



ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA

REGULATION OF FIRMS PERMIT TO PRACTICE MANUAL

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PREFACE

Engineers and Geoscientists British Columbia has a responsibility to serve and protect the public interest with respect to the engineering and geoscience professions in the province of British Columbia (BC). To effectively deliver on this responsibility, Engineers and Geoscientists BC must address two levels of influence on the quality of the practice of these professions: the influence of the individual who is practicing the profession, and the influence of the Firm within which that individual is employed.

Unlike other engineering and geoscience regulators across Canada, Engineers and Geoscientists BC has never had the legislative authority to regulate Firms. Therefore, the second layer of influence was previously addressed through the organization's voluntary Organizational Quality Management (OQM) Program, which was initiated in 2012. Since that time, public perception and confidence in the regulation of the professions has decreased, given recent engineering and geoscience failures in BC. As a result, the *Professional Governance Act* (the "*Act*"), which received royal assent in 2018, now requires Engineers and Geoscientists BC to regulate Firms in BC.

The regulation of Firms requirements were developed over several years, and are the product of extensive research, consultation, and strategic decision making. These requirements for Firms are intended to:

- protect public interest and the environment;
- align the two levels of influence on the practice of the professions;
- increase government and public confidence;

- add value to the business practices of Firms;
- align with the OQM Program; and
- align with the requirements of other regulatory bodies.

Under the *Act*, Firms will be required to register with Engineers and Geoscientists BC and obtain a Permit to Practice. A Permit to Practice is mandatory for all Firms that are engaged in providing services¹ in respect to the Regulated Practice of professional engineering and/or professional geoscience, including corporations, partnerships, incorporated and unincorporated sole practitioners, and municipalities. The *Act* also allows for the regulation of government registrants (a ministry or agency of the government that has been identified by the government as being a regulated Firm and is required to have a Permit to Practice). For Firms that employ registrants in capacities outside of the practice of professional engineering and/or professional geoscience, registration with Engineers and Geoscientists BC will not be required.

This *Regulation of Firms Permit to Practice Manual* provides details about Firm regulation created by the *Act* and the requirements of the Bylaws of Engineers and Geoscientists BC, including details on how to acquire and maintain a Permit to Practice. This manual is also intended to be used as a resource during the Regulation of Firms Permit to Practice training sessions.

¹ Additional clarification has been provided by the OSPG: There is no distinction in the *Act* between services or advice provided to a third-party

client or are being provided internally by an employee to another employee, contractor or other individual acting on the Firm's behalf.

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ABBREVIATIONS

ABBREVIATION	TERM
AHJ	Authority Having Jurisdiction
BC	British Columbia
<i>BCBC</i>	<i>British Columbia Building Code</i>
CADD	Computer-Aided Drafting and Design
CE	Continuing Education
COR	certificate of recognition
<i>NBC</i>	<i>National Building Code of Canada</i>
PDF	Portable Document Format
PPE	personal protective equipment
PPMP	Professional Practice Management Plan
OSPG	Office of the Superintendent of Professional Governance
VBBL	Vancouver Building By-law

DEFINED TERMS

The following definitions are specific to this manual. These words and terms are capitalized throughout the document.

TERM	DEFINITION
Act	The <i>Professional Governance Act</i> , S.B.C. 2018, Chapter 47.
Authenticate, Authenticating (see also Manually Authenticating and Digitally Authenticating)	The act of a Professional Registrant Manually Authenticating or Digitally Authenticating a Document.
Bylaws	The Bylaws of Engineers and Geoscientists BC made under the <i>Act</i> .
Certificate Authority	A third party approved by Engineers and Geoscientists BC to issue Digital Certificates to Professional Registrants.
Check (or derivatives)	A documented process that must be conducted in accordance with section 7.3.4 of the Bylaws to confirm that the professional engineering or professional geoscience work is complete, meets all Input Requirements, and is suitable for its intended use or purpose. This encompasses all various Checks that occur or ought to occur throughout the development, presentation, production, and performance of any Regulated Practice work in any sector.
Code of Ethics	Engineers and Geoscientists BC's Code of Ethics set out in Schedule A of the Bylaws.
Corrective Action	Action taken to identify and eliminate root causes of nonconforming work to prevent the non-conformance from recurring.
Delegate (and derivatives)	In relation to Direct Supervision, a Subordinate being directed to undertake certain work or decisions related to the Regulated Practice on behalf of a Professional Registrant who takes professional responsibility for the work of the Subordinate.
Digitally Authenticating	A Professional Registrant applying all of the following to a Document: (a) the Professional Registrant's Digital Seal; (b) a digital image of the Professional Registrant's signature; (c) a digital image of the date of authentication; and (d) the Professional Registrant's Digital Certificate.
Digital Certificate	A certificate issued to a Professional Registrant by a Certificate Authority that attests to the legitimacy of information through the use of encryption.
Digital Seal	A digital image of a Professional Registrant's Manual Seal with no material variation in format or wording.
Direct Supervision (and derivatives)	The responsibility for the control and conduct of the activities, work or decisions related to the Regulated Practice that have been Delegated to a Subordinate.

TERM	DEFINITION
Document(s)	Includes any physical or electronic Record, including but not limited to a report, certificate, memo, specification, drawing, map, or plan, that conveys a design, direction, estimate, calculation, opinion, interpretation, observation, model, or simulation that relates to the Regulated Practice.
Documentation	See the definition for “Record”.
Engineers and Geoscientists BC	The Association of Professional Engineers and Geoscientists of the Province of British Columbia, also operating as Engineers and Geoscientists BC.
Field Review(s)	Reviews conducted by Professional Registrants, or by Subordinates acting under Professional Registrants’ Direct Supervision, which must be conducted in accordance with section 7.3.3 of the Bylaws, and which take place at the site of the implementation or construction of professional engineering or professional geoscience work, that Professional Registrants in their professional discretion consider necessary to ascertain whether the implementation or construction of work substantially comply in all material respects with professional engineering or professional geoscience concepts or intent reflected in the Documents prepared for such work.
Field Reviewer	Unless another qualified party is selected by the client, owner, or employer to carry out Field Review, the Field Reviewer is the Professional of Record, or an individual under the Direct Supervision of the Professional of Record, who carries out the Field Review.
Firm	As defined in the <i>Act</i> : “(a) a legal entity or combination of legal entities engaged in providing services in respect of a regulated practice, or (b) a ministry or agency of the government that the Lieutenant Governor in Council may prescribe by regulation, but does not include a legal entity or combination of legal entities that may be exempted from this Act by regulation of the Lieutenant Governor in Council.”
Guide	A guide to a program or regulatory topic, published by Engineers and Geoscientists BC. These include Guides to quality management standards that in accordance with the <i>Act</i> and Bylaws define professional obligations related to specific processes and explain the minimum standards of practice, conduct and competence expected from Professional Registrants and Firms.

TERM	DEFINITION
Independent Review (in conjunction with Structural)	<p>A documented evaluation to be carried out in accordance with section 7.3.5 of the Bylaws of the structural design concept, details, and Documentation based on a qualitative examination of the substantially complete structural design Documents, before they are issued for construction or implementation, and the evaluation is performed in accordance with the Bylaws and the <i>Guide to the Standard for Independent Review of Structural Designs</i> by an appropriately qualified and experienced Professional Registrant who was not involved in preparing the design. There are two types of Independent Review:</p> <ul style="list-style-type: none"> • Type 1 Independent Review is an Independent Review carried out by an appropriately qualified and experienced Professional Registrant who was not involved in preparing the design but may be employed at the same Firm as the Professional of Record who is responsible for the design. • Type 2 Independent Review is an Independent Review carried out by an appropriately qualified and experienced Professional Registrant who was not involved in preparing the design and is not employed at the same Firm as the Professional of Record who is responsible for the design.
Independent Reviewer	The Professional Registrant who is responsible for conducting and completing an Independent Review.
Input Data	Data used as the basis for the professional engineering or professional geoscience work that may include, but is not limited to, test and survey data, design assumptions, applicable standards and codes, preliminary designs or reports, work prepared by other professionals, and information provided by the client.
Input Requirements	Requirements that the process or deliverable must meet or satisfy that may include, but is not limited to, client objectives and requirements, design criteria, applicable standards, codes and legislation, organizational requirements and standards, and requirements otherwise set out in Engineers and Geoscientists BC Professional Practice Guidelines.
Manual Seal	The ink stamp or embossing machine issued to a Professional Registrant by Engineers and Geoscientists BC that can create an impression on a Document.
Manually Authenticating	A Professional Registrant applying all of the following to a Document: <ul style="list-style-type: none"> (a) the Professional Registrant’s Manual Seal; (b) the Professional Registrant’s handwritten signature; and (c) the date of authentication.
Permit to Practice	A certificate bearing a Permit to Practice number that is issued to a Registrant Firm by Engineers and Geoscientists BC and confirms that the Registrant Firm is entitled to engage in the Reserved Practice in BC, subject to any suspensions, limitations, conditions, or restrictions on the Registrant Firm’s registration.
Professional Activities or Work	Tasks or projects involving Regulated Practice by a Professional Registrant or Registrant Firm.
Practice Advisory; Practice Advisories	An advisory, published by Engineers and Geoscientists BC, on time-sensitive technical, and/or limited-scope issues related to the Regulated Practice.
Professional of Record	The Professional Registrant who is professionally responsible for activities, work, or Documents related to the Regulated Practice.

TERM	DEFINITION
Professional Practice Guidelines	A guideline, published by Engineers and Geoscientists BC, in accordance with section 7.3.1 of the Bylaws, on specific professional services or activities.
Professional Practice Management Plan	A Professional Practice Management Plan is a Document developed and maintained by a Registrant Firm, as required in section 7.7.3 of the Bylaws.
Professional Registrant	A Registrant who is registered in one of the following categories of Registrants: <ul style="list-style-type: none"> • professional engineer; • professional geoscientist; • professional licensee engineering; • professional licensee geoscience; • life member prior to 1998; • honorary life member.
Quality Assurance	A set of activities intended to establish confidence that requirements will be met.
Quality Control	A set of activities intended to ensure that requirements are actually being met.
Record (Documentation)	Any Document that is evidence of Regulated Practice activities, events, or transactions, or is evidence that a Professional Registrant has met their professional and contractual obligations.
Records Management	The systematic control of all Records, regardless of media, from creation to disposal.
Registrant	As defined in Schedule 1, section 5 of the <i>Act</i> , a Registrant means, as applicable: <ul style="list-style-type: none"> “(a) a professional engineer, (b) a professional geoscientist, (c) a firm that is registered with the regulatory body under this Act, if firms may be registered in respect of that regulatory body, or (d) an individual or firm, as applicable, that is registered with the regulatory body as another category or subcategory of registrant in accordance with the bylaws of the regulatory body.”
Registrant Firm	A Firm that is registered with Engineers and Geoscientists BC as a Registrant.
Regulated Practice	As defined in Schedule 1, section 5 of the <i>Act</i> : <ul style="list-style-type: none"> “(a) the practice of professional engineering, or (b) the practice of professional geoscience;”
Reserved Practice	A Regulated Practice for which the right to practice is reserved for Registrants of a regulatory body.
Responsible Officer	An individual who has been designated by a Registrant Firm pursuant to section 5.12(13) of the Bylaws, must meet the requirements set out in sections 5.12(14), (15), (16) and (17) of the Bylaws, and has the responsibilities set out in section 5.12(18) of the Bylaws.
Responsible Registrant	Professional Registrant who has been designated by a Registrant Firm pursuant to section 5.12(5) of the Bylaws, must meet the criteria set out in sections 5.12(7) and (8) of the Bylaws, and has the responsibilities set out in section 5.12(9) of the Bylaws.

TERM	DEFINITION
Seal (synonymous with stamp)	The Professional Registrant’s Seal. It is either a Manual Seal or Digital Seal and collectively called “Seal”.
Shop Drawing	Includes, but is not limited to, a pre-existing standard or generic drawing, diagram, illustration, schedule, performance chart, brochure, or other printed information that is provided by a contractor to a Professional of Record, or is used by a Professional of Record, to illustrate details of a portion of work. Refer to the Engineers and Geoscientists BC <i>Professional Practice Guidelines – Shop Drawings</i> .
Structure	A series of connected, interrelated elements that form a system that provides adequate rigidity and can resist a series of external load effects applied to it, including its own weight. Structures can be temporary or permanent, and include buildings, retaining walls, large signage, support towers, bridges, dams, and tunnels.
Subordinate	Any individual who engages in the Regulated Practice under the Direct Supervision of a Professional Registrant.
Three Pillars of Professional Practice	The core elements of Engineers and Geoscientists BC’s model for regulation of firms, specifically: <ol style="list-style-type: none"> 1. ethics; 2. quality management; and 3. continuing education and competency.
Trainee	In respect of a Regulated Practice, means a person who is in training to engage in the Regulated Practice as a Registrant.

VERSION HISTORY

VERSION NUMBER	PUBLISHED DATE	DESCRIPTION OF CHANGES
1.1	June 9, 2021	Minor revisions to wording and to provide a link in Section 1.3 to the Regulation of Firms Permit to Practice Assessment Tool; and to align wording of Section 6.5 with the Engineers and Geoscientists BC Bylaws.
1.0	March 8, 2021	Initial version.

1.0 INTRODUCTION TO PERMIT TO PRACTICE

1.1 PURPOSE OF THIS MANUAL

Firm regulation addresses the fundamental influence that Firms have on the practice of individual Registrants employed by the Firm, by requiring Firms to establish policies and procedures related to ethics, quality management, and continuing education and competency (the “Three Pillars of Professional Practice”). Firms have a fundamental influence on the practice of engineering and geoscience by individual Registrants in their employment. Firm regulation addresses this influence by requiring Registrant Firms to establish policies and procedures addressing ethics, quality management, and continuing education and competency (the “Three Pillars of Professional Practice” in Engineers and Geoscientists BC’s Firm regulation model).

This manual is intended to serve as a comprehensive reference document that Firms may refer to, in order to understand their requirements under the *Professional Governance Act* (the “*Act*”) and the Bylaws of Engineers and Geoscientists BC, and to implement policies and procedures consistent with the Three Pillars of Professional Practice. Each section of this manual discusses each element of a Firm’s requirements in detail.

In addition, to complement this manual, Engineers and Geoscientists BC has established a mandatory training program to support Firms in meeting their requirements.

1.2 BACKGROUND

In 2012, Engineers and Geoscientists BC launched the voluntary OQM Program, in recognition of the significant influence Firms have on the practice of the professions. The OQM Program received broad support from both the private and public sector, with more than 430 Firms achieving certification.

In 2016, after several public incidents of engineering and geoscience failures in BC, Engineers and Geoscientists BC established a Task Force to investigate whether Firm regulation should be pursued. After significant research, analysis, and consultation, the decision was made to proceed with the regulation of Firms. Additional work was subsequently done by the Task Force to establish the model for regulation of Firms and to recommend which types of Firms the regulation should apply to.

In 2018, the British Columbia (BC) legislature passed the *Act*, which significantly changed Engineers and Geoscientists BC’s responsibilities and authorities. One of the most significant changes under the *Act* is the requirement to not only regulate individuals, but to begin regulating engineering and geoscience Firms.

Since the *Act* was passed, Engineers and Geoscientists BC has worked closely with the Office of the Superintendent of Professional Governance (the “OSPG”), which oversees the governance of regulatory bodies under the *Act*, to align the Firm regulation model developed by Engineers and Geoscientists BC with the requirements and expectations of the *Act* and the OSPG.

As a result, the regulatory requirements will not only serve to better protect public interest and the environment, they will also help to support and guide Firms in:

- supporting Professional Registrant employees in fulfilling their obligations related to ethics, quality management, and continuing education;
- fostering high standards of quality in professional practice;
- improving service and deliverables to clients and customers;
- improving risk management practices; and
- identifying efficiencies in business practice.

Firms are required to hold a Permit to Practice that are engaged in providing services in BC requiring the Regulated Practice of professional engineering or professional geoscience, including for internal consumption and the creation or processing of products.

1.3 APPLICABILITY

A Permit to Practice is mandatory for all Firms in the private and public sectors that are engaged in providing services in BC requiring the Regulated Practice of professional engineering and/or professional geoscience, including corporations, partnerships, incorporated and unincorporated sole practitioners, and municipalities. The *Act* also addresses the regulation of government Registrants (a ministry or agency of the government who has been identified by the government as being a regulated Firm and is required to have a Permit to Practice). For Firms that employ Registrants in capacities outside of the practice of professional engineering and/or professional geoscience, registration will not be required.

Firms that are unsure whether they require a Permit to Practice should use the [Regulation of Firms Permit to Practice Assessment Tool](#). By answering a series of questions, Firms can quickly assess whether they require a Permit to Practice. For more details, see the Engineers and Geoscientists BC website, in the “Practice Resources” area, under “Firm Practice” (egbc.ca/Practice-Resources/Firm-Practice).

2.0 REGULATION OF FIRMS REQUIREMENTS

2.1 OVERVIEW

In order to provide services requiring the practice of professional engineering and/or geoscience in BC, Firms will first be required to register and obtain a Permit to Practice, which can be done through the Engineers and Geoscientists BC website.

Firms will be then required to have their Responsible Registrant(s) attend a mandatory Regulation of Firms Permit to Practice training session. Within 12 months of obtaining their Permit to Practice, the Registrant Firm must develop a Professional Practice Management Plan (PPMP) that is aligned with the Three Pillars of Professional Practice: ethics, quality management, and continuing education and competency.

Firms become eligible for a mandatory compliance audit after 12 months of holding their Permit to Practice, and subsequently every 3 to 4 years following the date of their first compliance audit. The following sections cover these key requirements in more detail.

2.2 PERMIT TO PRACTICE APPLICATION

The application process for Firms is as follows (see also [FIGURE 2-1: Flowchart Illustrating the Permit to Practice Application Process](#)):

1. Effective July 2, 2021, Firm representatives can begin the application process through the Engineers and Geoscientists BC website.

Required information includes:

- industry and area(s) of practice;
- names under which the Firm does business;
- information about the Firm as a legal entity;
- information about the professionals employed by the Firm; and

- names and email addresses of the Responsible Officer and the Responsible Registrant(s).
2. An email is sent to the Responsible Registrant(s) and the Responsible Officer. These emails contain links to declarations that the Responsible Registrant(s) and Responsible Officer must make.
 3. The Responsible Registrant(s) and the Responsible Officer must complete declarations indicating that they understand the responsibilities attached to these roles.
 4. Once Engineers and Geoscientists BC receives the declarations from the Responsible Registrant(s) and the Responsible Officer, an invoice is generated and sent by email.
 - A \$350 application fee (Canadian dollars) is required for new applications. Annual fees are calculated based on the number of Registrants including Trainees (EITs and GITs) employed by the Registrant Firm who are engaged in the practice of the professions.
 - A Firm with only one Professional Registrant, is considered a Sole Practitioner and will pay a reduced annual fee of \$250. Sole Practitioners can employ up to two Trainees and still qualify for the \$250 annual fee.
 - For Firms with more than one Professional Registrant or more than two Trainees, the fee will be \$500 multiplied by the square root of n , where n equals the number of Registrants working for the Registrant Firm.
 5. When Engineers and Geoscientists BC receives payment from the Firm, the application is reviewed and if complete it may be approved and the Permit to Practice is issued. However, if the application is not approved, the Firm may request a review on the record if it believes that the application was incorrectly denied. Each Permit to Practice bears a Permit to Practice number that is unique to the Registrant Firm.

PERMIT TO PRACTICE APPLICATION PROCESS

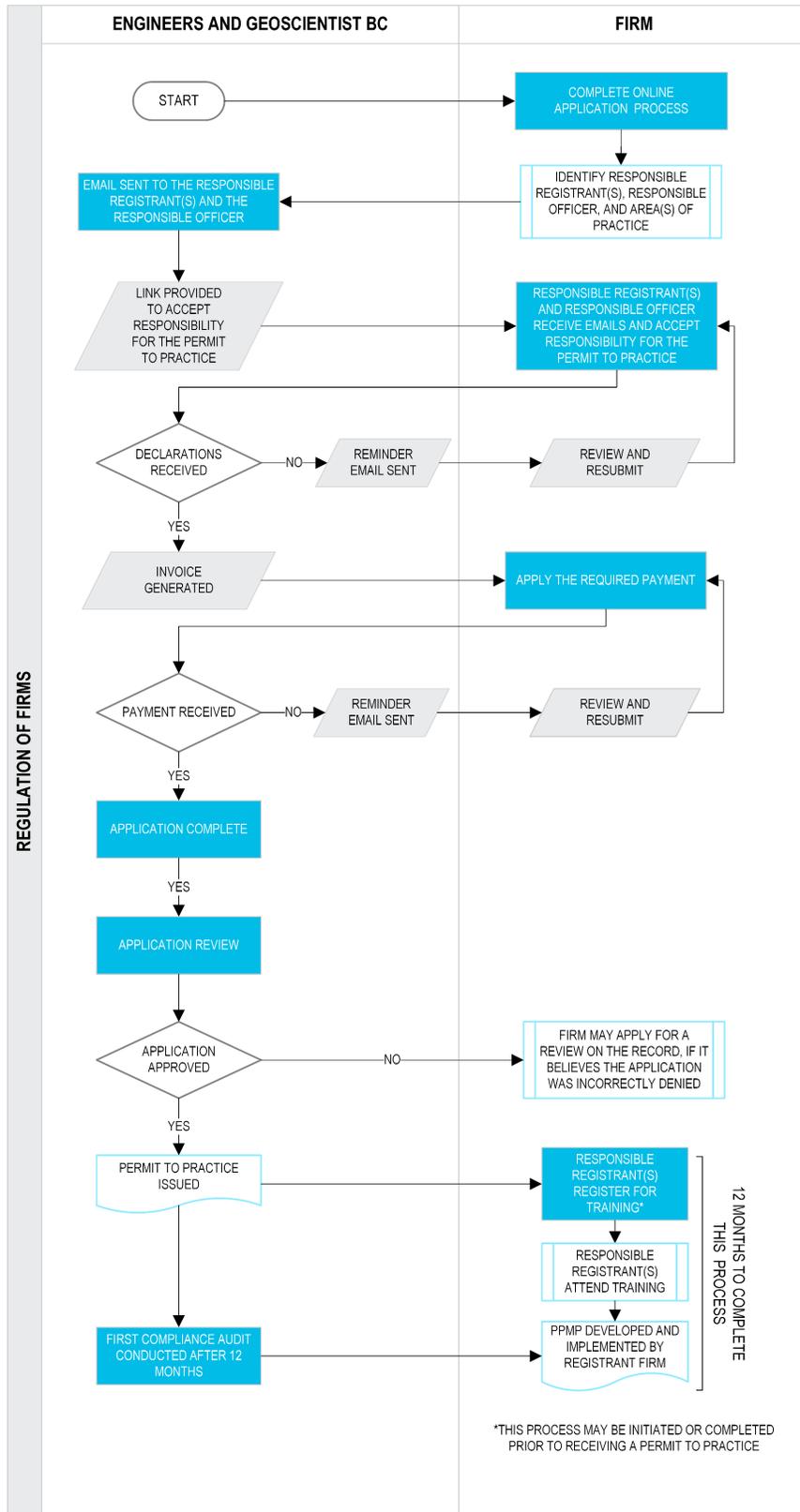


FIGURE 2-1: Flowchart Illustrating the Permit to Practice Application Process

2.3 REGULATION OF FIRMS PERMIT TO PRACTICE TRAINING

Once a Permit to Practice is issued to a Firm, all Responsible Registrant(s) listed during the initial application process must complete the Regulation of Firms Permit to Practice training within 12 months of the Firm being issued the Permit to Practice, and every 5 years thereafter. Any Registrants that are designated as Responsible Registrants for the Firm following the issuance of the Firm's Permit to Practice must complete the Regulation of Firms Permit to Practice training within 3 months of the date they were designated a Responsible Registrant (unless they have completed the Regulation of Firms Permit to Practice training in the previous 5 years).

Note that previous attendance at an OQM Program training session is not equivalent to the Regulation of Firms Permit to Practice training.

The Regulation of Firms Permit to Practice training session is focused on providing guidance and direction to Firms on developing and implementing a PPMP aligned with the requirements of the Three Pillars of Professional Practice.

If an individual is a Responsible Registrant for more than one Registrant Firm, that individual may complete the Regulation of Firms Permit to Practice training on behalf of multiple Registrant Firms concurrently.

A non-practising Registrant Firm and any individuals designated as Responsible Registrant(s) of a non-practising Registrant Firm are exempt from the Regulation of Firms Permit to Practice training and the annual review and approval of a Registrant Firm's PPMP, while maintaining non-practising status.

If a Responsible Registrant fails to complete the Regulation of Firms Permit to Practice training by the required date, a late fee will be issued. If failure to complete the Regulation of Firms Permit to Practice training continues, the Engineers and Geoscientists BC Registrar can place a condition on the Registrant Firm's Permit to Practice, prohibiting it from practising until

the Responsible Registrant completes the Regulation of Firms Permit to Practice training. Registrant Firms whose Responsible Registrants fail to attend the Regulation of Firms Permit to Practice training within 3 months of the Permit to Practice being suspended will have their Permits to Practice cancelled.

2.4 DEVELOPING A PROFESSIONAL PRACTICE MANAGEMENT PLAN

A PPMP is a Document developed and maintained by a Registrant Firm, as required in section 7.7.3 of the Bylaws.

Within 12 months of obtaining their Permit to Practice, the Registrant Firm must develop a PPMP that aligns with the Three Pillars of Professional Practice: ethics, quality management, and continuing education and competency.

2.4.1 REQUIREMENTS OF A PPMP

Required information in the PPMP must include:

1. the organizational structure of the Firm;
2. the names of the Registrant Firm's Responsible Officer and Responsible Registrant(s);
3. the Registrant Firm's area(s) of practice,
4. the Responsible Registrant(s) designated to each area of practice at the Registrant Firm; and
5. Documented policies and procedures, including
 - a) a Code of Conduct,
 - b) a plan for how the Firm will ensure compliance with standards of competence and quality management, and
 - c) a plan for compliance with continuing education requirements (see [Section 2.4.2](#) below).

The PPMP must be approved by the Firm's Responsible Officer and Responsible Registrant(s); this approval is mandatory and must be documented.

Registrant Firms must adhere to their PPMP and ensure that individuals employed by or under contract are provided with access to the PPMP. Registrant Firms

must also ensure that individuals working for the Firm understand the content of and adhere to the PPMP.

Registrant Firms or individual Professional Registrants may depart from the quality management requirements included in the PPMP, if it is appropriate to do so for an identified reason. The reason must be documented by the Registrant Firm or the individual Professional Registrant and supported by a written rationale that is consistent with obligations pursuant to the *Act*, applicable regulations, and the Bylaws.

Once a Firm has been issued a Permit to Practice, the Registrant Firm must annually review the PPMP and, if necessary, make any revisions to ensure its suitability and effectiveness. This review must be documented and approved by the Responsible Officer and Responsible Registrant(s).

When requested by Engineers and Geoscientists BC, the Registrant Firm must submit the PPMP no later than five business days after the request was made.

All approved versions of the PPMP must be retained for a minimum of 10 years after the PPMP version is no longer used by the Registrant Firm.

2.4.2 THE THREE PILLARS OF PROFESSIONAL PRACTICE IN A PPMP

A Registrant Firm's PPMP must address the following Three Pillars of Professional Practice:

1. Ethics
2. Quality management
3. Continuing education and competency

Each of these Three Pillars of Professional Practice are described below.

In order to meet the requirements for each of the Three Pillars of Professional Practice, Firms will generally have three options:

1. creating new policies and procedures
2. using established policies and procedures; or
3. revising existing policies and procedures.

If using existing policies and procedures, Firms may either consolidate current Documentation into one cohesive PPMP, or cross-reference each policy and procedure Document, to ensure the PPMP requirements are met.

2.4.2.1 Ethics

Every Registrant Firm must establish a code of conduct that explains how the Firm will ensure that the Firm and all individuals employed by or under contract with the Firm will comply with specific ethical standards. These specific ethical standards include:

1. the Engineers and Geoscientists BC Code of Ethics;
2. any Engineers and Geoscientists BC guidelines on human rights, equity, diversity, and inclusion that have been approved by Council; and
3. ethical business practices addressing corruption, conflict of interest, and contractual matters.

Specifically, the code of conduct contained in the PPMP should describe how the Registrant Firm and its employees will uphold the Code of Ethics in the specific context of the Registrant Firm's area(s) of practice. This Firm-specific context might include the jurisdictions the Registrant Firm operates in, the types of projects the Registrant Firm works on, and particular ethical issues that arise in the work undertaken by its employees. See also [Section 4.19 Code of Conduct Resources](#).

2.4.2.2 Quality Management

Firms must establish a plan for how they will ensure compliance with the standards of competence and quality management requirements set out in section 7.3 of the Bylaws. In particular, as applicable to the Firm's practice, documented policies and procedures must be developed for quality management requirements that include:

1. Standard for Use of Professional Practice Guidelines;
2. Standard for Retention and Preservation of Complete Project Documentation;
3. Standard for Field Reviews;

4. Standard for Checks;
5. Standard for Independent Review(s) of Structural Designs;
6. Standard for Independent Review(s) of High-Risk Professional Activities or Work;
7. Standard for Issuance of Manual Seal and Authenticating Documents; and
8. Standard for Delegation and Direct Supervision.

Not all quality management requirements will be relevant to the practice of every Registrant Firm. For example, if a Registrant Firm is not engaged in structural design, its PPMP does not have to include a quality management policy and procedure related to the Independent Review of structural design; however, the exclusion should be documented in the PPMP.

Information on each quality management requirement is addressed in detail in the Bylaws and in the Engineers and Geoscientists BC Guides to quality management standards.

2.4.2.3 Continuing Education and Competency

The continuing education and competency section in each Registrant Firm's PPMP must include policies and procedures that support individual Registrants who are employed by or under contract with the Registrant Firm by:

1. meeting individual Registrants' Continuing Education Program (CE Program) requirements as outlined in the Bylaws; and
2. maintaining individual Registrants' competency, with respect to the role(s) of the individual Registrants and the activities or work engaged in by the individual Registrants on behalf of the Registrant Firm.

To support these overarching requirements, Firms must conduct an annual documented review with each Professional Registrant employed by or under contract with the Firm, to confirm that the Professional Registrant is maintaining competency with respect to the Professional Registrant's role and area(s) of practice at the Firm. Firms must retain Documentation

from these reviews for at least 5 years, as they will be subject to auditing.

Firms may use existing performance review/annual review processes and templates to satisfy this requirement. Firms should also consider allowing employees who are Professional Registrants to use existing performance review/annual review forms that help fulfill their individual requirements to complete and submit an annual Continuing Education Plan (CE Plan) to Engineers and Geoscientists BC.

Although Firms are required within the Bylaws to support their Professional Registrant employees in meeting their continuing education requirements, the onus to comply with the CE Program requirements remains with each Professional Registrant.

2.5 ANNUAL REPORTING

By March 31 each year, a Registrant Firm must provide Engineers and Geoscientists BC with up-to date information for the register. Information collected and published annually includes:

1. its industry or industries and area(s) of practice;
2. the addresses of its main office and business locations in BC;
3. the names of the Responsible Officer and Responsible Registrant(s);
4. the area(s) of practice each Responsible Registrant; and
5. the business contact information of the Responsible Officer and Responsible Registrant(s).

Information collected annually but NOT published includes:

1. personal and unique email addresses of the Responsible Officer and Responsible Registrant(s);
2. names of all individual Registrants employed by the Registrant Firm; and
3. number of individuals employed by or under contract who are Registrants of each regulatory body under the *Act*.

If this information changes during the year, a Registrant Firm must update its information through the Engineers and Geoscientists BC website within 30 days of the change taking effect.

In addition to the annual reporting requirements, a Registrant Firm must provide written notice to Engineers and Geoscientists BC:

1. if the Registrant Firm is convicted of an offence;
2. if the Registrant Firm becomes the subject of an investigation that could result in cancellation, suspension, restriction, or limitation of its ability to practice a profession;
3. within 15 days, if the Registrant Firm is involved in a merger, acquisition, closure, dissolution, or other event where the Registrant Firm will cease to operate as an independent entity; and
4. within 15 days, if the Registrant Firm becomes the subject of an application for a bankruptcy order, makes an assignment for the general benefit of creditors, or makes or becomes the subject of a Division I or Division II proposal, as set out in the *Bankruptcy and Insolvency Act*.

2.6 BUSINESS NAME CONSENT

All businesses that wish to use certain words or titles associated with the Reserved Practice in their business names must first obtain consent from Engineers and Geoscientists BC, prior to registration or incorporation. Engineers and Geoscientists BC will generally grant consent to a business that has at least one Professional Registrant on staff and permitted to practise the Reserved Practice of professional engineering and/or professional geoscience in BC.

The full list of restricted words and titles, as well as the process for applying for consent to register using one of the restricted words or titles can be found at: egbc.ca/Registration/Registrant-Firms/Business-Name-Consent.

3.0 COMPLIANCE

3.1 REGISTRANT FIRM COMPLIANCE AUDIT

Twelve months after receiving a Permit to Practice, Registrant Firms are eligible for a compliance audit, to confirm that they have implemented documented policies and procedures consistent with ethics, quality management, and continuing education and competency requirements.

Engineers and Geoscientists BC intends to audit all Registrant Firms within the first 3 years after the introduction of Firm regulation. After this initial set of compliance audits, Engineers and Geoscientists BC will schedule subsequent routine audits based on the results of each Registrant Firm's previous audit.

3.1.1 COMPLIANCE AUDIT PROCESS

Engineers and Geoscientists BC assessors will carry out the compliance audits. One or more assessors will conduct the compliance audit and will provide appropriate notice to the Registrant Firm prior to initiation of the compliance audit.

The compliance audits are process-based and intended to assist the Registrant Firm understand how well their documented policies and procedures are working, and identify areas where improvements can be made to mitigate risk and streamline processes.

The compliance audits will involve both review of Documentation and interviews with the Registrant Firm's staff, to determine that the policies and procedures in the Registrant Firm's Professional Practice Management Plan (PPMP) are being followed.

The compliance audit may take place either at the Registrant Firm's place of business or by electronic means. In the case of a multi-office Registrant Firm, representative samples of work at each of the locations

may be audited. The duration of a compliance audit depends on the size of the Registrant Firm.

3.1.2 COMPLIANCE AUDIT REPORT

Following the compliance audit, the assessors will prepare a compliance audit report and provide a copy of the report to the Registrant Firm.

The result of the compliance audit will be based on one of the following three decisions:

1. Full compliance: The Registrant Firm's compliance audit file will be closed. The assessor's compliance audit report will be provided to the Registrant Firm and to the Audit and Practice Review Committee.
2. Minor nonconformance: Corrective Action will be prescribed to the Registrant Firm, which must be satisfactorily completed within a specified time period.
3. Major nonconformance: The compliance audit file will be referred to the Audit and Practice Review Committee. The assessor's compliance audit report will be provided to both the Registrant Firm and the Audit and Practice Review Committee.

"Minor nonconformance" means a situation in which, based on the evidence provided to the assessor,

- there has been failure to meet the applicable regulatory requirements, but such failure is not systemic; and
- there are no reasonable and probable grounds to believe that the Registrant Firm may pose a risk of significant harm to the environment or to the health or safety of the public or a group of people.

"Major nonconformance" means a situation in which, based on the evidence provided to the assessor,

- there is systemic failure by the Registrant Firm to meet an applicable regulatory requirement; or

- there are reasonable and probable grounds to believe that the Registrant Firm may pose a risk of significant harm to the environment or to the health or safety of the public or a group of people.

After receiving a compliance audit file for decision, the Audit and Practice Review Committee can:

1. prescribe Corrective Action that the Registrant Firm must satisfactorily complete within a specified time period;
2. initiate a practice review of the Registrant Firm;
3. provide information about the compliance audit to the Investigation Committee; or
4. close the compliance audit file.

3.2 PRACTICE REVIEW

Starting in October 2021, practice reviews may be carried out on Registrant Firms. Practice reviews can be authorized by the Audit and Practice Review Committee on the basis of information received from a compliance audit, a complaint, an investigation, or a practice review of a different Registrant.

The type of information that can trigger a practice review is information indicating that the Registrant Firm might have:

1. contravened the *Act* or the Bylaws;
2. failed to comply with a standard, limit, or condition imposed by the *Act*;
3. acted in a manner constituting professional misconduct or conduct unbecoming a Registrant; or
4. acted in a manner constituting incompetent practice of professional engineering or professional geoscience.

Engineers and Geoscientists BC will notify a Registrant Firm in writing when it is selected for a practice review.

If a Registrant Firm only has one Responsible Registrant, that Responsible Registrant will be the principal point of contact for the practice review. If there are multiple Responsible Registrants, the

Registrant Firm should designate a single Responsible Registrant to coordinate and communicate on behalf of the Registrant Firm.

During a practice review, a Registrant Firm must answer all questions, provide all requested information and Records, and facilitate any requested site visits and interviews with staff.

After the practice review is complete, the Registrant Firm will receive a copy of the associated practice review report. The Registrant Firm can provide a written response to the practice review report. These written responses will be sent to the Audit and Practice Review Committee with the practice review report.

After receiving the practice review report, the Audit and Practice Review Committee can close the file, impose limits or conditions on the practice of the Registrant Firm, or provide information about the practice review to the Investigation Committee.

Conditions imposed on the practice of the Registrant Firm by the Audit and Practice Review Committee can include:

1. restricting the practice that the Registrant Firm can engage in;
2. requiring another Registrant to supervise the practice of the Registrant Firm; and/or
3. requiring individual Professional Registrants employed by the Registrant Firm to undertake additional training.

A Registrant Firm can apply to the Audit and Practice Review Committee to have these conditions removed.

3.3 ENFORCEMENT

As Registrants, Registrant Firms will be subject to Engineers and Geoscientists BC's investigation and discipline process.

Registrants subject to investigation are obligated to cooperate by answering questions and producing files and Records. A Registrant Firm subject to investigation must also require any owner, director, officer, individual employed by or under contract with the Registrant Firm, or any other individual authorized to act on behalf of the Registrant Firm—including the Responsible Officer and Responsible Registrant(s)—to attend an interview requested by the investigator. A Registrant Firm must also take reasonable steps to provide the investigator with access to premises or project sites related to the investigation.

If a Registrant Firm has only one Responsible Registrant, that Responsible Registrant will be the principal point of contact with the investigator. If there are multiple Responsible Registrants, the Registrant Firm should designate a single Responsible Registrant to coordinate with the investigator and communicate on behalf of the Registrant Firm. After the investigation is complete and an investigation report has been received by the Investigation Committee, the Committee can:

1. close the file (with or without a letter of recommendations for improved conduct to the Registrant subject to investigation);
2. close the file and refer the matter to the Audit and Practice Review Committee;
3. attempt to resolve the matters subject to investigation through a negotiated process; or
4. issue a citation ordering a discipline hearing.

If the Investigation Committee issues a citation ordering a discipline hearing, the matter is then referred on to the Discipline Committee.

At the Discipline Committee stage, the matter may be resolved either by a consent agreement that will be published on Engineers and Geoscientists BC's website, or by way of a hearing in front of a panel of the Discipline Committee, which is open to the public. If the citation is proven at a hearing, or if the Registrant and Discipline Committee enter into a consent order, the remedies available to the Discipline Committee include:

1. issue a reprimand to the Registrant;
2. impose a penalty of up to \$250 000;
3. impose conditions or restrictions on the Registrant's registration;
4. suspend the Registrant's registration;
5. cancel the Registrant's registration; and
6. require the respondent to complete a remedial program and/or appear before a committee and satisfy the committee regarding the Registrant's competence.

During the investigation and discipline process, if either the Investigation or Discipline Committee considers it to be necessary in the public interest, the respective committee can take extraordinary action to restrict or suspend a Registrant Firm's registration and thus prevent the Registrant Firm from continuing to engage in the Reserved Practice on an interim basis while an investigation or discipline process is ongoing.

4.0 ETHICAL CONDUCT FOR REGISTRANT FIRMS

4.1 INTRODUCTION

As previously discussed, ethical practice is one of the Three Pillars of Professional Practice of Engineers and Geoscientists BC’s model of Firm regulation. Guidance for the two other pillars—compliance with Continuing Education and Competency and with Quality Management—are included in other sections within this manual.

Registrant Firms must establish a code of conduct within their Professional Practice Management Plan (PPMP), consistent with the Engineers and Geoscientists BC Code of Ethics.

This code of conduct must explain how the Registrant Firm will ensure that the Registrant Firm and all individuals employed by or under contract with the Registrant Firm will comply with specific ethical standards, as outlined in the Engineers and Geoscientists BC Bylaws. These specific ethical standards include:

1. the Engineers and Geoscientists BC Code of Ethics;
2. any Engineers and Geoscientists BC guidelines on human rights, equity, diversity, and inclusion that have been approved by Council; and
3. ethical business practices addressing corruption, conflict of interest, and contractual matters.

The code of conduct may be a standalone document, a set of documented policies and procedures, or other documented means of communication to employees, particularly individual Registrants outlining ethical expectations for decision-making and behaviour at the Registrant Firm. Although the format can vary, the content of the code of conduct must align with the principles in the Code of Ethics.

4.2 PURPOSE

The *Professional Governance Act* (the “*Act*”) governs the practices of professional engineering and professional geoscience in British Columbia (BC). The *Act* requires that Engineers and Geoscientists BC create a mandatory Code of Ethics in the Bylaws, to govern the conduct of Registrants.

The Engineers and Geoscientists BC Code of Ethics establishes ethical behaviour as the norm within the engineering and geoscience professions, articulates the standard of conduct expected of Registrants, and facilitates public protection by forming the basis for disciplinary action.

This section is intended to help Registrant Firms understand and apply the principles of the Code of Ethics in their codes of conduct and in their practice. It is not intended to provide binding instructions for how to ethically carry out Professional Activities or Work. Instead, it provides an interpretive framework, examples of appropriate and inappropriate conduct related to each principle of the Code of Ethics, and outlines relevant considerations for Registrant Firms to comply with the Code of Ethics.

Neither this section of this manual nor the Code of Ethics can cover all ethical situations Registrant Firms and individual Registrants are likely to encounter in their practice. The guidance in this section should support Registrants in making their own ethical judgments.

Unethical behaviour and breaches of the Code of Ethics may be grounds for investigation and discipline by Engineers and Geoscientists BC

4.3 APPLYING THE GUIDANCE

To meet the requirement for ethical conduct, Registrants Firms may either:

- use an existing code of conduct that is consistent with the three ethical standards;
- revise an existing code of conduct to align with the ethical standards; or
- create a new code of conduct that is consistent with the ethical standards.

The code of conduct developed by sole practitioners must address all three ethical standards listed in [Section 4.1 Introduction](#) above; however, sole practitioners are permitted to use the simple list in the Engineers and Geoscientists BC Code of Ethics as their code of conduct, in lieu of developing an extensive Document.

4.4 CONTEXT

4.4.1 ETHICS IN THE PROFESSIONS

In the professional context, ethics are the principles of conduct governing how engineers and geoscientists should behave in the course of their practice. For engineers and geoscientists in BC, the core principles of ethical professional behaviour are found in the Code of Ethics in the Bylaws. This Code of Ethics is aligned with the requirements of the *Act*.

As self-governing professions, engineers and geoscientists in BC developed the Code of Ethics over the past century, to establish core values that should guide the exercise of professional judgment and knowledge. These principles represent the duties and responsibilities that engineers and geoscientists have set for themselves as professionals.

The standards set by the Code of Ethics go beyond what is required by laws and regulations, to promote and ensure honesty, integrity, respect, responsibility, trustworthiness, and concern for others in the course of professional practice.

4.4.2 CODES OF ETHICS VERSUS CODES OF CONDUCT

A code of ethics is a set of principles that influence the judgment of the group to which they apply, whereas a code of conduct is a set of guidelines that influence actions.

The Engineers and Geoscientists BC Code of Ethics and the accompanying [Guide to the Code of Ethics](#) are intended to guide the judgment of individual Registrants. The Code of Ethics sets the professional values, principles, and ideals that influence judgment and decision-making.

A Registrant Firm's code of conduct sets out the behaviour and actions required of the Registrant Firm and those who are employed by or under contract with the Registrant Firm. Codes of conduct are directional documents setting out behaviours and practices that are allowed or disallowed within the Registrant Firm. Because of their limited scope within the Registrant Firm, codes of conduct are specific, narrow, and focused on actions or behaviours. Although no code can cover every circumstance, codes of conduct leave less room for judgment, as they are developed by Registrant Firms to deal with issues that are likely to arise in the course of that Registrant Firm's specific practice.

Every Registrant Firm must have a code of conduct within its PPMP that explains how the Registrant Firm will ensure that the Registrant Firm and all individuals employed by it or under contract with it will comply with specific ethical standards. These specific ethical standards include:

1. the Engineers and Geoscientists BC Code of Ethics;
2. any Engineers and Geoscientists BC guidelines on human rights, equity, diversity, or inclusion that have been approved by Council; and
3. ethical business practices addressing corruption, conflict of interest, and contractual matters.

4.5 THE ENGINEERS AND GEOSCIENTISTS BC CODE OF ETHICS

4.5.1 INTRODUCTION TO THE CODE OF ETHICS

The Engineers and Geoscientists BC Code of Ethics was established to support and inform Registrants in fulfilling their duty to the public, clients, the professions, and their fellow Registrants.

The Code of Ethics does not, nor is it intended to, define conduct for all situations that a Registrant may encounter. Rather, it provides guidance to inform the behaviour, decisions, and professional judgment of Registrants that Engineers and Geoscientists BC regulates. A Registrant should incorporate ethics into their daily decision-making.

The Code of Ethics serves several purposes, including to:

- designate the standard of conduct expected of Registrants in easily understandable terms;
- distinguish appropriate professional conduct from that which fails to meet a required standard; and
- provide a basis on which allegations of unprofessional conduct are adjudicated by the Discipline Committee or other groups charged with responsibilities related to the conduct of Registrants.

Further explanation of the Code of Ethics for individual Registrants is included in the Engineers and Geoscientists BC *Guide to the Code of Ethics*.

4.5.2 CODE OF ETHICS BYLAW

Registrants must adhere to the Code of Ethics Bylaw, as follows.

“Registrants must act at all times with fairness, courtesy and good faith toward all persons with whom the registrant has professional dealings, and in accordance with the public interest. Registrants must uphold the values of truth, honesty, and trustworthiness and safeguard human life and welfare and the environment.

In keeping with these basic tenets, registrants must:

1. hold paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace;
2. practice only in those fields where training and ability make the registrant professionally competent;
3. have regard for the common law and any applicable enactments, federal enactments, or enactments of another province;
4. have regard for applicable standards, policies, plans and practices established by the government or EGBC;
5. maintain competence in relevant specializations, including advances in the regulated practice and relevant science;
6. provide accurate information in respect of qualifications and experience;
7. provide professional opinions that distinguish between facts, assumptions and opinions;
8. avoid situations and circumstances in which there is a real or perceived conflict of interest and ensure conflicts of interest, including perceived conflicts of interest, are properly disclosed and necessary measures are taken so a conflict of interest does not bias decisions or recommendations;

9. report to EGBC and, if applicable, any other appropriate authority, if the registrant, on reasonable and probable grounds, believes that
 - a) the continued practice of a regulated practice by another registrant or other person, including firms and employers, might pose a risk of significant harm to the environment or to the health or safety of the public or a group of people; or
 - b) a registrant or another individual has made decisions or engaged in practices which may be illegal or unethical;
10. present clearly to employers and clients the possible consequences if professional decisions or judgments are overruled or disregarded;
11. clearly identify each registrant who has contributed professional work, including recommendations, reports, statements or opinions;
12. undertake work and documentation with due diligence and in accordance with any guidance developed to standardize professional documentation for the applicable profession; and
13. conduct themselves with fairness, courtesy and good faith towards clients, colleagues and others, give credit where it is due and accept, as well as give, honest and fair professional comment.”

4.6 PRINCIPLE 1: ACT IN THE PUBLIC INTEREST

4.6.1 PRINCIPLE

- Hold paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace.

4.6.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- The obligations imposed by Principle 1 of the Code of Ethics override all other obligations (i.e., to clients or employers) and supersede all other principles in the Code of Ethics.
- Registrants must honestly, fairly, and impartially consider the impacts of engineering and geoscience work on the public, environment, and workplace, to ensure negative impacts do not outweigh expected benefits.
- Registrants are responsible for having adequate knowledge of the potential impacts on the environment from their projects, in order to properly follow any precautions and develop necessary mitigative measures.
- All Registrants are responsible for promoting workplace safety and must adhere to any health and safety programs.
- Registrants who are owners, employers, or supervisors are responsible for ensuring individuals under their supervision have safe working conditions.

Refer to the Engineers and Geoscientists BC *Guide to the Code of Ethics* for more discussion on these key points for Registrants.

With respect to a Registrant’s obligation to protect the environment, this includes considering the impact of climate change. When relevant to the Professional Activities or Work being carried out, climate change must be considered. Engineers and Geoscientists BC has established position statements on climate change

that commit the regulatory body to providing support and sets expectations that Registrants consider the impact of their work on the climate. Engineers and Geoscientists BC also has a Council-approved Climate Change Action Plan that commits the regulatory body to provide support for individual Registrants. Registrants are to be knowledgeable of the relevant resources Engineers and Geoscientists BC hosts on the website related to climate change, which includes the above-referenced documents.

4.6.3 IMPLICATIONS FOR REGISTRANT FIRMS

Not holding public safety paramount can result in the loss of a Professional Registrant's license and ability to work, and can greatly impact a Registrant Firm's reputation. Not holding public safety paramount is poor business practice, and may impact the ongoing viability of a Registrant Firm.

4.6.3.1 Public Safety and the Environment

Registrant Firms have a duty to hold paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace. Registrant Firms must also support the individual Registrants employed by or under contract, in meeting this principle. With respect to protecting the environment, this includes the need to support their individual Registrants in meeting their obligation to address climate change (see above).

How does a Registrant Firm meet this requirement, particularly when doing so might place individual Registrants in conflict with the actions of the Registrant Firm and their clients?

Leaders of Registrant Firms must communicate to all employees, particularly individual Registrants, the importance of holding paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace. This principle should be inherent to the way a Registrant Firm does business, ensuring both the Registrant Firm and individual Registrants are able to meet their obligations.

Knowing conflicts may arise between individual and Registrant Firm responsibilities, Registrant Firms should have in place the means to address these challenges. This may include implementing a safe process for anonymously reporting behaviours and actions that are either not in keeping with the Registrant Firm's code of conduct or the Code of Ethics, or place public safety, the environment, or health and safety in the workplace at risk. Registrant Firms should understand that since these risks also pose significant risks to the Registrant Firm's reputation and ongoing viability, having such processes in place is ultimately to their benefit.

Registrant Firms must have protections for whistleblowers in place. Section 103 of the *Act* protects whistleblowers from retaliation and loss of employment. However, Registrant Firms that conduct themselves ethically will have these protections in place, even without a legal obligation to do so.

4.6.3.2 Health and Safety in the Workplace

Registrant Firms must be familiar with applicable WorkSafeBC regulations and, at minimum, have in place a health and safety program that complies with WorkSafeBC requirements. If not already necessitated by the marketplace, Registrant Firms should also consider pursuing a certificate of recognition (COR) through their industry or sector association. The COR requires an annually audited health and safety management system that is based on best practices proven to reduce workplace injuries and incidents.

Codes of ethics, policies, and employment contracts should clearly state employee obligations related to health and safety.

Individual Registrants acting as owners, employers, or supervisors are responsible for ensuring individuals under their Direct Supervision have safe working conditions. Individual Registrants have an ethical and legal obligation to adhere to governing health and safety programs and applicable legislation. This requires individual Registrants to be aware of the potential hazards, follow safe work procedures, and

ensure all employees are wearing appropriate personal protective equipment (PPE).

Registrant Firms must ensure that all employees receive sufficient training, orientation, and PPE (where applicable) to complete their work safely, particularly those who are new to the workforce or the worksite.

4.6.4 KEY POINTS FOR REGISTRANT FIRMS

- Consider Principle 1 as overriding all other principles in the Code of Ethics.
- As a Registrant Firm, hold paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace.
- Communicate to all employees, particularly individual Registrants, the importance of holding paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace.
- Provide a means for anonymous reporting of behaviours and actions that are not in keeping with the Registrant Firm's code of conduct or a professional's code of ethics, or that place public safety, the environment, or health and safety the workplace at risk.
- Implement protections for employees who act as whistleblowers.
- Have a WorkSafeBC-compliant health and safety program in place.
- Consider pursuing a COR, if not already in place, which is a preventive approach based on best practices.
- Clearly state employee obligations related to health and safety in the Registrant Firm's code of ethics, policies, and employment contracts.
- Provide health and safety training and site orientations to employees, particularly those who are new to the workplace or to a worksite.

4.7 PRINCIPLE 2: KNOW YOUR LIMITS

4.7.1 PRINCIPLE

- Practice only in those fields where training and ability make the Registrant professionally competent.

4.7.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- Registrants must never Authenticate plans, specifications, reports, letters of assurance, or other Documents that are either outside of their area of expertise or prepared by others not under their Direct Supervision, unless in accordance with the section 7.3.7 of the Bylaws, Standard for Issuance of Manual Seal and Authenticating Documents, or the accompanying *Guide to the Standard for Authentication of Documents*.
- Client pressure and/or an intention to save a client money are not valid reasons to Authenticate Documents outside a Registrant's area of expertise.
- Registrants must fully understand the scope of services they are being asked to undertake, be aware and honest with themselves about their limitations, and be quick to acknowledge and state the limits of their training and experience, when accepting responsibility for assignments.
- Registrants with the designations of Professional Licensee Engineering and Professional Licensee Geoscience must know and respect their limited scopes of practice.
- Where assignments require external expertise, Registrants should engage experts in those areas to fill in the gap in the Registrant's expertise.
- Registrants must respect the expertise required in other professions, disciplines, and practice areas, and must not assume that their work can be undertaken without the requisite education, training, and experience.

Refer to the Engineers and Geoscientists BC [Guide to the Code of Ethics](#) for more discussion on these key points for Registrants.

4.7.3 IMPLICATIONS FOR REGISTRANT FIRMS

Registrant Firms must know the limits of their expertise or risk consequences.

The engineering and geoscience expertise of Registrant Firms is built around the people they employ, including Professional Registrants. This means that when hiring, Registrant Firms need to be clear about the engineering and geoscience expertise they require, and confirm that those hired have this expertise or can develop it within the Registrant Firm. Registrant Firms also need to be aware of the loss of expertise when Professional Registrants leave a Registrant Firm; therefore, if a Registrant Firm does not hire or engage another Professional Registrant with the same expertise to replace the one who has left, the Registrant Firm must not continue to state they have the same expertise.

To maintain competence and expertise within the Registrant Firm, and to meet Permit to Practice requirements, Registrant Firms are required to implement a policy and procedure that support continuing education for Professional Registrants. This requirement is explained in detail in [Section 5.0 Continuing Education and Competency Requirements for Registrant Firms](#). The expertise that Registrant Firms have and market to outsiders may be lost, if Professional Registrants do not remain current in their fields of expertise.

When Registrant Firms market their expertise or that of their employees in marketing materials, resumes, or proposals for engineering and geoscience services, Registrant Firms must abide by the principles of the Code of Ethics to:

- market the Registrant Firm only in those fields where Professional Registrants, including those under contract, have the training and ability to be professionally competent (Principle 2);
- maintain competence in relevant specializations (Principle 5);

- provide accurate information in respect of qualifications and experience (Principle 6); and
- before accepting engineering and geoscience work, assess whether the Registrant Firm has the required expertise to carry out the work.

Registrant Firms should engage external resources to fill gaps in their expertise before committing to assignments requiring that expertise.

When a Registrant Firm is engaged by a client for engineering or geoscience services, the Registrant Firm has an ethical obligation to select qualified resources to carry out the work. This includes assigning Professional Registrants who have the training and experience to be professionally competent to undertake the required services. This obligation also includes assigning qualified resources to carry out required Checks and reviews.

4.7.4 KEY POINTS FOR REGISTRANT FIRMS

- Be clear about the engineering or geoscience expertise the Registrant Firm requires when hiring personnel, and the potential loss of expertise when Professional Registrants leave the Registrant Firm.
- Provide or support continuing education, to remain current in the Registrant Firm's areas of expertise.
- Accurately and honestly state the Registrant Firm's expertise and that of employees in marketing materials, resumes, and proposals.
- Practice only in those fields where employees have the training and ability to be professionally competent.
- Engage external experts to fill the Registrant Firm's gaps in expertise, before committing to an assignment.
- Select qualified resources to carry out the work and required Checks and reviews, including Professional Registrants with the required training and competence to undertake the required services.

4.8 PRINCIPLE 3: FOLLOW THE LAW

4.8.1 PRINCIPLE

- Have regard for the common law and any applicable enactments, federal enactments, or enactments of another province.

4.8.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- Registrants must be aware of and carefully consider the common law and applicable legislation in the jurisdictions where their projects will be constructed or implemented, before carrying out engineering or geoscience work.
- Applicable common law and enactments are binding upon Registrants, regardless of whether they are aware of them. If these laws are breached, Registrants may face civil liability or criminal prosecution.
- Registrants should develop an understanding of how to apply, and stay current in, enactments (i.e., building codes, bylaws, regulations) that typically apply to their work. They can also attend seminars and subscribe to updates, professional publications, and other communications that advise of relevant changes.
- Understand that legislation and the common law may only outline the minimum standard for professional work. Clients and employers often expect delivery of a standard that goes above and beyond.

Refer to the Engineers and Geoscientists BC [*Guide to the Code of Ethics*](#) for more discussion on these key points for Registrants.

4.8.3 IMPLICATIONS FOR REGISTRANT FIRMS

Not following the law can have costly and permanent impacts on a Firm's reputation and viability.

Every Registrant Firm's code of conduct should clearly state that everyone employed by or under contract with the Registrant Firm must abide by the law when carrying out their duties on behalf of the Registrant Firm. Many Registrant Firms include abiding by the law as a condition of employment in employment contracts.

Beyond stating that acting legally and following the law are requirements of continued employment, Registrant Firms have additional obligations to understand and apply legislation that has or may have an impact on the engineering and geoscience work they are undertaking. This duty means:

- ensuring Registrants stay current with applicable common law and legislation;
- identifying all legal requirements set out in common law and enactments of the jurisdictions where the engineering or geoscience work will be constructed or implemented, since a typical engineering or geoscience project may be governed by multiple jurisdictions (i.e., federal, provincial, and local law); and
- confirming through Checking and reviews that all legal requirements have been met.

Codes of conduct for Registrant Firms should include the duty of individual Registrants employed by or under contract to meet their legal obligations for work carried out on behalf of the Registrant Firm.

4.8.4 KEY POINTS FOR REGISTRANT FIRMS

- Include a statement in the Registrant Firm's code of conduct that clearly and unequivocally states that all employees and contracted workers must follow the law when carrying out work for the Registrant Firm.
- Include following the law as a condition of employment in employment contracts.

- Have documented policies and procedures that state individual Registrants must:
 - stay current in common law and legislation applicable to their practice areas;
 - identify all legal requirements set out in common law and enactments of the jurisdictions where the engineering or geoscience work will be constructed or implemented; and
 - confirm through Checking and reviews that all Input Requirements including legal requirements have been met.

4.9 PRINCIPLE 4: FOLLOW THE STANDARDS OF GOVERNMENT AND ENGINEERS AND GEOSCIENTISTS BC

4.9.1 PRINCIPLE

- Have regard for applicable standards, policies, plans, and practices established by the government or Engineers and Geoscientists BC.

4.9.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- Registrants should carefully consider and understand any applicable standards, policies, plans, and practices relevant to their work.
- Registrants must be familiar with the various Engineers and Geoscientists BC publications that set out standards of practice, and they must understand how those standards apply to their own practice areas.
- Registrants should stay current with respect to changes in publications and standards by receiving regular communications from Engineers and Geoscientists BC and periodically reviewing the publications listed online.

- Registrants should increase their understanding of how to apply standards, guidelines, and other guidance by attending webinars, seminars, and conferences.
- Registrants must fully cooperate with investigations, including answering questions, producing requested information, and complying with any disciplinary conditions put in place.
- Registrants must have regard for the standards, policies, plans, and practices imposed by regulatory bodies in the other jurisdictions in which they work.

Refer to the Engineers and Geoscientists BC [*Guide to the Code of Ethics*](#) for more discussion on these key points for Registrants.

4.9.3 IMPLICATIONS FOR REGISTRANT FIRMS

Registrant Firms have an obligation to carry out engineering and geoscience work that meets the standards set out in the Bylaws, Professional Practice Guidelines, Guides to quality management standards, and Practice Advisories published by Engineers and Geoscientists BC, and other guidance published by regulatory bodies or authorities having jurisdiction (AHJs).

Codes of conduct and internal practices should state that individual Registrants must be aware of, understand, and apply any regulations, guidance, and standards applicable to their work.

Continuing education policies and procedures should include supporting individual Registrants in remaining current with applicable standards, regulation, and guidance published by regulatory bodies and/or AHJs.

4.9.4 KEY POINTS FOR REGISTRANT FIRMS

- Understand the various Engineers and Geoscientists BC publications that set out standards of practice and how they apply to work carried out by the Registrant Firm.
- Require individual Registrants to be aware of, understand, and apply the relevant standards applicable to their work.

- Implement a process or policy to support individual Registrants in staying current in changes to these publications and standards by receiving regular communications from Engineers and Geoscientists BC and periodically reviewing the publications listed on its website.
- Support awareness of regulatory standards and how individual Registrants must apply them as part of the continuing education policy, including through Registrant Firm-supported webinars, seminars, and conferences.

4.10 PRINCIPLE 5: MAINTAIN YOUR COMPETENCE

4.10.1 PRINCIPLE

- Maintain competence in relevant specializations, including advances in the Regulated Practice and relevant science.

4.10.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- The *Act* makes continuing education mandatory for engineers and geoscientists registered to practice in BC, and the Bylaws require Professional Registrants to comply with the Engineers and Geoscientists BC CE Program.
- For Registrants to remain competent in their practice areas and advance in their careers, they must constantly stay informed, advance their knowledge, and upgrade their competency and skills.
- Registrants can maintain competency by engaging in the four areas of learning—technical, ethical, regulatory, and communications and leadership—through a combination of activities such as taking courses at educational training institutions, attending conferences, conducting research projects, participating in committees, collaborating with colleagues, engaging in self-directed study, and joining professional and technical societies.

- Registrants acting in managerial roles should enable and assist their employees with staying informed and up to date, while also ensuring work is being performed by qualified professionals.
- Registrants should contribute to the professional growth of Trainees by providing thoughtful supervision, engagement in discussion, opportunities for Trainees to stretch their skills, teaching, and constructive feedback.
- Registrants have a duty to attain and maintain competence in all areas of involvement, including technologically driven or individually motivated shifts in an area of technical activity.

Refer to the Engineers and Geoscientists BC [*Guide to the Code of Ethics*](#) for more discussion on these key points for Registrants.

4.10.3 IMPLICATIONS FOR REGISTRANT FIRMS

Registrant Firms have a duty to support their individual Registrants in meeting their duty to maintain competence. Registrant Firms are required to support their individual Registrants in meeting the requirements of the CE Program.

The Bylaws require Registrant Firms to develop, maintain, and follow procedures that support continuing education for individual Registrants employed by or under contract with the Registrant Firm. The continuing education and competency segment of the Three Pillars of Professional Practice describes the responsibility that Registrant Firms have for maintaining the competency of workers who are involved in engineering and geoscience work.

Registrants who are employing or supervising Trainees should assign work of a breadth and depth that is appropriate to the experience and training of the individual Trainee and supports the Trainee's development toward professional registration. Trainees are expected to complete assigned tasks and should be given feedback on their work. Registrant Firms should encourage their Trainees to participate in continuing education activities and pursue registration with Engineers and Geoscientists BC.

Registrant Firms should also encourage Professional Registrants to share knowledge with Trainees. Trainees should be included in informal discussions about ethical dilemmas, individual employment interests, and professional growth, among other topics. These informal discussions are invaluable for professionals in training, especially because these topics are not the primary focus of classes in university engineering and geoscience programs. Understanding how practising professionals address these issues in the course of their practice is valuable experience for professionals in training.

Registrant Firms should consider developing standard practices for developing the Trainees employed by or under contract, and larger employers may want to work with Engineers and Geoscientists BC to set up an Accredited Employer Program.

4.10.4 KEY POINTS FOR REGISTRANT FIRMS

- The *Act* makes continuing education mandatory for Professional Registrants.
- Registrant Firms are required to develop, maintain, and follow documented procedures supporting continuing education, to assist individual Registrants in maintaining competency. Refer to [Section 5.0 Continuing Education and Competency Requirements for Registrant Firms](#) for more information.
- Professionals Registrants employed by or under contract with the Registrant Firm must have the competence to safely and effectively undertake engineering or geoscience work for which the Registrant Firm has been engaged.
- To maintain competency in their practice areas, individual Registrants employed by or under contract with the Registrant Firm must constantly stay informed, advance their knowledge, and upgrade their skills and competency.
- Trainees employed by the Registrant Firm must be given the opportunity to gain the experience, knowledge, and skills required to register and become competent professionals.

4.11 PRINCIPLE 6: STATE YOUR QUALIFICATIONS ACCURATELY

4.11.1 PRINCIPLE

- Provide accurate information in respect of qualifications and experience.

4.11.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- Individual Registrants should only make statements about qualifications that are true and factual, never overstating what they can do for a client.
- Registrants should review what they have written or what others write about them to confirm that statements are accurate.
- When marketing services or proposing to undertake work for a client, Registrants should honestly assess and state whether they have the requisite expertise to carry out the work safely and effectively.
- Registrants must be careful to accurately assess and state the qualifications of any experts they choose to rely on.

Refer to the Engineers and Geoscientists BC [Guide to the Code of Ethics](#) for more discussion on these key points for Registrants.

4.11.3 IMPLICATIONS FOR REGISTRANT FIRMS

A Registrant Firm's reputation is built on trust that takes time to build, but only takes one momentary lapse of judgment to destroy.

The reputation of a Registrant Firm is established over time, based on the integrity and expertise of the people it employs. This is particularly true in Registrant Firms that employ Registered Professionals to carry out work that can affect public safety. A Registrant Firm's code of conduct must be consistent with the Code of Ethics and should hold individual Registrants and other employees to a high standard of communicating honestly to

clients, colleagues, stakeholders, and others they encounter through the course of their work.

Principle 6 is about telling the truth and not embellishing qualifications and experience to make the Registrant Firm or individual Registrants employed by the Registrant Firm appear more qualified than they are. Statements made by a Registrant Firm or the people it employs (e.g., in marketing materials, proposals, and resumes) that are not true or supported by fact may result in disciplinary action. They may result in public disclosures that damage a Registrant Firm's reputation and cost time and money to rectify. They may also result in decisions by others that put public safety and a Registrant Firm's reputation at risk.

Registrant Firms need to do more than make statements about honesty in codes of conduct. Honesty should be ingrained in the culture and embodied by the Registrant Firm's leaders. Action must be taken when a Professional Registrant or leader inaccurately states their experience and qualifications or those of others in the Registrant Firm to win work. These behaviours must be stopped, and the right behaviours reinforced.

Registrant Firms must be aware of the loss of qualifications and experience when Professional Registrants leave the Registrant Firm. Continuing to tout specialized experience even though the specialized Professional Registrants are no longer working for the Registrant Firm would be inaccurate and not in keeping with the Code of Ethics.

Registrant Firms should also take active steps to ensure that the titles that they have in place for employees are compliant with this standard, and with the restrictions on use of reserved titles as set out in the *Act* and Bylaws. In particular, only professional engineers and professional geoscientists who are registered with Engineers and Geoscientists BC should be given job titles that include reserved titles such as "professional engineer" or "professional geoscientist" or other similar names, titles, descriptions, or abbreviations that express or imply that the individual is a registrant, associated with Engineers and Geoscientists BC, or

entitled to practice professional engineering or professional geoscience in BC.

4.11.4 KEY POINTS FOR REGISTRANT FIRMS

- Include a statement in the Registrant Firm's code of conduct that states that employees must be honest in their communication with clients, colleagues, stakeholders, and others they encounter through the course of their work.
- Review all statements made in marketing materials, resumes, proposals, and other Documents to ensure accuracy.
- Have leaders communicate honestly and accurately to set an example.
- Reward employees for honest and ethical behaviour. Promptly address and correct instances where qualifications and experience have been overstated to win work or raise the profile of an employee or the Registrant Firm.
- Adjust the Registrant Firm's marketed qualifications and experience when expertise is lost due to Professional Registrants leaving.

4.12 PRINCIPLE 7: DISTINGUISH FACTS FROM ASSUMPTIONS AND OPINIONS

4.12.1 PRINCIPLE

- Provide professional opinions that distinguish between facts, assumptions, and opinions.

4.12.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- Professional Registrants must make it clear whether they are providing an opinion, making assumptions, or stating facts regarding engineering and geoscience, in all spoken and written communications.
- Facts stated in professional Documents must be supported by data or credited to a reliable source. Representations of facts must be precise, and must be provided with careful attention and diligence to ensure their accuracy and reliability.
- Registrants should make an effort to state what assumptions they are using to fill in gaps.
- If called upon to provide a professional opinion, Registrants should remain objective, fair, and independent, while relying on facts to an extent appropriate to the opinions provided.
- Registrants should ensure that statements attributed to them reflect their professional opinion.
- Expert witnesses must examine all case facts objectively to assist decision-makers without regard for what effect their opinion may have on the outcome of a matter. When engaged to provide an expert opinion, Registrants should review the Engineers and Geoscientists BC *Professional Practice Guidelines – Expert Witness*.

- Registrants should avoid sharing casual advice or opinions with others, especially outside of a professional environment, when comments are neither based on a complete understanding of the facts or a supporting analysis, nor accompanied by a discussion of the inherent assumptions and limitations.

Refer to the Engineers and Geoscientists BC *Guide to the Code of Ethics* for more discussion on these key points for Registrants.

4.12.3 IMPLICATIONS FOR REGISTRANT FIRMS

A Registrant Firm's code of conduct must reinforce that factual statements, opinions, and assumptions made by employees, particularly individual Registrants, must be clearly differentiated and supported by Documentation.

Registrant Firms should reinforce and support their code of conduct statement with professional practices that provide standards for:

- stating and supporting facts on which proposals, reports, and professional opinions are based;
- including all assumptions used in proposals, designs, recommendations, and conclusions;
- clearly identifying assumptions as such; and
- clearly distinguishing opinions from facts and assumptions.

4.12.4 KEY POINTS FOR REGISTRANT FIRMS

- Include a statement in the Registrant Firm's code of conduct that Professional Registrants must clearly differentiate between, facts, opinions, and assumptions.
- Develop professional practices around stating and distinguishing facts, assumptions, and opinions in Documents prepared by the Registrant Firm.

4.13 PRINCIPLE 8: NO CONFLICTS OF INTEREST

4.13.1 PRINCIPLE

- Avoid situations and circumstances in which there is a real or perceived conflict of interest, and ensure conflicts of interest, including perceived conflicts of interest, are properly disclosed and necessary measures are taken so a conflict of interest does not bias decisions or recommendations.

4.13.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- A conflict of interest is a situation in which a person becomes unreliable because a professional or personal benefit may exist that clashes with the person's professional duties.
- Conflicts of interest can be real or reasonably perceived and can arise from any interest that interferes with the service owed to clients or employers (direct or indirect).
- Registrant must avoid conflicts of interest wherever possible.
- Registrants must recognize and identify a conflict of interest when it arises.
- Registrants must immediately disclose any real or perceived conflicts of interest to employers, clients, and/or affected parties.
- Based on the response of employers, clients, and/or affected parties, Registrants must either withdraw from the situation and eliminate the conflict, or work to mitigate the risk of biased judgment by taking necessary measures to prevent the conflict of interest from biasing decisions and recommendations.
- It is an unethical conflict of interest for a Registrant to accept allowances, commissions, bribes, kickbacks, or large gifts from interested parties, suppliers, contractors, or similar

participants in connection with work for which they are responsible.

- Registrants must be cautious of contingency fee arrangements, because they are particularly likely to create conflicts of interest.
- Registrants should never divulge clients' or employers' confidential information or use it for personal gain, unless permission to do so has been provided by the owner of the information, a legal duty requires disclosure (such as the duty of a witness at trial), or the duty to report is engaged.
- Registrants should be attentive and careful, in order to detect where giving or accepting a gift would create a real or perceived conflict of interest.

Refer to the Engineers and Geoscientists BC *Guide to the Code of Ethics* for more discussion on these key points for Registrants.

4.13.3 IMPLICATIONS FOR REGISTRANT FIRMS

Registrant Firms are bound by the same principles as individual Registrants.

When a Registrant Firm identifies that it has a real or perceived conflict of interest regarding work it is undertaking or proposing to undertake for a client, the Registrant Firm has a duty to disclose the conflict to the affected parties. If the conflict is disclosed and the client agrees to proceed, the Registrant Firm must carry out the work fairly and impartially in the best interests of the client.

Registrant Firms should define real and perceived conflicts of interest in their codes of conduct and include guidance for employees about identifying and disclosing conflicts of interest. Registrant Firms should include procedures related to conflicts of interest in employment contracts and policies. Registrant Firms should consider educating employees, particularly Trainees and new Professional Registrants, about real or perceived conflicts of interest and how to address them when identified.

Suppliers and contractors engaged by Registrant Firms must be working and making decisions for the Registrant Firm that are also free of conflicts of interest. If a Registrant Firm works with suppliers or contractors, the Registrant Firm's codes of conduct and contracts should include statements or clauses that embed the requirement that all suppliers or contractors disclose any conflicts of interest in advance of accepting a contract, or when they are identified, if later in the project. If not disclosed, a real or perceived conflict of interest by a supplier or contractor may reflect badly on the Registrant Firm and may be viewed by a client as the Registrant Firm's conflict of interest.

4.13.4 KEY POINTS FOR REGISTRANT FIRMS

- Notify the client when a conflict of interest is identified in the work the Registrant Firm is undertaking or proposing to undertake for that client.
- Include statements in the Registrant Firm's code of conduct about how employees must identify and disclose conflicts of interest.
- Define real and perceived conflicts of interest and educate employees about why it is important to identify and disclose them.
- Include the requirement for identifying and disclosing conflicts of interest in employment contracts and policies, including with suppliers and contractors.

4.14 PRINCIPLE 9: DUTY TO REPORT

4.14.1 PRINCIPLE

- Understand the duty to report to the regulatory body and, if applicable, any other appropriate authority, if the Registrant, on reasonable and probable grounds, believes that:
 - a) the continued practice of a Regulated Practice by another Registrant or other person, including Firms and employers, might pose a risk of significant harm to the environment or to the health or safety of the public or a group of people; or
 - b) a Registrant or another individual has made decisions or engaged in practices which may be illegal or unethical.

4.14.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- Registrants must confirm that there are reasonable and probable grounds to believe the problem is real and ensure possible consequences have been assessed (e.g., preserve all relevant material to support the complaint).
- Registrants must inform the parties involved in the harmful conduct of Registrants' duty to report to the appropriate authorities.
- Registrants must discern who to inform. Typically, this will include Engineers and Geoscientists BC.
- Registrants must promptly tell the appropriate authority about the problem, its consequences, and recommendations for remedial action.
- Registrants should follow up to see that action is being taken.

Refer to the Engineers and Geoscientists BC [*Guide to the Code of Ethics*](#) for more discussion on these key points for Registrants.

4.14.3 IMPLICATIONS FOR REGISTRANT FIRMS

Registrant Firms have a duty to report and must also support individual Registrants in fulfilling their duty to report. Registrant Firms must understand the various circumstances in which the Registrant Firm or its individual Registrants must report to the Regulator and not impede the fulfillment of this duty.

Registrant Firms should be aware that their duty to report also includes reporting any Trainee or professional registered to practice by a regulator governed by the *Act*, if that professional has had their employment terminated, revoked, or has had a partnership dissolved due to the Trainee or professional's work creating a risk of significant harm to the environment or the health and safety of the public.

To effectively discharge the duty to report, the report should be made to the body or agency best able to address the risk. This will often be Engineers and Geoscientists BC or another regulatory body under the *Act*. For some areas of practice or specific types of risk, reports should be made both to a regulatory body and another organization. These other organizations could include health authorities, WorkSafeBC or Technical Safety BC, other ministries or agencies of government, or law enforcement. An exhaustive list of who should receive a report in certain situations is beyond the scope of this manual. Registrant Firms should be familiar with the organizations involved in their areas of practice and the powers they have to address risks to the environment or the health and safety of the public.

Statements in the Registrant Firm's code of conduct must support the duty to report. Registrant Firms should also consider practices that will facilitate reporting illegal, unethical, and potentially harmful activities by employees. Registrant Firms should create a culture where honest and factual reporting can be done free from fear of reprisal.

Registrant Firms should consider providing a safe means for employees, including Trainees or Professional Registrants, to anonymously report behaviours and actions not in keeping with the

Registrant Firm's code of conduct or a professional's code of ethics, or that place public safety, the environment, or health and safety in the workplace at risk. Registrant Firms should support these initiatives, understanding that these behaviours and actions may pose a significant risk to their reputation and ongoing viability.

Registrant Firms should have protections for whistleblowers in place to protect them from retaliation and loss of employment. The *Act* mandates that a Registrant must be protected from reprisal for making a complaint in good faith, giving evidence, or assisting in a complaint or prosecution.

4.14.4 KEY POINTS FOR REGISTRANT FIRMS

- Include statements in the Registrant Firm's code of conduct about the duty to report, a means to report anonymously, and protection for whistleblowers.
- Report a Trainee or Professional Registrant if you terminate their employment, suspend their privileges, or dissolve a partnership with them because their practice poses a risk of significant harm to the environment or public.
- Report to Engineers and Geoscientists BC engineering and geoscience activities, products, services, and practices that you believe:
 - pose a risk of significant harm to the environment or to the health or safety of the public;
 - to be illegal or unethical;
 - indicate incompetence, negligence, or unprofessional conduct; or
 - are being carried out by an unregistered person without Direct Supervision by a Professional Registrant.
- When discharging the duty to report, consider whether reports should be made both to a regulatory body and another organization.
- Consider hazards that are slow to develop, as well as those that are immediately apparent.
- Encourage Professional Registrants to coach, mentor, and provide professional guidance to a

less-experienced professional colleague, where inadequacies are observed that may be due to unskilled practice.

- Support prompt action by Registrants fulfilling their duty to report and those who report or stop work due to a safety violation that they believe poses an imminent risk to the safety of others.

4.15 PRINCIPLE 10: STAND YOUR GROUND

4.15.1 PRINCIPLE

- Stand your ground by presenting clearly to employers and clients the possible consequences, if professional decisions or judgments are overruled or disregarded.

4.15.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- Registrants should ensure that opinions and the facts contained within them are correct and based on sound principles, and that all information and assumptions are laid out logically, clearly, and completely, with particular attention being given to any complex content.
- Registrants should be realistic and honest in all estimates, reports, and statements, and be willing to admit when a wrong judgment has been made.
- Registrants should clearly explain concerns and recommendations in writing, while also stating the potential consequences of clients or employers not heeding Registrants' advice.
- Registrants should obtain written acknowledgement that clients or employers fully understand the risks of disregarding Registrants' advice, should they choose to do so.

Refer to the Engineers and Geoscientists BC [*Guide to the Code of Ethics*](#) for more discussion on these key points for Registrants.

4.15.3 IMPLICATIONS FOR REGISTRANT FIRMS

Not standing one's ground can have catastrophic and far-reaching effects on a Professional Registrant, their employer, and the public.

Registrant Firms may find themselves in situations where a Professional Registrant working for them has made a recommendation to a client or another professional who is disagreeing with or disregarding the recommendation. A Registrant Firm's code of conduct should have in place clear statements about the conduct expected of leaders or managers in these situations. Although having a Professional Registrant review the facts, assumptions, and rationale for the recommendation is a reasonable step, overriding or attempting to override the recommendation is not. Once the recommendation is reviewed and confirmed, the correct course of action for a Registrant Firm is to support the Professional Registrant in standing their ground.

Professional Registrants, supported by a Registrant Firm, must clearly communicate the consequences if the client decides to proceed against the Professional Registrant's recommendation. Keeping a Record of this communication will be important for the Professional Registrant and the Registrant Firm. The Registrant Firm must not impede the actions of Professional Registrants in standing their ground, holding public safety and protection of the environment paramount (Principle 1) and, if needed, in fulfilling their duty to report to the appropriate authorities (Principle 9).

4.15.4 KEY POINTS FOR REGISTRANT FIRMS

- Support Professional Registrants in standing their ground, including having clear statements in their code of conduct about the conduct of leaders, managers, and others about supporting a Registrant when a client disregards their advice.
- Recognize that the same conduct is required, even when the advice is being given to the Registrant Firm by a Professional Registrant that it employs.

4.16 PRINCIPLE 11: EACH PROFESSIONAL IS RESPONSIBLE

4.16.1 PRINCIPLE

- Clearly identify each Professional Registrant who has contributed professional work, including in recommendations, reports, statements, or opinions.

4.16.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- When multiple Professional Registrants take responsibility for specific disciplines or practice areas within Documents, each of those Professional Registrants must Authenticate and qualify their Seals.
- When Documents are reviewed by multiple Professional Registrants, each focusing on a specific discipline, practice area, or expertise within a Document, each of those Professional Registrants must qualify their reviews.
- Registrants must give credit to others and seek their permission when using their work.
- Professional Registrants must include a declaration for work provided by others that has been included in a Registrant's Authenticated drawings. Refer to the sample wording in the Engineers and Geoscientists BC, *Guide to the Standard for Authentication of Documents*.
- Professional Registrants must not Authenticate engineering or geoscience work that they did not prepare or Directly Supervise, or work that they are not qualified to carry out.

Refer to the Engineers and Geoscientists BC *Guide to the Code of Ethics* for more discussion on these key points for Professional Registrants.

4.16.3 IMPLICATIONS FOR REGISTRANT FIRMS

Registrant Firms should have statements in their codes of conduct, policies, and procedures that require Documents prepared by the Registrant Firm to clearly state who is professionally responsible for each area of professional practice included in the Document.

For Professional Registrants, this will include Authenticating (by Manual Seal or Digital Seal) and qualifying their Authentication for work in a Document prepared by them or under their Direct Supervision. This duty includes ensuring that every Document issued on behalf of the Registrant Firm has the Permit to Practice number visibly applied.

These practices should be clearly disseminated to Professional Registrants employed by or under contract with the Registrant Firm and reinforced through continuing education and Document reviews.

Any instances where a Professional Registrant has issued a Document where any of the following actions have occurred must be addressed by the Registrant Firm to prevent them from recurring:

- not Authenticated, when Authentication was required by the Bylaws, standards, or guidelines of the regulatory body;
- not Authenticated, when it was provided to another person who would be relying on and using the professional engineering or professional geoscience contained in the Document;
- Authenticated by a Professional Registrant who did not prepare or Directly Supervise the work included in the Document;
- Authenticated by a Registrant who was not qualified to Authenticate the work contained in the Document;
- Authenticated when the Document included undeclared work by others that were not directly supervised by the Professional Registrant; or
- otherwise inappropriately Authenticated.

Registrant Firms should consider adopting the practice of having reviewers qualify their reviews, much like Professional Registrants qualify their Authentication, to prevent a reviewer from being seen as responsible for an area of review for which they are not qualified to carry out or did not carry out.

4.16.4 KEY POINTS FOR REGISTRANT FIRMS

- Have statements in the Registrant Firm’s code of conduct and documented policies and procedures about clearly indicating in a Document who is professionally responsible.
- Have documented policies and procedures in place for appropriate Authentication, including use of professional Seals.
- Reinforce code of conduct and documented policies and procedures through Document reviews and continuing education.
- Address Authentication issues when identified.
- Consider having a procedure requiring that checkers qualify the scope of the Check when multiple checkers are Checking reports or other Documents.
- Include statements in the Registrant Firm’s code of conduct about honesty, fairness, and giving and taking credit only when due.

4.17 PRINCIPLE 12: WORK DILIGENTLY AND FOLLOW STANDARDS OF DOCUMENTATION

4.17.1 PRINCIPLE

Undertake work and Documentation with due diligence and in accordance with any guidance developed to standardize Documentation for the applicable profession.

4.17.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- Registrants should do necessary “homework” before beginning to carry out engineering and geoscience work.
- Registrants must carry out engineering and geoscience work carefully and thoroughly.
- Registrants should carefully review their own work and arrange for others to review their work, as required to suit the risk.
 - See the following Engineers and Geoscientists BC standards set out in the Bylaws:
 - Standard for Retention and Preservation of Complete Project Documentation;
 - Standard for Checks;
 - Standard for Independent Review(s) of High-Risk Professional Activities or Work; and
 - Standard for Independent Review(s) of Structural Designs.
 - See also the following accompanying Engineers and Geoscientists BC Guides:
 - *Guide to the Standard for Retention of Project Documentation;*
 - *Guide to the Standard for Documented Checks of Engineering and Geoscience Work;*
 - *Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work;* and
 - *Guide to the Standard for Documented Independent Review of Structural Designs.*

- Registrants must make sure they are well informed and have followed the requirements of Direct Supervision, before taking responsibility for the work of Subordinates.
 - See the Engineers and Geoscientists BC Standard for Delegation and Direct Supervision set out in the Bylaws and the accompanying *Guide to the Standard for Direct Supervision*.
- Registrants must follow all guidance and standards for the Documentation of engineering and geoscience work.
- Registrants must establish and maintain a documented quality management process for retaining and preserving complete project Documentation.
 - See the Engineers and Geoscientists BC Standard for Retention and Preservation of Complete Project Document set out in the Bylaws and the accompanying *Guide to the Standard for Retention of Project Documentation*.
- Registrants must retain Records that demonstrate that client and professional obligations have been met.
- Registrants should be able to easily retrieve Documentation when needed.
- Registrants must retain Records for their required retention period.
- Registrants must retain Documentation that enables engineering or geoscience work to be handed off effectively and efficiently to others.

Refer to the Engineers and Geoscientists BC *Guide to the Code of Ethics* for more discussion on these key points for Registrants.

4.17.3 IMPLICATIONS FOR REGISTRANT FIRMS

4.17.3.1 Working Diligently

Registrant Firms should include statements in their codes of conduct and documented policies and procedures about the requirement for employees, particularly individual Registrants, to be diligent in meeting all client, regulatory, and professional standards.

Procedures should include guidance about:

- identifying and confirming all client and regulatory Input Requirements prior to undertaking work;
- carefully and thoughtfully carrying out the work to meet all client, professional, and regulatory Input Requirements; and
- Checking or having work Checked, to confirm that all Input Requirements have been met.

Refer to the Standard for Checks set out in the Bylaws, the *Guide to the Standard for Documented Checks of Engineering and Geoscience Work*, and Section 6.7 Checks of this manual for further guidance.

4.17.3.2 Applying Standards for Engineering and Geoscience Documentation

Registrant Firms are required to have documented policies and procedures in place for retaining complete project Documentation.

Refer to the Standard for Retention and Preservation of Complete Project Document set out in the Bylaws, the *Guide to the Standard for Retention of Complete Project Documentation*, and Section 6.6 Retention and Preservation of Complete Project Documentation of this manual for further guidance.

4.17.4 KEY POINTS FOR REGISTRANT FIRMS

- Clearly communicate expectations about what due diligence means for individual Registrants in the Registrant Firm's code of conduct and documented policies and procedures.
- Reinforce these expectations through reviews and continuing education.

- Have in place documented policies and procedures for retaining and preserving complete project Documentation that meets the requirements set out in the Standard for Retention and Preservation of Complete Project Documentation set out in the Bylaws (see the [*Guide to the Standard for Retention of Complete Project Documentation*](#) for further details), in order to:
 - be able to easily retrieve Documentation when needed;
 - retain Documentation for the required retention period to demonstrate that client, regulatory, and professional obligations have been met, and supports engineering or geoscience work being handed off effectively and efficiently to others, when needed;
 - ensure Documentation is preserved in the event of a dissolution or other change in legal status of a Registrant Firm; and
 - be able to demonstrate that Records are trustworthy.

4.18 PRINCIPLE 13: FAIRNESS, COURTESY, GOOD FAITH

4.18.1 PRINCIPLE

- Conduct yourself with fairness, courtesy, and good faith towards clients, colleagues, and others, give credit where it is due, and accept, as well as give, honest and fair professional comment.

4.18.2 KEY POINTS FOR INDIVIDUAL REGISTRANTS

- Registrants should be courteous, respectful, polite, and considerate with clients, colleagues, members of the public, and others.
- Registrants should act in good faith with honest intention, truthfulness, and integrity.
- Registrants should be fair, honest, and constructive when providing feedback, and focus on the work and work product, not on the individual.
- Registrants should respectfully receive and apply feedback to improve and develop professional skills.
- Registrants must be honest and accurate when advertising services or products.
- Registrants must give credit where credit is due.

Refer to the Engineers and Geoscientists BC [*Guide to the Code of Ethics*](#) for more discussion on these key points for Registrants.

4.18.3 IMPLICATIONS FOR REGISTRANT FIRMS

To meet the requirements of Principle 13, Registrant Firms must conduct their business with fairness, courtesy, and good faith, and must support similar conduct by individual Registrants.

Through their codes of conduct and policies, Registrant Firms should set the tone for a healthy, respectful workplace free of harassment, where all employees are respected, included, and valued for their contributions. Setting expectations about respectful communication

and fair treatment, having leaders and managers model the required conduct, and rewarding those who communicate and act respectfully will help to make the conduct part of the workplace culture. Employees who are treated fairly, courteously, and in good faith by a Registrant Firm are more likely to treat the Registrant Firm's clients and contacts in the same way.

The Engineers and Geoscientists BC *Professional Practice Guidelines – Human Rights and Diversity* state that Firms should consider taking action to:

- provide a workplace environment that fosters mutual respect and good interpersonal relations;
- establish human rights policies within the Firm;
- establish policies to prohibit discrimination and harassment;
- establish effective procedures to deal with incidents;
- foster diversity in the workplace environment; and
- provide effective education programs for all employees.

Taking these actions will be a way for the Registrant Firm to comply with Principle 13, and support individual Registrants employed by or under contract in complying as well.

Fairness, courtesy, and good faith must go beyond the workplace and into the business environment in which the Registrant Firm operates. Being fair to clients means delivering decisions and opinions based on fact, expertise, and honest belief. Being courteous, polite, respectful, and considerate with clients, colleagues, employees, and others should be the norm modelled by all leaders and expected of all employees. Acting in good faith by communicating honestly will help a Registrant Firm build and maintain a professional reputation for integrity.

4.18.4 KEY POINTS FOR REGISTRANT FIRMS

- Conduct business with fairness, courtesy, and good faith, and reinforce and reward the same conduct among employees.
- Create a workplace culture that is respectful and inclusive.
- Build and maintain the Registrant Firm's reputation for integrity.

4.19 CODE OF CONDUCT RESOURCES

4.19.1 DEVELOPING A CODE OF CONDUCT

As discussed in [Section 4.4 Context](#) above, a Registrant Firm's code of conduct must explain how the Registrant Firm will ensure that everyone employed by or under contract with the Registrant Firm will comply with the ethical standards, including:

1. the Engineers and Geoscientists BC Code of Ethics;
2. any Engineers and Geoscientists BC guidelines on human rights, equity, diversity, or inclusion that have been approved by Council; and
3. ethical business practices addressing corruption, conflict of interest, and contractual matters.

As discussed in [Section 2.4.2.1 Ethics](#), a Registrant Firm's PPMP must include their code of conduct.

The following table shows the themes and principles of the Code of Ethics on the left-hand side, and guidance for code of conduct statements, related procedures, and supporting culture on the right-hand side.

Registrant Firms are expected to integrate the requirements of the Code of Ethics within the context of the structure and practice of their Firm. Context may include the countries where they work, the types of projects they undertake, and the ethical issues to which their employees may be exposed.

TABLE 4-1: Guidance for Registrant Firms According to Themes and Principles of the Code of Ethics

ENGINEERS AND GEOSCIENTISTS BC CODE OF ETHICS		GUIDANCE FOR REGISTRANT FIRMS		
THEME	PRINCIPLE	CODE OF CONDUCT ^a	PROFESSIONAL PRACTICES	CORPORATE CULTURE
Act in the Public Interest	(1) Hold paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace.	<ul style="list-style-type: none"> • Include a statement regarding acting in the public interest and holding paramount the safety, health, and welfare of the public, protection of the environment, and safety in the workplace. • If working internationally, include a statement regarding what complying with this Principle will look like. 	<ul style="list-style-type: none"> • Implement effective Quality Control processes. <ul style="list-style-type: none"> – Refer to the Bylaws section 7.3.4, Standard for Checks as well as the <i>Guide to the Standard for Documented Checks of Engineering and Geoscience Work</i>, and to <i>Section 6.7 Checks</i> of this manual, for guidance about establishing an effective Quality Control process for Checking professional engineering and professional geoscience work. – For structural engineers and those designing other high-risk Structures, such as dams and retaining walls, refer to the Bylaws section 7.3.5, Standard for Independent Review(s) of Structural Design as well as the <i>Guide to the Standard for Documented Independent Review of Structural Designs</i>, and to <i>Section 6.8 Independent Review of Structural Designs</i> of this manual, for guidance about establishing a process for independently reviewing structural designs and other high-risk designs. – For Professional Registrants involved in high-risk Professional Activities or Work, refer to the Bylaws section 7.3.6, Standard for Independent Review(s) of High-Risk Professional Activities or Work as well as the <i>Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work</i>, and to <i>Section 6.9 Independent Review of High-Risk Professional Activities or Work</i> of this manual, for guidance about establishing a process for independently reviewing high-risk Professional Activities or Work. • Implement an effective health and safety program (refer to worksafebc.com/en/health-safety/create-manage/health-safety-programs). 	<ul style="list-style-type: none"> • Foster a culture of delivering quality to clients, keeping employees safe and healthy, acting in the public interest, and continually improving.
Know Your Limits	(2) Practice only in those fields where training and ability make the registrant professionally competent.	<ul style="list-style-type: none"> • Include a statement regarding pursuing work only where the Registrant Firm and its Professional Registrants are competent to carry out the work. 	<ul style="list-style-type: none"> • Have systems in place to Document the Firm’s competencies. • Accurately reflect these competencies in marketing materials. • Include related criteria in Go-No Go or other opportunity risk assessments. • Refer to the Engineers and Geoscientists BC <i>Guide to the Continuing Education Program</i> and <i>Section 5.0 Continuing Education and Competency for Registrant Firms</i> of this manual, for guidance about implementing a program to keep current in and advance the competence of the Firm and its individual Registrants. 	<ul style="list-style-type: none"> • Foster a culture of learning and development.

TABLE 4-1: Guidance for Registrant Firms According to Themes and Principles of the Code of Ethics

ENGINEERS AND GEOSCIENTISTS BC CODE OF ETHICS		GUIDANCE FOR REGISTRANT FIRMS		
THEME	PRINCIPLE	CODE OF CONDUCT ^a	PROFESSIONAL PRACTICES	CORPORATE CULTURE
Follow the Law	(3) Have regard for the common law and any applicable enactments, federal enactments or enactments of another province.	<ul style="list-style-type: none"> • Include a statement regarding complying with laws in the jurisdiction where work is undertaken. 	<ul style="list-style-type: none"> • Develop practices to: <ul style="list-style-type: none"> – keep current in applicable legislation through notifications, subscriptions, libraries, directories, and continuing education; and – identify and meet all regulatory and statutory requirements applicable to projects. • Refer to the Bylaws section 7.3.1, Standard for Use of Professional Practice Guidelines as well as the Guide to the Standard for the Use of Professional Practice Guidelines, and to Section 6.5 Use of Professional Practice Guidelines of this manual, for guidance about procedures for meeting and remaining current in regulatory and statutory requirements in engineering and geoscience work the Firm undertakes. 	<ul style="list-style-type: none"> • Foster a culture where following the law is the way to do business.
Follow the Standards of Government, and Engineers and Geoscientists BC	(4) Have regard for applicable standards, policies, plans and practices established by the government or the regulatory body.	<ul style="list-style-type: none"> • Include a statement regarding complying with all applicable standards, and documented policies and procedures established by the government or regulatory bodies having jurisdiction. 	<ul style="list-style-type: none"> • Refer to the Bylaws section 7.3.1, Standard for Use of Professional Practice Guidelines as well as the Guide to the Standard for the Use of Professional Practice Guidelines, and to Section 6.5 Use of Professional Practice Guidelines of this manual, for guidance about establishing practices for being aware of, remaining current in, and applying related Professional Practice Guidelines and Practice Advisories to engineering and geoscience work the Firm undertakes. • Designate a person or persons to monitor regulatory standards, and communicate regularly with employees about relevant changes and updates. 	<ul style="list-style-type: none"> • Foster a culture of awareness of and compliance with regulatory standards.
Maintain Your Competence	(5) Maintain competence in relevant specializations, including advances in the regulated practice and relevant science.	<ul style="list-style-type: none"> • Include a statement regarding the importance of maintaining professional competency. 	<ul style="list-style-type: none"> • Implement a CE Program, to keep current in and advance the Registrant Firm's competence. • Refer to the Guide to the Continuing Education Program and to Section 5.0 Continuing Education and Competency for Registrant Firms of this manual. 	<ul style="list-style-type: none"> • Foster a culture of learning and development.
State Your Qualifications Accurately	(6) Provide accurate information in respect of qualifications and experience.	<ul style="list-style-type: none"> • Include a statement regarding being truthful and factual about Firm and employee qualifications and experience. 	<ul style="list-style-type: none"> • Have practices in place to Check the accuracy of marketing materials, proposals, and resumes before they are published or issued. 	<ul style="list-style-type: none"> • Foster a culture of honest communication.

TABLE 4-1: Guidance for Registrant Firms According to Themes and Principles of the Code of Ethics

ENGINEERS AND GEOSCIENTISTS BC CODE OF ETHICS		GUIDANCE FOR REGISTRANT FIRMS		
THEME	PRINCIPLE	CODE OF CONDUCT ^a	PROFESSIONAL PRACTICES	CORPORATE CULTURE
Distinguish Facts from Assumptions and Opinions	(7) provide professional opinions that distinguish between facts, assumptions and opinions;	<ul style="list-style-type: none"> • Include statements that: <ul style="list-style-type: none"> – define facts, assumptions, and opinions; – instruct individual Registrants in delineating facts, assumptions, and opinions in Documents and deliverables; and – direct individual Registrants in stating opinions only when the individual Registrant stating the opinion has the knowledge and honest belief in the opinion. 	<ul style="list-style-type: none"> • Implement procedures and create templates that delineate facts, assumptions, and opinions in proposals, reports, letters, and other deliverables. • Hold continuing education sessions to reinforce the practices. 	<ul style="list-style-type: none"> • Foster a culture of clarity and honesty in preparing Documents
No Conflicts of Interest	(8) Avoid situations and circumstances in which there is a real or perceived conflict of interest and ensure conflicts of interest, including perceived conflicts of interest, are properly disclosed and necessary measures are taken so a conflict of interest does not bias decisions or recommendations.	<ul style="list-style-type: none"> • Include statements that: <ul style="list-style-type: none"> – dictate that employees must act in the public and client interest; – define real and perceived conflicts of interest; – describe expected conduct and actions to be taken when Firm or individual conflicts of interest are identified; and – set limits on accepting and giving work-related gifts. 	<ul style="list-style-type: none"> • Provide continuing education about conflicts of interest and how to address them. • Have practices in place to identify and report conflicts of interest. • Review prospective clients and opportunities regarding any real or perceived conflicts of interest. 	<ul style="list-style-type: none"> • Foster a culture of unbiased decision-making.

TABLE 4-1: Guidance for Registrant Firms According to Themes and Principles of the Code of Ethics

ENGINEERS AND GEOSCIENTISTS BC CODE OF ETHICS		GUIDANCE FOR REGISTRANT FIRMS		
THEME	PRINCIPLE	CODE OF CONDUCT ^a	PROFESSIONAL PRACTICES	CORPORATE CULTURE
Duty to Report	(9) Report to EGBC and, if applicable, any other appropriate authority, if the registrant, on reasonable and probable grounds, believes that: (a) the continued practice of a regulated practice by another registrant or other person, including firms and employers, might pose a risk of significant harm to the environment or to the health or safety of the public or a group of people; or (b) a registrant or another individual has made decisions or engaged in practices which may be illegal or unethical.	<ul style="list-style-type: none"> • Include statements about legal and ethical duties to report and protections from reprisal. 	<ul style="list-style-type: none"> • Establish practices about the various circumstances that prompt a duty to report and how to properly discharge this duty. • Attend or implement continuing education, such as seminars, about the duty to report, consequences of not reporting, and how to report. • Establish a system for anonymous reporting of illegal and unethical conduct within the Firm. • Establish policies and procedures to protect whistleblowers from retaliation. 	<ul style="list-style-type: none"> • Foster a culture where employees do not look the other way when they see: <ul style="list-style-type: none"> – Illegal or unethical conduct; – practices or products that risk significant harm to the public or environment; or – hazards in the workplace. • Foster a culture where employees feel safe from reprisal for complying with their duty to report.
Stand Your Ground	(10) Present clearly to employers and clients the possible consequences if professional decisions or judgments are overruled or disregarded.	<ul style="list-style-type: none"> • Include statements regarding support for professional opinions and judgments, and expectations of professionals providing opinions or judgments. 	<ul style="list-style-type: none"> • Establish practices to reinforce providing professional opinions and judgments in writing, and communicating the consequences of being overruled. 	<ul style="list-style-type: none"> • Foster a culture of support for professionals who are standing their ground.
Each Professional is Responsible	(11) Clearly identify each registrant who has contributed professional work, including in recommendations, reports, statements, or opinions;	<ul style="list-style-type: none"> • Include statements regarding: <ul style="list-style-type: none"> – identifying all professionals taking professional responsibility for work; – appropriately Authenticating all Documents issued to others; – giving credit where credit is due; and – respecting copyright and trademarks owned by others. 	<ul style="list-style-type: none"> • Refer to the Bylaws section 7.3.7, Standard for Issuance of Manual Seal and Authenticating Documents as well as the Guide to the Standard for Authentication of Documents and Section 6.10 Issuance of Manual Seal and Authenticating Documents of this manual, for guidance about how to identify contributing professionals taking responsibility for engineering or geoscience work, “including recommendations, reports, statements or opinions”, through the use of professional Seals. 	<ul style="list-style-type: none"> • Foster a culture of giving credit where credit is due.

TABLE 4-1: Guidance for Registrant Firms According to Themes and Principles of the Code of Ethics

ENGINEERS AND GEOSCIENTISTS BC CODE OF ETHICS		GUIDANCE FOR REGISTRANT FIRMS		
THEME	PRINCIPLE	CODE OF CONDUCT ^a	PROFESSIONAL PRACTICES	CORPORATE CULTURE
Work Diligently and Follow Standards of Documentation	(12) Undertake work and documentation with due diligence and in accordance with any guidance developed to standardize professional documentation for the applicable profession.	<ul style="list-style-type: none"> • Include statements about: <ul style="list-style-type: none"> – expectations of quality in work prepared for the Firm; – expectations for meeting due diligence requirements; and – requirement for retaining complete and accurate Records. 	<ul style="list-style-type: none"> • Develop and reinforce expectations for delivering products and services that meet all regulatory, statutory, and client requirements. • Develop a rigorous quality management system. Refer to Section 6.0 Quality Management for Registrant Firms of this manual. • Refer to the Bylaws section 7.3.2, Standard for Retention and Preservation of Complete Project Documentation as well as the Guide to the Standard for Retention of Complete Project Documentation, and to Section 6.6 Retention and Preservation of Complete Project Documentation of this manual for guidance about professional practices that will support undertaking work “in accordance with any guidance developed to standardize professional Documentation” for the engineering and geoscience professions. 	<ul style="list-style-type: none"> • Foster a culture of delivering quality products and services that meet all requirements.
Fairness, Courtesy, Good Faith	(13) Conduct themselves with fairness, courtesy and good faith towards clients, colleagues and others, give credit where it is due, and accept, as well as give, honest and fair professional comment.	<ul style="list-style-type: none"> • Include statements about: <ul style="list-style-type: none"> – honesty and integrity; – respecting diversity and inclusion; – workplaces that are free of harassment; and – treating clients, colleagues, and others with fairness, courtesy, and good faith. 	<ul style="list-style-type: none"> • Establish practices and professional development that educate employees about what is expected of them with respect to standards of fairness, courtesy, and good faith. 	<ul style="list-style-type: none"> • Leaders should model the expected behaviour.

NOTE:

^a See [Section 4.19.2 Example of a Corporate Code of Conduct Consistent with the Engineers and Geoscientists BC Code of Ethics](#) of this manual for a sample code of conduct.

4.19.2 EXAMPLE OF A CORPORATE CODE OF CONDUCT CONSISTENT WITH THE ENGINEERS AND GEOSCIENTISTS BC CODE OF ETHICS

Registrant Firms that do not currently have a code of conduct, particularly those that are small, may use the following example as a base for developing their own code of conduct. This example is based on the themes in the Engineers and Geoscientists BC Code of Ethics.

Note that for a Registrant Firm’s code of conduct to be authentic and effective, it must be specific to the Registrant Firm and written in a style and with terminology consistent with the Registrant Firm’s own communications and publications and relevant to the Registrant Firm’s specific areas of practice, industry, etc.

The statements included must be those that the Registrant Firm supports and reinforces in its decisions and actions.

FIGURE 4-1: Example of a Corporate Code of Conduct Consistent with the Engineers and Geoscientists BC Code of Ethics

[FIRM’S NAME] CODE OF CONDUCT

ACT IN THE PUBLIC INTEREST
<ul style="list-style-type: none">• We are committed to holding public safety and the protection of the environment paramount in all work we undertake for clients.• Through our health and safety program, we are committed to keeping our people and our workplaces safe and healthy. We expect our employees to follow our program to keep themselves, clients, colleagues, and others safe and healthy in the workplace.
KNOW YOUR LIMITS
<ul style="list-style-type: none">• We work only in areas where our employees have the required education, training, and experience, or where we have access to others with the required expertise to carry out the work safely and effectively.• We maintain and expand the limits of our expertise by providing opportunities and supporting our employees in maintaining competency and growing their expertise and competence.
FOLLOW THE LAW
<ul style="list-style-type: none">• We act within the laws of jurisdictions where we carry out work.• We compete fairly and never try to unduly influence public officials to secure a project.• We expect our employees to:<ul style="list-style-type: none">– be aware of and knowledgeable in common law, legislation, codes, and regulations that apply to work they undertake for us; and– know and meet all regulatory and statutory requirements applicable to their work
FOLLOW THE STANDARDS OF GOVERNMENT AND ENGINEERS AND GEOSCIENTISTS BC
<ul style="list-style-type: none">• We expect our employees to be familiar with and apply all applicable standards, professional practice guidelines, practice advisories, and regulations published or issued by government or their professional regulator.

[FIRM'S NAME] CODE OF CONDUCT

MAINTAIN YOUR COMPETENCE

- We recognize the value of continuing education and training to sustain and grow our corporate competencies.
- We support the development and training of our employees through our continuing education program.
- We support the development of our employees who are trainees, to help them advance to become professional registrants.
- We provide opportunities for our people to advance and grow in their professions and careers.

STATE YOUR QUALIFICATIONS ACCURATELY

- Our reputation is based on the integrity and expertise of our employees.
- We expect our employees, as modelled by our leaders, to make statements that are supported by fact. Simply put, we expect all employees to tell the truth when communicating with clients, colleagues, and the public.
- Proposals, qualifications, resumes, and other marketing materials must be written accurately and reviewed to accurately reflect our qualifications and experience and that of our employees.

DISTINGUISH FACTS FROM ASSUMPTIONS AND OPINIONS

- Documents that we prepare must clearly identify facts, assumptions, and opinions.
- We expect that opinions stated by our professionals will be based on sufficient knowledge and honest belief in that opinion.
- Opinions stated by our professionals must be objective and independent, focus on the facts of the issue, and avoid being biased due to political, economic, or other factors.

NO CONFLICTS OF INTEREST

- Conflicts of interest occur when an employee has, or is perceived to have, a competing obligation or interest that may potentially influence their actions or decisions for one of our clients or for our firm.
- On becoming aware of a real or perceived conflict of interest affecting a client or our firm, employees must disclose the conflict of interest immediately to their manager and take any necessary steps to address the situation.
- To avoid real or perceived obligations to others that others, employees must not accept gifts, lunches, tickets, or other items exceeding a value of CAD\$*[insert dollar amount]* when representing or carrying out work for our firm.
- *[Firms will want to consider other restrictions that should be captured here, or may want to develop and reference the Firm's policy on gifts.]*

DUTY TO REPORT

- We understand that we have a legal and ethical duty to report when we have reasonable and probable grounds to believe that professional practice or work might pose a risk of significant harm to the environment or to the health or safety of the public.
- We understand that we have a duty to report if we terminate, suspend, or dissolve a partnership with a Trainee or Professional Registrant, because of activities, practices, or work we believe:
 - poses a risk of significant harm to the environment or to the health or safety of the public;
 - is illegal or unethical; or
 - indicates incompetence, negligence, or unprofessional conduct.
- We support our professionals in fulfilling their duty to report.
- We provide our employees with a means to anonymously report illegal, unethical, or otherwise inappropriate conduct by other employees.
- We protect employee whistleblowers who are acting in good faith from retaliation from the Firm, its leaders, and other employees.

[FIRM'S NAME] CODE OF CONDUCT

STAND YOUR GROUND

- We support our professionals and their advice and recommendations to clients.
- We expect our professionals to stand their ground and communicate in writing the consequences of not following their professional advice and recommendations.

EACH PROFESSIONAL IS RESPONSIBLE

- Professional reports, drawings, and other deliverables must always identify those taking professional responsibility for each practice area.
- Each professional must be familiar with use of seal or authentication requirements specified by their regulator and our internal professional practices.
- We expect leaders and employees to give credit when credit is due, and to respect the copyright and trademarks of other firms and practitioners.

WORK DILIGENTLY AND FOLLOW STANDARDS OF DOCUMENTATION

- We pride ourselves in the quality of work we deliver to clients. We expect every employee to work diligently to deliver products and services that meet all requirements and suit the purpose for which they have been created.
- Records are fundamental to demonstrating that we have met all requirements and fulfilled all professional, contractual and the firm's obligations. All employees must retain required records in keeping with regulatory and statutory requirements; our records management program; and our associated policies, procedures, and systems.

FAIRNESS, COURTESY, AND GOOD FAITH

- Our reputation and ongoing success are built on honesty and integrity.
- We respect and value diversity and strive to create a workplace culture that is respectful, inclusive, and free of harassment for all employees.
- We conduct business with fairness, courtesy, and good faith. We expect employees to be courteous, respectful, polite, and considerate with clients, colleagues, members of the public, and others.

5.0 CONTINUING EDUCATION AND COMPETENCY REQUIREMENTS FOR REGISTRANT FIRMS

5.1 INTRODUCTION

Continuing Education and maintaining competency is one of the Three Pillars of Professional Practice of Engineers and Geoscientists BC’s model for the regulation of Firms. The continuing education and competency pillar sets requirements for specific processes involved in the practice of professional engineering and/or professional geoscience. Guidance for the other two pillars—compliance with the Code of Ethics and with Quality Management—are included in other sections within this manual.

The Engineers and Geoscientists BC Continuing Education Program (CE Program) helps Registrants maintain competency in their area(s) of practice by creating a Continuing Education Plan (CE Plan) and undertaking continuing education activities. Registrant Firms are expected to assist and encourage the professionals employed by or under contract to maintain competency throughout the employment relationship.

Two mandatory requirements for Registrant Firms holding Permits to Practice are:

1. developing and maintaining a procedure for assessing competence of Professional Registrants at hiring and on an ongoing basis; and
2. developing and implementing procedures for supporting continuing education by their Professional Registrants.

These requirements may be addressed in a Registrant Firm’s corporate policies and procedures, or through other documented means. The policies and procedures

must clearly communicate to employees, particularly Registrants, the Registrant Firm’s approach to evaluating individuals for their ability to meet their job responsibilities, and the approach to supporting individuals in meeting their continuing education requirements. Any Documentation developed by a Firm for inclusion in the PPMP must reference the individual requirements of the Engineers and Geoscientists BC CE Program.

This section provides details on the purpose, context, guidance, and resources for Firms regarding continuing education and competency, as they prepare to meet the requirements of Registrant Firms.

5.2 PURPOSE

Registrant Firms are expected to develop, maintain, and follow documented procedures to meet the requirements of Bylaw 7.6.16.

Specifically, the Bylaw states:

- “(1) A Registrant Firm must develop, maintain, and follow documented procedures to support individual Registrants employed by or under contract with the Registrant Firm in
 - (a) meeting the individual Registrants’ continuing education program requirements pursuant to sections 7.6.3, 7.6.4, 7.6.5, 7.6.6 and 7.6.7, as applicable, and

- (b) maintaining the individual Registrants' competency with respect to the role(s) of the individual Registrants and the activities or work engaged in by the individual Registrants on behalf of the Registrant Firm.
- (2) Each year, a Registrant Firm that has more than one Professional Registrant employed or under contract with the Registrant Firm must conduct a documented review with each Professional Registrant employed by or under contract with the Registrant Firm, in order to confirm that the Professional Registrant is maintaining the Professional Registrant's competency with respect to the Regulated Practice.
 - (3) A Registrant Firm must retain all documentation that supports a documented review of a Professional Registrant conducted pursuant to subsection (2) for a minimum of 5 years after the documented review was completed.
 - (4) A non-practising Registrant Firm is exempt from the requirements in this section of the Bylaws while maintaining its non-practising status.”

The *Professional Governance Act* (the “*Act*”) requires that Engineers and Geoscientists BC establish and maintain a mandatory CE Program for its Registrants.

This section of the manual provides guidance to Firms in understanding the following:

- details about the Engineers and Geoscientists BC CE Program for Professional Registrants;
- the Registrant Firm's obligations in supporting individual Registrants in meeting their continuing education requirements; and
- the Registrant Firm's obligations in assessing the competency of Professional Registrants.

In addition, this section provides guidance, examples, and resources to assist Firms in developing appropriate policies and procedures to meet their obligations in this regard.

This section is intended to provide guidance on a Registrant Firm's obligations regarding the continuing education and competency to the professionals employed by or under contract; it is up to individual Registrant Firms to decide on the specific means and methods they use to meet these requirements.

5.3 CONTEXT

The guidance for Firms contained in this section relies on and refers to the Engineers and Geoscientists BC *Guide to the Continuing Education Program* that applies to all Registrants.

A Firm's role is largely to create procedures that assist its Professional Registrants in meeting their individual obligations, as well as periodically reviewing that its Professional Registrants are meeting their continuing education obligations.

See also [Section 7.0 References and Related Documents](#).

5.4 IN PRACTICE

After registering with Engineers and Geoscientists BC and being issued a Permit to Practice, Registrant Firms must ensure that they have in place a Professional Practice Management Plan (PPMP) containing documented policies and procedures consistent with the requirements for continuing education and competency.

To meet this requirement, Registrant Firms must:

- create a procedure outlining how the Registrant Firm will evaluate the competency of individual Registrants, and how it will support individual Registrants in maintaining their competency by meeting the requirements of the Engineers and Geoscientists BC CE Program; and,
- communicate the procedure to individual Registrants.

5.5 INDIVIDUAL CONTINUING EDUCATION PROGRAM REQUIREMENTS

Starting July 1, 2021, the mandatory Engineers and Geoscientists BC CE Program will come into force for individual Registrants. Following is a summary of requirements for individual Registrants:

- **Applicability:** The requirement to adhere to the CE Program depends on the Registrant’s professional designation.
 - It is mandatory for all practising Professional Registrants to meet all requirements of the CE Program.
 - It is optional for Registrants with a non-practising designation (either “Non-practising” or “Retired”) to meet the overall Continuing Education Hour (CE Hour) and CE Plan requirements; however, it is mandatory for these Registrants to complete at least one CE Hour in each 3-year rolling period in the categories of Ethical Learning and Regulatory Learning (see “Areas of Learning” below).
 - It is optional for Trainees to meet the CE Program requirements; however, they are still encouraged to follow the requirements of the CE Program during their training years.
- **CE Hours:** Practising Professional Registrants must complete at least 60 CE Hours in every 3-year rolling period. Professional practice hours do not count toward CE Hours. All continuing education activities must be recorded in the year that they are undertaken.
- **Exemptions:** Professional Registrants going on parental, medical, or compassionate care leaves, or those with other extenuating circumstances, can apply for an exemption from CE Program requirements on an annual basis.

- **Areas of Learning:** Professional Registrants will categorize their continuing education activities into one or more of four areas of learning: Ethical Learning, Regulatory Learning, Technical Learning, or Communications and Leadership. Definitions and examples of activities that fall into each area of learning can be found in the Engineers and Geoscientists BC [*Guide to the Continuing Education Program*](#).
- **Mandatory Hours for Ethical and Regulatory Learning:** Professional Registrants must annually complete at least one CE Hour of activity in each of categories of Ethical Learning and Regulatory Learning.
- **Continuing Education Plan (CE Plan):** Practising Professional Registrants must create, maintain, and submit a CE Plan on an annual basis, to help reflect on and plan their continuing education activities. A template for the CE Plan is provided in the Engineers and Geoscientists BC [*Guide to the Continuing Education Program*](#); Professional Registrants can also use their own template, provided it meets the minimum requirements given in the [*Guide to the Continuing Education Program*](#).

5.6 THE REGISTRANT FIRM’S RESPONSIBILITIES

Professional Registrants must maintain competence in their roles and areas of practice, using continuing education to help them do so. Registrant Firms are involved in the competence and continuing education of their professionals in three principal ways, by:

1. assessing competence;
2. helping to maintain competence through continuing education; and
3. assisting with keeping Records.

5.6.1 ASSESSING COMPETENCE

5.6.1.1 Purpose

Registrant Firms must frequently and consistently assess the competence of individual Registrants employed by or under contract with them to ensure their practice meets the required standard.

5.6.1.2 Implications for Registrant Firms

It is up to Registrant Firms to decide on the specific means and methods they use to assess the competence of their individual Registrants. Competence is defined as “the ability to perform the tasks and roles of an occupational category to standards expected and recognized by employers and community at large.” Metrics for assessing competence may be developed by each Registrant Firm, or they may be based on wider industry standards. Registrant Firms should also refer to external codes and standards for guidance on competence, including the standards contained within Engineers and Geoscientists BC Bylaws, Engineers and Geoscientists BC Code of Ethics, Guides to quality management standards, Professional Practice Guidelines, and Practice Advisories.

When hiring new professionals, each Registrant Firm needs a robust process to assess and document the individual Registrant’s skills and abilities. This helps ensure that the new employee is competent to perform the role and meets any additional fit and corporate requirements. These processes must be documented, to provide a clear audit trail establishing the incoming level of competence for each individual Registrant. This Documentation will serve as a baseline against which to judge the individual Registrant’s development and performance in the role.

Many Firms already have a periodic performance review process that tracks the competency and development of employees. A Firm with a performance review process should be able to adapt it to assess whether an individual Registrant is maintaining their competency with respect to the Regulated Practice. Regular performance reviews should provide some assessment of the individual Registrant’s skills and

abilities, both by the individual and their peers or managers. Firms should tailor the output of the annual performance review process, to track the competence of individual Registrants and identify areas where further training or education would be beneficial.

Firms must ensure that regular performance reviews are fair and equitable for all employees, regardless of an employee's gender, race, or other personal attributes. (Firms can review the BC Human Rights Code for more complete information about prohibited grounds of discrimination in the workplace.) Best practices for Registrant Firms include regularly normalizing performance review outcomes across all employee categories, to ensure no one segment of employees is receiving higher or lower performance review scores due to implicit biases.

The Engineers and Geoscientists BC CE Program requires Professional Registrants to create a CE Plan that helps them maintain competency by planning their continuing education activities. A Professional Registrant’s CE Plan can be incorporated into a Registrant Firm’s annual performance review process and/or can be modified to suit the Registrant Firm’s requirements, while still maintaining the required elements. Treating the CE Plan as a cooperative exercise between the Registrant Firm and the Professional Registrant will help both parties meet their Permit to Practice requirements and CE Program requirements, respectively.

5.6.1.3 Key Points for Registrant Firms

- Develop consistent processes to assess and document the skills and abilities of new individual Registrants.
- Track the competency of individual Registrants through the Registrant Firm’s annual performance review process.
- Ensure performance reviews are fair and equitable for all employees.
- To help ensure Professional Registrants meet their CE Program requirements, consider incorporating the required CE Plan into the annual performance review process.

5.6.2 MAINTAINING COMPETENCE

5.6.2.1 Purpose

Principle 5 of the Code of Ethics establishes that it is the responsibility of each individual Registrant to maintain their competence. Continuing education is one of the most important ways individual Registrants can maintain their competence. Registrant Firms have an important role to play in helping their individual Registrants maintain competence, by supporting their employees in meeting the requirements of the CE Program.

5.6.2.2 Implications for Registrant Firms

Registrant Firms must develop procedures addressing how they will support their individual Registrants in meeting individual continuing education requirements. The level of this support will vary, depending on the size, complexity, and resources of each Registrant Firm. Some Registrant Firms may allot time for undertaking continuing education activities and provide financial support for the associated costs. Registrant Firms with fewer financial resources may assist individual Registrants but encourage them to focus on internal training opportunities at a lower cost. Registrant Firms may also convene discussion forums or facilitate mentoring opportunities that further the development of professional competence.

To meet Permit to Practice requirements, Firms must develop and document their policies and procedures in detail, and these Documents must be made available for all individual Registrants to review. This procedure should outline the amount of support the Registrant Firm will provide for individual Registrants to undertake continuing education activities, including:

- the Registrant Firm's overall vision and goals for supporting continuing education;
- time off, both paid and unpaid, to attend learning activities;
- financial support available for learning activities; and

- learning opportunities organized by the Registrant Firm (e.g., conferences, seminars, workshops, mentoring programs).

Registrant Firms cannot actively discourage or inhibit individual Registrants from pursuing continuing education activities that assist them in maintaining competence.

Individual Registrants and managers should work together to identify the individual Registrant's learning needs and the continuing education activities that match those needs. The annual performance and continuing education review process should be used as a mechanism in this cooperative work. Through peer and manager review of an individual Registrant's CE Plan, Registrant Firms can also provide valuable feedback on proposed continuing education activities, and help individual Registrants identify appropriate opportunities that meet current and future role requirements and fit into the Registrant Firm's documented policies and procedures. Both training needs and applicable activities should be tracked on the individual Registrant's CE Plan.

5.6.2.3 Key Points for Registrant Firms

- Registrant Firms must develop, adapt, or use a current compliant documented procedure that addresses how they will support their individual Registrants in meeting their individual requirements for the CE Program.
- Registrant Firms cannot actively discourage or inhibit individual Registrants from pursuing relevant continuing education activities.
- Registrant Firms should, through an adapted or newly created annual performance review process, assist individual Registrant employees in identifying learning needs and relevant continuing education activities, and provide feedback on continuing education activities that individual Registrants have identified for themselves.

5.6.3 KEEPING RECORDS

5.6.3.1 Purpose

Registrant Firms can assist individuals in meeting their CE Program requirements by keeping Records of their individual Registrant employees' participation in the Registrant Firm's continuing education activities.

5.6.3.2 Implications for Registrant Firms

As part of the CE Program, Professional Registrants must keep Records of their continuing education activities (including Documentation of attendance, receipts, certificates, or other proof of undertaking the activity), as well as CE Plans, for at least 5 years.

Registrant Firms can assist individuals by keeping their own Records of individual Registrants' attendance at internal training events and by also maintaining performance review Records for at least the same 5-year period.

Other Documents that relate to assessing and demonstrating competence, such as interview processes, intake evaluations, role descriptions, and training program materials, should also be retained as proof of an effective competency program within the Registrant Firm.

5.6.3.3 Key Points for Registrant Firms

- Keep Records of individual Registrant employee's attendance at continuing education activities hosted by the Registrant Firm for at least 5 years.
- Keep Records of performance reviews for individual Registrant employees for at least 5 years.

5.7 RESOURCES

To understand individual requirements under the CE Program, refer to the Engineers and Geoscientists BC *Guide to the Continuing Education Program*, which also includes a CE Plan template.

5.8 SUMMARY

Registrant Firms must play a part in ensuring that their individual Registrants maintain competence in their role and area of practice.

By assessing competence at intake and throughout an individual Registrant's career, having documented policies and procedures to help individual Registrants maintain competency and meet their individual continuing education requirements, and keeping Records of their policies and initiatives, Registrant Firms can demonstrate that they are helping to maintain public safety while supporting their individual Registrants in meeting their professional obligations.

6.0 QUALITY MANAGEMENT FOR REGISTRANT FIRMS

6.1 INTRODUCTION

Quality Management is one of the Three Pillars of Professional Practice of Engineers and Geoscientists BC’s model for the regulation of Firms. The quality management pillar is based on the standards of competence set out in sections 7.3.1 through 7.3.8 of the Bylaws. The quality management pillar sets requirements for specific processes involved in the practice of professional engineering or professional geoscience. To meet the quality management requirements, Registrant Firms and Professional Registrants should establish and follow policies and procedures to govern identified processes.

Guidance for the two other pillars—compliance with the Code of Ethics and with Continuing Education and Competency—are included in other sections within this manual.

Quality management requirements must be addressed in a Registrant Firm’s Professional Practice Management Plan (PPMP) or in corporate policies and procedures or other documented means. The quality management requirements must be clearly communicated to employees, particularly Professional Registrants. Those working for Registrant Firms are expected to follow the quality management requirements established in the PPMP and applicable policies or procedures.

This section provides details on the purpose, context, guidance, and resources for Firms regarding quality management, as they prepare to qualify for a Permit to Practice.

6.2 PURPOSE

The quality management section of this manual has been developed to:

- provide guidance to Firms in understanding the quality management requirements in the Bylaws;
- provide guidance to Firms on how to confirm, adapt, adopt, or create policies and procedures consistent with the quality management requirements; and
- provide resources for Firms for addressing quality management requirements.

6.3 APPLYING THE GUIDANCE

The sections of the Bylaws that address each quality management topic delineate requirements that must be upheld by Professional Registrants, as well as requirements that must be upheld by Registrant Firms. Generally, the requirements for Registrant Firms concern establishing, maintaining, and ensuring its employees follow documented policies and procedures related to the quality management topic.

These quality management policies and procedures form a significant part of each Registrant Firm’s PPMP. The PPMP must include a plan for how the Registrant Firm will ensure compliance with the standards of competence and quality management established in the Bylaws.

The eight quality management topics identified in the Bylaws, and their respective sections in this manual, include:

1. Use of Professional Practice Guidelines ([Section 6.5](#));
2. Retention and Preservation of Complete Project Documentation ([Section 6.6](#));
3. Checks ([Section 6.7](#));
4. Independent Review(s) of Structural Designs ([Section 6.8](#));
5. Independent Review(s) of High-Risk Professional Activities or Work ([Section 6.9](#));
6. Issuance of Manual Seal and Authenticating Documents ([Section 6.10](#));
7. Delegation and Direct Supervision ([Section 6.11](#));
and
8. Field Review ([Section 6.12](#)).

A PPMP may not need to address all of these quality management topics. For example, a Registrant Firm that does not engage in structural engineering is not required to create policies governing the Independent Review of structural designs; however, the exclusion should be documented in the PPMP.

Firms are also required to take reasonable steps to ensure that the Professional Registrants employed by or under contract with the Firm adhere to the standards of competence and quality management required of Professional Registrants.

[TABLE 6-1](#) below explains the differences between this manual and the Guides to the quality management standards.

TABLE 6-1: Differentiating Between this Section of this Manual and the Guides to the Quality Management Standards

CATEGORIES FOR COMPARISON	THIS SECTION OF THIS MANUAL	GUIDES TO THE QUALITY MANAGEMENT STANDARDS
AUDIENCE	<ul style="list-style-type: none"> • Firms seeking a Permit to Practice 	<ul style="list-style-type: none"> • Professional Registrants
PURPOSE	<ul style="list-style-type: none"> • Provides resources to Firms looking for guidance on meeting Permit to Practice requirements for quality management and compliance with Professional Practice Guidelines and Practice Advisories 	<ul style="list-style-type: none"> • Interprets the standards of practice, conduct and competence required for compliance with the quality management requirements
RELATIONSHIP	<ul style="list-style-type: none"> • Collective, with its own terminology; all sections are written to complement each other 	<ul style="list-style-type: none"> • Standalone documents with their own definitions
CONTENT	<ul style="list-style-type: none"> • Why and what to do with guidance about how to comply with the Permit to Practice requirements 	<ul style="list-style-type: none"> • Why and what to do, but not how to do it
OUTCOME OF USE	<ul style="list-style-type: none"> • Continued compliance with Permit to Practice requirements 	<ul style="list-style-type: none"> • Meeting the quality management requirements and compliance with Professional Practice Guidelines and Practice Advisories as stated in the <i>Act</i> and Bylaws
OUTCOME OF FAILURE TO USE	<ul style="list-style-type: none"> • Potential disciplinary action resulting in cancellation of registration and/or cancellation of Permit to Practice, among other restrictions or penalties 	<ul style="list-style-type: none"> • Potential for disciplinary action against Registrants resulting in cancellation of registration, among other restrictions or penalties

6.4 CONTEXT

The guidance for Firms contained in this section relies on and refers to the Guides to quality management standards that apply to all Professional Registrants.

6.5 USE OF PROFESSIONAL PRACTICE GUIDELINES

6.5.1 PURPOSE

Registrant Firms are expected to establish, maintain, and follow documented policies and procedures related to the use of Professional Practice Guidelines.

Specifically, section 7.3.1(3), Standard for Use of Professional Practice Guidelines of the Bylaws states:

“A Registrant Firm must do all of the following:

- (a) establish, maintain, and follow documented policies and procedures in order to
 - (i) obtain information and details in a timely manner regarding professional practice guidelines published pursuant to subsection (1) that are relevant to the Regulated Practice carried out by the Registrant Firm and Professional Registrants employed by or under contract with the Registrant Firm, and
 - (ii) inform the Professional Registrants employed by or under contract with the Registrant Firm in a timely and effective manner of professional practice guidelines published pursuant to subsection (1) that are relevant the Regulated Practice carried out by the Registrant Firm and Professional Registrants employed by or under contract with the Registrant Firm;

- (b) take reasonable steps to facilitate all Professional Registrants employed by or under contract with the Registrant Firm in adhering to the obligations of Professional Registrants pursuant to subsection (2).”

This section provides guidance on a Firm’s obligations for implementing documented policies and procedures to reinforce the use of Professional Practice Guidelines and Practice Advisories by the Professional Registrants employed by or under contract with the Firm. It is up to individual Firms to decide on the specific means and methods they use to meet these requirements and the intent of this Bylaw.

6.5.2 IN PRACTICE

6.5.2.1 What Are Professional Practice Guidelines

Each Professional Practice Guideline establishes the expectations and obligations of professional practice that all Professional Registrants are expected to have regard for when engaged in the relevant professional engineering or professional geoscience work, in addition to the more general standards set out in the Bylaws.

Engineers and Geoscientists BC chooses Professional Practice Guideline topics with a risk-based analysis, prioritizing Professional Practice Guidelines that address practice activities that pose increased risks to the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace. Professional Practice Guidelines are prepared by subject matter experts and address specific Professional Activities or Work. When preparing a Professional Practice Guideline, Engineers and Geoscientists BC consults with subject matter experts, Professional Registrants practising in the relevant field, and other stakeholders.

All Professional Practice Guidelines are published on the Engineers and Geoscientists BC website. From time to time, Professional Practice Guidelines are revised or updated, so Professional Registrants should be familiar with the current versions applicable to their practice.

Professional Practice Guidelines do not replace the exercise of professional expertise and judgment. They are intended to establish what professionals should do, not how they should do it.

6.5.2.2 Why Are Professional Practice Guidelines Created

Engineers and Geoscientists BC creates Professional Practice Guidelines for a number of reasons, including:

- to respond to requests from stakeholders to establish expectations and obligations in a specific professional activity;
- to address issues within a specific professional activity that have been uncovered by practice reviews, audits, disciplinary proceedings, industry feedback, or public feedback;
- as strategic means to respond to initiatives from government, industry, or the community of professionals; and
- to address changes in legislation, regulation, or commonly used standards, issues of public safety, or environmental concerns or approaches taken by professionals engaged in a specific professional activity.

The common element that leads Engineers and Geoscientists BC to create a Professional Practice Guideline is when additional guidance is deemed necessary. Engineers and Geoscientists BC creates new Professional Practice Guidelines to set clear expectations and obligations of professional practice in relation to a specific professional activity when there is a change, a concern, or an identified need for such guidance.

6.5.2.3 Why Are Professional Practice Guidelines Important to Registrant Firms

Professional Practice Guidelines are created to help Professional Registrants fulfill their professional obligations. They establish a common level of expectation for clients, employers, the public at large, the profession as a whole, government, and regulatory agencies.

Professional Registrants should be familiar with all Professional Practice Guidelines that relate to their work. They should also be familiar with Professional Practice Guidelines that are more general and apply to the majority of Professional Registrants, such as *Sustainability, Human Rights and Diversity, Intellectual Property, Shop Drawings, and Expert Witness*.

Professional Practice Guidelines are important at the Registrant Firm level, due to the influence that a Registrant Firm has on the practice of its Professional Registrants. Registrant Firms must have policies that ensure they periodically check for new or updated Professional Practice Guidelines relevant to their areas of practice, and inform their Professional Registrants of their availability. Registrant Firms are also required to take reasonable steps to help their Professional Registrants follow relevant Professional Practice Guidelines.

Failure to comply with the intent of Professional Practice Guidelines may be considered evidence of professional misconduct and may result in disciplinary proceedings by Engineers and Geoscientists BC. Policies and procedures that ensure Registrant Firms and their Professional Registrants stay up to date with relevant Professional Practice Guidelines lower the chance of deficient practice that could pose risks to the environment or public safety, damage the Registrant Firm's reputation, or result in sanctions from Engineers and Geoscientists BC.

6.5.3 PERMIT TO PRACTICE REQUIREMENTS

6.5.3.1 Summary

The core requirements are that Registrant Firms must have documented policies and procedures about staying current with Professional Practice Guidelines, keep their Professional Registrants informed about new or revised Professional Practice Guidelines, and take reasonable steps to ensure their Professional Registrants follow the Professional Practice Guidelines relevant to their areas of practice.

6.5.3.2 Detailed Requirements

In order to meet this requirement, a Registrant Firm must ensure that:

1. it has established, maintains, and is following documented policies and procedures to stay current with Professional Practice Guidelines, including
 - a) monitoring communications from Engineers and Geoscientists BC for announcements of new or revised Professional Practice Guidelines, and
 - b) regularly reviewing the Engineers and Geoscientists BC website for new or revised Professional Practice Guidelines;
2. it ensures the Registrant Firm's Professional Registrants are made aware of new or revised Professional Practice Guidelines relevant to their practice in a timely and effective manner; and
3. it can demonstrate that the Registrant Firm's Professional Registrants are aware of, using, and meeting the intent of relevant Professional Practice Guidelines.

6.5.4 RESOURCES

Current Professional Practice Guidelines and Practice Advisories are available on the Engineers and Geoscientists BC website at egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories.

6.6 RETENTION AND PRESERVATION OF COMPLETE PROJECT DOCUMENTATION

6.6.1 PURPOSE

Registrant Firms are required to establish, maintain, and follow documented policies and procedures for the retention and preservation of complete project Documentation for a minimum of 10 years after the project is completed or the Documentation is last used, whichever is later.

Specifically, section 7.3.2, Standard for Retention and Preservation of Complete Project Documentation of the Bylaws states:

- “(2) A Registrant Firm must establish, maintain, and follow documented policies and procedures for the retention and preservation of complete project documentation related to the Regulated Practice engaged in by the Registrant Firm, which documentation is not limited to, but must include if they existed, physical and electronic versions of
- (a) correspondence,
 - (b) investigations,
 - (c) surveys,
 - (d) reports,
 - (e) data,
 - (f) background information,
 - (g) assessments,
 - (h) designs,
 - (i) specifications,
 - (j) field reviews,
 - (k) testing information,
 - (l) models,
 - (m) simulations,
 - (n) quality assurance documentation,
 - (o) drawings,
 - (p) calculations, and
 - (q) copies of all Authenticated Documents.

- (3) Complete project documentation must be retained and preserved for at least 10 years after the later of the completion of the project or when the documentation is no longer used.
- (4) A Registrant Firm must do all of the following:
 - (a) establish and maintain documented policies, plans, and procedures:
 - (i) in order to ensure that, if any of the situations set out in section 5.32(4) occur with respect to a Registrant Firm, complete project documentation is preserved in accordance with subsection (3) and such documentation is accessible in the event of a request pursuant to the PGA or Bylaws, and
 - (ii) for all individuals employed by or under contract with the Registrant Firm to follow in relation to the retention and preservation of complete project documentation and the obligations of Professional Registrants and Registrant Firms pursuant to this section of the Bylaws;
 - (b) ensure that all individuals employed by or under contract with the Registrant Firm adhere to the documented policies and procedures of the Registrant Firm established pursuant to paragraph (a);
 - (c) take reasonable steps to facilitate the Professional Registrants employed by or under contract with the Registrant Firm in adhering to the obligations of Professional Registrants pursuant to subsections (1) and (3).
- (5) A Professional Registrant who is employed by or under contract with a Registrant Firm

may satisfy their obligations pursuant to this section of the Bylaws with respect to any project documentation produced during the course of their employment or contract with the Registrant Firm by

- (a) taking reasonable steps to confirm that
 - (i) the Registrant Firm has in place documented policies and procedures for the retention and preservation of all project documentation produced by the Professional Registrant during the course of or related to their employment or contract with the Registrant Firm, and
 - (ii) that the documented policies and procedures referred to in paragraph (a)(i) are in accordance with the requirements set out in subsections (2), (3), and (4), and
- (b) consistently adhering to the documented policies and procedures of the Registrant Firm with respect to retention and preservation of project documentation established pursuant to subsection (4)(a) during the course of the Professional Registrant's employment or contract with the Registrant Firm.
- (6) A Professional Registrant who ceases to be employed by or under contract with a Registrant Firm may continue to satisfy their obligation to retain and preserve complete project documentation pursuant to subsection (3) by ensuring that:
 - (a) an agreement is in place with the Registrant Firm regarding the retention and preservation of all project documentation produced by the Professional Registrant during the course of their employment or contract with the Registrant Firm, and

- (b) the agreement referenced in paragraph (a) requires either the Professional Registrant or the Registrant Firm, or both, to retain and preserve all project documentation in accordance with the requirements of this section of the Bylaws.”

This section provides guidance on a Registrant Firm’s obligations for implementing documented policies and procedures consistent with the Bylaw requirements related to retaining complete project Documentation.

It is up to individual Registrant Firms to decide on the specific means and methods they use to meet these requirements and the intent of this Bylaw. The principal obligation on Registrant Firms is to establish, maintain, and follow documented policies and procedures that ensure complete project Documentation is retained and preserved for at least 10 years after either the completion of the project or the last use of the Documentation, whichever is later. These policies and procedures must also address how project Documentation will be retained and preserved if the Firm enters bankruptcy proceedings or otherwise ceases to exist as an independent operating entity.

6.6.2 IN PRACTICE

6.6.2.1 What Is Retaining Project Documentation

Retaining project Documentation means preserving, in paper or electronic form, every Document that is evidence of engineering or geoscience-related activities, events, or transactions, or is evidence that Professional Registrants have met their professional and contractual obligations, or has been prepared and delivered for the project or work, regardless of the media used to create or store the Documentation. Documents must be retained for at least 10 years after the related project is completed or the Document is last used, whichever occurs later.

6.6.2.2 Why Retain Complete Documentation of Engineering and Geoscience Work

Retaining complete and readily retrievable Documentation is critical to professional practice and helps Professional Registrants demonstrate that they are holding public safety paramount and serving the public interest, as required in the *Act* and Code of Ethics.

Having a full set of properly retained project Documents allows a Registrant Firm to cooperate with other Firms or individuals working on the project, and to ensure an orderly handoff if another Firm or Professional Registrant takes over the project.

If a project is later the subject of a legal or regulatory dispute, a full set of properly retained Documents will provide an evidentiary basis the Registrant Firm can use to defend its engineering or geoscience work. The Documents will allow the Registrant Firm to show the basis for professional decisions and that its Professional Registrants met the required professional standards.

Document retention also helps the Registrant Firm in its future work. Properly retained and organized Records can be referred to if the Registrant Firm later undertakes a similar project.

6.6.2.3 What Constitutes an Appropriate Document Retention System

TABLE 6-2: Checklist of Considerations for Document and Records Management below presents considerations for developing a Document or Records Management system.

6.6.2.4 What Documentation Must Be Retained

The specific Documents that must be retained will depend on the nature of the Registrant Firm’s engineering or geoscience practice. If a Document is evidence of professional activities, events, or transactions, or is evidence that Professional Registrants and the Registrant Firm met their professional and contractual obligations, then it

should be retained. Depending on the sector, the list of Documents to retain may include the following:

- Scopes of work to be developed
- Project or product requirements
- Budgets
- Proposals
- Feasibility studies and business cases
- Client agreements (that include compliance with Bylaw 7.5 about client notification regarding professional liability insurance)
- Design or development inputs
- Records of Input Data reviews and/or testing
- Correspondence, including email
- Drawings, specifications, reports, and other professional Documentation (hard copy or digital) Authenticated by a Professional Registrant
- Records of design or contract changes
- Records of Checks and reviews
- Mark-ups from clients and approving authorities
- Records of approvals by clients, authorities having jurisdiction (AHJs), or other stakeholders
- Calibration and testing Records
- Surveys
- Field books, logbooks, and notebooks
- Time sheets or Records
- Records of procurement
- Tender, bid, and contract Documents
- Vendor or Shop Drawings
- Samples or, in their place, Records of samples such as photographs or test reports
- Field Review reports
- Quality Assurance Documentation (e.g., software validation, manufacturing/fabrication Quality Control Records)
- Records of resolution of any nonconforming product or services
- Any other engineering, geoscience, legal, statutory, or regulatory Document created for a project or work by a Firm or others outside of the Firm.

Duplicates, convenience copies, appointments, advertisements, and social exchanges do not need to be retained as Records and may be discarded when they are no longer useful.

6.6.2.5 How Long Must Documentation Be Retained as a Record

Engineers and Geoscientists BC requires that professional engineering and professional geoscience Documentation be retained for at least 10 years after the project is completed or the Documentation is last used, whichever is later.

Other regulatory, statutory, or contractual obligations may require retention of certain Documents for a longer period.

6.6.2.6 What Should Be Implemented to Manage Documentation

Registrant Firms are required to develop programs to manage Documentation. A simple program that is easily understood and adopted is preferable. The program should include policy, procedures, systems, and training.

6.6.2.6.1 Policy

A Document retention policy should discuss all the documents created by the Registrant Firm, delineating which are Documents that should be retained as Records for the required 10-year period. Although the Bylaw only requires Registrant Firms to retain Documents that are evidence of engineering or geoscience decisions, or evidence that the Registrant Firm and its Professional Registrants met their professional obligations, a Registrant Firm may wish to create retention policies for other categories of information.

The policy should set the logistics of retention, including whether Documents will be retained in electronic or hard copy form, or both. It should assign roles and responsibilities for retention.

The policy should outline how Documents will be preserved if the Registrant Firm ceases to exist as an independent operating entity (e.g., if the Registrant Firm dissolves, is acquired, or enters bankruptcy proceedings). In these cases, the Registrant Firm may wish to have the Responsible Officer or a Responsible Registrant take charge of retaining the Documents or have the Documents placed into the responsibility of a designated legal representative.

6.6.2.6.2 Procedures

For guidance on what to include and consider for procedures throughout the Documentation life cycle, see [TABLE 6-2: Checklist of Considerations for Document and Records Management](#) below.

6.6.2.6.3 Systems

There is no universal system for retaining Documentation that will work equally well in all Firms. Registrant Firms should create and use systems that are suited to their size and complexity.

6.6.2.6.4 Training

Having policies, procedures, and systems in place is only the first step. Registrant Firms must also ensure that their employees are trained in how to use these instruments to meet the obligation to retain Documents. The goal of training should be that all of a Firm's employees are able to apply the policies, procedures, and systems to the extent that handling and retaining Documents is part of their work.

6.6.2.7 How Should Documentation Be Retained

Documentation may be required to substantiate or defend claims. For Documentation to be used as evidence in a court of law, Registrant Firms should be able to demonstrate the authenticity, integrity, accuracy, completeness, and trustworthiness of the Documentation.

- Documentation has authenticity, if the Registrant Firm is able to demonstrate its origin and identify the individuals who created and revised it.
- Documentation has integrity, if the Registrant Firm has controls to prevent changes to its content and meaning after it is created or accepted as a final version.
- Accurate Documents are correct and factual.
- A Registrant Firm can demonstrate the completeness of a Document by showing that it has not been changed after being finalized, and that all parts of the original Document are preserved.

- A Registrant Firm can demonstrate the trustworthiness of a Document by having a control and management system that provides authentic, reliable, accurate, and complete Records.

There is no specific medium in which Documentation must be retained. Depending on the nature of a Document, it may make sense to retain it electronically or in hard copy. A Registrant Firm may choose to set procedures for retaining Documentation solely in electronic form, solely in hard copy, or a combination of both media. In their policies, Registrant Firms should designate either electronic or hard copy as the primary retention media. All Documentation should then be filed and stored within a storage system that makes sense for the size, complexity, and types of work the Registrant Firm engages in. If a Registrant Firm chooses to use electronic storage as its primary system, it should have policies addressing when paper Documents should be converted to electronic versions for retention, as well as when and how to discard the paper convenience copies.

Some Registrant Firms may prefer to use a combination of electronic and hard copy retention. In these scenarios, the Registrant Firm's policies should address which Documents are to be stored electronically and which stored in hard copy. A Registrant Firm using this mixed approach should create a cross-reference guide that allows users to determine where specific Documents can be located.

To avoid confusion and improperly retained Documentation, Registrant Firms should ensure that retained Documentation (including emails) is titled or labelled in a manner that is project-specific and related to the contents of the Documentation. Registrant Firms should establish rules that promote the easy review and retrieval of specific Documentation.

In creating its system for retaining Documentation, a Registrant Firm should consider how to address concerns about confidentiality and security.

Both Registrant Firms and Professional Registrants have obligations to retain Documentation. However, as most Registrant Firms will exercise control over

and have property in the Documents, Professional Registrants are not required to maintain a separate set of Documents if the Registrant Firm has policies and procedures that meet the Document retention obligations that the Professional Registrant consistently follows.

6.6.3 PERMIT TO PRACTICE REQUIREMENTS

6.6.3.1 Summary

The core requirement is that Registrant Firms must have documented policies about retaining complete project Documentation for at least 10 years after the related project is completed or the Document is last used, whichever is later.

6.6.3.2 Detailed Requirements

In order to meet this requirement, a Registrant Firm must ensure that:

1. it has established, maintains, and is following documented policies and procedures for retaining Documents for at least 10 years after the later of project completion or last use, including:

- a) a process for identifying which files must be retained;
 - b) a consistent filing system that describes how Documents will be retained; and
 - c) controls to ensure that retained Documents are retrievable, legible, authentic, accurate, complete, trustworthy, and have integrity;
2. these policies and procedures address how Documents will be preserved if the Registrant Firm ceases to be an independent operating entity; and
 3. it can demonstrate that its Professional Registrants are aware of and using the Document retention policies and procedures.

6.6.4 RESOURCES

For guidance on what to include and consider for procedures throughout the Documentation life cycle, see [TABLE 6-2: Checklist of Considerations for Document and Records Management](#) below. Firms should decide what is relevant, and keep procedures as simple as possible, while considering the size and complexity of the Firm.

TABLE 6-2: Checklist of Considerations for Document and Records Management

CONSIDERATIONS		✓
PREPARING DOCUMENTS		
1.	Developing Document standards for consistent, professional appearance that clearly identifies the Firm creating them	
2.	Creating standard templates and forms for commonly used Documents	
3.	Deciding on software and media for creating and maintaining Documents	
4.	Developing and using standard coding or labelling for hard copies	
5.	Developing and using standard file naming for electronic Documents	
6.	Including Document identifiers (not commonly found on the Document) in Document properties or metadata stored with each electronic file	
7.	Setting up a protocol for including project or work name, number, and file folder in the subject line of project or work-related email containing information that must be retained	
8.	Creating and implementing a standard Checking process appropriate to the type of Document being created	
9.	Training users in how to prepare Documents	

TABLE 6-2: Checklist of Considerations for Document and Records Management

CONSIDERATIONS		✓
FILING DOCUMENTS		
10.	Creating and implementing a standard, Firm-wide file structure	
11.	Identifying primary filing system (electronic or hard copy) or deciding to use both	
12.	If using both electronic and hard-copy filing, creating a cross-reference guide showing in which system, and in which folder, Documents are located	
13.	For hard copy filing, labelling Documents with project or work and folder name and number	
14.	For electronic files, creating and using standard file-naming conventions that identify project or work and file folder	
15.	Filing all project or work email messages that must be retained in the appropriate folder of their related project or work file structure	
16.	Regularly backing up servers containing project or work filing, and storing media off-site so that the files can be restored in case of a failure or disaster	
17.	Controlling access to files containing confidential or personal information	
18.	Filing issued electronic Documents in read-only format exactly as issued	
19.	Setting up a check-in/check-out system wherever multiple users have access to working Documents	
20.	Training users and Document managers in how to file and store Documents	
REVISING DOCUMENTS		
21.	Including a revision Record indicating revision number, what was revised and by whom, on Documents where version control is required (e.g., drawings, reports)	
22.	Clearly identifying the revisions (see the Engineers and Geoscientists BC <i>Guide to the Standard for Authentication of Documents</i>)	
23.	Creating and implementing a standard Checking process for all revisions	
24.	Training users in Document revision procedures	
ISSUING DOCUMENTS		
25.	Including an issue Record on Documents, indicating the purpose for issuing the Document and when it was issued, where version control is required (e.g., drawings, reports)	
26.	When issuing electronic Documents, providing, and retaining the file in a read-only format exactly as issued	
27.	Using some form of transmittal (e.g., form, email, or other) as a Record of what was sent to whom, when it was sent, and how it was sent	
28.	To create an audit trail, retaining a Record of who receives which Document revisions and when they receive them	
29.	Ensuring the most recent or current revisions of Documents are issued to those who require them	
30.	Training users and Document managers in how to issue Documents	

TABLE 6-2: Checklist of Considerations for Document and Records Management

CONSIDERATIONS		✓
RECEIVING DOCUMENTS		
31.	Recording when Documents are received, how they are received, and by whom they are received	
32.	Setting up a standard distribution indicating expectation of those receiving the Document (e.g., approve, action by, information only)	
33.	Recording actions taken based on received Documents	
34.	If receiving hard copy Documents, coding, and filing in the hard copy project or work file structure, or scanning, naming, and filing in this electronic file structure	
35.	If receiving electronic Documents, naming, and filing in the electronic file structure or printing and filing in the hard copy file structure	
36.	Determining whether the Document is a Record to be retained or a Document that is kept for convenience until no longer needed	
37.	Training users and Document managers in procedures for Documents they receive	
ARCHIVING RECORDS		
38.	Defining which Documents are Records	
39.	Creating a table to identify categories of Records and their respective retention period	
40.	Deciding on media for retaining Records (e.g., hard copy, electronic, or combination)	
41.	Deciding on the means by which the integrity of the archived Records is protected	
42.	Culling non-Records and convenience copies from files	
43.	Grouping, labelling, and logging Records with their date of destruction	
44.	Deciding on storage media (e.g., server, tapes, CDs, DVDs, hard copy)	
45.	Deciding on storage location (e.g., onsite, external)	
46.	Migrating or transferring Records to their storage medium and location	
47.	Training Document managers in archiving procedures	
STORING RECORDS		
48.	Setting up a system for storing Records or using a qualified external provider	
49.	Securing access so only those with permission can access files	
50.	Limiting access to confidential and personal information	
51.	Providing environmental controls to preserve Records in storage (e.g., protection from moisture or fire)	
52.	Migrating Records to current media, or maintaining hardware and software able to access them for the duration of their retention period	
53.	Training Document managers in storage procedures for retained Records	
DESTROYING RECORDS		
54.	Destroying all Records that have met all retention requirements and that are not under a legal hold for pending litigation or a regulatory requirement	
55.	Keeping a Record of what was destroyed, when it was destroyed, and by whom it was destroyed	

6.7 CHECKS

6.7.1 PURPOSE

Registrant Firms are required to establish, maintain, and follow documented policies and procedures in relation to documented Checks of engineering or geoscience work. Checking is a documented process to confirm that the professional work is complete, meets all Input Requirements, and is suitable for its intended use of purpose.

Specifically, section 7.3.4 (4), Standard for Checks of the Bylaws states:

“A Registrant Firm must do all of the following:

- (a) establish and maintain documented policies and procedures for Professional Registrants employed by or under contract with the Registrant Firm to follow in relation to documented checks and the obligations of Professional Registrants pursuant to this section of the Bylaws, which may include
 - (i) process flowcharts,
 - (ii) checklists, or
 - (iii) forms;
- (b) ensure that the Professional Registrants employed by or under contract with the Registrant Firm adhere to the documented policies and procedures established pursuant to paragraph (a);
- (c) take reasonable steps to facilitate the Professional Registrants employed by or under contact with the Registrant Firm in adhering to the obligations of Professional Registrants pursuant to subsections (1), (2), and (3);

- (d) retain complete documentation related to checks conducted by any Professional Registrant employed by or under contract with the Registrant Firm, in accordance with section 7.3.2 of the Bylaws.”

This section of the manual provides guidance to Firms on how to implement documented policies and procedures regarding documented Checking using a written Quality Control process.

It is up to individual Firms to decide on the specific means and methods they use to meet these requirements and the intent of this Bylaw. The principal obligation of the Registrant Firm is to establish, maintain, and follow documented policies and procedures that confirm engineering or geoscience work is complete, meets all Input Requirements, and is suitable for its intended use or purpose.

6.7.2 IN PRACTICE

6.7.2.1 What Is Checking

Checking is a documented Quality Control process that confirms that the work is complete, meets all Input Requirements, and is suited for its intended use or purpose. Input Requirements are those that the process or deliverable must meet or satisfy. A non-exhaustive list of Input Requirements includes client objectives; design criteria; applicable standards, codes, and legislation including Engineers and Geoscientists BC’s Bylaws; organizational requirements and standards; and requirements set out in Engineers and Geoscientists BC’s Professional Practice Guidelines.

Checks ought to occur throughout the development, presentation, production, and performance of any professional engineering or professional geoscience work in any sector. Depending on the risk, Checking may be carried out by the Professional Registrant who prepared the work, or by a qualified individual not associated with the work being Checked.

Many types of Checking may be used on any specific engineering or geoscience project. These could include:

1. Professional Registrants Checking their own calculations or enlisting other Professional Registrants to Check them;
2. intra-disciplinary Checking, to identify and solve problems, or verify that work prepared by one Professional Registrant meets the Input Requirements;
3. inter-disciplinary Checking, to coordinate the work of Professional Registrants in multiple disciplines working on the same project;
4. planned periodic Checking that occurs when significant revisions are made to the design;
5. Checking that ensures the work is compliant with applicable codes, standards, and regulations;
6. constructability or operability Checking, to confirm that the work can be built or will operate as planned;
7. health, safety, and environmental Checking, to ensure the work will not harm the public, users, or the environment;
8. validation that the work is capable of meeting its intended purpose and operating under expected conditions;
9. verification that the work does meet the Input Requirements, which may include peer review by another Professional Registrant;
10. testing or surveying a process, installation, program, or product; and
11. Checking work prepared by a subconsultant or supplier, to ensure it meets all Input Requirements and does not conflict with other work before it is incorporated into the broader engineering or geoscience work.

6.7.2.2 Why Perform Checks of Engineering and Geoscience Work

Checks are the means by which Professional Registrants confirm that the work they have prepared meets all Input Requirements and the appropriate

standard of care¹ expected when preparing similar work.

If done by the Professional Registrant who prepared the work, Checks provide a second look. If done by a Professional Registrant not associated with the work, Checks provide a second set of eyes. In either case, the goal is to avoid errors and oversights, and confirm the work is ready to be issued to those who will rely on it.

6.7.2.3 What Constitutes a Documented Checking Process

The appropriate Checking process for specific engineering or geoscience work will depend on the complexity and risk of the work. A Firm's Checking process could be a procedure, process flowchart, checklist, or other guidance document, depending on what is being Checked. The process should be designed to account for factors including:

- the complexity and risk associated with the work;
- the Professional Registrant's experience in preparing similar work;
- the checker's experience in Checking similar work;
- statutory, regulatory, and other requirements that apply to the work;
- the Firm's contractual obligations;
- recommendations for similar work contained in Engineers and Geoscientists BC Professional Practice Guidelines and Practice Advisories; and
- what level of analysis should be involved in the Check.

Whatever its specific format, the process should indicate:

1. what should be Checked;
2. when it should be Checked;
3. who should do the Checking;
4. how it should be Checked; and
5. what Records of the Checking must be created and retained.

¹ Standard of care is a legal concept describing the care exercised by other reasonable, prudent, and competent professionals in the same discipline at the

time when and location where the work is being undertaken. Standard of care is determined by the courts.

6.7.2.4 What Work Should Be Checked

The Professional Registrant who is taking professional responsibility for the engineering or geoscience Documents that are prepared for delivery to others must ensure the Documents are Checked before Authenticating them. The Checking is intended to confirm that the Documents are complete, meet all Input Requirements, are suitable for their intended use, and are ready to be Authenticated, before the work is issued or put into use.

6.7.2.4.1 Input Requirements

Input Requirements are the mandatory parameters that define the scope of the engineering or geoscience work. They are the externally defined requirements applicable to the project. Client or user objectives and requirements; design or implementation criteria; applicable codes, standards, and legislation including Engineers and Geoscientists BC's Bylaws; Firm-specific requirements and standards; and applicable Professional Practice Guidelines and Practice Advisories could all create requirements that the engineering or geoscience work must meet.

One of the core purposes of Checking is to ensure that the professional work meets the Input Requirements. The frequency, extent, and scope of Checking any specific engineering or geoscience work will therefore vary, depending on the complexity and stringency of the applicable Input Requirements.

6.7.2.4.2 Input Data

Input Data is the information used as the basis for the engineering or geoscience work. Input Data should be Checked to confirm that it is current, complete, accurate, suitable, and fit for purpose.

Depending on the nature of the engineering or geoscience work, Input Data could include:

- test or survey data;
- design or implementation assumptions;
- applicable codes, standards, or regulations;
- preliminary designs;

- previous reports or studies;
- work prepared by other professionals; and
- data provided by a client, user, owner, or employer.

When evaluating Input Data for currency, completeness, accuracy, suitability, and fitness for purpose, appropriate Checking procedures may confirm that:

1. the government or industry standard being applied is the most current version;
2. the reports include relevant information that will be relied upon by whoever uses the reports;
3. materials to be used in a work or process have been appropriately tested and certified; and/or
4. preliminary designs have been approved by the client as the basis for detailed or final designs.

Input Data and calculations that will be used as the basis for engineering or geoscience work must be Checked before they are used for further development or implementation.

Checking Input Data does not mean recalculating or carrying out detailed Checks of work that is outside of the professional practice of the Professional Registrant doing the Checking, or work that has been certified by a recognized authority. However, once Input Data is incorporated into the engineering or geoscience work, the Professional of Record will confirm its suitability for their engineering or geoscience work, regardless of its source.

6.7.2.4.3 Design Software, Spreadsheets, or Related Data

Design software, spreadsheets, or the Input Data used by Professional Registrants should be validated periodically by performing a known design calculation, such as one included in a textbook exercise or confirmed in past work. Alternatively, the software can be validated against a hand calculation or verified at the site or against performance data.

These validation exercises and any Corrective Actions must be logged and retained as Records.

6.7.2.4.4 *Engineering and Geoscience Work*

Engineering and geoscience work evolves over time and through collaboration. Professional engineering and professional geoscience work should be periodically Checked, using appropriate types of Checks and at stages or milestones suitable to the duration and complexity of the work.

6.7.2.4.5 *Independent Review(s) of Structural Designs*

Most structural designs require an Independent Review. Refer to [Section 6.8 Independent Review\(s\) of Structural Designs](#) for information regarding these reviews. Appropriate Checking procedures do not eliminate the requirement for Independent Review.

6.7.2.4.6 *Independent Review(s) of High-Risk Professional Activities or Work*

Most high-risk Professional Activities or Work require Independent Review. Appropriate Checking procedures do not eliminate the requirement for Independent Review.

Refer to [Section 6.9 Independent Review\(s\) of High-Risk Professional Activities or Work](#) for information regarding these reviews.

6.7.2.5 *Who Is Responsible for Ensuring Appropriate Checks Take Place*

The Professional of Record is responsible for ensuring that Checks are performed on engineering or geoscience work that they prepare or are prepared under their Direct Supervision. If a Firm's Checking policies and procedures include checklists or forms, they should include form fields where the user identifies themselves.

6.7.2.6 *Who Is Qualified to Perform Checks*

Checks may be performed by a Registered Professional, a Trainee (EIT, GIT), or another party who is appropriately qualified.

The person conducting the Check must:

1. have current expertise in the discipline and type of work being Checked;
2. be sufficiently experienced and have the required knowledge to identify the elements to be Checked;
3. understand the Checking process;
4. have reviewed and understood all relevant Input Requirements;
5. be objective;
6. be thorough and diligent in Checking and recording observations, corrections, and Corrective Action, and
7. be aware of any tools required to assist in the Checking.

Small Firms or Firms engaged in multiple areas of practice may find it useful to identify in their procedures the specific Professional Registrants responsible for Checking particular types of work.

6.7.2.7 *When Is Self-Checking Allowed to Be the Only Means of Checking Work*

If a Firm does allow self-Checking, it may be used as the only Check solely in circumstances when all the following conditions are met:

1. the Professional Registrant is experienced in the work being Checked;
2. the work is straightforward, repetitive, or uses established methods and practices, such as prescriptive codes and standards requiring minimal professional judgment;
3. applicable Professional Practice Guidelines and Practice Advisories permit self-Checking;
4. the work does not involve Structural Design or high-risk Professional Activities or Work; and
5. the Professional Registrant has considered the probability and impact of potential errors in Checking, and has determined that self-Checking will meet the required standard of care for the work.

Given the value of Checking, Firms may consider prohibiting self-Checking from being the sole Checking method used on engineering or geoscience work in its policies and procedures. Alternately, a Firm may identify specific types of work on which self-Checking can be the sole Checking method, or set more stringent criteria than those listed above.

6.7.2.8 How Are Checks Documented and Addressed

Records of formal Checks that occur throughout the project or work are a means to communicate to others that the Checks have occurred, and to provide evidence that the applicable requirements have been met. Where self-Checking as the only Check is used, Records of self-Checks must also be retained.

Firms must ensure that Checks are taking place for the engineering and geoscience work carried out by their Professional Registrants, and that Records of the Checks are retained. The Record must include what was Checked, when it was Checked and by whom it was Checked. When Checking identifies issues, a Firm's procedures should require Professional Registrants to create Records of the issues and any Corrective Actions that were taken in response. If a Firm is using checklists or forms for Checking, it should consider having space for the Checkers to Document issues and track responses.

6.7.3 PERMIT TO PRACTICE REQUIREMENTS

6.7.3.1 Summary

The core requirement is that Registrant Firms must have documented policies and procedures for Professional Registrants to follow when carrying out Checks of engineering and geoscience work.

6.7.3.2 Detailed Requirements

In order to meet this requirement, a Registrant Firm must ensure that:

1. a documented process is in place to address Checking of engineering and geoscience work, and this process is appropriate to the level of risk in the work;
2. the process and the related policies and procedures are communicated to those involved in the engineering or geoscience work;
3. Input Requirements are confirmed and recorded before work is carried out;
4. Input Data is Checked before being used in work, and a Record of this Check is retained;
5. engineering or geoscience calculations are Checked, and a Record of this Check is retained;
6. the process addresses when Checking is insufficient and Independent Review is required;
7. the process addresses who is qualified to Check engineering or geoscience work;
8. the process addresses the circumstances in which self-Checking is appropriate or inappropriate;
9. engineering and geoscience work and Documentation is Checked periodically, as required based on the nature of the work, and Records of Checking are retained; and
10. Records of Checking indicate who carried out the Checking, when the Checking was completed, what issues were identified during the Checking, and what actions were taken to address identified issues.

6.7.4 RESOURCES

A sample flowchart showing a generic Checking process is shown in [FIGURE 6-1: Example Checking Process Using a Flowchart and Checklists](#) below.

Considerations for developing documented Checking procedures that meet the Bylaw are included in [TABLE 6-3: Checklist of Considerations for Documented Checking Procedures](#) below.

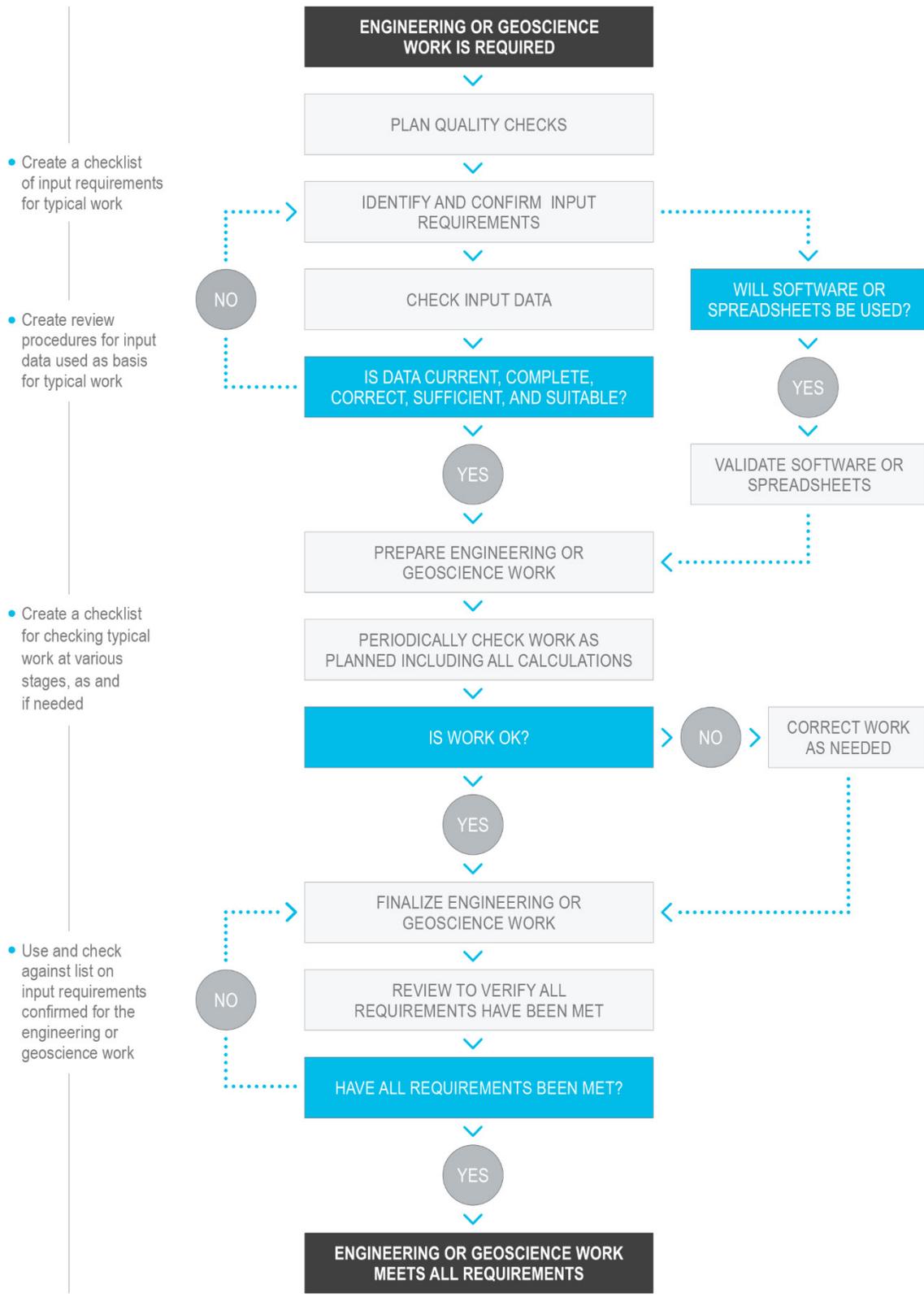


FIGURE 6-1: Example Checking Process Using a Flowchart and Checklists

TABLE 6-3: Checklist of Considerations for Documented Checking Procedures

CONSIDERATIONS		✓
CAPABILITY TO PERFORM THE WORK		
1.	Using resources who are qualified to perform the engineering or geoscience work	
2.	Having qualified resources available to perform the work	
3.	Providing adequate time and budget to perform and Check work	
LEVEL OF CHECKING REQUIRED		
4.	Assessing risk involved in the professional engineering and geoscience work	
5.	Confirming complexity and duration of work	
6.	Confirming any required Checking procedures	
7.	Determining the number, frequency, and types of Checks	
8.	Preparing plans indicating what types of Checks are required, when the Checks are to be performed, and by whom the Checks are to be conducted	
SELF-CHECKING AS THE ONLY CHECK		
9.	Setting clear policies about self-Checking of engineering and geoscience work	
10.	Not allowing self-Checking as the only Check for complex or innovative work	
11.	Not allowing self-Checking as the only Check, when the Professional Registrant considers the probability of occurrence and the magnitude of the potential result unacceptable for self-Checking	
12.	Not allowing self-Checking as the only Check, when the required standard of care would suggest an independent Check is required	
13.	Not allowing self-Checking as the only Check, when applicable Professional Practice Guidelines or Practice Advisories recommend or require an independent Check	
14.	Not allowing self-Checking as the only Check of structural or high-risk Professional Activities or Work that require an Independent Review	
15.	Where self-Checking is allowed, consider having self-checkers use a different means of analysis, if available, at a later time	
INPUT REQUIREMENTS		
16.	Confirming Input Requirements, such as client or user objectives and requirements, design or implementation criteria, applicable codes, standards and legislation, Firm-specific requirements and standards, and related Professional Practice Guidelines and Practice Advisories	
17.	Documenting Input Requirements	
18.	Using documented Input Requirements on Checks throughout the project or work, to verify that all requirements have been met	
INPUT DATA		
19.	Identifying Input Data, such as test and survey data; design or implementation assumptions; applicable codes or standards; preliminary designs or earlier reports, investigations, or studies; work prepared by other professionals; and information provided by the client, owner, operator, or user	
20.	Checking Input Data to confirm that it is current, complete, accurate, suitable, and sufficient	
21.	Keeping a Record of Input Data Checks	

TABLE 6-3: Checklist of Considerations for Documented Checking Procedures

CONSIDERATIONS		✓
DESIGN SOFTWARE		
22.	Validating software and spreadsheets used in engineering or geoscience calculations by ensuring that they are based on current standards, and periodically Checking their accuracy using textbook examples, previously confirmed results, or hand calculations	
23.	Keeping a Record or log of any software or spreadsheet validation	
ENGINEERING AND GEOSCIENCE WORK		
24.	Confirming the types of Checks required (e.g., inter-disciplinary, constructability, operability, code, and health and safety)	
25.	Checking engineering and geoscience work at predefined stages of work	
26.	Checking calculations used in engineering and geoscience work	
27.	Checking and Authenticating engineering and geoscience work that is prepared and will be delivered to others who will use and rely on it	
28.	Confirming that deliverables containing engineering and geoscience work, such as drawings, specifications, agreements, business cases, reports, and letters, are Checked	
QUALIFICATIONS OF CHECKERS		
29.	<p>Having Checking undertaken by a Professional Registrant, Trainee (EIT, GIT), or other appropriately qualified party who meets the following requirements:</p> <ul style="list-style-type: none"> • Has current expertise in the discipline and type of work being Checked • Is sufficiently experienced to identify the elements to be Checked • Understands the Checking process • Has reviewed and understood all relevant requirements • Is objective • Is thorough and diligent in Checking and recording observations 	
CHECKING TOOLS		
30.	Developing Checking tools, such as checklists based on discipline, type of work, phase or stage of work, deliverable or product, or other content or structure suited to the work	
31.	Reminding checkers that these tools do not replace their professional judgment	
32.	Providing training on Checking tools and procedures	
RECORDS AND FOLLOW-UP		
33.	Keeping a Record of Checks	
34.	Identifying project or work, Professional of Record, checker, purpose of Check, when Checking occurred in all Records, and any issues raised by the checker	
35.	Documenting how the issues raised by the checker were addressed and what, if any, Corrective Actions were identified, approved, and undertaken	
36.	Tracking issues identified in Checks to confirm that they are addressed and that any required Corrective Action has been taken	
37.	Retaining a Record of Checks in digital or hard copy	

6.8 INDEPENDENT REVIEW(S) OF STRUCTURAL DESIGNS

6.8.1 PURPOSE

Registrant Firms are required to establish, maintain, and follow documented policies and procedures for Professional Registrants in relation to Independent Review of structural designs.

Specifically, section 7.3.5 (9), Standard for Independent Review(s) of Structural Designs of the Bylaws states:

- “(9) If applicable pursuant to subsection (1), and not exempted pursuant to subsection (2), a Registrant Firm must do all of the following:
- (a) establish and maintain documented policies and procedures for Professional Registrants employed by or under contract with the Registrant Firm to follow in relation to independent review of structural designs and the obligations of Professional Registrants pursuant to this section of the Bylaws, which may include
 - (i) checklists, or
 - (ii) signoff forms;
 - (b) take reasonable steps to ensure that a Professional Registrant conducting a documented independent review pursuant to this section of the Bylaws has sufficient and acceptable knowledge, training, and experience to conduct the documented independent review;
 - (c) ensure that the Professional Registrants employed by or under contract with the Registrant Firm adhere to the documented policies and procedures of the Registrant Firm established pursuant to paragraph (a);

- (d) take reasonable steps to facilitate the Professional Registrants employed by or under contract with the Registrant Firm in adhering to the obligations of Professional Registrants pursuant to subsections (1) to (8).”

This section of the manual provides guidance to Firms on how to implement documented policies and procedures regarding documented Independent Reviews of structural designs.

It is up to individual Firms to decide on the specific means and methods they use to meet these requirements and the intent of this Bylaw

6.8.2 IN PRACTICE

6.8.2.1 What Is Independent Review of Structural Designs

Independent Review of a structural design is a documented evaluation of the design concept, details, and Documentation, based on a qualitative examination of the substantially complete structural design Documents. An Independent Review must occur before any Documents are issued for construction. An Independent Review must be carried out by an experienced Professional Registrant licensed to practice structural engineering by Engineers and Geoscientists BC who has not been involved in preparing the design.

There are two types of Independent Reviews, both of which must be carried out by an experienced Professional Registrant who was not involved in preparing the design. The main distinction is that Type 1 Independent Reviews can be carried out by a qualified independent Professional Registrant who works for the same Firm as the Professional of Record, while Type 2 Independent Reviews must be carried out by a qualified independent Professional Registrant who does not work for the same Firm as the Professional of Record.

- **Type 1 Independent Reviews** are generally appropriate where the Professional of Record and Firm have experience with the type and scale of the Structure, there are no irregular or uncommon aspects of the structural design, and the structural design only involves design problems with well-defined solutions.
- **Type 2 Independent Reviews** are generally appropriate where the Professional of Record and Firm do not have experience with the type and scale of the Structure, there are irregular or uncommon aspects of the structural design, or the structural design involves design problems without well-defined solutions.

Independent Reviews are not the same as and cannot be replaced by Checks of engineering and geoscience work.

For information about Checking, refer to [Section 6.7 Checks](#) above, and to the Engineers and Geoscientists BC *Guide to the Standard for Documented Checks of Engineering and Geoscience Work*.

6.8.2.2 Why Perform an Independent Review of Structural Designs

The Bylaws require that documented Independent Reviews of structural designs are carried out before structural design Documents are issued for construction. Independent Reviews are a means of confirming that the structural design meets relevant code and design requirements and reflects the appropriate standard of care¹ expected when preparing similar work.

Independent Reviews have been mandated by Engineers and Geoscientists BC because virtually all structural designs create risks to the public. Independent Reviews provide objective and non-biased assessments of the adequacy of the structural design approach, execution, and Documentation, and reduce the risk of structural failure and the potential resulting harm to the public and the environment.

¹ Standard of care is a legal concept describing the care exercised by other reasonable, prudent, and competent professionals in the same discipline at the

6.8.2.3 What Constitutes an Appropriate Independent Review Process

Refer to the sample Checklist and Signoff for An Independent Review of Structural Designs form, provided in [Section 6.8.4 Resources](#) at the end of this section.

A documented risk assessment should be carried out, to determine whether a Type 1 or Type 2 Independent Review is appropriate. The key question to ask is whether the potential risks identified by the risk assessment are significant enough to warrant conducting a Type 2 Independent Review. These risk assessments must be Documented and must consider:

- consequences of failure;
- complexity of the structural design;
- modes of failure;
- nature of the design assumptions;
- uniqueness of the structural design;
- structural designs of specific types of Structures that have been designated by Engineers and Geoscientists BC or an authority having jurisdiction (AHJ) as requiring a certain type of independent structural review; and
- whether a substantially similar structural design by the same Professional of Record was subject to a Type 2 Independent Review within a reasonable amount of time.

The risk assessment must be Documented and must explain how the identified risks support the recommendation for a Type 1 or Type 2 Independent Review.

time when and location where the work is being undertaken. Standard of care is determined by the courts.

6.8.2.4 When Is Independent Review of Structural Designs Required

Except for conventional one- or two-family dwellings that fall entirely within the prescriptive requirements of Part 9 of the *British Columbia Building Code (BCBC)*, the Vancouver Building By-law (VBBL), or the *National Building Code of Canada (NBC)* (see [Section 6.8.2.5 When Is Independent Review Not Required](#)), all structural designs prepared in BC, in any sector, must undergo an Independent Review that complies with the Bylaws before final structural design Documents are issued for construction.

Repetitive designs of individual structural components do not require an Independent Review of each repetition. However, an initial Independent Review of the typical component design, and periodic Independent Reviews at intervals appropriate to confirm the performance of the design, are required.

Independent Reviews may be carried out in stages as portions of the structural design are completed. Consideration should be given to carrying out the review of the concept and approach before starting the detailed design, to minimize possible rework. Documents may not be issued for construction for any portion of the Structure until the Independent Review of that portion is completed.

6.8.2.5 When Is Independent Review Not Required

Many conventional, wood frame, one- and two-family dwellings fall entirely within the prescriptive requirements of Part 9 of the *BCBC*, the VBBL, or the *NBC*, and do not require a structural design that complies with Part 4 of these codes.

Where the structural design of a one- or two-family dwelling is based on Part 9 of the *BCBC*, the VBBL, or the *NBC*, and includes a design for lateral resistance conforming to the prescriptive requirements in the latest edition of the Canadian Wood Council (CWC) *Engineering Guide for Wood Frame Construction*, an Independent Review of the design is not required. However, where the CWC lateral resistance evaluation

indicates that a structural design conforming to Part 4 of the *BCBC*, the VBBL, or the *NBC* is required, an Independent Review is also required.

6.8.2.6 Who Is Responsible for Ensuring Independent Reviews Take Place

Professionals of Record are responsible for ensuring that Independent Reviews are performed on structural designs that they prepare themselves, and those that are carried out under their Direct Supervision. Despite the work being reviewed by others, Professionals of Record remain responsible for the structural design work carried out in their professional capacity, or under their Direct Supervision.

However, the Professional of Record for the primary structural system for a Structure is not responsible for ensuring that Independent Reviews are carried out on all individual structural components designed by other Registered Professionals retained by the component manufacturer or contractor and incorporated into the primary structural system. Nevertheless, the Professional of Record for the primary structural system for a Structure is responsible for confirming that the components are in general conformance with the design concept and general arrangement of the primary structural system.

Registrant Firms must ensure that their Professional Registrants are adhering to its policies and procedures for Independent Reviews, and must take reasonable steps to facilitate their Professional Registrants adhering to the Bylaw requirements for Professional Registrants related to Independent Reviews. If a Registrant Firm is engaged in structural design work, its policies and procedures should address how Professional Registrants should approach the process as a Professional of Record and as an Independent Reviewer.

6.8.2.7 Who Is Qualified to Perform Independent Reviews of Structural Designs

To be qualified to perform Independent Reviews of structural designs, the Independent Reviewer must be a Professional Registrant qualified to practice structural engineering. In addition, the Independent Reviewer:

1. must have appropriate experience with the type of Structure being reviewed;
2. must have sufficient experience to critique concepts and identify deficiencies in Structures with a complexity equal to or greater than that being reviewed;
3. should have a recommended minimum of 6 years of experience with the particular structural system being reviewed; and
4. must not have been involved in preparing the design.

Independent Reviews of structural designs cannot be completed by Professional Registrants involved in preparing the design. Whether an Independent Review must be carried out by a Professional Registrant who does not work for the same Firm as the Professional of Record will depend on the risk assessment completed by the Professional of Record.

6.8.2.8 Can the Independent Reviewer Be the Checker

Checking is a different process and a distinct activity from Independent Review.

If qualified to do so, the Independent Reviewer for the structural design may also perform required Checking, as described in [Section 6.7 Checks](#) above.

6.8.2.9 How Are Independent Reviews Documented

The Independent Reviewer must communicate the results of the review to the Professional of Record and Document the results. Records of calculations, Check prints, and communication concerning the review and any concerns raised, must be retained as Records with other project Documentation.

See the sample Checklist and Signoff for An Independent Review of Structural Designs form, located in [Section 6.8.4 Resources](#) at the end of this section, for an example of an appropriate Record.

6.8.3 PERMIT TO PRACTICE REQUIREMENTS

6.8.3.1 Summary

The core requirement is that Registrant Firms engaged in structural design must have documented policies and procedures for Professional Registrants to follow in relation to Independent Review of Structural Designs. These policies and procedures should address how Professional Registrants should proceed when they are the Professionals of Record designing the Structure and how they should proceed when they are the Independent Reviewer. Registrant Firms must ensure that their Professional Registrants adhere to these policies and procedures.

6.8.3.2 Detailed Requirements

This section only applies in cases where a Registrant Firm either prepares structural designs that require Independent Review or conducts Independent Reviews of structural designs.

In order to meet this requirement, a Registrant Firm must ensure that:

1. it has documented policies and procedures for its Professional Registrants to follow when designing Structures or conducting Independent Reviews of structural designs;
2. their policies and procedures are communicated to those involved in designing Structures or conducting Independent Reviews of structural designs;
3. their policies and procedures describe how risk assessments should be conducted to determine whether either a Type 1 or a Type 2 Independent Review is appropriate;
4. their policies and procedures describe how to address Independent Review of repetitive designs, including the timing of periodic Independent Reviews;

5. Independent Reviews of structural designs are taking place before Documents are issued for construction;
6. Professional Registrants responsible for primary structural systems are confirming that specialty components designed by others are in general conformance with the design concept and general arrangement of the primary structural system;
7. Independent Reviewers are appropriately qualified to carry out the Independent Reviews they perform and have not been involved in preparing the related design;
8. Professionals of Record provide Independent Reviewers with the Documents necessary to carry out the Independent Review;
9. Professionals of Record are adequately resolving concerns noted in the Independent Reviews and documenting the rationale for their actions; and
10. adequate Records of Independent Reviews and resulting actions are being retained for at least 10 years.

In addition, a Registrant Firm's policies and procedures related to carrying out Independent Reviews of structural design should address the following:

1. What should be reviewed, including:
 - a) design criteria, loads (including loads imposed by components designed by other disciplines and loads from adjacent Structures), and performance requirements;
 - b) geotechnical requirements and material properties;
 - c) the concept and integrity of the gravity and lateral load resisting system;
 - d) representative samples of the structural assumptions, continuity of load paths for both gravity and lateral loads, stability, and detailing;
 - e) structural plans and supporting Documents, to determine whether they are sufficient to identify the essential components of the structural system, and provide sufficient

information to guide the construction of the Structure;

- f) Documents related to the structural design, to ensure they are complete, consistent, coordinated, and in general compliance with the appropriate codes, standards, and other requirements; and
 - g) calculations on a representative sample of structural elements, to determine whether the analysis, design, and detailing generally comply with the appropriate codes and standards.
2. That Independent Reviewers should discuss concerns with the Professional of Record and document the discussion.
 3. That Independent Reviewers must provide a formal Record of the Independent Review to the Professional of Record that identifies any issues.
 4. That when an Independent Review uncovers significant concerns, the Independent Reviewer must request that the Professional of Record revise and resubmit the design Documents for additional Independent Review.
 5. That adequate Records of Independent Reviews and resulting actions must be retained for at least 10 years.

6.8.4 RESOURCES

See the sample Checklist and Signoff for An Independent Review of Structural Designs below.

CHECKLIST AND SIGNOFF FOR AN INDEPENDENT REVIEW OF STRUCTURAL DESIGNS

[Print clearly and legibly]

RE:

Name of project or work

Address of project or work

PROFESSIONAL OF RECORD

P.Eng. or P.L.Eng. name

Firm name

Permit to Practice number

Address of firm

ITEM	REVIEWED	REMARKS
	INITIALS	
1. Design code loadings and serviceability limits		
2. Material specifications and geotechnical recommendations		
3. Concept and integrity of the gravity load resisting system		
4. Concept and integrity of the lateral load resisting system (e.g., wind, seismic)		
5. Drawing completeness and continuity of load paths		
6. Design check of representative structural elements		
7. Review of representative structural details		
8. Concerns discussed with the Professional of Record		

INDEPENDENT REVIEWER

P.Eng. or P.L.Eng. name

Firm name

Permit to Practice number

Address of firm

Date: (yy/mm/dd)

Signature

CHECKLIST AND SIGNOFF FOR AN INDEPENDENT REVIEW OF STRUCTURAL DESIGNS

[Print clearly and legibly]

TO: PROFESSIONAL OF RECORD

DATE: _____

P.Eng. or P.L.Eng. name

Firm name

Permit to Practice number

Address

RE: _____
Project name

Address of project

The undersigned hereby records that an Independent Review of the project or work, based on the attached list of the structural plans and supporting documents prepared by the Professional of Record for the structural components, has been completed by this Independent Reviewer.

I am a member of the firm _____
(Name of firm)

With the Permit to Practice number: _____
(Permit to Practice Number)

and I sign this letter on behalf of the firm.

I certify that I am a Professional Registrant as defined below.

DATE: _____

Name

Signed

Address

Telephone

(Affix PROFESSIONAL SEAL here)

NOTE:

1. The above letter must be signed by a Professional Registrant (professional engineer, and professional licensee engineering, licensed to practice by Engineers and Geoscientists BC) qualified to conduct an Independent Review on the structural design being reviewed.
2. This letter is endorsed by Engineers and Geoscientists BC.

6.9 INDEPENDENT REVIEW(S) OF HIGH-RISK PROFESSIONAL ACTIVITIES OR WORK

At the time of publishing this manual, guidance related to Bylaw 7.3.6, Standard for Independent Review(s) of High-Risk Professional Activities or Work was still under development. Monitor the Engineers and Geoscientists BC website for the next version of this manual, expected to be released in mid-2021, which will include the completed contents of this section.

Until the guidance is available, Registrants must follow the requirements contained in section 7.3.6(9) of the Bylaws, which state:

- “(9) A Registrant Firm must do all of the following:
 - (a) establish and maintain documented policies and procedures for Professional Registrants employed by or under contract with the Registrant Firm to follow in relation to independent review of high-risk professional activities or work and the obligations of Professional Registrants pursuant to this section of the Bylaws, which may include
 - (i) checklists, or
 - (ii) signoff forms;
 - (b) take reasonable steps to ensure that a Professional Registrant conducting a documented independent review pursuant to this section of the Bylaws has sufficient and acceptable knowledge, training, and experience to conduct the review;
 - (c) ensure that Professional Registrants employed by or under contract with the Registrant Firm adhere to the documented policies and procedures of the Registrant Firm established pursuant to paragraph (a);

- (d) take reasonable steps to facilitate Professional Registrants employed by or under contract with the Registrant Firm in adhering to the obligations of Professional Registrants pursuant to subsections (1) to (8).”

6.10 ISSUANCE OF MANUAL SEAL AND AUTHENTICATING DOCUMENTS

6.10.1 PURPOSE

Registrant Firms are required to establish, maintain, and follow documented policies and procedures for Professional Registrants employed by or under contract to follow in relation to the use of Manual Seals and Digital Seals for the authentication of Documents.

Specifically, sections 7.3.7(13), (14), (15), (16), (17), and (18) of the Standard for Issuance of Manual Seal and Authenticating Documents Bylaws, states:

- “(13) A Registrant Firm must do all of the following:
 - (a) establish and maintain documented policies and procedures for all individuals employed by or under contract with the Registrant Firm to follow in relation to the use of a Manual Seal, the use of a Digital Seal, the Authentication of Documents, and the obligations of Professional Registrants pursuant to subsections (1) to (12);
 - (b) ensure that all individuals employed by or under contract with the Registrant Firm adhere to the documented policies and procedures of the Registrant Firm established pursuant to paragraph (a);
 - (c) take reasonable steps to facilitate the individual Registrants employed by or under contact with the Registrant Firm in adhering to the obligations of

individual Registrants pursuant to subsections (1) to (12).

- (14) If a Professional Registrant employed by or under contract with a Registrant Firm Authenticates a Document on behalf of the Registrant Firm, the Registrant Firm's Permit to Practice Number must be applied visibly to the Document.
- (15) Only the following individuals may apply a Registrant Firm's Permit to Practice number to a Document:
 - (a) a Responsible Registrant of the Registrant Firm;
 - (b) a Professional Registrant employed by or under contract with the Registrant Firm who has been authorized by a Responsible Registrant to apply the Registrant Firm's Permit to Practice Number.
- (16) A Registrant Firm must not allow any person to apply the Registrant Firm's Permit to Practice Number to a Document other than the individuals set out in subsection (15).
- (17) If a Registrant Firm has reasonable and probable grounds to believe that any person has applied the Registrant Firm's Permit to Practice Number to a Document other than the individuals set out in subsection (15), the Registrant Firm must report the person to EGBC and provide EGBC with any information requested by EGBC regarding the circumstances of the application of the Permit to Practice Number.
- (18) In the event that a Registrant Firm's registration and Permit to Practice are cancelled, suspended, or subject to a condition prohibiting the Registrant Firm from engaging in the Regulated Practice,

- (a) the Registrant Firm must not allow any person to apply the Registrant Firm's Permit to Practice Number to a Document,
- (b) the Registrant Firm must not allow or cause the Registrant Firm's Permit to Practice Number to appear on any communication, website, document, or in any other manner that could suggest that the Registrant Firm's registration and Permit to Practice Number are not cancelled, suspended, or subject to a condition prohibiting the Registrant Firm from engaging in the Regulated Practice and
- (c) a Professional Registrant must not
 - (i) apply the Registrant Firm's Permit to Practice Number to a Document, or
 - (ii) authorize another Professional Registrant to apply the Registrant Firm's Permit to Practice Number to a Document."

This section of the manual provides guidance to Firms on how to implement documented policies and procedures that are consistent with regards to Authentication of Documents and the use of Engineers and Geoscientists BC Seals.

Upon registration, Registrant Firms receive a Permit to Practice certificate that bears a unique Permit to Practice number issued to that Registrant Firm by Engineers and Geoscientists BC. Registrant Firms will not receive a Manual Seal or Digital Seal.

Authentication of engineering or geoscience Documents requires individual Professional Registrants to apply their Manual Seal or Digital Seal. If the Document is being Authenticated on behalf of a Registrant Firm, the Registrant Firm's Permit to Practice number must be applied to the Document, in addition to the Manual Seal or Digital Seal of the Professional Registrant Authenticating the Document.

It is up to individual Registrant Firms to decide on the specific means and methods they use to meet these requirements and the intent of the Bylaw.

6.10.2 IN PRACTICE

6.10.2.1 What Is Meant by Authentication

The purpose of the Engineers and Geoscientists BC Seal is to Authenticate engineering and geoscience Documents. When signed and dated, a Professional Registrant's Seal indicates to the user of the Document that the Authenticated Document has been prepared and delivered in the professional capacity of, or directly supervised by, a qualified Professional Registrant who is taking full responsibility for the contents of the Document.

The Seal indicates that the Document has not been altered, and that it contains the original information for which the Professional Registrant accepted responsibility. The Seal is a mark of reliance, an indication that others can rely on the fact that the opinions, judgments, or designs in the Authenticated Documents were provided by a Professional Registrant held to high standards of knowledge, skill, and ethical conduct. It is not a warranty.

The Seal may be a Manual Seal that uses ink to leave its mark or a Digital Seal accompanied by a Digital Certificate. A Document is Authenticated when the Seal is applied, signed, and dated by the Professional Registrant whose name is on the Seal. A Professional Registrant can use either a Manual Seal or a Digital Seal when Authenticating a Document.

A Registrant Firm's Permit to Practice number is not contained within a Manual Seal or Digital Seal. When a Document is Authenticated on behalf of a Registrant Firm, the Permit to Practice number must be applied visibly to the Document.

The Permit to Practice number can be applied either by a Responsible Registrant or by an individual who has been authorized by a Responsible Registrant to apply the Permit to Practice number. If a Responsible Registrant authorizes another individual to apply the

Permit to Practice number, the Registrant Firm should create and preserve Records of these authorizations. These Records should specify the types of Document to which each individual is authorized to apply the Permit to Practice number.

6.10.2.2 Why Authenticate Professional Documents

Professional Registrants are required by the Bylaw to Authenticate all Documents that they prepare and deliver in their professional capacity or that were prepared and delivered under their Direct Supervision.

By Authenticating a Document, Professional Registrants are making a visible commitment to the standards of the professions, and signifying to the public that they accept professional responsibility for the Document and its content.

The Permit to Practice number is a unique identifier associated with each Registrant Firm. Its presence on a Document is an indication that the Document was prepared and delivered on behalf of the Registrant Firm.

6.10.2.3 What Constitutes an Appropriate System to Manage the Use of Seals

Refer to the considerations and resources provided under [Section 6.10.4 Resources](#) below.

6.10.2.4 Which Documents Should Be Authenticated

When Professional Registrants act in their professional capacity to prepare and deliver a Document that contains information involving the practice of professional engineering or professional geoscience, or when they directly supervise the preparation and delivery of such a Document, they are required to Authenticate the Document. Professional Registrants should do so only after they have evaluated—and are ready to accept responsibility for—the Document and its contents.

In addition to the Bylaw, certain other legislation, including the *Occupational Health and Safety Regulation* of the *Workers Compensation Act*, the *BCBC*, and the *Safety Authority Act*, requires that Professional

Registrants Authenticate engineering and geoscience Documents relevant to the professional activity they are carrying out. Professional Registrants must have current knowledge of applicable legislation that contains Authentication requirements.

Where manufactured equipment, products, or components are specified for use or installation on projects in BC, but they have been designed and fabricated outside of BC, a Professional Registrant is not required to Authenticate fabrication or vendor Documents for these items, provided they have been certified by the fabricator as meeting the performance specification prepared and Authenticated by that Professional Registrant.

However, Professional Registrants are responsible for Checking and Authenticating Documents showing that the equipment meets the requirements of the *Occupational Health and Safety Regulation* of the *Workers Compensation Act* and of Technical Safety BC. Professional Registrants are also responsible for preparing and Authenticating any Documents for onsite services required for any equipment.

Out-of-province manufactured or fabricated components, such as pre-engineered steel buildings or wood trusses, will continue to require authentication by a Professional Registrant. In addition, other legislation in BC may require authentication by a Professional Registrant on specific manufactured or fabricated products for use or installation in BC that have been designed and constructed/fabricated outside of BC.

Professional Registrants must not Authenticate Documentation that they have not prepared in their professional capacity (i.e., that does not contain engineering or geoscience content).

Professional Registrants are professionally responsible for any aspect of a project, work, or Document that they have prepared and delivered or directly supervised, whether or not they apply their Seal.

For more details about whether or not to Authenticate a Document, refer to [TABLE 6-6: When Authentication is Required](#), located in [Section 6.10.4 Resources](#) at the end of this section.

In addition to the usual steps for Authentication, the Registrant Firm's Permit to Practice number must be applied to any Document that is prepared and delivered on behalf of the Registrant Firm.

6.10.2.5 When Should a Seal Be Applied

The test of whether or not a Document must be Authenticated is whether the recipients of the Document(s) will be relying on the professional engineering or professional geoscience content.

- If the Document will be relied on—whether for tendering, permitting, construction, implementation, use, or other reliance—the Professional Registrant must Authenticate the Document(s).
- If the Document is for information only, discussion purposes, or collaboration, or it is not in its final form, and the receiver will understand that they cannot rely on it to price, construct, install, implement, or use, the Professional Registrant does not need to Authenticate the Document(s).

A Document may only be Authenticated when the Professional Registrant is ready to accept professional responsibility for the Document and its professional engineering or professional geoscience content and before it is delivered to others who will rely on it. Where a Document includes multiple disciplines, a Professional Registrant should clearly indicate the discipline or disciplines they are accepting professional responsibility for.

Professional Registrants must never acquiesce to others, including clients, owners, or employers, when deciding whether a Document is ready to be Authenticated. A decision to Authenticate or not Authenticate a professional engineering or professional geoscience Document must always be made by the Professional Registrant responsible for that Document and its contents. Any Document Authenticated by a

Professional Registrant on behalf of a Registrant Firm must also bear the Registrant Firm's Permit to Practice number.

6.10.2.6 What to Do When Asked for a Copy of an Originally Sealed Document

Where a copy of a non-Authenticated Document is sent to satisfy a request for a copy, the copy does not need to be originally Authenticated. The Record version of the Document will include the original authentication.

If an electronic copy of an Authenticated Document containing the Professional Registrant's Seal is to be transmitted, controls should be in place to prevent alteration of the Authenticated Document and to prevent misuse of the applied Seal.

6.10.2.7 What to Do When Asked to Authenticate Record Drawings

Record drawings include as-constructed or as-implemented measurements taken of completed works.

Record drawings prepared for clients, owners, or employers may also include engineering or geoscience changes made and approved during construction or implementation, changes necessitated by differing site conditions, or addenda not previously incorporated into the Documents during the tendering process that would be included on final design drawings.

The as-constructed or as-implemented measurements may be taken by someone under the Direct Supervision of the Professional of Record, or they may be supplied by others, such as the contractor, the operations manager, or others who are responsible for the construction or implementation, and who are not under the Professional Registrant's Direct Supervision. Clients, owners, or employers may require that one set of Record drawings containing the design changes and as-constructed or as-implemented information be provided and Authenticated. Professional Registrants are not permitted to take responsibility for field measurements that were not carried out under their Direct Supervision.

Professional Registrants may only Authenticate Documents that also contain as-constructed or as-implemented information provided by others who are not under their Direct Supervision when an appropriate declaration is included to indicate that they are not accepting responsibility for the information supplied by others.

Firms may seek advice from their legal or insurance advisors as to appropriate wording for a declaration, or they may use the declaration wording included in the Engineers and Geoscientists BC [*Guide to the Standard for Authentication of Documents*](#).

6.10.2.8 What to Consider When Sending Professional Information by Email

Technical engineering or geoscience opinions and decisions on which others will rely may need to be sent in the body of an email message. To Authenticate this kind of professional information, an appropriate approach is to follow up such transmissions by preparing a Document that can be Authenticated and formally transmitted.

Alternatively, if a Digital Seal is used in combination with the Digital Certificate, a Digital Seal and Digital Certificate can be applied to an email. This can be achieved by converting the email to a portable document format (PDF) Document, applying the Digital Seal and Digital Certificate, and attaching the PDF Document to a covering email.

6.10.2.9 Options for Providing CADD Files to a Client

Clients, owners, or authorities having jurisdiction (AHJs) may request editable Computer-Aided Drafting and Design (CADD) files to use for maintaining their facilities or, in the case of municipalities, to publish online for use by others.

To Authenticate their work and distinguish it from future changes to the drawings that may be made by the receivers of such files, Professional Registrants may use the following methods:

1. Embed the CADD file(s) in a PDF file and Authenticate the PDF file using a Digital Seal in

conjunction with a Digital Certificate issued by a Certificate Authority that has been approved by Engineers and Geoscientists BC.

2. Manually Authenticate a hard-copy version of the drawings and provide the hard copy together with a set of editable CADD files that are not Authenticated.
3. Scan an Authenticated set of drawings and provide the Authenticated set together with a set of editable CADD files that are not Authenticated.

6.10.2.10 What to Consider When Professional Documents Must Be Translated

Professional Registrants must not Authenticate Documents in languages other than their working language(s). This includes Documents that are partially in a language other than the Professional Registrant's working language(s).

Professional Registrants should not Authenticate a Document translated by someone who is not a Professional Registrant. Accurate and reliable translation of engineering or geoscience Documents requires knowledge and application of the principles those Documents rely on. If someone who is not a Professional Registrant translates engineering or geoscience Documents, the translated Documents could create serious risks to those who will rely on them. Engineers and Geoscientists BC considers any non-Professional Registrant who translates engineering or geoscience Documents to be unlawfully practising engineering or geoscience.

6.10.2.11 How Should the Seal Be Applied

See [TABLE 6-4: Where to Apply Seals](#) for details on where a Seal should be applied.

The Seal is not complete without the Professional Registrant's signature and the date. The date must be the date of authentication, even though this date may differ from the date on the Document. No one else may sign a Professional Registrant's Seal on their behalf e.g., "per".

When using an ink stamp to manually Seal a hard-copy Document, the impression should be clear and legible, and the Document must be signed and dated adjacent to or across the Seal. The best practice is for the Seal to use one colour of ink and the signature and date to use a distinguishable colour of ink. A Digital Seal must be used in conjunction with a Digital Certificate for a Document to be properly Authenticated.

Engineers and Geoscientists BC does not approve the use of stick-on, photocopied, or electronically scanned and applied versions of a Seal or signature, or the insertion of Digital Seals without a Digital Certificate into electronic files being distributed as such to others.

6.10.2.12 Legal Requirements for Digital Seals

When using a Digital Seal, Professional Registrants must use a Digital Seal issued by Engineers and Geoscientists BC. (This requirement can also be met by using a Digital Certificate technology service provider that has been independently confirmed to meet Engineers and Geoscientists BC best practices, as described in the [Guide to the Standard for Authentication of Documents](#), under Section 3.6.7 Certificate Authority Requirements.)

The Seal must bear the Professional Registrant's first initial, middle initial(s), last name, and designation stated as either "Professional Engineer, Province of British Columbia," "Professional Geoscientist, Province of British Columbia," "Professional Licensee Engineering, Province of British Columbia," or "Professional Licensee Geoscience, Province of British Columbia."

Professional Registrants who were registered with Engineers and Geoscientists BC as an engineering licensee or geoscience licensee under the *Engineers and Geoscience Act*, and who were issued a Manual Seal bearing the term "Engineering Licensee" or "Geoscientist Licensee," should continue to use a Digital Seal that reflects the language that appears on their Manual Seal.

The Digital Seal must be capable of being “returned” to Engineers and Geoscientists BC; that is, a Professional Registrant must be able to show Engineers and Geoscientists BC that they are no longer able to use the Digital Seal. The Digital Certificate must include the date the Document was Authenticated.

6.10.2.13 What Records Must Be Retained

Firms are required to retain copies of all Authenticated Documents issued to others for at least 10 years after either the end of the project or the last use of the Authenticated Document, whichever is later.

When a Registrant Firm authorizes an individual to apply the Firm’s Permit to Practice number, the Registrant Firm should keep Records of this authorization.

6.10.3 PERMIT TO PRACTICE REQUIREMENTS

6.10.3.1 Summary

The core requirement is that Registrant Firms must have documented policies and procedures for Professional Registrants to follow when Authenticating Documents and using the Registrant Firm’s Permit to Practice number.

These policies and procedures establish a system to control the use of Seals and the Permit to Practice number within the Registrant Firm. Professional Registrants and Registrant Firms should be aware that:

- Engineers and Geoscientists BC retains ownership of a Professional Registrant’s Seal and can require its return if the Professional Registrant is misusing it or if the Professional Registrant’s registration is cancelled;
- the Seal must remain in the care and control of the Professional Registrant to whom it was issued; and
- no one else can apply or sign the Seal on behalf of the Professional Registrant who is Authenticating the Document.

A Professional Registrant’s Seal is the symbol that confirms the Professional Registrant is taking professional responsibility for the contents of a

Document. Professional Registrants must Authenticate Documents they prepare when the recipient will rely on the content of the Documents. The Professional Registrant who Authenticates a Document should be the one who prepared the Document or had it prepared under their Direct Supervision. Individual Professional Registrants must use their own judgment in determining when they are prepared to take professional responsibility for a Document by Authenticating it.

Misuse of Seals is one of the most common reasons that Professional Registrants face professional discipline. By creating policies and procedures for Authenticating Documents, and communicating these procedures to their employees, Registrant Firms can protect themselves and their Professional Registrants from disciplinary proceedings.

The following resources can assist Professional Registrants in appropriately applying their Seals; see [Section 6.10.4 Resources](#) at the end of this section:

- [TABLE 6-4: Where to Apply Seals](#)
- [TABLE 6-5: Practical Methods for Issuing Authenticated Documents](#)
- [TABLE 6-6: When Authentication is Required](#)

6.10.3.2 Detailed Requirements

In order to meet these requirements, a Registrant Firm must ensure that:

1. it has documented policies and procedures for its Professional Registrants to follow when using Seals or using the Firm’s Permit to Practice number;
2. their policies and procedures are communicated to and followed by all individuals employed by or under contract for the Firm;
3. it takes reasonable steps to assist its Professional Registrants in meeting their individual obligations with respect to Authentication as set out in the Bylaws, including ensuring that
 - a) Documents are being Authenticated by Professional Registrants with the lowest level of direct professional responsibility,

- b) Documents are being Authenticated in appropriate locations and in an appropriate manner,
 - c) decisions about when to Authenticate Documents are made by the Professional Registrants taking professional responsibility for them,
 - d) if using Digital Seals, Professional Registrants are also using Digital Certificates,
 - e) if using Manual Seals, Professional Registrants are also applying signatures and dates adjacent to or across the Seals,
 - f) Professional Registrants are including qualifying or limiting language if Authenticating Documents containing as-implemented or as-constructed content supplied by others,
 - g) if providing engineering or geoscience opinions or decisions in the body of emails, Professional Registrants are sending secondary emails with appropriately Authenticated Documents expressing the opinions or decisions, and
 - h) Professional Registrants are only Authenticating Documents entirely in their working language(s) and which have not been translated by someone who is not a Professional Registrant;
4. if a Document is Authenticated on behalf of the Registrant Firm, its Permit to Practice number has been applied to the Document;
 5. Documents Authenticated on behalf of the Registrant Firm are retained for at least 10 years after either the end of the related project or the Document's last use, whichever is later;
 6. the Registrant Firm's Permit to Practice number is only applied by a Responsible Registrant of the Registrant Firm or an individual authorized to do so by a Responsible Registrant of the Registrant Firm;
 7. it keeps Records of authorizations given by Responsible Registrants that allow individuals to apply the Permit to Practice number to Authenticated Documents;
 8. it does not allow anyone else to apply its Permit to Practice number to Authenticated Documents;
 9. it reports to Engineers and Geoscientists BC any person who it has reasonable and probable grounds to believe has applied the Registrant Firm's Permit to Practice number to a Document without authorization; and
 10. if the Registrant Firm's Permit to Practice is cancelled, suspended, or subject to a condition prohibiting the Registrant Firm from practising,
 - a) it does not allow any person to apply the Permit to Practice number to a Document,
 - b) it does not allow or cause the Permit to Practice number to appear in any context that would suggest the Registrant Firm remains entitled to practise engineering or geoscience, and
 - c) it communicates to the Registrant Firm's Professional Registrants that they must not apply or authorize another person to apply the Permit to Practice number to a Document.

6.10.4 RESOURCES

The following resources can assist Professional Registrants in appropriately applying their Seals.

TABLE 6-4: Where to Apply Seals

TYPE OF DOCUMENT	LOCATION OF SEAL
DRAWINGS	<ul style="list-style-type: none"> • In an allotted space in the title block or in the lower right-hand corner of each drawing
SPECIFICATIONS	<ul style="list-style-type: none"> • On the first page or cover sheet of the section to which the Seal applies or, if responsible for the overall specification, on the cover sheet for the overall specification
REPORTS	<ul style="list-style-type: none"> • Next to the title of the author or signature in the report, whether at the beginning or end of the report
OTHER PROFESSIONAL DOCUMENTS	<ul style="list-style-type: none"> • Next to the title of the author or signature on the Document, whether at the beginning or end of the Document
DIGITAL FILES	<ul style="list-style-type: none"> • In locations appropriate to the type of Document <ul style="list-style-type: none"> – Use a Digital Seal and signature only in combination with Digital Certificate technology that has been approved by Engineers and Geoscientists BC

TABLE 6-5: Practical Methods for Issuing Authenticated Documents

PRACTICAL METHODS FOR ISSUING AUTHENTICATED DOCUMENTS	
<p>Following are practical ways in which Professional Registrants can comply with Bylaw 7.3.7 and issue Documents that require authentication:</p>	
HARD COPY DOCUMENTS	
<ul style="list-style-type: none"> • Print the Document(s), apply the Manual Seal to the physical Document(s), sign and date the Seal, and issue the physical Document(s). An Authenticated set must be retained by the Professional Registrant as a Record. This method may not be practical when issuing a large number of sets. 	
<ul style="list-style-type: none"> • Print the Document(s), apply the Manual Seal to the physical Document(s), sign and date the Seal, reproduce multiple hard copies, as needed, and issue the copies of the Document(s). The Professional Registrant does not need to originally Authenticate the copies. An Authenticated set must be retained by the Professional Registrant as a Record. 	
<ul style="list-style-type: none"> • Apply a Digital Seal to the Document file(s), print the Document(s), sign and date the Seal on each original Document, reproduce multiple hard copies as needed, and issue the copies of the Document(s). Remove the Digital Seal from working Document files. The Professional Registrant does not need to originally Authenticate the copies. An Authenticated set must be retained by the Professional Registrant as a Record. 	
<ul style="list-style-type: none"> • Apply a Digital Seal to the Document file with a Digital Certificate, add fine print to the digital signature zone stating, "This Document is a printed copy from a digitally Authenticated original," and print the Document. An Authenticated set must be retained by the Professional Registrant as a Record. 	
DIGITALLY ISSUED DOCUMENTS	
<ul style="list-style-type: none"> • Apply a Digital Seal to the Document file with a Digital Certificate, and transmit the file to others. An Authenticated set must be retained by the Professional Registrant as a Record. 	
<ul style="list-style-type: none"> • Print the Document(s), manually Authenticate the Document(s), scan the original of the Authenticated Document(s), and issue the scanned file(s) digitally. An Authenticated set must be retained by the Professional Registrant as a Record. 	

TABLE 6-6: When Authentication is Required

STAGE OR TYPE OF DOCUMENT	INTERNALLY ISSUED CONCEPTUAL OR PRELIMINARY DOCUMENTS ^a (not intended or ready to be relied upon by others) For use solely within the entity in which it was created such as a company, government ministry, or an engineering/geoscience office or department	EXTERNALLY ISSUED OR FORMALLY PREPARED AND DELIVERED INTERNAL DOCUMENTS Delivered to external users such as clients, contractors, government ministries, or AHJs Delivered to internal users within the Firm such as other departments, branches, offices, or divisions for external or formal internal use ^b			RETAIN DOCUMENT?
		SINGLE DISCIPLINE – SINGLE PROFESSIONAL OF RECORD	SINGLE DISCIPLINE – MULTIPLE PROFESSIONALS OF RECORD	MULTIPLE DISCIPLINES	
PRELIMINARY OR DRAFT DOCUMENT A work in progress; non-finalized Document ^c	No	No, unless required by other laws or regulation If required, Authenticate as per originally issued Document and mark accordingly (e.g., PRELIMINARY, NOT FOR IMPLEMENTATION, NOT FOR CONSTRUCTION)	No, unless required by other laws or regulation If required, Authenticate as per originally issued Document and mark accordingly (e.g., PRELIMINARY, NOT FOR IMPLEMENTATION, NOT FOR CONSTRUCTION)	No, unless required by other laws or regulation If required, Authenticate as per originally issued Document and mark accordingly (e.g., PRELIMINARY, NOT FOR IMPLEMENTATION, NOT FOR CONSTRUCTION)	Yes, if submitted for legal or regulatory purposes
ESTIMATES	No	No, unless the Document contains professional engineering or professional geoscience content	No, unless the Document contains professional engineering or professional geoscience content	No, unless the Document contains professional engineering or professional geoscience content	Yes, if work awarded is based on the Document
BID, TENDER, PURCHASE, OR PROCUREMENT DOCUMENTS Documents prepared for any procurement process related to professional engineering and/or professional geoscience works, including any addenda incorporated in Documents during bidding process	No, if the tender, purchase or procurement Documents are being issued to bidders as information only and the bidders understand that they cannot rely on their completeness or accuracy (e.g., for budget pricing based on general works and degree of complexity)	Yes, Authenticate as per originally issued Document and mark accordingly (e.g., FOR TENDER ONLY, NOT FOR CONSTRUCTION, NOT FOR IMPLEMENTATION)	Yes, Authenticate as per originally issued Document and mark accordingly (e.g., FOR TENDER ONLY, NOT FOR CONSTRUCTION, NOT FOR IMPLEMENTATION)	Yes, Authenticate as per originally issued Document and mark accordingly (e.g., FOR TENDER ONLY, NOT FOR CONSTRUCTION, NOT FOR IMPLEMENTATION)	Yes
STANDARD DRAWING^d	No	Yes	Yes, each professional to Authenticate and qualify area of responsibility	Yes, each professional to Authenticate and qualify area of responsibility	Yes
SPECIFICATIONS	No	Yes	Yes, each professional to Authenticate and qualify area of responsibility	Yes, each professional to Authenticate and qualify area of responsibility	Yes
ISSUED FOR PERMITTING Documents prepared and deemed ready for permit purposes	No	Yes, Authenticate as per originally issued Document and mark accordingly ISSUED FOR PERMIT PURPOSES ONLY	Yes, Authenticate as per originally issued Document and mark accordingly ISSUED FOR PERMIT PURPOSES ONLY	Yes, Authenticate as per originally issued Document and mark accordingly ISSUED FOR PERMIT PURPOSES ONLY	Yes

^a For discussion or review purposes only as the validity of the contents are not intended or ready to be relied on by others.

Refer to Internal Documents and Preliminary Documents in Sections 3.2.2 and 3.2.3 of the *Guide to the Standard for Authentication of Documents*.

^b Refer to Internal Documents and Preliminary Documents in Sections 3.2.2 and 3.2.3 of the *Guide to the Standard for Authentication of Documents*.

^c Refer to Preliminary Documents in Section 3.2.3 of the *Guide to the Standard for Authentication of Documents*.

^d Refer to Standard Drawings in Section 3.2.9 of the *Guide to the Standard for Authentication of Documents*. A professional who subsequently uses a standard Document that is not Authenticated must determine that it is suitable for the current purpose and Authenticate it accordingly.

TABLE 6-6: When Authentication is Required

STAGE OR TYPE OF DOCUMENT	INTERNALLY ISSUED CONCEPTUAL OR PRELIMINARY DOCUMENTS ^a (not intended or ready to be relied upon by others) For use solely within the entity in which it was created such as a company, government ministry, or an engineering/geoscience office or department	EXTERNALLY ISSUED OR FORMALLY PREPARED AND DELIVERED INTERNAL DOCUMENTS Delivered to external users such as clients, contractors, government ministries, or AHJs Delivered to internal users within the Firm such as other departments, branches, offices, or divisions for external or formal internal use ^b			RETAIN DOCUMENT?
		SINGLE DISCIPLINE – SINGLE PROFESSIONAL OF RECORD	SINGLE DISCIPLINE – MULTIPLE PROFESSIONALS OF RECORD	MULTIPLE DISCIPLINES	
DESIGN-BUILD	No, if the Documents are being used for internal purposes in preparation of the bid package	Yes, Authenticate as per guidance in Section 3.2.12 ^e	Yes, Authenticate as per guidance in Section 3.2.12	Yes, Authenticate as per guidance in Section 3.2.12 ^e	Yes
ISSUED FOR CONSTRUCTION, IMPLEMENTATION OF USE DOCUMENTS Documents prepared and deemed ready for construction, implementation of use, including reissued bid Documents where no changes were made during bidding	Not Applicable	Yes, Authenticate as per originally issued Document and mark accordingly ISSUED FOR CONSTRUCTION, IMPLEMENTATION OR USE If reissuing bid Documents, see guidance in Section 3.4.5 ^e	Yes, Authenticate as per originally issued Document and mark accordingly ISSUED FOR CONSTRUCTION, IMPLEMENTATION OR USE If reissuing bid Documents, see guidance in Section 3.4.5 ^e	Yes, Authenticate as per originally issued Document and mark accordingly ISSUED FOR CONSTRUCTION, IMPLEMENTATION OR USE If reissuing bid Documents, see guidance in Section 3.4.5 ^e	Yes
REVISED DOCUMENT^f Document changed from a master Document, or an earlier revised Document, by a different Professional Registrant	No	Yes, clearly identify revisions; Professional Registrant revising Document must Authenticate with date revised	Yes, clearly identify revisions; Professional Registrant revising Document must Authenticate with date revised	Yes, clearly identify revisions; Professional Registrant revising Document must Authenticate with date revised	Yes
FINAL DESIGN DRAWINGS Document that includes all design changes made by change order during construction, or by addenda during bidding, and not previously incorporated in Documents	Not Applicable	Yes, Authenticate as per originally issued Document	Yes, Authenticate as per originally issued Document	Yes, Authenticate as per originally issued Document	Yes

^a Refer to the *Guide to the Standard for Authentication of Documents*.

^f Refer to Section 3.4.4 of the *Guide to the Standard for Authentication of Documents* for further information regarding a different Professional of Record Authenticating revised Documents.

TABLE 6-6: When Authentication is Required

STAGE OR TYPE OF DOCUMENT	INTERNALLY ISSUED CONCEPTUAL OR PRELIMINARY DOCUMENTS ^a (not intended or ready to be relied upon by others) For use solely within the entity in which it was created such as a company, government ministry, or an engineering/geoscience office or department	EXTERNALLY ISSUED OR FORMALLY PREPARED AND DELIVERED INTERNAL DOCUMENTS Delivered to external users such as clients, contractors, government ministries, or AHJs Delivered to internal users within the Firm such as other departments, branches, offices, or divisions for external or formal internal use ^b			RETAIN DOCUMENT?
		SINGLE DISCIPLINE – SINGLE PROFESSIONAL OF RECORD	SINGLE DISCIPLINE – MULTIPLE PROFESSIONALS OF RECORD	MULTIPLE DISCIPLINES	
RECORD DRAWINGS^g Document that includes as-constructed or as-implemented information	Not Applicable	No, unless required to do so If required, Authenticate as per originally issued Document and, if Document includes as-constructed information supplied by others, add declaration not accepting responsibility for that information (see Clause 3.2.15.9) ^g	No, unless required to do so If required, Authenticate as per originally issued Document and, if Document includes as-constructed information supplied by others, add declaration not accepting responsibility for that information (see Clause 3.2.15.9) ^g	No, unless required to do so If required, Authenticate as per originally issued Document and, if Document includes as-constructed information supplied by others, add declaration not accepting responsibility for that information (see Clause 3.2.15.9) ^g	Yes
FIELD DOCUMENTS^h Professional Documents prepared and issued in the field that contain opinions or decisions that change the issued for construction Documents	Not Applicable	Authenticate in the field or follow up by preparing in office, Authenticating as per originally issued Document, and retaining in files This Guide does not require that an Authenticated copy be sent to field recipient	Authenticate in the field or follow up by preparing in office, Authenticating as per originally issued Document, and retaining in files This Guide does not require that an Authenticated copy be sent to field recipient	Authenticate in the field or follow up by preparing in office, Authenticating as per originally issued Document, and retaining in files This Guide does not require that an Authenticated copy be sent to field recipient	Yes
SHOP DRAWINGS Documents prepared and designed by a Professional Registrant for a fabricator, supplier, equipment manufacturer, installer, or erector	No	Yes, Authenticate as per originally issued Document (see the <i>Professional Practice Guidelines – Shop Drawings</i>)	Yes, Authenticate as per originally issued Document (see the <i>Professional Practice Guidelines – Shop Drawings</i>)	Yes, Authenticate as per originally issued Document (see the <i>Professional Practice Guidelines – Shop Drawings</i>)	Yes
REPORTS Prepared by a Professional Registrant	No	Yes, next to the title of the author or signature in the report, whether at the beginning or end of the report	Yes, next to the title of the author or signature in the report, whether at the beginning or end of the report	Yes, next to the title of the author or signature in the report, whether at the beginning or end of the report	Yes
DRAWINGS, MAPS, OR PLANS BOUND INTO ANOTHER BOUND DOCUMENT Bound booklets containing reports, drawings, plans, maps	No	No, provided the bound Document is Authenticated	No, provided the bound Document is Authenticated	No, provided the bound Document is Authenticated	Yes

^g Refer to Section 3.2.15 of the *Guide to the Standard for Authentication of Documents* for further information regarding Authenticating Record drawings.

^h Refer to Section 3.2.11 of the *Guide to the Standard for Authentication of Documents* for further information regarding Authenticating field Documents.

TABLE 6-6: When Authentication is Required

STAGE OR TYPE OF DOCUMENT	INTERNALLY ISSUED CONCEPTUAL OR PRELIMINARY DOCUMENTS ^a (not intended or ready to be relied upon by others) For use solely within the entity in which it was created such as a company, government ministry, or an engineering/geoscience office or department	EXTERNALLY ISSUED OR FORMALLY PREPARED AND DELIVERED INTERNAL DOCUMENTS Delivered to external users such as clients, contractors, government ministries, or AHJs Delivered to internal users within the Firm such as other departments, branches, offices, or divisions for external or formal internal use ^b			RETAIN DOCUMENT?
		SINGLE DISCIPLINE – SINGLE PROFESSIONAL OF RECORD	SINGLE DISCIPLINE – MULTIPLE PROFESSIONALS OF RECORD	MULTIPLE DISCIPLINES	
DOCUMENTS SUBMITTED IN RESPONSE TO DEMAND-SIDE LEGISLATION (e.g., the <i>Occupational Health and Safety Regulations, BC Building Code, or Safety Authority Act</i>)	Not Applicable	Yes, Authenticate as per originally issued Document	Yes, Authenticate as per originally issued Document	Yes, Authenticate as per originally issued Document	Yes
ELECTRONIC DOCUMENT Documents in digital format containing professional engineering or professional geoscience information	No	Yes, Authenticate as per originally issued Document using Digital Seal with Digital Certificate, or print to physical form, Authenticate and retain in files	Yes, Authenticate as per originally issued Document using Digital Seal with Digital Certificate, or print to physical form, Authenticate and retain in files	Yes, Authenticate as per originally issued Document using Digital Seal with Digital Certificate, or print to physical form, Authenticate, and retain in files	Yes
DOCUMENTS FOR NON-BC WORK Engineering or geoscience projects geographically located outside of BC	No	Authenticate only if a member or licensee in the respective jurisdiction where the works or projects are located Where there is no licensure requirement, Authenticate as a Professional Registrant	Authenticate only if a member or licensee in the respective jurisdiction where the works or projects are located Where there is no licensure requirement, Authenticate as a Professional Registrant	Authenticate only if a member or licensee in the respective jurisdiction where the works or projects are located Where there is no licensure requirement, Authenticate as a Professional Registrant	Yes
DOCUMENT PREPARED BY A NON-BC PROFESSIONAL Document prepared by a Professional Registrant in another jurisdiction who is not licensed to practice in BC	No	Authenticate as per originally issued Document only after sufficient review of the project/works and Document, to assume full responsibility for both	Authenticate as per originally issued Document only after sufficient review of the project/works and Document, to assume full responsibility for both	Authenticate as per originally issued Document only after sufficient review of the project/works and Document, to assume full responsibility for both	Yes, if Authenticated
DOCUMENT NOT PREPARED UNDER DIRECT SUPERVISION Document prepared by an individual not under the Direct Supervision of the Professional Registrant	No	Authenticate as per originally issued Document only after sufficient review of project/works and Document, to assume full responsibility for the Document including altering or revising the Document	Authenticate as per originally issued Document only after sufficient review of project/works and Document, to assume full responsibility for the Document including altering or revising the Document	Authenticate as per originally issued Document only after sufficient review of project/works and Document, to assume full responsibility for the Document including altering or revising the Document	Yes, if Authenticated

TABLE 6-6: When Authentication is Required

STAGE OR TYPE OF DOCUMENT	INTERNALLY ISSUED CONCEPTUAL OR PRELIMINARY DOCUMENTS ^a (not intended or ready to be relied upon by others) For use solely within the entity in which it was created such as a company, government ministry, or an engineering/geoscience office or department	EXTERNALLY ISSUED OR FORMALLY PREPARED AND DELIVERED INTERNAL DOCUMENTS Delivered to external users such as clients, contractors, government ministries, or AHJs Delivered to internal users within the Firm such as other departments, branches, offices, or divisions for external or formal internal use ^b			RETAIN DOCUMENT?
		SINGLE DISCIPLINE – SINGLE PROFESSIONAL OF RECORD	SINGLE DISCIPLINE – MULTIPLE PROFESSIONALS OF RECORD	MULTIPLE DISCIPLINES	
TRANSLATED DOCUMENTS¹ Document containing the same information in more than one language	No	Authenticate as per originally issued Document Authenticate translated Documents only if fluent in language to which Document translated	Authenticate as per originally issued Document Authenticate translated Documents only if fluent in language to which Document translated	Authenticate as per originally issued Document Authenticate translated Documents only if fluent in language to which Document translated	Yes, if Authenticated
DOCUMENTS IN MULTIPLE LANGUAGES¹	No	Authenticate in multiple languages only if fluent in those languages	Authenticate in multiple languages only if fluent in those languages	Authenticate in multiple languages only if fluent in those languages	Yes, if Authenticated
ASSURANCE OF INSURANCE	No	No, unless required by other laws or regulation	No, unless required by other laws or regulation	No, unless required by other laws or regulation	No

¹ Refer to Section 3.4.6 of the *Guide to the Standard for Authentication of Documents* for further information about Authenticating translated Documents.

¹ Refer to Section 3.4.6 of the *Guide to the Standard for Authentication of Documents* for further information about Authenticating in multiple languages.

6.11 DELEGATION AND DIRECT SUPERVISION

6.11.1 PURPOSE

Registrant Firms are required to establish and maintain documented policies and procedures for Professional Registrants and Subordinates in relation to Delegation and Direct Supervision of engineering or geoscience work or decisions.

Section 7.3.8, Standard for Delegation and Direction Supervision of the Bylaws states:

“(4) If any Professional Registrants employed by or under contract with a Registrant Firm will Delegate work or decisions related to the Regulated Practice to a Subordinate, or if the Registrant Firm employs any individuals who will act as a Subordinate, the Registrant Firm must do all of the following:

- (a) establish and maintain documented policies and procedures for Professional Registrants and Subordinates employed by or under contract with the Registrant Firm to follow in relation to Delegation, Direct Supervision, and the obligations of Professional Registrants pursuant to subsections (1), (2), and (3);
- (b) ensure that the Professional Registrants and Subordinates employed by or under contract with the Registrant Firm adhere to the documented policies and procedures of the Registrant Firm established pursuant to paragraph (a);

- (c) take reasonable steps to facilitate Professional Registrants and Subordinates employed by or under contract with the Registrant Firm in adhering to the obligations of Professional Registrants and Subordinates pursuant to subsections (1), (2), and (3).”

This section of the manual provides guidance to Firms on how to implement documented policies and procedures that are consistent with the requirements for Delegation and Direct Supervision of engineering or geoscience work.

It is up to individual Firms to decide on the specific means and methods they use to meet these requirements and the intent of this Bylaw.

6.11.2 IN PRACTICE

6.11.2.1 What Is Direct Supervision

Direct Supervision is the professional responsibility for the control and conduct of engineering or geoscience work or decisions that a Professional Registrant Delegates to a Subordinate. A Subordinate is any individual who engages in engineering or geoscience under a Professional Registrant’s Direct Supervision, including Trainees.

Direct Supervision does not require a direct reporting relationship between the Subordinate and the Professional Registrant. Direct Supervision does not relate to managerial or administrative oversight of staff. It exists when a Professional Registrant is taking professional responsibility for engineering or geoscience work performed by another.

6.11.2.2 Why Is Adequate and Appropriate Direct Supervision Important

When Professional Registrants Authenticate Documents, or otherwise take professional responsibility for professional engineering or professional geoscience work, they are exposing themselves to personal and professional liability for the work.

When Professional Registrants Delegate engineering or geoscience work, they remain responsible for the work. Adequate and appropriate Direct Supervision mitigates the risk to a Professional Registrant from unacceptable, unsafe, or incompetent work, and ensures that Professional Registrants retain appropriate control of that work.

6.11.2.3 What Constitutes Appropriate Delegation of Engineering and Geoscience Work

For a generic procedure for Delegating engineering and geoscience resources, refer to [Section 6.11.4 Resources](#) at the end of this section.

6.11.2.4 When Can Engineering and Geoscience Work Be Delegated

Professional Registrants can Delegate engineering or geoscience work only when that work will be carried out under their Direct Supervision (i.e., the Professional Registrant will be controlling and overseeing the work). Before Delegating work, the Professional Registrant should assess whether the Subordinate is capable of doing the Delegated work under the Professional Registrant's Direct Supervision.

To demonstrate that a Professional Registrant has provided Direct Supervision that meets the intent of the requirement, the Professional Registrant must be able to show active control and involvement in the project or work, with ongoing interaction and input.

The Professional Registrant should be engaged throughout the engineering or geoscience work, to ensure that is completed appropriately and is suitable for its purpose. Active involvement can be demonstrated through the Professional Registrant's knowledge of the project or work and its development or history; input on drafts; review of particular elements throughout the project or work; and evidence of regular consultation with the Subordinate.

6.11.2.5 When Can Engineering or Geoscience Documents Prepared by Others Be Authenticated

There are two circumstances in which Professional Registrants may be called upon to Authenticate Documents prepared by others.

The first is where work is carried out under the Direct Supervision of the Professional Registrant, which is the topic of this section of the manual. When a Professional Registrant has appropriately Directly Supervised the work, they should be comfortable taking professional responsibility for it by Authenticating the related Documents.

The second circumstance involves Professional Registrants Authenticating Documents prepared by others, where the Professional Registrant's prior involvement is minimal. See [Section 6.10 Issuance of Manual Seal and Authenticating Documents](#) of this manual and, for detailed guidance, refer to the Engineers and Geoscientists BC [*Guide to the Standard for Authentication of Documents*](#).

6.11.2.6 When May Field Reviews Be Delegated

Delegation of work outside of the office is difficult, and Professional Registrants must take care to ensure that appropriate practices are followed.

A Professional Registrant must directly supervise and carefully instruct Subordinates who carry out Field Reviews. They must also have determined that the Subordinate has the appropriate skills and competencies for the work. To demonstrate Direct Supervision of a Field Review, the Professional Registrant should provide specific instructions on what the Subordinate should observe, Check, confirm, test, record, and report.

A Professional Registrant must be able to demonstrate that the Subordinate contacted them when the circumstances required it. The Professional Registrant must always be involved in any professional engineering or professional geoscience decisions or judgments.

6.11.2.7 Who Can Make Professional Engineering and Professional Geoscience Decisions

Throughout the project or work, a Professional Registrant must have some degree of involvement in, and take responsibility for, all engineering or geoscience decisions.

This does not mean that the Professional Registrant must make every decision. Codes and standards of practice that the Professional Registrant has identified as relevant to the engineering and geoscience work involved can guide the Subordinate's work.

The Professional Registrant must have understood the relevant issues, monitored the Subordinate's work, given directions as needed, and reviewed each professional engineering or professional geoscience decision.

6.11.2.8 What Is Appropriate Direct Supervision

The level of Direct Supervision may vary, depending on the experience of the Professional Registrant and the Subordinate and the nature of the work. As a Subordinate becomes more experienced, and the Directly Supervising Professional Registrant becomes more comfortable with their work, the frequency and thoroughness of the Direct Supervision can decrease. However, even with very experienced and capable Subordinates, the Professional Registrant who is Directly Supervising the work must remain involved and continue oversight of the engineering or geoscience work or decisions.

The Professional Registrant may assign broader or multi-stage tasks with less frequent involvement, as long as they are available when the Subordinate has questions or needs direction.

6.11.2.9 How Is Direct Supervision Documented

Delegated work must be properly and adequately documented and submitted to the Professional Registrant for review. These Records must be retained to demonstrate that reviews of the Subordinate's work by the Professional Registrant took place as planned.

6.11.3 PERMIT TO PRACTICE REQUIREMENTS

6.11.3.1 Summary

The core requirement is that Registrant Firms must have documented policies and procedures for Professional Registrants to follow when Delegating and Directly Supervising engineering or geoscience activities, work or decisions.

6.11.3.2 Detailed Requirements

In order to meet these requirements, a Registrant Firm must ensure that:

1. it has documented policies and procedures for its Professional Registrants to follow when Delegating and Directly Supervising engineering or geoscience work or decisions;
2. the policies and procedures are communicated to and followed by all individuals employed by or under contract for the Registrant Firm;
3. the Firm takes reasonable steps to assist its Professional Registrants in meeting their individual obligations with respect to Delegation and Direct Supervision as set out in the Bylaws, including requirements that:
 - a) Professional Registrants appropriately Directly Supervise all engineering or geoscience work Delegated to a Subordinate by
 - i. having knowledge of all stages of the project or work,
 - ii. having knowledge of the development or history of the project or work,
 - iii. providing input throughout the course of the work,
 - iv. reviewing particular elements throughout the course of the work, and
 - v. being regularly consulted throughout the project or work;
 - b) Professional Registrants are able to Directly Supervise the work appropriately by
 - i. being located in the same workplace as, or regularly communicating with, the Subordinate,

- ii. being available to the Subordinate during the project or work for discussion or consultation,
 - iii. periodically reviewing the Subordinate's work, and
 - iv. being involved throughout the project or work, not just providing a final review;
- c) Professional Registrants are adequately Directly Supervising Field Reviews by
- i. determining whether it is appropriate to Delegate Field Reviews and whether the Subordinate has the requisite level of training and experience for the Field Review,
 - ii. determining, based on the complexity and critical nature of the Field Reviews, whether the Subordinate is capable of providing the required level of quality and accuracy,
 - iii. providing to the Subordinate careful instructions about the required effort, reporting detail, and specific aspects of the activities to be Field Reviewed,
 - iv. providing clear instructions to the Subordinate about what must be confirmed, tested, recorded, and reported in the Field Review,
 - v. being involved in engineering or geoscience decisions or judgments required during the Field Review, and
 - vi. reviewing and following up on Field Review reports;
- d) Professional Registrants are appropriately involved in all engineering or geoscience decisions made by a Subordinate by
- i. being available for discussion and consultation with the Subordinate,
 - ii. begin aware of relevant Input Requirements, design criteria, methods of analysis, selection of resource materials and systems, field conditions, engineering and geoscience methodologies being applied, economics of alternate solutions, environmental considerations, and other considerations relevant to the engineering or geoscience decisions, and
 - iii. reviewing each engineering or geoscience decision and the reasons for making it;
- e) Professional Registrants are providing Direct Supervision appropriate to the experience and knowledge of the Subordinate by
- i. assessing experience levels and creating supervision plans suited to the Subordinate's experience and knowledge,
 - ii. assigning broader or multi-stage tasks with decreasing frequency of reviews as a Subordinate's experience and knowledge increases, and
 - iii. being available to answer the Subordinate's questions and provide direction; and
- f) if applicable, Professional Registrants who are professional licensees engineering or professional licensees geoscience only Directly Supervise engineering or geoscience work or decisions that are within their authorized areas of practice.

6.11.4 RESOURCES

6.11.4.1 [Generic Procedure for Delegating Professional Engineering and Professional Geoscience Work](#)

To Delegate work to a Subordinate, a Professional Registrant is required to:

1. assess the work that may be Delegated, to confirm the knowledge, experience, and capabilities required, and any tools or resources (e.g., standards, codes) that can be used to successfully implement the work;
2. assess the Subordinate, to confirm that the Subordinate has the required knowledge, capability, and experience, and to identify any gaps that must be addressed;

3. make required tools and resources available and address any gaps in them, including identifying subject matter experts to be consulted during the work;
4. address gaps in the Subordinate's knowledge, skills, and experience directly, through support from another, more-experienced individual available to assist or by setting up a monitored learning experience;
5. establish the Subordinate's scope of work, duties, responsibilities, authorities, and limits on acting alone;
6. create a plan defining when and how the Subordinate's work will be reviewed;
7. Delegate the work to the Subordinate and communicate the scope of work, duties, responsibilities, authorities, limits on acting alone, and timing and process for required reviews;
8. ensure that the Delegated work is properly and adequately documented, and that it is submitted for review as planned; and
9. retain Documentation to demonstrate that professional reviews of the Subordinate's work took place as planned.

For information on how to demonstrate whether Professional Registrants in a Registrant Firm are meeting the Direct Supervision requirement, see [TABLE 6-7](#) below.

TABLE 6-7: Checklist for the Registrant Firm to Confirm Appropriate Direct Supervision

CHECKLIST FOR THE REGISTRANT FIRM TO CONFIRM APPROPRIATE DIRECT SUPERVISION		
Can Professional Registrants demonstrate that they:		✓
DEMONSTRATING ACTIVE INVOLVEMENT, CONTROL, AND INTERACTION IN THE PROJECT OR WORK		
1.	Have knowledge of all stages of the project or work	
2.	Have knowledge of the development or history of the project or work	
3.	Provided input on earlier drafts	
4.	Reviewed particular elements in earlier stages	
5.	Were regularly consulted throughout the project or work	
DEMONSTRATING APPROPRIATE SUPERVISION		
6.	Were located in the same workplace as, or was regularly communicating with, the Subordinate	
7.	Were available to the Subordinate during the project or work	
8.	Periodically reviewed the Subordinate's work	
9.	Consulted throughout the project or work and not just at the final stage	
DEMONSTRATING ADEQUATE SUPERVISION OF FIELD REVIEWS		
10.	Assessed circumstances to determine if Delegating Field Reviews is appropriate	
11.	Assessed the complexity and critical nature of the Field Review to determine whether the Subordinate can provide the required level of quality and accuracy	
12.	Assessed whether the Subordinate has the required level of training and experience for the Field Review	
13.	Provided careful instructions to those who carried out the Field Reviews about the required effort, reporting detail, and specific aspects of the construction activities to be reviewed	
14.	Gave instructions including what to confirm, test, record, and report	
15.	Were involved in making any engineering or geoscience decisions or judgments required in the field	
16.	Reviewed and followed up on field reports	
DEMONSTRATING INVOLVEMENT IN ALL ENGINEERING AND GEOSCIENCE DECISIONS		
17.	Were available to answer Subordinate's questions about decisions	
18.	Were aware of relevant Input Requirements, design criteria, methods of analysis, selection of resource materials and systems, field conditions, engineering and geoscience methodologies being applied, economics of alternate solutions, environmental considerations, and other relevant considerations	
19.	Reviewed each engineering and geoscience decision and the reasons for making it	
DEMONSTRATING SUPERVISION APPROPRIATE TO EXPERIENCE OF PROFESSIONAL REGISTRANT AND SUBORDINATE		
20.	Assessed experience levels and set up an appropriate supervision plan	
21.	Assigned broader or multi-stepped tasks with decreasing frequency of reviews as the Subordinate's experience increased	
22.	Were available to answer the Subordinate's questions and provide direction	

6.12 FIELD REVIEW

6.12.1 PURPOSE

Registrant Firms are required to establish, maintain, and follow documented policies and procedures for Professional Registrants to follow in relation to Field Reviews.

Section 7.3.3, Standard for Field Review of the Bylaws states:

- “(4) If applicable pursuant to subsection (1), A Registrant Firm must do all of the following:
- (a) establish and maintain documented policies and procedures for Professional Registrants employed by or under contract with the Registrant Firm to follow in relation to field reviews and the obligations of Professional Registrants pursuant to this section of the Bylaws, which may include
 - (i) process flowcharts,
 - (ii) checklists, or
 - (iii) forms;
 - (b) ensure that the Professional Registrants employed by or under contract with the Registrant Firm adhere to the documented policies and procedures of the Registrant Firm established pursuant to paragraph (a);
 - (c) take reasonable steps to facilitate the Professional Registrants employed by or under contact with the Registrant Firm in adhering to the obligations of Professional Registrants pursuant to subsections (1), (2) and (3).”

This section of the manual provides guidance to Firms on how to implement documented policies and procedures that comply with the requirement for Field Reviews.

It is up to individual Firms to decide on the specific means and methods they use to meet these requirements and the intent of this Bylaw.

6.12.2 IN PRACTICE

6.12.2.1 What Are Field Reviews

Field Reviews are periodic reviews conducted by Professional Registrants, or by Subordinates under Professional Registrants’ Direct Supervision, at the site of the implementation or construction of professional engineering or professional geoscience work, that Professional Registrants in their professional discretion consider necessary to ascertain whether the implementation or construction of work substantially comply in all material respects with professional engineering or professional geoscience concepts or intent reflected in the Documents prepared for such work.

The Field Reviewer provides interpretations, observations, and advice to the appropriate party (e.g., contractor, operations manager, or another party responsible for the implementation or construction) about nonconforming work observed in the Field Review. The Field Reviewer does not provide instructions about how to rectify or carry out the corrective work.

Although terminology may differ across areas and industries of practice, and the scope of a Field Review will depend on the nature of the work, these obligations apply to Professional Registrants in all sectors. Field Reviews in this context do not apply only to project-based engineering or geoscience work, but also involve reviewing the implementation of ongoing engineering or geoscience work in any sector.

6.12.2.2 Field Reviews and Protecting the Public

Field Reviews are not supervision or inspection of the work. They are also not a guarantee that all deficiencies will be found. The Field Reviewer does not take responsibility for work installed, implemented, or constructed by others.

Field Reviews do not relieve the party implementing or constructing the work of its responsibility for supervising the work, delivering work that is in conformity with the engineering or geoscience intent, and deciding the means and methods for doing so.

Field Reviews are also not inspections of safety at a contractor-controlled site or a site managed by others, nor are they reviews of the safety program. This does not mean that Professional Registrants may look the other way when they observe a safety violation or concern. Registrants have a duty to hold public safety paramount and report unsafe/unethical work if they observe it.

When Professional Registrants become aware of safety violations or concerns, they must advise the appropriate party in control of the site or responsible for site safety and, if no action is taken, they must then advise the client or relevant authorities. When these actions fail, and the Professional Registrant believes that workers, the public, or the environment are in imminent danger, the Professional Registrant has a duty to stop the work immediately. If attempts to stop the dangerous work fail, the Professional Registrant should make an immediate call to WorkSafeBC or the appropriate authority having jurisdiction (AHJ) for assistance and indicate the urgency of the situation.

The Registrant Firm that employs the Professional Registrant should support them when they undertake these actions in good faith.

6.12.2.3 Why Are Field Reviews Important

Field Reviews allow Professional Registrants to confirm that their professional engineering or professional geoscience work is being implemented, used, installed, or constructed in general conformance to the concepts or intent laid out in the engineering or geoscience Documents they prepared for the work.

Field Reviews provide Professional Registrants with the opportunity to identify nonconforming work, and have it rectified or replaced, as appropriate. They also help Professional Registrants keep their employer, the client, the owner, and other relevant professionals informed about the quality of the work.

6.12.2.4 What Constitutes a Documented Field Review Process

The process may be captured in a written procedure, process flowchart, checklists, forms to record Field Reviews, or other Documentation suited to the nature of the work undertaken by Professional Registrants. If a Registrant Firm frequently carries out Field Reviews of a specific type of work, it should consider whether to create a standard form Document for Field Reviews of that work.

6.12.2.5 How Many Field Reviews Are Required

The number and extent of Field Reviews always remains at the discretion of the Professional Registrant. Deciding the number, extent, and timing of Field Reviews requires the exercise of professional knowledge and judgment, so the Professional Registrant must determine what is appropriate for the specific engineering or geoscience work in question.

Consequently, it is contrary to the Professional Registrant's obligations to agree in advance to a fixed number or extent of Field Reviews. It is appropriate for the Professional Registrant to provide an employer, client, or owner with an estimate of the number of anticipated Field Reviews and/or the cost per Field Review visit. If additional Field Reviews are required, the discretion to increase the number and extent of

the Field Reviews must always remain with the Professional Registrant.

To determine the extent of Field Reviews required, Professional Registrants should assess:

1. the level and nature of risk, complexity, unknown conditions, and duration of the implementation or construction;
2. the standard of practice for the type and nature of work to be reviewed;
3. applicable Professional Practice Guidelines and Practice Advisories;
4. applicable legislation, codes, standards, or other regulatory requirements that may be relevant to the nature of the Field Review to be carried out (e.g., *BCBC*, *Occupational Health and Safety Regulation*, and the *Workers Compensation Act*);
5. the level of detail provided in the engineering or geoscience Documentation prepared for the project or work;
6. the experience, expertise, reputation, and method of selection (e.g., public tender, prequalified bidders, or negotiated) of those implementing or constructing the work;
7. the quantity and type/nature of deficiencies found early in the project or work or through prior Field Reviews; and
8. the experience of those carrying out the Field Reviews.

Professional Registrants must act reasonably, but they must not acquiesce to client or employer demands to conduct fewer Field Reviews than the Professional Registrant believes are necessary.

Professional Registrants may not rely on the expectation that a client, owner, or regulatory authority is subsequently carrying out reviews of the work as a reason to reduce the number of reviews that they carry out. To avoid misunderstandings or disputes, it may be helpful for Professional Registrants or Registrant Firms to inform clients, owners, or employers about the purpose of Field Reviews and the obligations of Professional

Registrants to determine the number and extent of Field Reviews to be carried out during implementation or construction.

The number of Field Reviews should be consistent with the standard of care for the specific engineering and geoscience work. The number and frequency of the Field Reviews may need to be adjusted if more deficiencies than expected are found early in the project or work.

To address concerns about the number of Field Reviews, Professional Registrants can:

1. approach the client, owner, or employer about the general rationale and project-specific reasoning for additional Field Reviews;
2. if unsuccessful in receiving agreement or payment for additional Field Reviews, Document and communicate to the client, owner, or employer the consequences of not conducting sufficient Field Reviews, which may include
 - a) risks to public safety, including safety in the workplace or risks to the environment,
 - b) obligations to notify a regulatory body, if a Professional Registrant believes that there is a risk to public safety, safety in the workplace, or the environment,
 - c) not being able to execute Letters of Assurance required by the *BCBC*, and
 - d) not being able to Authenticate assurance statements required by other legislation.

If the client, owner, or employer does not grant permission or approve payment for Field Reviews that the Professional Registrant has determined to be necessary, the Professional Registrant should consider how to fulfill their ethical obligations. The Professional Registrant may conclude that they are ethically obligated to notify the appropriate regulatory agency and remove themselves from the project. The Professional Registrant should create and retain a Record of these communications.

6.12.2.6 When Should Field Reviews Be Conducted

Field Reviews should occur periodically, based on the nature and progress of the implementation or construction.

Professional Registrants who are engaged to conduct Field Reviews must carry out Field Reviews, or arrange to have them carried out, on critical components during the implementation or construction process.

When a critical component has been covered or enclosed before the required Field Review is carried out, the Professional Registrant should request that the work be uncovered or opened to allow for a Field Review. Where uncovering or opening the work is not feasible or practical, the Professional Registrant can provide an opinion about what was observed relevant to the work and the performance of the party implementing or constructing the work. They should also identify and communicate to the client or owner the consequences of not seeing the work and the rationale that was provided for not uncovering it.

Professional Registrants should consider conducting some reviews randomly and unannounced, so the Field Reviewer is not observing work only when the contractor or other party implementing the work has had the opportunity to prepare for the Field Review.

Where manufactured equipment or products for installation or use in BC have been designed and constructed or fabricated outside BC, the Professional Registrant should prepare performance specifications that require the constructor/fabricator to certify the equipment or products. The Professional Registrant must exercise professional discretion, to determine whether Field Reviews are required at the out-of-province facility during fabrication or construction.

Once the out-of-province equipment is received, the Professional Registrant is required to Check the quality of what is received and confirm that it meets any requirements of the *Occupational Health and Safety Regulation* or Technical Safety BC. The Professional Registrant is also responsible for carrying out Field Reviews of any onsite alterations to the equipment.

6.12.2.7 What Tasks Are Carried Out in a Field Review

Field Reviews may consist of observations, testing, software validation, or surveying. Outcomes may include interpretations, advice, test reports, or surveys. Field Reviews may also involve reviewing Quality Control processes. The content and process of a Field Review will depend on the nature of what is being reviewed. Professional Registrants must use their knowledge and judgment to determine how best to Field Review any specific work, to ascertain whether it substantially complies with the supporting Documents created to guide the work.

Testing and analysis should be carried out to recognized standards. Any equipment used in Field Reviews should be periodically calibrated to recognized standards and Checked, where possible, before each use.

6.12.2.8 Who Can Conduct a Field Review

The Professional of Record must carry out the Field Reviews themselves, or Delegate them to qualified individuals working under their Direct Supervision. A Subordinate does not need to be in a position that normally directly reports to the Professional Registrant.

The Professional Registrant must assess the Field Review requirements, to determine whether to Delegate the Field Reviews to a qualified Subordinate. In doing so, the Professional Registrant must assess the level, complexity, or critical nature of the Field Review, and the level of training and experience of any potential reviewer, and consider whether the Subordinate is qualified to conduct the Field Review.

The Professional Registrant must provide direction regarding the timing, frequency, and focus of Field Reviews, and provide clear directions about the required effort, reporting detail, and specific aspects of the construction or implementation activities to be reviewed.

The Professional Registrant must be involved in any engineering or geoscience decisions made during or as a result of the Field Review. As opportunity allows, the Field Reviews should be carried out in the presence of

both a representative of the owner or client and of the party responsible for the implementation or construction.

6.12.2.9 What If the Professional of Record Is Not Carrying Out the Field Reviews

The Bylaw requires that Professional Registrants, or someone under their Direct Supervision, carry out Field Reviews. Engineers and Geoscientists BC strongly recommends that the Professional of Record, who is professionally responsible for the preparation of the engineering or geoscience Documents, also carries out or Directly Supervises the Field Reviews.

Engineers and Geoscientists BC understands that for various reasons this may not always be the case. In some instances, the client, owner, or employer may choose not to use the Professional of Record for the required Field Reviews. In these circumstances, Professional Registrants are required to have documented protocols in place that address:

1. obtaining written confirmation from the client, owner, or employer about how and by whom Field Review(s) will be carried out;
2. confirming that a qualified Professional Registrant, as appropriate to the work and registered in the governing jurisdiction where the implementation or construction will occur, will be conducting or directly supervising the Field Review(s);
3. advising the client, owner, or employer, and the engineering/geoscience professional responsible for the Field Review, of the Professional Registrant's availability to answer questions regarding the work during implementation or construction;
4. requesting copies of Field Review reports; and
5. retaining a Record of any communication confirming steps 1 to 4 above, and the response of the client, owner, or employer.

For buildings in BC covered under the *BCBC*, the Professional Registrant responsible for Field Reviews would be the registered professional who signs the Letters of Assurance.

If the Professional of Record cannot confirm that Field Reviews will be carried out by a professional licensed or registered in the governing jurisdiction, or by a qualified party under that professional's Direct Supervision, the Professional of Record must:

1. advise the client, owner, or employer of the Professional Registrant's obligations under the *Act* and Bylaws and the consequences of the client, owner, or employer not having appropriate Field Reviews carried out, including
 - a) placing public safety at risk,
 - b) having to notify the appropriate AHJ or relevant regulatory body,
 - c) not being able to execute required Letters of Assurance, and
 - d) not being able to Authenticate other legislated assurance statements; and
2. if the client, owner, or employer continues to refuse to authorize appropriate Field Reviews, Professional Registrants are required to notify the appropriate AHJ or other relevant regulatory body and consider removing themselves from the project.

Although not within Engineers and Geoscientists BC's mandate, similar protocols are recommended for work requiring Field Review outside of Canadian jurisdictions.

6.12.2.10 How Should Observations from Field Reviews Be Addressed

When work observed through Field Reviews at the implementation or construction phase does not conform to the engineering or geoscience concepts or intent laid out in the relevant engineering or geoscience Documents, the nonconforming work must be documented and communicated to the party responsible for the implementation or construction. This communication must be in writing. Depending on the severity of the discrepancies between the relevant engineering and geoscience Documents and the observation made in the Field Reviews, the Professional Registrant may be ethically required to reject the work.

Instructions about any work to be removed and replaced or rectified must be given to the party responsible for the implementation or construction in writing at the time of the Field Review. A copy of a report should be provided in hard copy or by email at the time, even if a typewritten one will follow later.

Professional Registrants must take care not to provide advice that could be construed as taking responsibility for how to correct any nonconforming work. The party responsible for the implementation or construction must remain responsible for the correction.

The Professional Registrant must continue to report nonconforming work until it is rectified. When the work is rectified, they must confirm and record that the work is rectified, or Document why this did not occur and what approach other than rectifying the work was employed.

6.12.2.11 How Are Field Reviews Documented

All Field Reviews must be documented. Documentation may be in notebooks, reports, forms, meeting minutes, photographs, videos, or other Documentation. Firms and Professional Registrants who frequently conduct Field Reviews of similar types of work should develop standard forms that suit the work, to assist in consistently capturing all required information. Field Review Documentation must be retained as a Record.

If Field Reviews require equipment, the Documentation of the Field Review should indicate when and how equipment was used during the Field Review, include Records of the equipment's calibration, and include the status of the equipment at the time the Documentation was created.

6.12.3 PERMIT TO PRACTICE REQUIREMENTS

6.12.3.1 Summary

The core requirement is that Registrant Firms must have documented policies and procedures for Professional Registrants to follow when engaged in Field Reviews.

6.12.3.2 Detailed Requirements

In order to meet this requirement, a Registrant Firm must ensure that:

1. it has documented policies and procedures for its Professional Registrants to follow when engaged in Field Reviews;
2. their policies and procedures are communicated to and followed by all individuals employed by or under contract with the Registrant Firm;
3. Professional Registrants are not predetermining the number or extent of Field Reviews required for a project or work, but are determining them based on appropriate criteria, including
 - a) the nature of the work,
 - b) potential risks inherent in the work, and
 - c) the results of previous Field Reviews;
4. Field Reviews appropriate to the work are being carried out during its implementation or construction, including at critical points identified by the Professional Registrant;
5. where possible, Field Reviews are being carried out by the Professional Registrant who prepared the Documents for implementation or construction, or by a Subordinate under the Professional Registrant's Direct Supervision;
6. there are appropriate protocols for how a Professional Registrant should address situations when a client, owner, or employer decides against using the Professional Registrant to carry out Field Reviews;

7. there are appropriate protocols for how a Professional Registrant should address situations where the work to be Field Reviewed has been covered or made inaccessible, including
 - a) requesting that it be uncovered or made accessible for a Field Review,
 - b) advising the client, owner, or employer of the consequences, should the Professional Registrant not be able to Field Review the work, and the rationale for why the work must be Field Reviewed, and
 - c) documenting communications and additional actions taken in these situations;
8. Professional Registrants are advising clients, owners, or employers when they believe additional Field Reviews are required and why;
9. Professional Registrants are advising clients, owners, or employers of the consequences of not carrying out additional recommended Field Reviews;
10. Professional Registrants or Subordinates are documenting observations made during Field Reviews, and are communicating the observations to those responsible for the implementation or construction in writing at the time of the Field Review;
11. Field Reviewers are advising those responsible for the implementation or construction when aspects of the work must be rectified or replaced, but are not directing the implementation or construction;
12. Professional Registrants are tracking nonconforming work identified by Field Reviews until the work is rectified;
13. all Field Reviews are appropriately documented;
14. a procedure exists and is being followed for the creation and storage of photographic and video Records; and
15. Field Review Documentation is being retained as Records for at least 10 years after the work is completed or the Document is last used, whichever is later.

6.12.4 RESOURCES

6.12.4.1 Generic Procedure for Documented Field Reviews

To carry out Field Reviews, a Professional Registrant is required to:

1. assess the nature of the engineering or geoscience work involved and the complexity of the engineering or geoscience services to be completed during the implementation or construction phase;
2. determine the number, timing, and focus of Field Reviews required to meet the standard of care for the work;
3. determine whether Field Reviews are suitable for Delegation, and determine whether qualified Subordinates are available;
4. Document, and agree with the client, owner, or employer, the scope of required Field Reviews, including any requirements for testing or surveying;
5. communicate to the party responsible for the implementation or construction the specific aspects of construction or implementation activities that will be reviewed, and requirements for providing notice of when they will be ready to observe, test or, survey;
6. where Field Reviews will be Delegated to a Subordinate, provide direction about the required efforts, reporting detail, and specific aspects of construction or implementation activities that must be observed, tested, or surveyed;
7. Document all Field Reviews, including date, time, location, work reviewed, observations made, and directions given;
8. carry out Field Reviews as required and planned;
9. adjust the extent of Field Reviews required based on the issues observed in earlier Field Reviews;

10. where appropriate, take photographs or videos to capture and Document observations made during Field Reviews, taking care to create an audit trail by
 - a) checking the equipment, date, and time settings before taking photographs,
 - b) including a description of what was photographed, along with the date, time, location, and name of photographer,
 - c) not enhancing, cropping, or otherwise editing photographs, except when required for clarity, as well as retaining the original unaltered photograph along with the edited photograph,
 - d) downloading and storing all photographs taken on a designated server or other location, and
 - e) creating non-editable backups of all photographs;
11. provide directions about nonconforming work and required resolution to the party responsible for the implementation or construction in writing, with copies to the client and to the Professional Registrant's project or work file;
12. leave the means and methods for correcting nonconforming work to the party responsible for the implementation or construction;
13. be involved in engineering and geoscience decisions made by the Subordinate carrying out the Field Reviews;
14. advise the client, owner, or employer of any required or proposed revisions to the work that will result in changes in the cost, schedule, or function, and receive approval to proceed before directing the party responsible for the implementation or construction to revise the work;
15. continue to report nonconforming work observed in Field Reviews until it is rectified;
16. confirm and Document how the party responsible for the implementation or construction has addressed any nonconforming work observed in Field Reviews; and
17. retain Field Review Documentation as Records.

In cases where the Professional of Record or someone under their Direct Supervision will not be involved in Field Reviews, Professional Registrants must:

1. obtain written confirmation from the client, owner, or employer about how and by whom Field Reviews will be carried out;
2. confirm that a qualified engineering or geoscience professional, as appropriate to the work and registered in the governing jurisdiction where the implementation or construction will occur, will be conducting or directly supervising the Field Review;
3. advise the client, owner, or employer, as well as the professional responsible for the Field Review, of their availability to answer questions regarding the work during implementation or construction;
4. request copies of Field Review reports; and
5. retain a Record of any communication confirming steps 1 to 4 above, and the response of the client, owner, or employer.

For buildings in BC covered by the *BCBC*, the Professional Registrant responsible for Field Reviews would be the registered professional who signs the Letters of Assurance.

If the Professional of Record cannot confirm that Field Reviews will be carried out by a professional licensed or registered in the governing jurisdiction, or by a qualified party under that professional's Direct Supervision, the Professional of Record must advise the client, owner, or employer of the Professional Registrant's obligations under the *Act* and Bylaws and the consequences of not having appropriate Field Reviews carried out.

If the Professional of Record confirms that there is no intent to authorize appropriate Field Reviews, the Professional Registrant must notify the appropriate AHJ or other relevant regulatory body and consider removing themselves from the project.

7.0 REFERENCES AND RELATED DOCUMENTS

Legislation and documents referred to in this manual appear in [Section 7.1 Legislation](#) and [Section 7.2 References](#).

7.1 LEGISLATION

Bankruptcy and Insolvency Act [R.S.C. 1985], Chapter B-3.

Human Rights Code [R.S.B.C. 1996], Chapter 210.

Occupational Health and Safety Regulation, B.C. Reg. 296/97.

Professional Governance Act [S.B.C. 2018], Chapter 47.

Safety Authority Act [S.B.C. 2003], Chapter 38.

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