STANDARD TERMS OF REFERENCE (STORe)

A guide for preparing professional reports and technical studies for the development approval process, ensuring compliance with RDCK standards.

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The **Standard Terms of Reference (STORe)** provides a framework for preparing professional reports and technical studies that may be required during the development approval process. It supports the Regional District of Central Kootenay (RDCK) in achieving consistent and transparent development approvals and ensures compliance with the relevant RDCK policies and regulations.

1 Introduction

1.1 This document outlines the requirements for reports and studies necessary to provide the information required by the RDCK to make informed decisions on development applications.

1.2 The STORe comprises multiple sections, each containing specific Terms of Reference for the most common types of studies required in the development approval process. Qualified professionals are required to refer to the relevant sections within the STORe when preparing professional reports and technical studies.

1.3 The STORe is intended to provide guidance and assistance only and are not to be considered exhaustive or limiting. The specific requirements for any given application may vary depending on the nature and scope of the proposed development, the site characteristics, and applicable regulations. Qualified professionals are expected to exercise professional judgment in determining the appropriate level of detail for their reports based on the specific circumstances of the project.

1.4 The RDCK may request additional information at any time if it is deemed necessary to make an informed decision on an application.

2 Objectives

2.1 To establish clear guidelines: To establish a consistent framework for the preparation and submission of high-quality professional reports and technical studies that support informed decision-making by the RDCK.

2.2 To facilitate efficient review and decision-making: To provide clear and concise guidance on report content, enabling timely decisions while allowing qualified professionals to exercise judgment in tailoring details to project-specific circumstances, site characteristics, and applicable regulations.

2.3 To promote professional integrity: To ensure that all reports are prepared by qualified professionals who adhere to ethical and professional standards.

3 Audience

3.1 This document is intended for:

3.2 **Qualified Professionals:** Qualified Professional means an applied scientist, technologist, or similar expert acting alone or together with another qualified professional, where:

3.2.1 The individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association.

3.2.2 The individual's area of expertise is recognized by the Regional District as one that is acceptable for the purpose of providing all or part of an

assessment report in respect of that development proposal; and the individual is acting within that individual's area of expertise.

3.3 RDCK Staff: Officials responsible for review and compliance.

4 Updates and Revisions

4.1 The STORe may be updated to reflect legislative changes, evolving best practices, or organizational needs. Users must confirm they are referencing the latest version before initiating any assessment.

5 Guidance and Support

5.1 Applicants and property owners are also advised to refer to this document.

5.2 Applicants should consult RDCK staff early in the process, ideally prior to their Qualified Professional completing any sort of comprehensive site evaluation, to ensure clarity on STORe requirements. Doing so will help to avoid delays. Staff are available to provide guidance to applicants and Qualified Professionals to ensure compliance and alignment with development regulations and bylaws.

I. GENERAL REQUIREMENTS FOR ALL PROFESSIONAL REPORTS AND TECHNICAL STUDIES

1 Applicability

1.1 Professional reports and technical studies may be required to support various development applications, including but not limited to Development Permits, Bylaw Amendments, Temporary Use Permits, Site-Specific Exemptions to the Floodplain Bylaw, Building Permits, and other applications as may be determined by the applicable RDCK policies and bylaws.

1.2 Each Electoral Area's Official Community Plan (OCP) includes policies, guidelines, and exemptions to assist applicants in determining whether a professional report or technical study is required.

1.3 Applicants are encouraged to confirm with RDCK Planning staff whether a professional report or technical study is necessary for their application before initiating the assessment process.

2 General Requirements

All professional reports and technical studies must adhere to the following general requirements:

2.1 The report must be prepared, signed, and sealed by a Qualified Professional.

2.2 The Qualified Professional shall include a signed statement acknowledging:

2.2.1 The report has been prepared specifically for the property owner.

2.2.2 The report has been prepared for a property owner to support a specific development application (referencing the application type).

2.2.3 Who funded the preparation of the report.

2.2.4 That the RDCK may rely upon the Qualified Professional's recommendations for development and use of the property is consistent with the relevant RDCK bylaws.

2.3 All sources of data used in the report, as well as a detailed description of the methods used to assess the site and proposal, shall be clearly documented.

2.4 Reports must demonstrate a coordinated effort among all professionals involved in the project. This collaborative approach is essential to ensure that all development activities are accurately captured and appropriately considered. Failure to adequately assess all development activities may result in the report being deemed incomplete or deficient and, consequently, subject to rejection.

2.5 Depending on the specific characteristics of a site, additional information beyond what is outlined in this STORe may be required for the RDCK to make an informed decision on an application. As a result, the size and complexity of reports may vary.

2.6 Complaints may be submitted to the relevant professional association in cases where a report submitted to the RDCK exhibits any of the following:

2.6.1 Noncompliance with standard professional requirements for practicing professionals;

2.6.2 Plagiarism;
2.6.3 A lack of competence in the relevant specialization(s); or
2.6.4 Evidence of unethical practice.

3 Submission Process

3.1 Professional reports and technical studies must be submitted as part of a complete development application. Submissions can be made online by e-mailing complete applications to plandept@rdck.bc.ca or in-person at the RDCK's offices in Nelson, Creston, or Nakusp, with a preference for digital copies unless hard copies are specifically requested.

3.2 All supporting documentation, including data sources, methodologies, maps, drawings, photographs, and technical analyses shall be submitted concurrently with the report.

3.3 Professional reports and technical studies deemed deficient will be rejected, resulting in processing delays.

4 Security Deposit (where applicable)

4.1 **Performance Guarantee:**

4.1.1 For development proposals that require restoration, remediation, monitoring, or maintenance, the applicant must provide a security deposit to guarantee the performance of the terms of the permit.

4.1.2 The security deposit will be calculated in accordance with *the Regional District of Central Kootenay Planning Procedures and Fees Bylaw No. 2457, 2015*, as amended from time to time.

4.2 **Itemized Cost Estimate:**

4.2.1 An itemized cost estimate must be submitted by the applicant to calculate the security deposit.

4.2.2 The RDCK recommends completing and submitting cost estimates after confirmation that the report sufficiently addresses the relevant policies and guidelines.

4.2.3 Cost estimates must be prepared in accordance with the "security deposit calculation procedure" in *Regional District of Central Kootenay Planning Procedures and Fees Bylaw No. 2457, 2015*.

4.2.4 Failure to submit a cost estimate consistent with the prescribed procedure may delay application processing.

5 Assessment Criteria

The RDCK will evaluate submissions based on:

5.1 Completeness: Inclusion of all mandatory components;

5.2 Accuracy: Precision of analyses and mapping;

5.3 Mitigation Measures: Practicality and alignment with established guidelines;

5.4 Compliance with Relevant Professional Standards and Principles: Integration of measures, suggestions, and standards as prescribed by relevant legal, professional, and policy guidelines;

5.5 Stakeholder Collaboration: Engagement with relevant local agencies, First Nations, planners, and engineers, among others, is encouraged.

6 Review and Decision Process

6.1 **Initial Review**

6.1.1 Incomplete professional reports and technical studies may result in an application not being accepted until all relevant information is included in the report/study.

6.1.2 Upon submission of a complete application, RDCK staff will review the report to ensure it includes all mandatory components and complies with the requirements outlined in the STORe.

6.1.3 Deficient reports will be rejected with noted deficiencies that must be addressed. The application will be put on hold until a revised report has been submitted that contains all relevant information needed for the RDCK to make a decision.

6.2 **Independent Review**

6.2.1 If required, the RDCK may commission an independent review to verify the findings and recommendations of the submitted professional reports and/or technical studies.

6.2.2 The applicant will be notified if additional clarifications or revisions are necessary based on the independent review.

6.3 **Final Decision**

6.3.1 The RDCK will assess professional report and technical studies and determine whether the development proposal meets the requirements.

6.3.2 The decision and any conditions of approval or reasons for rejection will be communicated to the applicant in writing.

7 Post-Approval Obligations

7.1 **Monitoring and Compliance**

7.1.1 Approved developments must adhere to all recommendations and mitigation measures outlined in the professional report or technical study.

7.1.2 The RDCK may require monitoring and/or periodic inspections to ensure compliance and identify potential areas requiring maintenance or further mitigation.

7.1.3 Reporting on the status of protection measures may be required for developments impacting environmentally sensitive areas.

7.2 **Security Deposit Release**

7.2.1 Security deposits will be held until the RDCK is satisfied that all restoration, remediation, monitoring, and/or maintenance requirements have been met.

7.2.2 A final inspection is generally required prior to the release of the security deposit to the applicant. However, in certain cases, a report prepared by a Qualified Professional may be deemed sufficient, and an on-site inspection by RDCK staff may not be necessary.

8 Amendments to Standard Terms of Reference (STORe)

8.1 The RDCK reserves the right to amend the STORe as required to align with changes in legislation, policies, processes, or best practices.

8.2 Applicants and Qualified Professionals are advised to confirm they are using the latest version of the STORe before commencing the preparation of any professional report or technical study.

II. RIPARIAN AREAS PROTECTION REGULATION (RAPR) AND BIOPHYSICAL ASSESSMENT

1 Introduction

This section establishes general standards for *Riparian Areas Protection Regulation* (*RAPR*) and Biophysical Assessment reports submitted in support of Development Permits (such as Riparian Protection Development Permit, Environmentally Sensitive Development Permit, Watercourse Development Permit), or Bylaw Amendment and Temporary Use Permit applications, where applicable, to the RDCK. *Riparian Areas Protection Regulation* (*RAPR*) and Biophysical Assessment reports are expected to include the information specified in this document, unless otherwise agreed upon by RDCK staff and the Qualified Professional before submission.

2 Professional Standards

2.1 The report must be prepared, signed, and sealed by a Qualified Environmental Professional (QEP) as defined under the *Riparian Areas Protection Regulation (RAPR)*.

2.2 The Qualified Environmental Professional (QEP) must have appropriate training and experience in conducting *Riparian Areas Protection Regulation (RAPR)* and biophysical assessments.

3 Submission Requirements

3.1 A *Riparian Areas Protection Regulation* and Biophysical Assessment report with all required elements as outlined in this document, that includes the following:

3.1.1 Detailed site description, including the location, existing riparian and upland habitat features, species at risk, and invasive species considerations.

3.1.2 Proposed development description, including construction activities, site infrastructure, and potential impacts on riparian areas and the Streamside Protection and Enhancement Area (SPEA).

3.1.3 Mitigation measures following the hierarchy of avoidance, minimization, restoration, and offsetting, aligned with the *RAPR Technical Assessment Manual* and relevant guidelines.

3.2 Supporting documentation may vary depending on the specific site or proposal and could include elements such as watercourse boundaries, Zones of Sensitivity (ZOS), SPEA, restoration areas, and vegetation replacement plans.

4 Assessment Report Content Requirements

Refer to Sections 1.2.1, 1.2.2, 1.2.3, 1.2.5, 1.2.6, 1.3, 2, and 3 of the *RAPR Technical Assessment Manual* for additional details.

All *RAPR* And Biophysical Assessment reports are required to include the following information:

4.1 **Property Description**

4.1.1 Name of the property owner(s), legal description, street address, and geographical coordinates.

4.2 **Habitat Description**

4.2.1 Detailed description of existing habitat and fisheries resource values, including but not limited to:

4.2.1.1 Fish species and fish habitat values (e.g., potential spawning, rearing, overwintering, or migration areas).
4.2.1.2 Native riparian vegetation and habitat features providing potential habitat value (e.g., shade, cover, substrate, boulders, rocks, bedrock, and leaf litter).
4.2.1.3 Upland habitat features that support landscape connectivity for other wildlife.
4.2.1.4 Relevant occurrences of species at risk within the application area.
4.2.1.5 Invasive species and relevant management considerations.

4.2.2 Description of Federally and Provincially Listed Species at Risk.
4.2.3 Identification of Zones of Sensitivity (ZOS).
4.2.4 Determination of the Streamside Protection and Enhancement Area (SPEA).
4.2.5 Description of the existing state of the site, including the riparian assessment area and SPEA, with details on:

4.2.5.1 Previous disturbances in the riparian assessment area and SPEA, including their impacts on habitat values and fisheries resources.
4.2.5.2 Presence of invasive species.

4.2.6 Photographs of current site conditions, illustrating the riparian area, significant fish habitat features, notable vegetation, the proposed development area, and the surrounding environment.
4.2.7 Potential for Archaeological Resources.

4.3 **Reference to Previous Studies (if any)**

4.3.1 Summary of past riparian, biophysical, hydrological, or flood hazard studies relevant to the property.
4.3.2 Key findings that inform mitigation, setback, or elevation recommendations.

4.4 **Proposed Development**

4.4.1 Description of proposed development activities, including but not limited to:

4.4.1.1 Construction activities and methods that may impact the riparian assessment area and SPEA (e.g., site grading and blasting).
4.4.1.2 Structures (e.g., retaining walls).
4.4.1.3 Site infrastructure (e.g., water lines, septic fields, and driveways).

4.4.1.4 Landscaped areas, including non-permeable surfaces that may affect riparian function, fish, or fish habitat.
4.4.1.5 Off-site developments that may impact the site.

4.5 **Assessment**

4.5.1 Summary of any pre-existing disturbances to the site and whether they were covered under a previous approval (e.g. Development Permit, Provincial Authorization, etc.).
4.5.2 Summary of potential impacts on riparian and wildlife habitat values and fisheries resources as a result of the proposed development as well as pre-existing site disturbances (where relevant).
4.5.3 Potential impacts of off-site developments on the riparian area.
4.5.4 Methodologies and assumptions used in assessment.

4.6 **Mitigation Measures and QEP Recommendations**

4.6.1 Description of mitigation strategies, following the hierarchy:

4.6.1.1 Avoidance of environmental impacts and associated components.
4.6.1.2 Minimization of unavoidable impacts.
4.6.1.3 Restoration of on-site environmental values.
4.6.1.4 Offsetting for residual impacts that cannot be minimized.

4.6.2 Where avoidance is not possible, scientific rationale for alternative mitigation approaches. Rationale should align with:

4.6.2.1 The Shoreline Guidance Document: Kootenay Lake.
4.6.2.2 British Columbia's Environmental Mitigation Policy and Procedures.
4.6.2.3 Fisheries and Oceans Canada's Policy for Applying Measures to Offset Adverse Effects on Fish and Fish Habitat under the Fisheries Act, where applicable.

4.6.3 Recommended measures to protect the SPEA from potential hazards, as described in Section 16 of the RAPR and Sections 1.3.1 and 3.7 of the *RAPR Technical Assessment Manual.*
4.6.4 Recommended measures to address previous site disturbances, where relevant.
4.6.5 Additional details on mitigation measures, including:

4.6.5.1 Proposed areas of disturbance.
4.6.5.2 Strategies to mitigate potential impacts to species at risk.
4.6.5.3 Limits of disturbance (e.g., silt fencing, snow fencing, construction timing, etc.).
4.6.5.4 Proposed restoration areas, including invasive species management.

4.6.5.5 Environmental monitoring for high-risk activities identified by the QEP.

4.7 **Construction Management Plan**

4.7.1 Strategies for managing riparian areas during construction, including (where applicable):

4.7.1.1 Sediment and erosion control measures.
4.7.1.2 Temporary flood proofing techniques.
4.7.1.3 Riparian management considerations.

4.7.2 Potential impacts to neighboring properties and safe site access throughout all project phases.

4.8 **Regulatory Review**

4.8.1 Ensure compliance with all relevant local government bylaws, Provincial and Federal Acts, regulations, and best practices.

4.9 **Additional Considerations**

4.9.1 Rehabilitation and Revegetation Plan, if applicable, including:

4.9.1.1 Locations and sizes (m^2) of areas to be disturbed and rehabilitated/revegetated.
4.9.1.2 Compensation/vegetation replacement ratios (typically 2:1 to 8:1, except in extraordinary cases), justified by the QEP based on:

4.9.1.2.1 The value and significance of pre-disturbance habitat.
4.9.1.2.2 The potential impacts of disturbance.
4.9.1.2.3 The sizes, species, and percentage of canopy cover of removed vegetation.
4.9.1.2.4 The Province of BC's *Tree Replacement Criteria*.
4.9.1.2.5 The time required for habitat reestablishment.
4.9.1.2.6 Risks of establishment and failure.

4.9.1.3 Recommendations for environmental monitoring during development.
4.9.1.4 Anticipated post-development site conditions.
4.9.1.5 Consistency of mitigation measures with applicable Species at Risk Management Plans and Best Practices.

5 Site Plan Requirements

5.1 A site plan should accompany all report submissions, as described in Section 1.2.4 of the *Riparian Areas Protection Regulation (RAPR) Technical Assessment Manual.* The level of detail required will depend on the complexity and potential impact of the proposed development. In some cases, multiple maps may be necessary to illustrate all relevant information effectively.

5.2 The information depicted on the site plan should be elaborated upon in the report to ensure clarity while avoiding excessive details on the site plan itself.

5.3 Site plans should be clear, concise, and well-organized.

Site Plan should illustrate the following key information:

5.4 **Site Characteristics**

5.4.1 Parcel boundaries.
5.4.2 Existing watercourses on and adjacent to the property.
5.4.3 The natural boundary of watercourses.
5.4.4 The width of Zones of Sensitivity.
5.4.5 The width of the SPEA.
5.4.6 Natural features that, in the professional opinion of the QEP, are significant.
5.4.7 Areas of pre-existing site disturbance.
5.4.8 Relevant site infrastructure (e.g. water lines, septic fields, and driveways).

5.5 **Development Proposal**

5.5.1 The location of proposed structures.
5.5.2 Areas where development activities are proposed, including soil disturbance and vegetation removal.
5.5.3 For sloped lots, site plans should reflect the site grading plan, showing cut and fill slopes and how they relate to the mitigation measures outlined below.

5.6 **Mitigation Measures**

5.6.1 Areas that will remain undeveloped, including those protected from soil disturbance and vegetation removal.
5.6.2 Limits of disturbance, such as silt fencing, snow fencing, or construction timing considerations.
5.6.3 Areas designated for restoration, remediation, or ongoing maintenance.

5.7 **Additional Considerations**

5.7.1 A planting plan is optional but recommended. Instead of including detailed planting information on the site plan, a separate table in the report may be used, provided it clearly correlates with designated areas on the site plan. For example, if a “restoration area" is shown on the site plan, the

report should explicitly state that the proposed plantings in Table [XX] correspond to that area.

III. FLOOD HAZARD ASSESSMENT

1 Introduction

This section establishes general standards for Flood Hazard Assessment reports submitted in support of Site-Specific Floodplain Exemption, Temporary Use Permit, or Bylaw Amendment applications, where applicable, to the RDCK. Flood Hazard Assessment reports are expected to include the information specified in this document, unless otherwise agreed upon by RDCK staff and the Qualified Professional before submission.

2 Professional Standards

2.1 The report must be prepared, signed, and sealed by a Professional Engineer or Professional Geoscientist, as defined under the *Professional Governance Act*.

2.2 The Professional Engineer or Professional Geoscientist must specialize in flood hazard assessments, as outlined in the Engineers and Geoscientists of British Columbia's (EGBC) *Legislated Flood Assessments in a Changing Climate in BC* Professional Practice Guidelines.

3 Submission Requirements

3.1 A Flood Hazard Assessment report must include the following, in addition to all required elements as outlined in this document:

3.1.1 Property description, site location map, and detailed site plan showing natural boundaries, proposed structures, and property boundaries.

3.1.2 An assessment of flood and debris flow hazards, including magnitude, frequency, and potential impacts, along with proposed mitigation measures.

3.1.3 Recommendations for safe building areas, setback distances, and necessary measures to maintain the safe use of the property.

3.2 Supporting documentation may vary depending on the specific site or proposal and could include elements such as maps and diagrams illustrating flood construction levels (FCLs), potential overland flow paths, proposed flood protection works, technical analyses, and historical flood data.

4 Assessment Report Content Requirements

All Flood Hazard Assessment reports are required to include the following information:

4.1 **Property Description**

4.1.1 Name of the property owner(s), legal description, street address, and geographical coordinates.

4.2 **Topographic and Geomorphological Description**

4.2.1 Description of the site's topography, slope stability, and geomorphological features, including:

4.2.1.1 Flood paths, erosion zones, and areas subject to or likely to be subject to flood-related geohazards

4.2.1.2 Identification of historical floodplain boundaries, flood-prone areas, and natural drainage patterns.

4.2.1.3 Incorporation of historical and current photographs where available.

4.2.1.4 A scaled topographic map delineating the watershed area, alluvial fans, and watercourse channels, if available.

4.2.2 Photographs of current site conditions, illustrating the floodplain and areas that may be subject to flooding and flood-related geohazards, erosion-prone areas, and any notable landform changes, the proposed development area, and the surrounding environment.

4.3 **Reference to Previous Studies (if any)**

4.3.1 Summary of past geotechnical, hydrological, or flood hazard studies relevant to the property.

4.3.2 Key findings that inform mitigation, setback, or elevation recommendations.

4.4 **Proposed Development**

4.4.1 Description of Proposed Development Activities, including but not limited to:

4.4.1.1 Construction activities and methods that may impact the assessment area (e.g., site grading, vegetation clearing, and blasting).

4.4.1.2 Structures (e.g., retaining walls).

4.4.1.3 Site infrastructure (e.g., water lines, septic fields, and driveways).

4.4.1.4 Landscaped areas, including non-permeable surfaces.

4.4.1.5 Off-site developments that may impact the site.

4.4.2 Setbacks should not be reduced unless a serious hardship exists, and no other reasonable option is available. A valid hardship is recognized where the physical characteristics of the lot (for example, exposed bedrock, steep slope, presence of a watercourse, etc.) and the size of the lot are such that building development proposals, while remaining consistent with land use zoning bylaws, cannot reasonably proceed unless the setback requirements are reduced.

4.4.3 Evidence of compliance with policy and assurance of property safety.

4.5 **Assessment**

4.5.1 Identification of flood hazards, including:

4.5.1.1 Types, magnitudes, and recurrence intervals (e.g., 200-year flood event).

4.5.1.2 Potential impacts on the site, surrounding infrastructure, and neighboring properties.

4.5.1.3 Depths, velocities, and pathways of potential floods or debris flows.

4.5.2 Methodologies and assumptions used in hazard analysis.

4.5.3 Assessment of potential debris flow hazards, including sedimentation risks and impacts on drainage systems.

4.5.4 Summary of Potential Impacts on the assessment area.

4.5.5 Potential Impacts of Off-Site Developments on the assessment area.

4.6 **Mitigation Measures and Qualified Professional Recommendations**

4.6.1 Recommended measures to address identified hazards and ensure site safety, including:

4.6.1.1 Minimum flood construction levels (FCLs).

4.6.1.2 Structural and non-structural/bio-engineered mitigation options such as engineered retaining walls, rip rap, vegetative buffer areas, etc.

4.6.1.2.1 Preference will be given to non-structural/bio-engineered solutions in order to minimize disturbance to the natural environment.

4.6.1.3 Maintenance plans for mitigation structures, ensuring long-term effectiveness.

4.6.1.4 Assessment of mitigation works and their potential impact on neighboring properties.

4.6.1.5 Recommendations for flood proofing measures, including foundation designs and drainage considerations.

4.7 **Construction Management Plan**

4.7.1 Strategies for managing flood-related hazards during construction, including:

4.7.1.1 Sediment and erosion control measures.

4.7.1.2 Temporary flood proofing techniques.

4.7.1.3 Drainage management considerations.

4.7.2 Potential impacts on neighboring properties and safe site access throughout all project phases.

4.8 **Regulatory Review**

4.8.1 Ensure compliance with all relevant local government bylaws, Provincial and Federal Acts, regulations, EGBC Professional Practice Guidelines, and engineering best practices.

4.9 **Additional Considerations**

4.9.1 Site vulnerability assessment using floodplain maps and historical records.
4.9.2 Recommendations for structural elements such as foundations and retaining walls based on soil and slope conditions.
4.9.3 Requirements for ancillary structures, including erosion control, floodproofing, and site coverage limits.
4.9.4 Identification of unique site features (e.g., abandoned channels, meandering streams) that could influence hazards or mitigation strategies.
4.9.5 Consideration of future changes in watershed conditions and long-term flood risk management strategies.

4.10 **Final Statement on Site Safety and Quality Assurance**

4.10.1 A Flood Assurance Statement signed and sealed by the Qualified Professional, confirming adherence to applicable guidelines

5 Site Plan Requirements

5.1 A site plan should accompany all Flood Hazard Assessment submissions. The level of detail required will depend on the complexity and potential flood hazard risk of the proposed development. In some cases, multiple maps may be necessary to illustrate all relevant information effectively.

5.2 The information depicted on the site plan should be further detailed in the Flood Hazard Assessment report to ensure clarity while avoiding excessive details on the site plan itself.

5.3 Site plans should be clear, concise, and well-organized.

Site Plan should illustrate the following key information:

5.4 **Site Characteristics**

5.4.1 Parcel boundaries.
5.4.2 Existing watercourses, floodplains, and areas subject to flood hazards, as identified in RDCK floodplain maps.
5.4.3 The natural boundary of water bodies, including lakes, rivers, and creeks.
5.4.4 Flood Construction Levels (FCL), including base elevation and required freeboard adjustments.

5.4.4.1 Areas subject to or likely subject to flood and flood-related geohazards

5.4.5 Natural features deemed significant in the professional opinion of the Qualified Professional, such as unstable slopes or sediment transport pathways.

5.5 **Development Proposal**

5.5.1 The location of proposed structures, roads, site infrastructure (e.g., water lines, septic fields, etc.) and access routes.

5.5.2 Areas that have been or are proposed to be subject to development activities, including grading, soil disturbance, and vegetation removal.

5.5.3 Floodproofing measures, such as:

5.5.3.1 Minimum building elevations relative to FCL.

5.5.3.2 Foundation types designed to withstand flood forces.

5.5.4 Drainage and stormwater management features, including culverts, swales, and retention ponds.

5.5.5 For sloped lots, site plans should reflect the grading plan, showing the locations of all cut and fill slopes and their impact on mitigation measures.

5.5.6 Emergency access and egress routes.

5.6 **Mitigation Measures**

5.6.1 Areas that will remain free of development, including soil disturbance and vegetation removal.

5.6.2 Limits of disturbance, such as silt fencing, erosion control measures, and construction timing considerations.

5.6.3 Areas that will be subject to restoration, remediation, or maintenance.

5.6.4 Areas designated for flood hazard mitigation, such as setback buffers, structural measures and non-structural measures.

IV. GEOTECHNICAL REPORT

1 Introduction

This section establishes general standards for Geotechnical reports submitted in support of Building Permits, Temporary Use Permit or Bylaw Amendment applications, where applicable, to the RDCK. Geotechnical reports are expected to include the information specified in this document, unless otherwise agreed upon by RDCK staff and the Qualified Professional before submission.

2 Professional Standards

2.1 The report must be prepared, signed, and sealed by a Professional Engineer or Professional Geoscientist, as defined under the *Professional Governance Act*.

2.2 The Professional Engineer or Professional Geoscientist must specialize in geotechnical engineering, as outlined by the Engineers and Geoscientists of British Columbia's (EGBC) professional practice guidelines and practice advisories.

3 Submission Requirements

3.1 A Geotechnical report with all required elements as outlined in this document, that includes the following:

3.1.1 Maps and site plans illustrating the property boundaries, potential hazard zones, slope stability areas, and proposed development locations.

3.1.2 An assessment of geological and geomorphological conditions.

3.1.3 A Risk Mitigation Plan with specific recommendations for slope stabilization, and erosion control.

3.2 Supporting documentation may vary depending on the specific site or proposal and could include elements such as cross-sectional diagrams, soil test results, and technical analyses.

3.3 For issuance of a Building Permit: Letters of Assurance schedule B, as required per Subsection 2.2.7 of Division C of the BC Building Code 2024, must be submitted for the structure and applicable drawings to confirm the property's safety for the intended use. Additionally, a Schedule C-B must be submitted to the Building Department by the Professional Engineer prior to occupancy of the structure.

4 Assessment Report Content Requirements

All Geotechnical reports are required to include the following information:

4.1 **Property Description**

4.1.1 Name of the property owner(s), legal description, street address, and geographical coordinates.

4.2 **Topographic and Geomorphological Description**

4.2.1 Description of the site's topography, slope stability, and geomorphological characteristics, including:

4.2.1.1 Natural hazards affecting the site, such as slope instability, erosion, groundwater seepage, and subsidence.

4.2.1.2 The presence of bedrock, soil composition, and surficial deposits.

4.2.2 Photographs of current site conditions, illustrating slope conditions, and potential geotechnical hazards, the proposed development area, and the surrounding environment.

4.3 **Reference to Previous Studies (if any)**

4.3.1 Summary of past geotechnical assessments in the vicinity.

4.3.2 Key findings that inform mitigation, foundation design, or site suitability for development.

4.4 **Proposed Development**

4.4.1 Description of proposed development activities, including but not limited to:

4.4.1.1 Construction activities and methods that may impact the assessment area (e.g., site grading, vegetation clearing, and blasting).

4.4.1.2 Structures (e.g., retaining walls).

4.4.1.3 Site infrastructure (e.g., water lines, septic fields, and driveways).

4.4.1.4 Landscaped areas, including non-permeable surfaces.

4.4.1.5 Off-site developments that may impact the site.

4.5 **Assessment**

4.5.1 Slope stability issues, including landslide risk and soil shear strength.

4.5.2 Erosion susceptibility and groundwater-related risks, such as seepage or seasonal fluctuations.

4.5.3 Seismic hazards and liquefaction potential.

4.5.4 Potential Impacts of off-site developments on the assessment area.

4.5.5 Methodologies and assumptions used in hazard analysis, supported by borehole logs, soil testing data, and numerical modeling, if applicable.

4.5.6 Summary of potential impacts on the assessment area.

4.6 **Mitigation Measures and Qualified Professional Recommendations**

4.6.1 Recommended measures to address identified hazards and ensure site safety, including:

4.6.1.1 Retaining structures, engineered slopes, and erosion control measures.

4.6.1.2 Soil stabilization techniques, such as soil nailing, geotextiles, or vegetative reinforcement.

4.6.1.3 Drainage management to reduce water accumulation and seepage risks.
4.6.1.4 Maintenance plans for any mitigation structures to ensure long-term effectiveness.
4.6.1.5 Assessment of mitigation works and their potential impact on neighboring properties.

4.7 **Construction Management Plan**

4.7.1 Strategies for managing geotechnical hazards during construction, including:

4.7.1.1 Temporary slope stabilization measures.
4.7.1.2 Erosion and sediment control plans.
4.7.1.3 Groundwater management considerations.

4.7.2 Potential impacts on neighboring properties and safe site access throughout all project phases.

4.8 **Regulatory Review**

4.8.1 Ensure compliance with all relevant local government bylaws, Provincial and Federal Acts, regulations, EGBC Professional Practice Guidelines, and engineering best practices.

4.9 **Additional Considerations**

4.9.1 Recommendations for structural elements such as:

4.9.1.1 Foundation design, including suitability for deep vs. shallow foundations.
4.9.1.2 Retaining walls and cut/fill slopes, including required reinforcement.
4.9.1.3 Drainage solutions to mitigate water-related risks.
4.9.1.4 Specific considerations for seismic design, including soil liquefaction analysis and foundation reinforcement recommendations.

4.9.2 Recommendations for long-term monitoring of geotechnical stability, including:

4.9.2.1 Instrumentation (e.g., inclinometers, piezometers) for slope or groundwater movement.
4.9.2.2 Periodic geotechnical inspections.
4.9.2.3 Adaptive management strategies if site conditions change over time.

4.10 **Final Statement on Site Safety and Quality Assurance**

4.10.1 A Flood Assurance Statement signed and sealed by the Qualified Professional, confirming adherence to applicable guidelines

5 Site Plan Requirements

5.1 A site plan should accompany all Geotechnical reports. The level of detail required will depend on the complexity of the site, the potential geotechnical risks, and the proposed development. In some cases, multiple maps may be necessary to illustrate all relevant information effectively.

5.2 The information depicted on the site plan should be further detailed in the Geotechnical report to ensure clarity while avoiding excessive details on the site plan itself.

5.3 Site plans should be clear, concise, and well-organized.

Site Plan should illustrate the following key information:

5.4 **Site Characteristics**

5.4.1 Parcel boundaries.

5.4.2 Existing topographic features, including:

5.4.2.1 Slope contours at appropriate intervals.

5.4.2.2 Bedrock outcrops, cliffs, and slope transitions.

5.4.2.3 Drainage routes, water bodies, and seasonal/permanent wet areas.

5.4.3 Areas subject to slope instability, erosion, or subsurface concerns (e.g., groundwater seepage zones).

5.4.4 Known geotechnical hazards may include, but are not limited to, flooding, mudflows, debris flows, debris torrents, erosion, landslides, rockfall, ground subsidence, and avalanche.

5.4.5 Natural features deemed significant in the professional opinion of the Qualified Professional.

5.5 **Development Proposal**

5.5.1 The location of proposed structures, roads, site infrastructure (e.g., water lines, septic field, etc.) and access routes.

5.5.2 Areas that have been or are proposed to be subject to excavation, grading, soil disturbance, or vegetation removal.

5.5.3 Proposed site grading and post-development contours.

5.5.4 Foundation types and setback distances from identified hazard areas.

5.5.5 For sloped lots, site plans should reflect the grading plan, showing the locations of all cut and fill slopes and their impact on mitigation measures.

5.5.6 Drainage and stormwater management features, including culverts, swales, and retention ponds.

5.6 **Mitigation Measures**

5.6.1 Areas that will remain free of development, including soil disturbance and vegetation removal.

5.6.2 Limits of disturbance, such as erosion control measures, temporary shoring, or slope stabilization works.

5.6.3 Areas that will be subject to retaining walls, engineered slope stabilization, or other protective measures.

5.6.4 Restoration or remediation zones, including revegetation plans where applicable.

5.6.5 Recommendations for ongoing monitoring and maintenance of geotechnical mitigation structures.

V. WILDFIRE HAZARD ASSESSMENT

1 Introduction

This section establishes general standards for Wildfire Hazard Assessment reports submitted in support of Development Permits (such as Wildfire Development Permit) or Bylaw Amendment applications, where applicable, to the RDCK. Wildfire Hazard Assessment reports are expected to include the information specified in this document, unless otherwise agreed upon by RDCK staff and the Qualified Professional before submission.

2 Professional Standards

2.1 The report must be prepared, signed, and sealed by a Professional Forester, as defined under the *Professional Governance Act*.

2.2 The Professional Forester must specialize in wildfire risk and fuel hazard assessments and fuel management.

3 Submission Requirements

3.1 A Wildfire Hazard Assessment report with all required elements as outlined in this document, that includes the following:

3.1.1 Maps and site plans that illustrate anticipated building envelope areas, home ignition zones, firebreaks, and emergency access points.

3.1.2 A Fire Mitigation Plan with specific recommendations for fire risk reduction.

3.2 Supporting documentation may vary depending on the specific site or proposal and could include elements such as images, cross-sectional diagrams, and technical analyses.

4 Assessment Report Content Requirements

All Wildfire Hazard Assessment reports are required to include the following information:

4.1 **Property Description**

4.1.1 Name of the property owner(s), legal description, street address, and geographical coordinates.

4.1.2 A location map showing property boundaries, regional context, topography, vegetation cover, and proximity to forested areas and identified wildfire hazard zones.

4.2 **Topographic and Vegetation Description**

4.2.1 Description of the site's topography, including:

4.2.1.1 Slope gradients and aspect orientation.

4.2.1.2 Elevation influences on wildfire behavior.

4.2.2 Identification of vegetation types, density, and distribution, including:

4.2.2.1 Ground, ladder, and crown fuels.

4.2.2.2 Fire-prone vegetation species such as juniper, cedar, and coniferous trees.

4.2.3 Photographs of current site conditions, illustrating vegetation hazards, slope conditions, and proximity to forested areas, the proposed development area(s), and the surrounding environment.

4.3 **Reference to Previous Studies (if any)**

4.3.1 Summary of any relevant past wildfire hazard assessments in the vicinity.

4.3.2 Refer to the relevant Community Wildfire Resiliency Plan, if available, for information on wildfire preparedness, identified risks, risk reduction strategies, and recommended mitigation measures.

4.4 **Proposed Development**

4.4.1 Description of Proposed Development Activities, including but not limited to:

4.4.1.1 Construction activities and methods that may influence wildfire exposure (e.g., vegetation removal, placement of combustible materials etc.).

4.4.1.2 Structures (e.g., primary dwellings, accessory buildings, decks, and fences), including construction materials relevant to wildfire resilience.

4.4.1.3 Site infrastructure (e.g., driveways, emergency access routes, water storage or hydrant systems for fire suppression).

4.4.1.4 Landscaped areas, including non-combustible zones, defensible space, and use of fire-resistant plant species.

4.4.1.5 Off-site developments or conditions that may affect wildfire risk to the subject property (e.g., adjacent fuel loads, topography, or interface with forested lands).

4.5 **Assessment**

4.5.1 Identification of wildfire risks, including:

4.5.1.1 Fuel hazard classifications based on proximity and density.

4.5.1.2 Wildfire behavior in varying slope and weather conditions.

4.5.1.3 Historical fire occurrences in the region.

4.5.2 Assessment of the Home Ignition Zone following *FireSmart BC* standards

4.5.3 Consideration of climate change impacts, including increased drought conditions and shifting fire seasons.

4.5.4 Potential impacts of off-site developments on the assessment area.

4.5.5 Methodologies and assumptions used in the assessment.

4.6 **Mitigation Measures and Qualified Professional Recommendations**

4.6.1 Recommended mitigation measures, including:

4.6.1.1 Fuel management strategies (e.g., removal of hazardous vegetation, maintenance of defensible spaces).
4.6.1.2 Firebreak design and spacing recommendations for reducing fire spread.
4.6.1.3 Construction materials for roofing, siding, and decks, where applicable.

4.6.2 Long-term implementation recommendations for *FireSmart* principles, including:

4.6.2.1 Fire-resistant landscaping considerations.
4.6.2.2 Infrastructure design to reduce ignition risk.
4.6.2.3 Structural resilience enhancements (e.g., non-combustible fencing, screened vents, and enclosed eaves).

4.6.3 Maintenance plans for mitigation strategies to ensure long-term effectiveness.

4.7 **Regulatory Review**

4.7.1 Ensure compliance with all relevant local government bylaws, Provincial and Federal Acts, regulations, *FireSmart BC* principles, and best practices.

4.8 **Additional Considerations**

4.8.1 Site-Specific Design Considerations:

4.8.1.1 Recommendations for wildfire-resistant building design, including building materials and vegetation.
4.8.1.2 Specific setbacks and spacing requirements for developments on sloped terrain, where fire spreads more rapidly.
4.8.1.3 Post-Construction Monitoring and Maintenance

4.8.2 Recommendations for ongoing wildfire risk monitoring, including:

4.8.2.1 Vegetation management and hazard reassessment.
4.8.2.2 Community wildfire mitigation programs.
4.8.2.3 Adaptive fire protection strategies based on changing climate conditions.

4.9 **Final Statement on Site Safety and Quality Assurance**

4.9.1 A statement from the Qualified Professional certifying that the proposed development is "safe for the intended use" and referencing necessary mitigation measures.

4.9.2 A Quality Assurance Statement signed and sealed by the Qualified Professional, confirming adherence to applicable guidelines.

5 Site Plan Requirements

5.1 A site plan may accompany Wildfire Hazard Assessment submissions, where that information is necessary to make a decision on an application. The level of detail can vary depending on the site's wildfire exposure, surrounding vegetation, and proposed development activities. In some cases, multiple maps may be helpful to illustrate all relevant information effectively.

Site plans may illustrate the following key information:

5.2 **Site Characteristics**

5.2.1 Parcel boundaries.

5.2.2 Existing topographic features, including:

5.2.2.1 Slope gradients, aspect orientation, and elevation influencing wildfire behavior.

5.2.2.2 Areas with natural firebreaks (e.g., water bodies, roads, open spaces).

5.2.3 Vegetation characteristics, including:

5.2.3.1 Classification of fuel types (e.g., ground, ladder, and crown fuels).

5.2.3.2 Density and distribution of flammable vegetation within the site and adjacent areas.

5.2.4 Proximity to forested areas, grasslands, and other wildfire-prone landscapes.

5.2.5 Home Ignition Zone (HIZ) considerations, delineating Immediate Zone, Intermediate Zone and Extended Zone.

5.2.6 Natural features deemed significant in the professional opinion of the Qualified Professional.

5.3 **Development Proposal**

5.3.1 The location of proposed structures, roads, and access routes.

5.3.2 Areas that have been or are proposed to be subject to development activities, including vegetation removal, grading, and soil disturbance.

5.3.2.1 Defensible space zones around structures, ensuring compliance with *FireSmart BC* guidelines.

5.3.2.2 Proposed firebreaks or buffer zones to reduce wildfire risk.

5.3.3 Infrastructure elements, including:

5.3.3.1 Emergency access and egress routes.

5.3.3.2 Fire hydrant locations or alternative water sources for firefighting.

5.3.3.3 Locations for fuel storage, ensuring compliance with wildfire safety standards.

5.3.4 For sloped lots, site plans may also include the grading plan, showing the relationship between terrain modifications and fire mitigation strategies.

5.4 **Mitigation Measures**

5.4.1 Areas that will remain free of development, including those designated for wildfire risk reduction.

5.4.2 Limits of disturbance, such as prescribed fire-resistant landscaping, vegetation management zones, and construction staging areas.

5.4.3 Fire suppression infrastructure, including hydrant placements, emergency water storage, or designated fire access points, where applicable.

5.4.4 Areas designated for fuel management, wildfire buffer zones, or controlled thinning operations.

5.4.5 Recommendations for ongoing monitoring and maintenance of wildfire mitigation measures.

VI. HYDROGEOLOGICAL ASSESSMENT

1 Introduction

This section establishes general standards for Hydrogeological Assessment reports submitted in support of Aquifer Protection Development Permit, Temporary Use Permit, or Bylaw Amendment applications, where applicable, to the RDCK. Hydrogeological Assessment reports are expected to include the information specified in this document, unless otherwise agreed upon by RDCK staff and the Qualified Professional before submission.

2 Professional Standards

2.1 The report must be prepared, signed, and sealed by a Professional Engineer or Geoscientist, as defined under the Professional Governance Act.

2.2 The Professional Engineer or Professional Geoscientist must specialize in hydrogeological assessments, as outlined by the Engineers and Geoscientists of British Columbia's (EGBC) professional practice guidelines and practice advisories.

3 Submission Requirements

3.1 A Hydrogeological Assessment report with all required elements as outlined in this document, including but not necessarily limited to:

3.1.1 Maps and site plans that illustrate aquifer boundaries, capture zones, recharge areas, and potential contamination sources.

3.1.2 A Groundwater Protection Plan with specific recommendations for risk mitigation and contingency measures.

3.2 Supporting documentation may vary depending on the specific site or proposal and could include elements such as images, cross-sectional diagrams, borehole logs, and technical analyses.

4 Assessment Report Content Requirements

All Hydrogeological Assessment reports are required to include the following information:

4.1 **Site Description**

4.1.1 Name of the property owner(s), legal description, street address, and geographical coordinates.

4.1.2 A location map showing property boundaries, regional context, and proximity to aquifers or recharge zones.

4.2 **Aquifer and Hydrogeological Description**

4.2.1 A comprehensive description of aquifer type, recharge zones, hydraulic conductivity, and interactions between groundwater and surface water.

4.2.2 Description of site-specific hydrogeological features, including well yields, groundwater depth fluctuations, and potential influences from nearby developments.

4.3 **Reference to Previous Studies (if any)**

4.3.1 Summary of any relevant findings from past hydrogeological studies, well reports, or water quality assessments in the vicinity.

4.3.2 Key findings that inform the understanding of site conditions and any mitigation measures.

4.4 **Proposed Development**

4.4.1 Description of proposed development activities, including but not limited to:

4.4.1.1 Construction activities and methods that may impact the assessment area (e.g., site grading, vegetation clearing, and blasting).

4.4.1.2 Structures (e.g., retaining walls).

4.4.1.3 Site infrastructure (e.g., water lines, septic fields, and driveways).

4.4.1.4 Landscaped areas, including non-permeable surfaces.

4.4.1.5 Off-site developments that may impact the site.

4.5 **Assessment**

4.5.1 Analysis of groundwater flow direction, capture zones, and potential impacts on adjacent developments.

4.5.2 Seasonal and long-term variations in groundwater levels and quality.

4.5.3 Identification of contamination risks such as underground storage tanks, abandoned wells, septic systems, and pipelines.

4.5.4 Potential for groundwater contamination due to land use changes, excavation, or development activities.

4.5.5 Assessment of groundwater conditions affecting slope stability, including increased recharge due to development.

4.5.6 Analysis of soil permeability and infiltration potential.

4.5.7 In case of potential drought concerns, analysis of potential long-term impacts of climate change including variations in recharge rates, increased drought risks, and groundwater availability.

4.5.8 Predicted trends in water table fluctuations and their effects on the development.

4.5.9 Methodologies and assumptions used in the assessment.

4.6 **Mitigation Measures and Qualified Professional Recommendations**

4.6.1 Best management practices for erosion control, spill response, and hazardous material handling.

4.6.2 Strategies for ensuring sustainable groundwater use, including water conservation measures, where applicable.

4.6.3 Identification of significant drinking water threats, wellhead protection areas, and aquifer vulnerability zones.

4.6.4 Recommendations for minimizing risks to public water supplies and private wells.
4.6.5 Assessment of potential impacts on nearby wells and ecosystems, including minimum drawdown thresholds.
4.6.6 Long-term projections for aquifer sustainability.
4.6.7 Analysis of potential groundwater mounding and mitigation recommendations.

4.7 **Construction Management Plan (if applicable)**

4.7.1 Strategies for preventing ground water pollution during construction
4.7.2 Potential impacts on groundwater quality throughout all project phases.

4.8 **Regulatory Review**

4.8.1 Ensure compliance with all relevant local government bylaws, Provincial and Federal Acts, regulations, EGBC Professional Practice Guidelines, and best practices.

4.9 **Additional Considerations (if applicable)**

4.9.1 Monitoring Plan**:**

4.9.1.1 Establishment of a monitoring framework to track groundwater levels, contamination risks, and mitigation measure effectiveness.
4.9.1.2 Timeline, responsible parties, and specific indicators for assessing site conditions post-development.

4.9.2 Groundwater Quality Assessment:

4.9.2.1 The Qualified Professional must provide a statement confirming that all water quality results are consistent with relevant provincial and federal drinking water standards. Analyses must include, but are not limited to:

4.9.2.1.1 Physical Parameters: pH, temperature, electrical conductivity, turbidity.
4.9.2.1.2 Chemical Parameters: Nitrate, nitrite, ammonia, chloride, sulfate, bicarbonate, fluoride.
4.9.2.1.3 Metals and Trace Elements: Arsenic, lead, cadmium, mercury, iron, manganese.
4.9.2.1.4 Microbiological Parameters: Total coliforms, fecal coliforms, E. coli.
4.9.2.1.5 Organic Contaminants: Volatile organic compounds (VOCs), pesticides, hydrocarbons.
4.9.2.1.6 Site-Specific Parameters: Additional testing based on regulatory requirements and identified contamination risks.

4.9.3 Long-Term Environmental Considerations:

4.9.3.1 Analysis of anticipated groundwater conditions post-development, including potential alterations to flow patterns and recharge rates.

4.9.3.2 Recommendations for sustainable water use and conservation in response to projected long-term environmental changes.

4.10 **Final Statement on Site Safety and Quality Assurance**

4.10.1 A Quality Assurance Statement signed and sealed by the Qualified Professional, confirming adherence to applicable guidelines.

5 Site Plan Requirements

5.1 A site plan should accompany all Hydrogeological Assessment submissions, and the proposed development activities. In some cases, multiple maps may be necessary to illustrate all relevant information effectively.

5.2 The information depicted on the site plan should be further detailed in the Hydrogeological Assessment report to ensure clarity while avoiding excessive details on the site plan itself.

5.3 Site plans should be clear, concise, and well-organized.

Site Plan should illustrate the following key information:

5.4 **Site Characteristics**

5.4.1 Parcel boundaries.

5.4.2 Existing topographic features, including:

5.4.2.1 Contour elevations and slope gradients.

5.4.2.2 Surface water features (lakes, rivers, streams, wetlands).

5.4.3 Aquifer characteristics, including:

5.4.3.1 Aquifer boundaries, recharge zones, and hydraulic conductivity.

5.4.3.2 Groundwater-surface water interaction zones.

5.4.4 Existing and proposed groundwater infrastructure, including:

5.4.4.1 Locations of wells (private, municipal, industrial).

5.4.4.2 Septic systems and drain fields.

5.4.4.3 Stormwater infiltration basins and recharge areas.

5.4.5 Potential contamination sources, such as:

5.4.5.1 Fuel storage tanks, landfills, hazardous material storage sites.

5.4.5.2 Abandoned wells and historical spill locations.

5.4.6 Natural features deemed significant in the professional opinion of the Qualified Professional.

5.5 **Development Proposal**

5.5.1 The location of proposed structures, roads, and access routes.

5.5.2 Areas that have been or are proposed to be subject to excavation, grading, soil disturbance, or vegetation removal.

5.5.3 Proposed site grading and post-development contours, including any changes to water infiltration.

5.5.4 Groundwater flow considerations, such as:

5.5.4.1 Flow direction and capture zones.

5.5.4.2 Potential impacts on adjacent wells and ecosystems.

5.5.5 For sloped lots, site plans should reflect the grading plan, showing the relationship between slope modifications and groundwater recharge impacts.

5.5.6 Dewatering considerations, including:

5.5.6.1 Temporary dewatering zones.

5.5.6.2 Predicted impacts on groundwater mounding and flow redirection.

5.5.7 Environmental compliance considerations, including adherence to:

5.5.7.1 Federal and provincial water protection regulations.

5.6 **Mitigation Measures:**

5.6.1 Areas that will remain free of development, including protected aquifer recharge zones.

5.6.2 Limits of disturbance, such as erosion control measures, spill response plans, and hazardous material management.

5.6.3 Areas designated for stormwater management, aquifer protection buffers, or controlled infiltration areas**.**

5.6.4 Groundwater monitoring infrastructure, including wellhead protection measures.

5.6.5 Recommendations for ongoing monitoring and maintenance of groundwater mitigation measures.