Geotechnical Reporting Documents (GRD) that the City may require in support of development and permit applications for private land within the City of Nanaimo, including:

- Rezoning Amendment Applications;
- Development Permits;
- Development Variance Permits;
- Subdivision Applications; and,
- Building Permits.

The authority for the City to require a GRD may be found in a variety of statutes, bylaws, and regulations. In addition to these Guidelines, the reader should be aware of the following documents:

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- Guidelines for Geotechnical Assessments above Abandoned Mine Workings, 2022. These relatively specific guidelines relate to the City's expectations for assessment and reporting for lands that lie within the City's Development Permit Area 4: Abandoned Mine Workings Hazards;
- Manual of Engineering Standards & Specifications (MOESS): Section 3.7. Geotechnical Assessment and Reporting. This document describes requirements for geotechnical assessment and reporting in relation to the design process for new roads and underground utilities; and,
- Seismic Design Guidelines for Water, Sewer Utilities and Road 2022. These guidelines are referenced in the Manual of Engineering Standards & Specifications: Section 3.7. and outline the City's expectations for seismic design for components of City-owned infrastructure that are not covered under the BC Building Code.

3. DEFINITIONS AND RESPONSIBILITIES

Qualified Professional: means a professional engineer or geoscientist who is registered or licenced in good standing with Engineers and Geoscientists BC (EGBC). The Qualified Professional will have the appropriate level of education, training, and experience to complete the assessment required in support of the particular application.

Geotechnical Engineer of Record (GER): means the Professional Geotechnical Engineer responsible for a specific portion of the project design. The GER, who will be a Qualified Professional, is responsible to ascertain that the GER's final design (including any changes made during construction) meets applicable design standards, criteria and guidelines. The GER's responsibilities during construction include conducting Field Reviews for the geotechnical aspects of construction being installed by the contractor. The GER is primarily responsible for evaluating whether the geotechnical aspects of construction are performed in general accordance with the geotechnical aspects of project plans and specifications, and the geotechnical design recommendations prepared by the GER.

Geotechnical Reporting Document (GRD): Reports and other documents that communicate geotechnical data, analysis and recommendations. GRD's can be of many types and formats including Geotechnical Design Reports; Geotechnical Baseline Reports; Geotechnical Design Memos; Geotechnical Field Memos; and Geotechnical Completion Reports. Multiple GRD's may be required by the City as a project moves through the development process from Rezoning and/or Development Permit; to Subdivision and Building Permit; and from preliminary design to detailed design to construction and operation.

Approving Officer (AO): means the City of Nanaimo's municipal Approving Officer as defined in the *Land Title Act*. The Approving Officer is the statutory official responsible for ensuring that subdivisions applications comply with provincial statutes, regulations, and local government bylaws regulated to subdivision.

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Building Official: means a qualified City of Nanaimo employee who is responsible for the administration and enforcement of Building Regulations and includes, but is not limited to, a Building Inspector, Plumbing Official, Plan Reviewer, and/or Manager.

The Client: means an individual or company who engages a Qualified Professional or Engineer of Record to provide geotechnical services in support of the land development or building permit application. The client is typically the landowner or a third party who has been contracted to oversee the process on behalf of the owner.

Letters of Assurance: means standard forms of the *British Columbia Building Code* informing authorities having jurisdiction which aspects of a project design and Field Reviews are the responsibility of the Engineer of Record.

4. GEOTECHNICAL DESIGN CRITERIA

Natural and Mining Induced Geological Hazard Risk:

It is most important that natural and mining induced geological hazards (Hazards) be identified on land that is about to be subdivided or, in the case of a Building Permit application, developed. These hazards may include but are not limited to, flooding; debris torrent; landslide; rockfall; erosion; subsidence; and mining induced geological hazard. Pursuant to Section 86 of the *Land Title Act*, the Approving Officer may refuse to approve the subdivision application if the officer considers that the land in question may be subject to a hazard. Similar provisions apply under Section 56 of the *Community Charter*, the *Strata Property Act* and the *Bare Land Strata* Regulations BC Reg. 75/78.

For assessing landslide hazards, the most recent version of the EGBC "Guidelines for Legislated Landslide Assessment for Proposed Residential Developments in BC" must be followed. The Qualified Professional is required to fully execute the Landslide Assessment Assurance Statement in Appendix D.

The most recent version of the City's Guidelines for Geotechnical Assessments above Abandoned Mine Workings is to be used in the geotechnical assessment or development of lands within the City's DPA 4: Abandoned Mine Workings Hazards.

For assessing flood hazards, the most recent version of the EGBC "Professional Practice Guidelines - Legislated Flood Assessments in a Changing Climate in BC" shall be followed. The Qualified Professional is required to fully execute the Flood Assurance Statement in Appendix I.

Seismic Design:

Seismic design objectives and expected performance of buildings are described in Commentary J of the Structural Commentaries (User's Guide – NBC 2015: Part 4 of Division B or latest version thereof). These relate to the protection of life and safety of building occupants and the general public as the building responds to strong ground shaking, as well as requirements to limit building damage during low to moderate levels of ground shaking.

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For subdivisions, seismic design is required on all structures and slopes that form the lot grading plan. This includes retaining walls greater than 1.2 m in height that support a roadway or walls that support a cut above the roadway where failure of the wall or cut will enter the City's right-of-way. The most recent version of the EGBC Professional Practice Guidelines for Retaining Wall Design shall be used in wall design and in defining minimum performance requirements. The City may require the GER to complete the Appendix A: Engineer of Record Retaining Wall Assurance Statement. The City requires the Owner to obtain a Building Permit for all walls greater than 1.5 m in height and for the GER to provide Letters of Assurance for the wall design and subsequent completion of Field Reviews.

For preliminary screening of seismic stability of slopes in relation to residential development, the seismic coefficient used in the pseudo-static limit equilibrium slope stability analysis should be equal to the 2% in 50 year Peak Ground Acceleration (PGA) (i.e. k=1.0(PGA). If the Factor of Safety (FOS) is > 1, when k=1.0(PGA) is used no further stability analyses are required. However, if the FOS is < 1, then the further stability analyses are required as outlined in the most recent version of the EGBC "Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia." For site specific numerical analyses of site response and soil structure interaction, a site specific seismic hazard value can be obtained from the Geological Survey of Canada. Liquefaction potential of the subsoil shall be evaluated for structures, walls and embankments and the design will incorporate ground improvements and other methods of addressing potential liquefaction to meet the performance expectations described herein.

Seismic considerations and performance for new roads and underground utilities are presented in the Manual of Engineering Standards and Specifications Section 3.7 with further guidance presented in the latest version of the City's Seismic Design Guidelines for Water, Sewer Utilities, and Roads.

Level of Landslide Safety

The City will assess the suitability of land for new development with respect to rotational and translational landslides on the basis of the following minimum Factors of Safety (FOS):

Table 1 – *Minimum Factor for Safety for Slope Stability Hazard from Rotational and Translational Landslides*

Type of Application	**FOS > 1.3 (static) FOS > 1.0 (non-static, with D < 0.15 m with 1:475)**	**FOS > 1.5 (static) FOS > 1.0 (non-static, with D < 0.15 m with 1:2475)**
Building Permit (< 25 % increase to gross floor area)	X	
Building Permit (> 25 % increase to gross floor area and/or retaining walls > 1.2 m)		X
Re-zoning		X
Subdivision		X
New Development (Development Permit)		X

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Where: 1:475 and 1:2,475 are annual probabilities of seismic hazard based on the latest version of the building code.

D is ground displacement calculated in accordance with the procedures of the most recent version of the EGBC Guidelines for Legislated Landslide Assessment for Residential Developments in BC.

Where the potential for high velocity flow type landslides or rockfall hazard is identified, the assessment shall identify the mitigation measures necessary to verify that the land may be used safely for the use intended in accordance with the reporting requirements given below. The mitigation measures, maintenance, and surveillance requirements shall comply with the requirements below.

Considerations of Changed Conditions, Maintenance and Surveillance

In completing their geotechnical assessment, the Qualified Professional and GER should consider the potential for changes to existing conditions resulting from natural processes such as sea level rise, erosion, wildfire, repeated freeze thaw, and from human activities and urban development. In the absence of a project specific agreement with the City, the assessment and geotechnical reporting for building and subdivision projects should consider the influence of potential changes over a period of 100 years. The GRD should include discussion and recommendations for geotechnically related maintenance and surveillance requirements to satisfy project performance expectations over this time period, including where the responsibility lies for such actions. The professional's report together with a Section 219 covenant may be required to be registered on the title of the property pursuant to the *Land Title Act*.

Specific guidance related to civil and transportation infrastructure retaining walls is provided in the EGBC Professional Practice Guidelines for Retaining Wall Design, Version 1.1 25 February 2020.

5. GEOTECHNICAL SETTING

Nanaimo has a complex geological history that includes several regimes of glaciation along with deposition and erosion during the wasting of the last ice sheet. The area was home to commercial coal mining and large areas of the City are underlain by abandoned underground mine workings. The area is also prone to hazards from strong seismic shaking, and steeper areas to landslide, rockfall, and erosion. The eastern boundary of the City is formed by the Strait of Georgia and is subject to changing conditions and active erosion as a result of tidal effects and long-term sea level change. A general description of the local geotechnical setting is provided in Appendix 1.

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6. GEOTECHNICAL REPORTING WITHIN THE APPROVAL PROCESS

6.1 GENERAL

GRDs take many forms, have many titles and can be prepared at various levels of detail commensurate to the various stage of a project; from feasibility to detailed design to construction. GRDs can vary from comprehensive design reports to focused interpretive reports dealing with one phase of a design or one design element. GRDs also include baseline geotechnical reports that are limited to the presentation of factual data, as well as forensic reports addressing some form of failure. At the construction stage of a project, GRDs include field memos and site instructions that can contain recommendations or instructions that may substantially alter the recommendations given in the original geotechnical design report that formed the basis of approval.

The City operates within a development approval process with a legislative framework that, dependent on the project, may include requirements from bylaws covering rezoning applications, the *Local Government Act* (Development Permits), the *Land Title Act* (Subdivisions), *Community Charter* (Building Permits), *Local Government Act* (Flood Plain Bylaw) and *BC Building Code*. The reporting requirements in this Guideline relate to the GRDs submitted in support of those applications. City Council, or its delegate, the City's AO and/or Building Official in discharging their responsibilities must have reliance on the GRD submitted for the particular development application.

The attached **Figure 1** is a flowchart that summarizes the legislated development approval process followed by the City and identifies the City's general expectations in terms of supporting GRDs. Specific wording requirements for GRD's are presented below.

6.2 GEOTECHNICAL REPORT REQUIREMENTS

Geotechnical Reports provided in support of a development application must address the following requirements:

<u>Property Identification</u>
The report must identify the subject property by providing the legal description and civic address of the subject property as well as a plan showing the location of the property. Any existing restrictive covenants relative to land use or natural hazards shall be identified and attached to the report, with relevant zoning or geotechnical setbacks or easements marked on the plan, where applicable.

<u>Reason for Report</u>
Description of the intended use of the subject property that corresponds to the development application(s) being considered by the City.

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Reliance of City Council or its delegate, the Approving Officer and/or Building Official on the Report

The applicable example statement shall be used in the case of:

- Rezoning:

  "Notwithstanding any other statement in this report, this report may be relied upon by the City of Nanaimo in considering a zoning amendment application to rezone the subject property from (*insert existing zoning*) to (*insert proposed zoning*) as regulated by City of Nanaimo Zoning Bylaw No. 4500."

- Development Variance:

  "Notwithstanding any other statement in this report, this report may be relied upon by the City of Nanaimo in considering an application to vary the City of Nanaimo Bylaw No. 4500 "section to vary (*insert section of the bylaw being varied*)."

- Development Permit:

  "Notwithstanding any other statement in this report, this report may be relied upon by the City of Nanaimo in considering a development permit application under section (*insert section*) of the *Local Government Act* for lands within DPA (*name DPA*)."

- Subdivision:

  "Notwithstanding any other statement in this report, this report may be relied upon by the Approving Officer in considering a subdivision application under Section 86(1) (d) of the *Land Title Act*."

- Building Permit:

  "Notwithstanding any other statement in this report, this report may be relied upon by the City of Nanaimo in considering a building permit application under Section 56 of the *Community Charter*."

Safe Use of the Land

The following statement on safety and suitability shall be included:

- "The land identified as *(insert property legal address)* may be used safely for the use intended." or;
- "The land identified as *(insert property legal address)* may be used safely for the use intended, provided that the recommendations presented herein are followed." or;
- "The land identified as *(insert property legal address)* is not safe nor suitable for the use intended."

Format for Submission

An original, signed, and stamped copy of the report to be completed by the GER is required to be submitted to the City.

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7. REFERENCES

Associated Engineering. City of Nanaimo Sea Level Rise Study, December 2018.

Canadian Foundation Engineering Manual 4th Edition, 2006.

CIRIA Abandoned Mine Workings Manual C758D 2019.

City of Nanaimo: Guidelines for Geotechnical Assessments above Abandoned Mine Workings, 2022.

City of Nanaimo: Manual of Engineering Standards & Specifications, 2022.

City of Nanaimo: Seismic Design Guidelines for Water, Sewer Utilities, and Roads, 2022.

Commentary J of the Structural Commentaries (User's Guide – NBC 2015: Part 4 of Division B).

Engineers and Geoscientists BC Guidelines for Geotechnical Engineering Services for Building Projects.

Engineers and Geoscientists BC Professional Practice Guidelines, Retaining Wall Design, November 2019.

Engineers and Geoscientists BC Professional Practice Guidelines, Legislated Flood Assessments in a Changing Climate in BC, August 2018.

Engineers and Geoscientists BC Professional Practice Guidelines, Legislated Landslide Assessments for Proposed Residential Development in BC, May 2010.

Geological Survey of Canada Surficial Geology Nanaimo Map 27-1963.

HBT Agra Ltd. North Slope Stability Study, Report prepared for the City of Nanaimo, 1993.

Ministry of Energy and Mines, Geological Survey Branch, Geology of the Wellington Area Nanaimo Coalfield, Open File 1998-07.

The City's guidelines for legislated geotechnical reports will be updated from time to time and the latest version on the City's website should always be consulted. If you have any questions on these Guidelines, please contact the City Development Services Division at 250-755-4429.

Attachments: Figure 1: Legislated Development Approval Process

Appendix 1: City of Nanaimo Geotechnical Setting

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APPENDIX 1

CITY OF NANAIMO GEOTECHNICAL SETTING

The City is located within the Nanaimo Lowlands on the east side of Vancouver Island. The topography is characterized by gently rolling hills with an elevation of no more than about 250m that give way to flatter plains bordering the Strait of Georgia. West of the Nanaimo Lowlands, and beyond the limits of the City, are the more mountainous Southern Vancouver Island Ranges.

The nature and distribution of soils across the City is related to the several regimes of glaciation that overrode the area and the subsequent wasting of the last major ice sheet (the Wisconsin Glaciation) which ended about 10,000 years ago. Heavily over-consolidated pre-Wisconsin glacial and inter-glacial soils are exposed in the sea cliffs (the North Slope) along the northern coastline of the City. A blanket of glacial till deposited after the retreat of the last major ice sheet is found across much of the City. During the retreat and melting of this ice, the sea level was considerably higher than present. Heavily loaded streams issuing from the valley glaciers in the Nanaimo River and Haslam Creek valleys deposited sand and gravel as deltas into a sea that was approximately 150 m higher than the present sea level. Marine and glacio-marine soils were deposited in the seas that overlapped the lowlands. During the period of lowering of sea level to the present, streams deposited gravel and sand and cut terraces in older deposits while clays and silts continued to be deposited in the deeper waters. During the last century several low lying coastal areas within and adjacent to Nanaimo's downtown were infilled and reclaimed. The surficial geology of Nanaimo is shown on the Geological Survey of Canada Map 27-1963.

Aside from the volcanic rocks (Karmutsen Formation of Upper Triassic Period) that are exposed in the upland areas between Long Lake, Cottle Hill and Sugar Loaf Mountain, the bedrock that underlies the Nanaimo Lowland in the City is predominantly sedimentary in origin; belonging to the Nanaimo Group of the Upper Cretaceous Period. Principal rock types include sandstone, conglomerate, shale and coal. Coal was commercially extracted from the Nanaimo Coalfield from the mid-ninetieth century to the early 1960's. Coal was taken primarily from three major seams; the Douglas, Newcastle and Wellington Seams using a variety of methods including room and pillar, retreat and longwall mining. Approximately 15 percent of the land area of the City is underlain by abandoned coal mine workings. The local structural geology is dominated by strong faults that cross the area from southeast to northwest. In many cases these strong faults define the lateral extent of mining. The bedrock geology of Nanaimo is shown on the Ministry of Energy and Mines, Geological Survey Branch, Open File 1998-07.

Areas of Nanaimo are susceptible to natural hazards and mining induced geological hazards (hazards). A critical part of the land development process is the identification of such hazards and the determination as to whether they can be avoided or suitably mitigated to the satisfaction of the City to enable development approvals to be provided. An important component of the hazard assessment is the determination of ground response to strong seismic shaking. The City of Nanaimo's Official Community Plan (OCP) provides discussion on known hazards and designates Development Permit Area 3 (DPA3) as Natural Hazard Lands. The City's published

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mapping of DPA3 areas includes areas of steep slopes prone to landslide and/or erosion adjacent to coastal waters and inland watercourses. It is noted that the City will consider the recommendations contained in the AGRA (1993) North Slope Study and subsequent follow-up studies when reviewing proposed development within DPA3 along the North Slope (coastal slopes from Departure Bay to Lantzville). The City's published mapping of DPA 4 includes known lands that are underlain by abandoned underground mine workings. The OCP and DPA 4 includes discussion on the legacy risks associated with abandoned underground mine workings and the need for site specific geotechnical assessment in accordance with the City's guidelines for geotechnical assessments above abandoned mine workings.

The eastern boundary of the City is formed by the Strait of Georgia and is subject to changing conditions and active erosion as a result of tidal effects and long-term sea level change. The City's study on sea level change provides guidance to the qualified professional on future anticipated changes in sea level.

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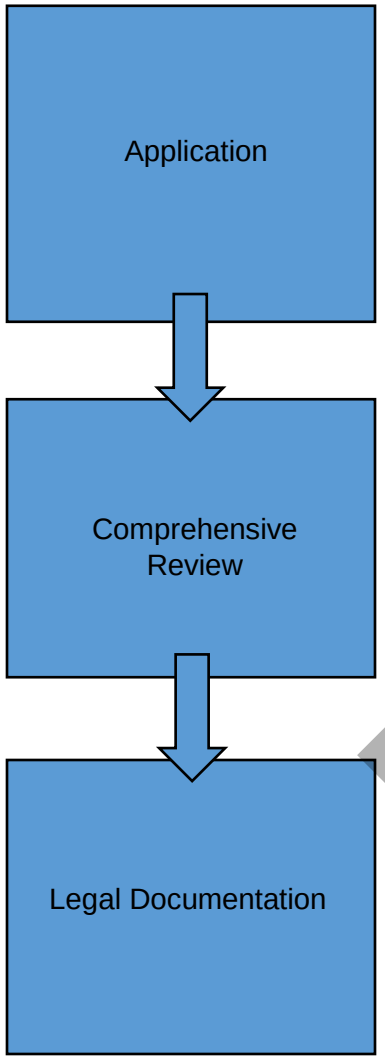
FIGURE 1

LEGISLATED DEVELOPMENT APPROVAL PROCESS

REZONING



Submission of Geotechnical Reporting Documents (GRD) to identify and quantify hazards and to provide recommendations to address the hazards identified, and to certify that the land may be used safely for the use intended.

The scope of work and extent of reporting to satisfy approval may be significant if a hazard is present that precludes the qualified professional from forming an opinion based on a preliminary scope of work. Along with a review of hazards, the report is expected to contain general guidance on geotechnical design and construction considerations, such as appropriate foundation systems and anticipated site preparation activities.

The City may require the Owner to fund a third-party geotechnical peer review for sites or projects of complexity.

City staff will complete a review of the GRD and provide comment or accept.

If the project advances, prior to fourth reading by Council a Geotechnical Covenant that has the GRD as an appendix may be required to be prepared, reviewed by City staff and registered against the title of the property.

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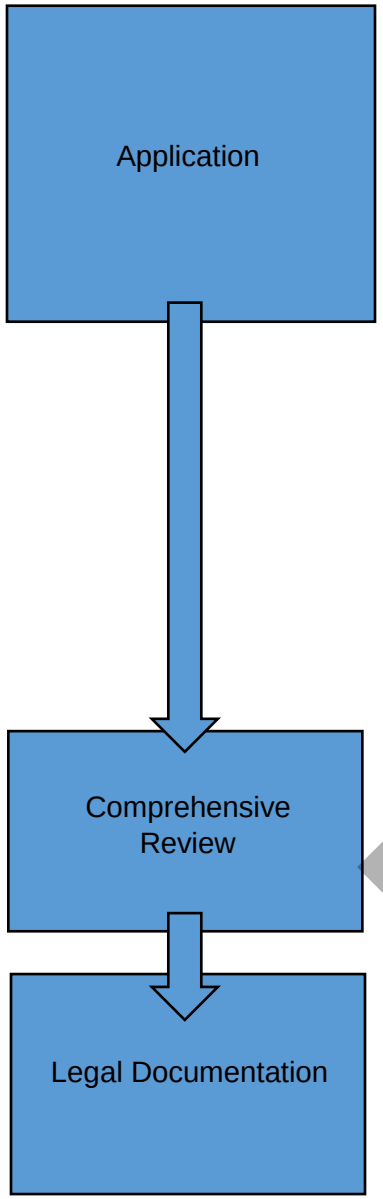
DEVELOPMENT PERMIT



Submission of Geotechnical Reporting Documents (GRD) to identify and quantify hazards and to provide recommendations to address the hazards identified, and to certify that the land may be used safely for the use intended.

The focus of the geotechnical assessment will be to identify potential hazards; determine the risks posed to the proposed development; and develop recommendations to avoid or otherwise mitigate the risk. In the case of landslide and flooding hazards, the City will expect the pertinent EGBC professional practice guidelines to be followed. In the case of legacy mining issues, the City will expect the Guidelines for Geotechnical Assessments above Abandoned Mine Workings to be followed. Sufficient assessment is required to support the statement that the land may be used safely for the use intended. Recommendations may be provided for further detailed geotechnical assessment required in support of a subsequent stage of the development process.

A separate GRD Geotechnical Completion Report may be required by the City at the end of construction in the event that it was necessary to implement geotechnical works to mitigate a hazard or improve ground conditions, as a condition of approval. Examples may include the implementation of long term slope stabilisation measures, ground densification to mitigate liquefaction and grouting/improvement of lands underlain by abandoned mine workings. The GRD Geotechnical Completion Report will serve as a record of “as-constructed” conditions and will include a statement that provides reliance to City that the land may be used safely for the use intended.

The City may require the Owner to fund a third-party geotechnical peer review for sites or projects of complexity.

City staff will complete a review of the GRD and provide comment or accept.

A Geotechnical Covenant that has the GRD as an appendix may be required to be prepared, reviewed by City staff and registered against the title of the property.

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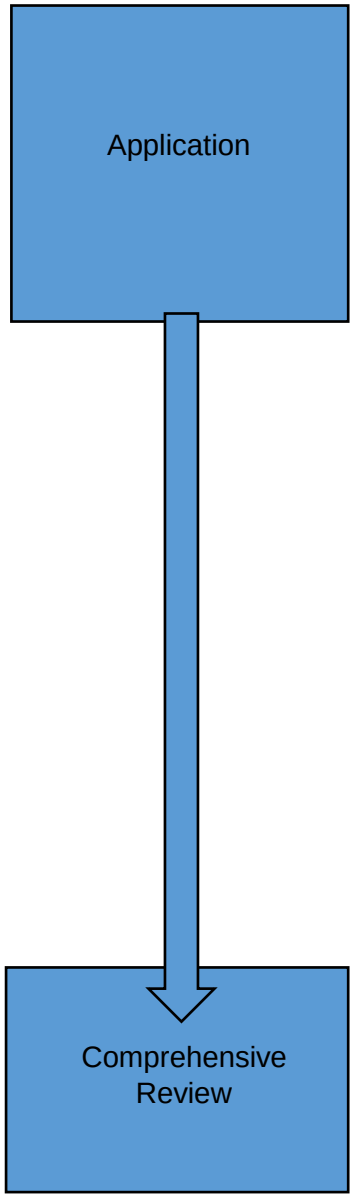
SUBDIVISION



Submission of Geotechnical Reporting Documents (GRD) to certify that the land may be used safely for the use intended.

The scope and detail included in a GRD submitted in support of an application to subdivide can vary widely dependent on the nature of the development and complexity of ground conditions. At a minimum, the GRD geotechnical assessment will identify potential hazards and, if present, provide recommendations to address the site conditions with a view to certifying that the land may be used safely for the intended usage.

The scope of work and extent of reporting to satisfy approval will depend on the complexity and scale of the development and the nature of the ground conditions. In addition to an assessment of hazards, the report is expected to contain geotechnical discussion and recommendations for design and construction considerations related to foundation systems, and anticipated site preparation activities. The GRD geotechnical report should be prepared in conjunction with the civil lot grading plan and should contain recommendations in support of civil infrastructure including buried utilities and retaining walls. Recommendations may be provided for further detailed geotechnical assessment required in support of Building Permit requirements for structures and retaining walls. Discussion and recommendations should be provided for geotechnically required aspects of maintenance or surveillance required to meet the City's performance requirements over the lifetime of the project.

Supplemental GRDs may be required to document the design and construction of ground improvement activities or special measures. Examples where further documentation should be expected include projects involving the implementation of long term slope stabilization measures, deep ground densification and grouting/improvement of lands underlain by abandoned mine workings. The Geotechnical Completion Report may serve as a record of "as-constructed" conditions and will identify any maintenance of works and measures that will be required in the future. The report will include a statement that provides reliance that the land may be used safely for the use intended.

The Owner may be required to fund a third-party geotechnical peer review for sites or projects of complexity.

The City's Approving Officer will complete a review of the GRD and provide comment or accept.

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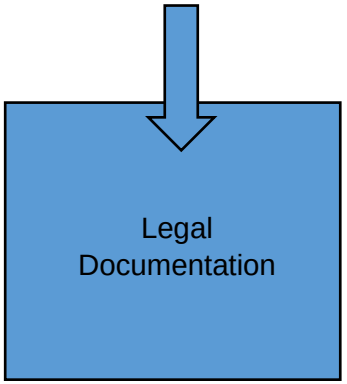

If the original GRD concluded that “the land may be used safely for the use intended” without any mitigative works or measures, prior to approval Final Approval of the subdivision by the Approving Officer or issuance of Substantial Completion by the City Engineer, a Geotechnical Covenant that has the GRD as an appendix is to be prepared, reviewed by the Approving Officer and registered against the title of the property.

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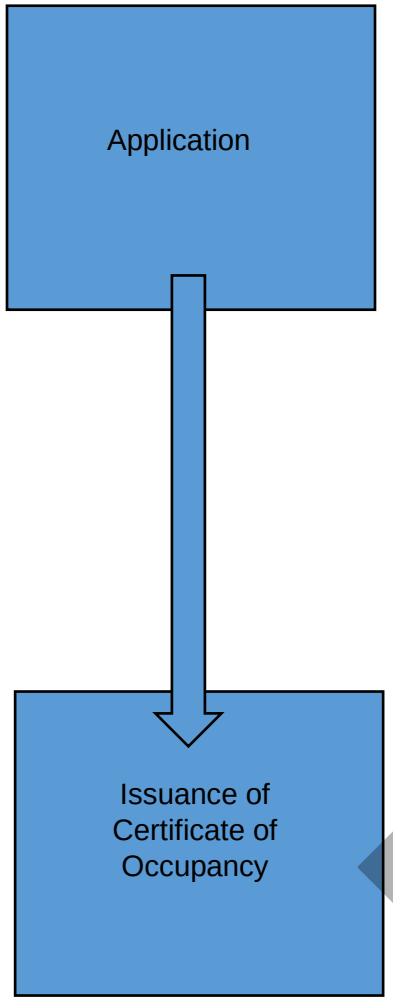
BUILDING PERMIT



Submission of Geotechnical Reporting Documents (GRD) to certify that the land may be used safely for the use intended.

A GRD geotechnical assessment and report prepared in support of a Building Permit application will address in detail the specific needs of the project. In developing those details, the Geotechnical Engineer of Record (GER) is expected to interact with the Structural and/or Civil Engineer of Record, other design team members or contractors with a scope of work and process, as outlined in the EGBC Professional Practice Guidelines for Geotechnical Engineering Services for Building Projects. Dependent on the project, recommendations may be required for matters such as stability of slopes, utility support, storm water facilities, temporary support and construction and long term dewatering among other subsurface related matters such as ground improvement.

During construction, the GER will complete the necessary field reviews required to satisfy their obligations under the BCBC Letters of Assurance. Dependent on the nature of the work required, the City may require a Geotechnical Completion Report at the end of construction to serve as a record of "as-constructed" conditions and to identify any maintenance of works, and measures, that will be required in the future. The report will include a statement that provides reliance to City that the land may be used safely for the use intended.

The City may require the Owner to fund a third party geotechnical peer review for sites or projects of complexity.

If the original GRD concluded that the property was "safe & suitable" without any mitigative works or measures, prior to issuance of a Certificate of Occupancy by the Building Official, a Geotechnical Covenant that has the GRD as an appendix is to be prepared, reviewed by City staff and registered against the title of the property.

If supplemental GRDs such a Geotechnical Completion Report were required, a Geotechnical Covenant that appends both the original, any supplemental design reports and the Geotechnical Completion Report, is to be prepared; reviewed by City staff; and registered against the title of the property.

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