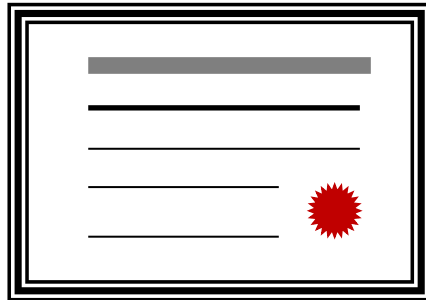


Mechanisms Supporting or Requiring the Use of Qualified Persons in Natural Resource Administration in British Columbia



Prepared by
Ilka Bauer
and
Garth Webber Atkins

for
Qualified Persons Cross-Ministry Working Group
October, 2013

Table of Contents

1. Introduction	1
2. Methodology.....	1
3. Results.....	2
3.1. Government involvement in determining who is a QP	2
3.2. Statutory language and other factors that trigger the use of QPs	3
3.3. Use of QPs in different phases of the project life cycle	6
3.4. Use of QPs in troubleshooting and problem-solving	15
4. Discussion.....	17
4.1. Authority to involve QPs and clarity of QP requirements	17
4.2. Prescriptive vs. outcome-based models: What are QPs relied on <i>for</i> ?	17
4.3. Potential for expanding the use of QPs within existing frameworks.....	18
5. Conclusion.....	20
Appendix I	21

1. Introduction

The Qualified Persons Cross-Ministry Working Group is developing a common framework to coordinate the appropriate use of qualified persons (QPs) across natural resource sectors. Desired outcomes include increased efficiency and timeliness of decision-making, more effective applications of risk management, clear accountabilities, and a shared understanding of how QPs may be relied on in resource authorizations and management. This report is the one of several that examine different aspects of an overall framework for the use of QPs in the natural resource sector.

For the purpose of this work, the term “qualified person” (QP) refers to a person who has appropriate education, training, experience and expertise in a specific area of practice, and who has been through a qualification process that adequately evaluates their education, training and experience to confirm them as competent to practice in their area of specialization. As such, the term includes a spectrum of different types of QPs, including self-regulating professionals as well as accredited practitioners.

The aim of this report is to provide a general overview of existing mechanisms that lead to the use of QPs, in the granting of resource authorizations and the management of environmental risk. Such mechanisms include both legislative and policy requirements to use QPs in natural resource administration, and the different means by which persons may be deemed to be qualified. By providing an inventory and description of these different mechanisms, this report will serve as a basis for future work and discussion. It is not the aim of this work to evaluate the efficacy of any specific mechanism, if any one mechanism is more appropriate than another, or if any specific mechanism can be implemented in a regime where it is not currently used. While these are important considerations when discussing involvement of a specific QP in a specific context, they cannot be adequately addressed at the general level of this survey.

Specifically, the aims of this work are to:

1. Identify general mechanisms of QP involvement across regimes.
2. Identify any differences in overall models as to how QPs are used.
3. Identify potential barriers to expanded use of QPs within existing frameworks.

Individuals interested in any specific mechanism are encouraged to follow up on the examples given, and to contact the agencies and individuals involved.

2. Methodology

Mechanisms of QP involvement currently used were identified by examining legislation, operational guidance, and policy documents, and, where required, by discussing the use of QPs with individuals familiar with different regimes. Given the nature and scope of relevant materials, this survey started with regimes that were known to involve QPs extensively, and was expanded from there as additional information became available, or as further candidate regimes were pointed out in discussion. The aim

was to represent the range of mechanisms available, rather than being fully comprehensive, and not all regimes were examined in equal depth.

A draft report was provided to a number of staff and stakeholders for feedback, and much of it was incorporated into this final report

3. Results

This section briefly examines different ways in which government is involved in determining who is a QP. It then gives examples of statutory language and other factors that can directly or indirectly trigger QP involvement in the resource authorization process. The final subsections examine mechanisms used to involve QPs in different phases of the project life cycle.

3.1. Government involvement in determining who is a QP

Depending on the type of qualification and regime involved, government can take a variety of roles in determining who is a QP.

3.1.1. Legislation that creates self-regulating professional associations

Self-regulating professionals such as engineers, geoscientists, foresters, land surveyors, agrologists, biologists and technologists are members of professional associations that set standards for membership and determine whether or not an individual is competent to practice. The professional association is also the forum for any disciplinary proceedings if a complaint is filed against a member. Thus, QPs who are organized as self-regulating professions enjoy a considerable degree of independence from direct government oversight. Ultimately, however, what enables this independence is legislation passed by government, and professional statutes require professional associations to use their powers in the public interest (see, e.g., *Foresters Act* s. 4(1) and (2); *Engineers and Geoscientists Act* s. 4.1(1); *Agrologists Act* s. 3(2); *College of Applied Biology Act* s. 3(2)).

3.1.2. Rosters of pre-qualified individuals

A roster is a directory of QPs who have submitted their qualifications to government, and who have been judged to be capable of providing a particular service. Rosters are used in a variety of contexts, and are useful especially where work requires specialization but may be performed by QPs from a variety of backgrounds. The roster of Contaminated Sites Approved Professionals¹ established under s. 42(2) of the *Environmental Management Act (EMA)*, for example, includes professional engineers, professional geoscientists, professional agrologists, registered professional biologists, and professional chemists.

¹ Online: <<http://www.csapsociety.bc.ca/find>>.

3.1.3. Certification of QPs by government agencies

Government is directly involved in certifying QPs under a number of natural resource regimes. This includes QPs such as timber scalers (licensed under the *Forest Act*), pesticide applicators (certified under the *Integrated Pest Management Act and Regulation*), and open pit and underground shift bosses (certified under the *Health, Safety and Reclamation Code for Mines in British Columbia* (“*Mining Code*”).

3.1.4. Direct vetting of QP qualifications by the decision-maker

In some situations, whether or not an individual is a suitable QP is determined by the decision-maker on a case-by-case basis. Under the *Heritage Conservation Act*, for example, excavation or alteration of land for the purpose of archaeological research or searching for artifacts of aboriginal origin requires a permit (s. 14). Individuals interested in performing a heritage inspection or heritage investigation apply to the ministry, and their suitability is evaluated based on training- and experience-based criteria,² as well as the type of work that is being proposed.

3.1.5. Specification of criteria to be met

Government does not always have a role in the accreditation of a QP or the creation of a QP governing body. Government may, however, establish who is qualified to conduct a particular kind of work by specifying a necessary accreditation, or criteria which must be met in the way of training, expertise and experience.

3.2. Statutory language and other factors that trigger the use of QPs

Language surrounding the use of QPs varies in specificity, with examples falling into several distinct categories. In many contexts, the requirement to involve a QP is implicit and may not be expressly specified by the resource regime.

3.2.1. Language that explicitly requires use of a QP

Where the requirement to engage a QP is explicit within the resource regime, the type of QP required may either be specified, or may have to be determined on a case-by-case basis.

Wording that requires the use of a specific (identified) QP.

Examples in this category explicitly require use of specific QPs, usually those who work in a restricted area of practice or hold a specific accreditation or certification:

- A. “Tailings impoundments, water management facilities, dams and waste dumps shall be designed by a professional engineer” (*Mining Code* s. 10.1.8).
- B. “A person who is not a British Columbia land surveyor acting under instruction of the Surveyor General may not carry out a survey under this Act” (*Land Act* s. 74).

² BC Ministry of Forests, Lands and Natural Resource Operations, *Policy Statement*, online: Archaeology – Heritage Permits <http://www.for.gov.bc.ca/archaeology/policies/heritage_permits.htm#policy_statement>.

- C. The Municipal Wastewater Regulation requires that a wastewater facility operated and maintained by a person who is certified under the Environmental Operators Certification Program.

Wording that requires the use of a QP, but no specific qualifications are identified.

Examples in this category are found in situations where instruments or guidance documents use a very broad definition of “qualified professional” (or related term), and where suitable QPs may come from a variety of backgrounds. The specific QP appropriate in a given context may have to be determined on a case-by-case basis.

- A. ““qualified professional” means an applied scientist or technologist specializing in a particular applied science or technology including, but not necessarily limited to, agronomy, biology, chemistry, engineering, geology, or hydrogeology and
 - (a) who is registered in British Columbia with their appropriate professional organization, acting under that association’s Code of Ethics and subject to disciplinary action by that association, and
 - (b) who, through suitable education, experience, accreditation and knowledge, may be reasonably relied on to provide advice within their area of expertise” [*Municipal Sewage Regulation* s. 1]
- B. “Baseline studies and assessment analyses must follow relevant provincial and federal standards ... and guidance and be conducted under the direction of an appropriately qualified professional.”³

Wording that requires a QP, who becomes qualified by meeting criteria specified in regulation

- A. The Riparian Areas Regulation (RAR) under the Fish Protection Act specifies that as a condition of approval of a proposed development, riparian area assessments must be performed by a qualified environmental professional who meets a number of specific criteria (*RAR* s. 1)⁴. When conducting an assessment, the QP must certify that they meet these criteria, and that they followed the assessment methodology attached as a schedule to the regulation. The QP works with the client and the municipality where the proposed development is located to ensure that there will be no harmful effects on riparian fish habitat, and the QP’s assessment report ultimately certifies that this condition can be met.

3.2.2. Situations where the requirement for a QP is implicit

Where the resource regime itself does not explicitly require engagement of a QP, use of a QP may nonetheless be required implicitly if the work at issue falls into a restricted area of practice.

³ BC Ministry of Environment, *Application Information Requirements Template* (October 2010), online: <http://www.eao.gov.bc.ca/pdf/AIR_Template_oct2010.pdf> at 19 [*AIR Template*].

⁴ BC Ministry of Environment, Riparian Areas Regulation Schedule of Assessment Methods, online: <http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/assessment_methods.pdf>.

Requirement to engage a QP because the work at issue falls into a restricted area of practice

Many self-regulating professional associations, including professional engineers and geoscientists, professional foresters, and land surveyors have a legislated monopoly on practice (see *Engineers and Geoscientists Act* s. 22; *Foresters Act* s. 20; *Land Surveyors Act* s. 59). Only members of these professions may legally perform work falling within the profession's field of practice. In other cases, a self-regulating professional association may have an exclusive right to use a specific title (see e.g., *Agrologists Act* s. 17; *College of Applied Biology Act* s. 12). Individuals who are not members of the association can perform work falling within the subject areas covered by these enactments, as long as they do not use the protected title. In some contexts, use of a registered member may assist in demonstrating that due diligence was undertaken in performing an activity (see next heading).

3.2.3. Situations where the use of QPs is expected because of due diligence requirements or standard industry practice.

While not explicitly required, QPs may be expected to be used where carrying out of the activity requires or would reasonably be expected to require expert knowledge, or if use of a QP is normal industry practice and thus may be required to demonstrate that the proponent was duly diligent in undertaking the activity

Requirement to use a QP because of due diligence requirements / standard industry practice

Under outcome-based components of regulatory regimes, compliance is assessed based on whether or not an operator has achieved an outcome required by legislation. If required outcomes are not met (i.e., the operator is out of compliance), they may be able to use a defence of due diligence – i.e., they may be able to establish that they are not at fault because they used appropriate care and took all reasonable steps to meet legislated objectives. In making this determination, one of the relevant questions may be whether or not they engaged and followed the advice of a QP, especially if QP involvement in the type of work at issue is standard industry practice or reasonably expected because of the nature of or complexity of the work. Allowing a defence of due diligence acknowledges that not all events can be foreseen, and that the operator may not be at fault in spite of not achieving the outcome required by legislation. Depending on whether or not the regimes in question include the relevant power, they may still be ordered to remediate the problem.

- A. The *Forest and Range Practices Act (FRPA)* and the *Oil and Gas Activities Act (OGAA)*, include significant outcome-based components, and both explicitly incorporate a due diligence defence (*FRPA* s. 72; *OGAA* s. 62(5)). Because of the type of work involved and the nature of objectives set, activities regulated under both regimes rely on a variety of QPs, including self-regulating professionals as well as accredited practitioners. The requirement to involve specific QPs is not always stated explicitly, and depending on the work at issue, may result from relevant professional acts, due diligence requirements, or normal industry practice.

3.2.4. Situations where specific work is required, which may or may not be conducted by a QP.

This is a very broad category, with most examples relating to situations where proponents or operators are asked to submit environmental information or management plans. These may reasonably be expected to be prepared by trained individuals, but they may not require a specific accreditation.

3.3. QP mechanisms used in different phases of the project life cycle

Figure 1 presents a general overview of mechanisms used to trigger QP involvement in existing regimes. The diagram represents a broad conceptual summary and is not meant to describe any specific regime in detail. In the following sections, information and examples are provided for each of the mechanisms identified. While this discussion is organized around numbered “boxes”, many of the mechanisms discussed are not mutually exclusive. In the implementation phase, for example, requirements for the use of QPs that are specified *a priori* by legal instruments (box 7) may be supplemented by project-specific requirements that originate in permit conditions or plans (boxes 8 - 9). Actual activities performed by QPs, on the other hand, tend to be similar between boxes, and examples given in each case by no means represent an exhaustive list.

In general, examples provided focus on situations where QP involvement is enabled or required by the resource regime, be it by statute, regulation, or policy. In reading these examples, it should be kept in mind that QP involvement at any stage of a project may also result from any applicable professional acts, due diligence requirements, and other factors discussed under heading 3.2.2. The contaminated sites regime (box 13) contains a number of notable mechanisms for requiring QP use, but this regime is different and separate from a typical resource use permitting process. While referred to where appropriate in the following sections, this regime will also be discussed separately at the end of the review.

Further, it should be noted that in some situations, it may be that work is carried out by non-QPs under the supervision of a QP, or is reviewed by a QP.

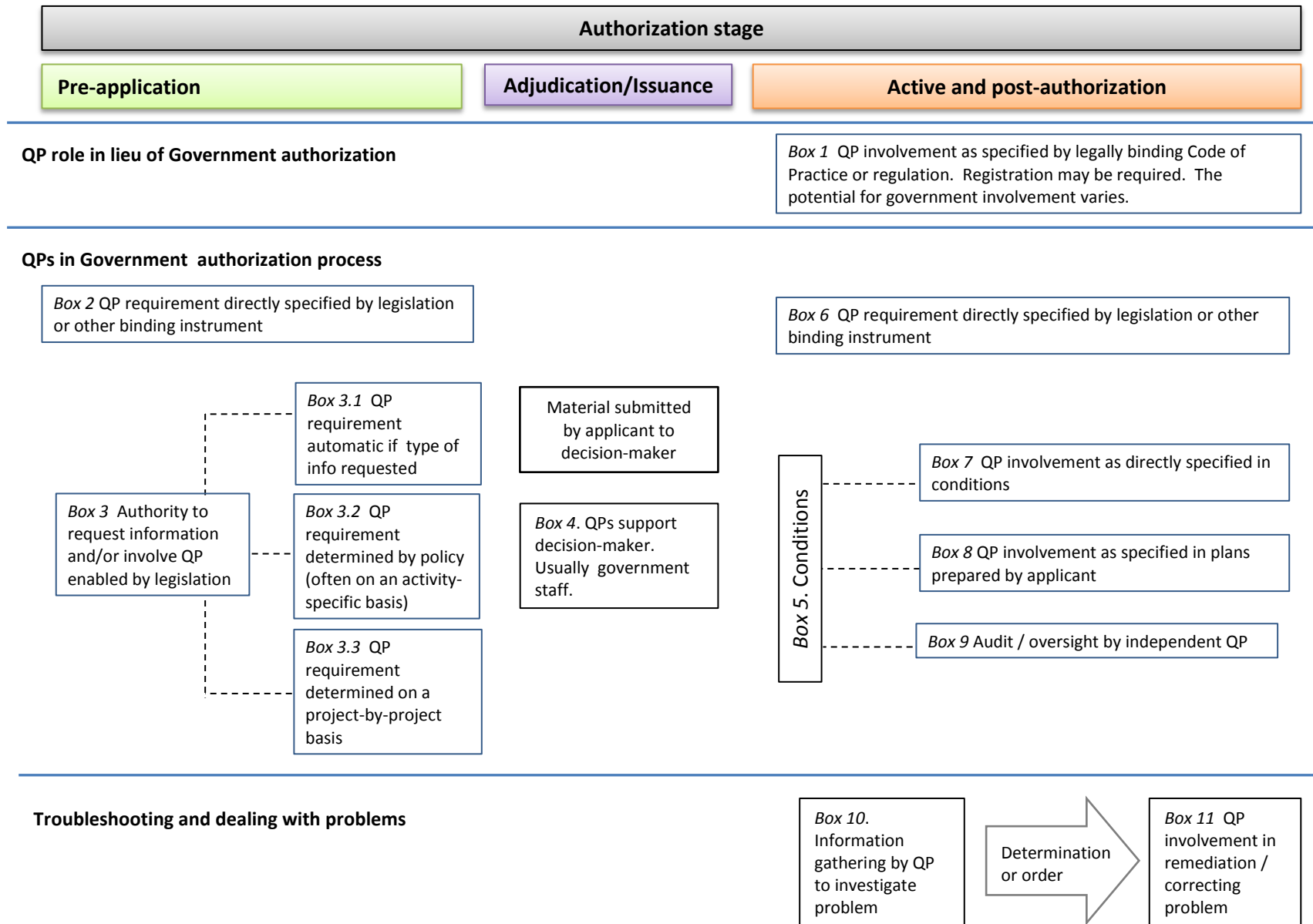


Figure 1. QP mechanism used at different stages of a typical project cycle. The boxes describe mechanisms in the *Land Act*, *FRPA*, *Water Act*, *EMA Part 2*, *OGAA*, and *Mines Act* that require or support the use of QPs. A particular regime may not use all of the mechanisms indicated. **Box numbers are provided as a cross-reference to the text, and do not necessarily represent a flow from one mechanism or action to another .**

3.3.1. Activities where the use of a QP results in an exemption from a formal authorization

Box 1: QP involvement required by regulation or Code of Practice (COP)

This mechanism enables a party to be exempted from obtaining a specific approval from government. This may involve the use of suitable QPs, either because their use is specified, or because the activity requires the expertise of a QP. Depending on the activity and risk involved, some examples in this category require registration or notification. The ability of government to become involved varies, including: no ability to intervene, being able to request information only, being able to intervene in certain circumstances, and being able to require a full application.

- A. Under the *Environmental Management Act (EMA)*, two types of regulations can exempt a person engaged in a prescribed activity or industry from normal permitting requirements. General authority to provide exemptions by regulation is provided in *EMA* s. 138(2)(s). Specific powers are vested in the Minister for making “codes of practice” (COP; *EMA* s. 22), and in the Lieutenant Governor in Council for making regulations (*EMA* s. 21). Exemptions are available where a relevant regulation or COP exists, and where the person engaged in the activity (a) complies with COP or regulation, and (b) for some activities or industries, has an effective registration (see *Waste Discharge Regulation* s. 4).

Examples of explicit or implicit QP requirements in COP and regulations include:

- Exemptions from normal COP requirements for older facilities provided a report prepared by a QP shows no impact (e.g., *Code of Agricultural Practice for Waste Management* s. 7 (part of *Agricultural Waste Control Regulation (AWCR)*)).
 - Requirements for regular testing or inspection of equipment or facilities (e.g., *Code of Agricultural Practice for Waste Management* s. 18 (part of *AWCR*)).
 - Requirements to design of facilities to certain standards (e.g., *COP for the Slaughter and Poultry Processing Industries* s. 7).
 - Requirements for operators to be certified (e.g., *Municipal Sewage Regulation* s. 22)
 - Requirements for regular testing or environmental monitoring to ensure emissions or discharges do not exceed specified standards (e.g., *Municipal Sewage Regulation* Part 7).
 - Requirements for preparation of plans by a QP (e.g., *COP for Soil Amendments* s. 8; *COP for the Slaughter and Poultry Processing Industries* s. 8(3)(a)).
- B. Several mechanisms under the *Water Act* exempt certain activities or individuals from more formal licensing or approval processes.
- Section 44 of the *Water Regulation (WR)* allows for certain changes in and about a stream to be made without an approval or licence, provided a habitat officer is notified; any conditions imposed by the habitat officer are followed, and the change is made in accordance with the regulation (*WR* s. 40 and 42). For some of these changes, designs have to be prepared by a professional engineer (*WR* s. 44(1)(a)(ix); 44(1)(l)).
 - Section 47 of the *WR* authorizes qualified professionals and qualified well drillers to divert water from a stream without a licence or approval under specified circumstances.

3.3.2. Pre-application: QP involvement in preparing the application.

This phase includes all steps required to put together and submit a viable and complete application under a natural resource regime. For the most part, QP involvement is focussed on characterizing existing site conditions, and on preparing documents and plans to support the application.

Box 2: Application requirements specified by legislation or other binding instrument

- A. *The Health, Safety and Reclamation Code for Mines in British Columbia* (“*Mining Code*”) lays out comprehensive rules to be followed in the construction, operation, and decommissioning of a mine. The *Mining Code* is prepared and amended by the Health, Safety and Reclamation Code Committee, establishment of which is mandated by s. 34(1) of the *Mines Act*. The code and any amendments come into force on approval of the Lieutenant Governor in Council, and contravention is an offence (*Mines Act* (s. 34(6)) and 37(2)). Sections 10.1.1 – 10.1.10 of the code provide a list of plans and documents that have to be submitted as part or (or with the) permit applications under s. 10(1) of the *Mines Act*. When required by the Chief Inspector, some of these plans have to be prepared by licensed professionals.
- B. Under the *Forest and Range Practices Act (FRPA)*, holders of larger tenures must have a forest stewardship plan approved before harvesting timber or constructing a road (*FRPA* s. 3(1)). Section 5 of the Act and the *Forest Planning and Practices Regulation (FPPR)* define the required content of a forest stewardship plan. Preparation of this plan falls under the definition of “practice of professional forestry” in s. 1 of the *Foresters Act*, and will require involvement of a professional forester. Other QPs, however, are likely to be involved⁵ and may certify prescribed components of the plan (*FRPA* s. 16(1.01)(a), *FPPR* s. 22.1).

In specifying application requirements, there may be a trade-off between completeness and complexity in drafting relevant provisions. In this regard, the mining regime and *FRPA* are very different in their approach. Mining applications undergo a complex, multi-step review process (see box 3.3 below), and the code just provides an overall list of plans that are required, with further details fleshed out in the pre-application phase. *FRPA*, on the other hand, specifies a complete set of factors (or objectives) to be addressed in the creation of a forest stewardship plan. These objectives can be found in regulations, orders, and land-use plans, and the scheme and its inter-relationships with other instruments are more complex. Under both the *Mines Act* and *FRPA*, the decision-maker has authority to request further information if required to support the decision (*Mining Code* s. 10.1.4(9); *FRPA* s. 16(2.1)).

Box 3: Authority to require QP enabled by legislation, with actual decision made at operational level

Several regimes deal with multiple activity types, and even for a single activity type, risk will depend on the size, location, and complexity of what is proposed. Rather than try to anticipate all possible scenarios that may arise, most legislation grants discretion, enabling decision-makers to request

⁵ Roberta Reader, *The Expectations that Affect the Management of Public Forest and Range Lands in British Columbia: Looking Outside the Legislation: A discussion paper prepared for the Ministry of Forests and Range and the Ministry of Environment* (February 2006) at 197-218, online: <<http://www.for.gov.bc.ca/code/training/frpa/looking.html>> [Reader].

information from the applicant as required. This means the decision as to whether or not a given piece of information (and QP) is required is often made at the operational level.

Under most of the regimes examined, provisions authorizing decision-makers to request information are broad and permissive (e.g., *Land Act* s. 35(1); *Water Act* s. 10(c); *OGAA* s. 24(1); *Environmental Assessment Act EAA* s. 11(2)(c)), enabling the regulating authority to ask for a broad range of information, as long as it is relevant and reasonable in the circumstances. The degree to which discretion is structured by operational guidance and policy differs between regimes, resulting in a continuum of approaches. For the purpose of discussion, these are summarized into three broad categories:

Box 3.1: Specific information (and QP) either required or not

Examples in this category involve situations where a decision-maker has discretionary authority to either request a given type of information or not. If the information is requested, it often requires use of a QP.

- A. Section 76 (1) of the *Land Act* authorizes the minister to order a survey of Crown land. The “practice of land surveying” is a restricted area of practice under the *Land Surveyors Act (LSA)*. This means it may only be performed by members of the BC Association of Land Surveyors, or by companies authorized under the *LSA*.
- B. In the context of subdivision approval, section 86(1)(d)(i) of the *Land Title Act* authorizes the approving officer to request a report certified by professional engineer that land may safely be used for the intended purpose.

Box 3.2: Application and QP requirements determined by (activity-specific) guidance or policy

Examples in this category involve regimes where decision-makers have broad authority to request information. Specific information requested is guided by policy and operational procedures, and may vary with project type, size, or other relevant factors. Requirements for QP involvement vary and may or may not be clearly specified.

- A. Section 35(1) of the *Land Act* provides the minister with broad authority to require feasibility studies, environmental assessments, timber cruises, land valuation appraisals, or other information with an application for a Crown land disposition. The information required for different activity types is specified in Crown land application guidance and policies.⁶ While guidance is often not explicit, some of this information is likely to require use of a QP.
- B. Section 10(1) of the *Water Act* requires a person applying for a licence to comply with directions of the comptroller or regional water manager, and to provide any plans, specifications and other information they require. Information requirements are specified in application guidance, and for large projects, the applicant has to submit a

⁶ See BC Ministry of Forests, Lands and Resource Operations, *Crown Land Uses (Program Areas)*, online: <http://www.for.gov.bc.ca/Land_Tenures/crown_land_application_information/program_areas.html>.

water development plan.⁷ The Ministry can require that that this plan be prepared by a QP and specify any criteria or standards that the plan must meet.

- C. Section 11 of the EAA gives the executive director broad authority to determine the scope, procedure and methods to be used in the assessment. In practice, the process used is similar to those for complex projects discussed for Box 3.3 below. The Environmental Assessment Office (EAO) provides a detailed Application Information (AIR) Template, which is used by the proponent to outline information they plan to submit. The EAO and a project working group review the draft and seek feedback from the public and First Nations before issuing a final AIR document.

The EA process provides for assessment of environmental, economic, social, heritage, and health effects of proposed projects, and the AIR template requires the proponent to identify environmental management and operational plans that will be provided in the application. This may include plans for monitoring of surface water, ground water, wildlife and vegetation; plans for management of acid rock drainage; soil salvage and site reclamation plans; and facility decommissioning and closure plans. Baseline studies and assessment analyses must follow provincial and federal standards and be conducted under the direction of an appropriately qualified professional.

Box 3.3: Application and QP requirements determined on project-by-project basis

For high-risk or complex activities, details of information to be submitted with the application and the need for QP involvement are usually determined on a project-by-project basis. This may involve meetings between the proponent and ministry staff, submission of draft documents, and public notice and comment.

- A. For waste discharge authorizations under the *EMA*, the applicant prepares a draft application. They then meet with ministry staff to review the scope and detail of the draft, and to determine if a technical assessment report is required. There are also publication, notice and consultation requirements (see *Public Notification Regulation* under the *EMA*), the results of which feed into the final application.⁸
- B. Permitting under the *Mines Act* follows a similar multi-stage process.⁹ Steps involved include submission of a preliminary application; requests for additional information, and referrals to other ministries, communities, and First Nations before the application is finalized.

⁷ BC Ministry of Environment, *Application Package for a Water Licence* (October 2011) at 47, online: <http://www.env.gov.bc.ca/wsd/water_rights/licence_application/cabinet/complete_application_form_oct-2011.pdf>.

⁸ BC Ministry of Environment, *Waste Discharge Authorization Application Process Flow Sheet*, online: <http://www.env.gov.bc.ca/epd/waste_discharge_auth/pdf/process.pdf>.

⁹ BC Ministry of Energy and Mines, *Application requirements for a permit approving the mine plan and reclamation program pursuant to the Mines Act, RSBC 1996, c 293*, online: <<http://www.empr.gov.bc.ca/Mining/Permitting-Reclamation/Guidance/PermitAppReqs/Pages/default.aspx>>.

3.3.3. Issuance (application review and decision)

Box 4: QP involvement in application review and direct support to decision-maker

This phase involves review of the application received by government, and any further steps required to decide whether or not an authorization will be issued. Review of applications typically involves government QPs who may report directly to the statutory decision-maker. Few enactments explicitly provide for use of external QPs at this stage. However, QPs may enter the decision-making process in several different ways:

Streamlining of applications if a QP prepared or signed off certain components

The level of scrutiny required by government staff in evaluating applications may vary with the type and quality of material submitted, so mechanisms to involve QPs in the pre-application phase become relevant in the decision-making process. The degree of reliance on QPs is likely to vary depending on the specific component of the regime at issue, and on whether it uses a prescriptive or outcome-based approach. This is explored in more detail in the Discussion.

Examples of regimes that are explicit about how preparation of application documents by QPs is (or may be) factored into decision-making include the following:

- A. Under *FRPA*, prescribed components of a forest stewardship plan or a woodlot licence plan are deemed to conform to legislative requirements if a person with prescribed qualifications certifies that they do (*FRPA* s. 16(1.01) & (1.2)). This applies only to selected components of the plan, and the decision-maker must accept these components if they are certified.
- B. While not a conventional authorization regime, the contaminated sites regime (*EMA* Part 4 and *Contaminated Sites Regulation (CSR)*) contains several relevant mechanisms:¹⁰
 - a. Applications for low and moderate-risk sites are subject to a special roster review procedure by an approved professional. Once this review is complete, the application, including the recommendation of the approved professional for approval and a draft of the legal instrument applied, is submitted to the Society of the Contaminated Sites Approved Professionals of British Columbia. The Society then submits the application to the Ministry, unless it is first chosen for an audit. One in eight submissions are audited, and any deficiencies are corrected before it is submitted to the Ministry. Ministry staff normally only review certain key documents of the application package before making the decision.

¹⁰ See *CSR* s. 15, 43, 47, 49; BC Ministry of Environment, *Protocol 6 for Contaminated Sites: Eligibility of Applications for Review by Approved Professionals* (Effective June 21, 2010), online: <http://www.env.gov.bc.ca/epd/remediation/policy_procedure_protocol/protocols/pdf/protocol_6.pdf>; BC Ministry of Environment, *Administrative Guidance on Contaminated Sites 3: Applying for Contaminated Sites Services Version 6* (June 2010), online: <<http://www.env.gov.bc.ca/epd/remediation/guidance/administrative/ag03.pdf>>; BC Ministry of Environment, *Administrative Guidance on Contaminated Sites 5: Approved Professional Recommendations for Non-High-Risk Sites Version 6* (June 2010), online: <<http://www.env.gov.bc.ca/epd/remediation/guidance/administrative/ag05.pdf>>; BC Ministry of Environment, *Ministry Procedures for the Roster of Approved Professionals* (effective November 12, 2009), online: <http://www.env.gov.bc.ca/epd/remediation/policy_procedure_protocol/procedure/pdf/roster_procedure.pdf> [*Approved Professionals Procedure*].

- b. High risk applications have to be submitted directly to the Ministry. The applicant has the option to also submit a recommendation of an approved professional. As per *CSR* s. 49.1, the director may consider the recommendation of the approved professional in determining the extent of review required.

Involvement of external QPs in reviewing application documents (decision-maker support)

A decision maker may contract out the review of documents to an external QP to assist in the review of an application. In some cases, legislation allows the proponent explicitly to request (and pay for) external QP assistance in order to speed up the review process (e.g. Contaminated Sites Regulation - however, the decision maker is not bound by the QP recommendation) .

Box 5: Conditions

All regimes examined allow the decision-maker to impose conditions when granting an authorization (see *EAA* s. 17(3)(c)(i); *EMA* s. 14(1), 15(2); *Land Act* s. 11(3); *Water Act* s. 9 and 12(1)(f); *Mines Act* s. 10(3); *OGAA* s. 25(2)(b); *FRPA* s. 112). This authority is usually broad, and in many regimes, conditions are a key mechanism to involve QPs in the management and monitoring of risk during the active and post-authorization phases of the activity. Conditions vary in specificity and scope, and may require the operator to perform specific actions (box 8), to prepare plans (box 9), or to submit to (and pay for) external audits (box 10).

3.3.4. Active and Post-Authorization phases

These phases include the active life of the project, as well as decommissioning and any activities that continue beyond the life of the authorization. Several mechanisms are available to involve QPs in these project phases, and many of these mechanisms overlap and are not mutually exclusive. Because mechanisms in these phases are similar, they are discussed together in this section.

Box 6: QP requirement directly specified by legislation or other binding instrument

Many regimes include regulations that specify how certain activities are to be performed. While general rules cannot address all site-specific risks, they provide a general set of rules to be followed, and many require use of QPs in certain contexts.

- A. The *Mining Code* lays out a comprehensive set of rules dealing primarily with health and safety aspects of mine operation and decommissioning. Examples of QP involvement include:
 - Requirements for supervision of work by certified staff (s. 1.12.1-1.12.5; s. 1.13.1 – 1.13.9).
 - Requirements for performance of certain activities by certified staff (e.g., 8.2.1).
 - Requirements for approval or design of mine shafts and other works by a professional engineer (e.g., s. 7.1.1; 10.1.8; 10.7.19).
 - Requirements for submission of annual safety inspection reports by a professional engineer (e.g., 10.5.3).
- B. Regulations under the *OGAA* directly or indirectly require the use of QPs.
 - The *Drilling and Production Regulation* requires well drillers, rig managers, and the permit holder's representative at the well site to hold specified certifications (s. 13(2) - (4)).

- *The Pipeline and Liquefied Natural Gas Facility Regulation* requires construction, operation, maintenance, deactivation and abandonment of facilities in accordance with CSA standards, which may require the use of QPs.

Box 7: QP involvement as directly specified in conditions

There are many different ways to involve QPs through conditions in authorization management processes. Moreover, the requirement for plans (box 9) or for audit or oversight by an independent QP (box 10) may be imposed as a condition of authorization, so this mechanism partially overlaps those discussed in the following sections.

The relationship between levels and predictability of risk on the one hand and mechanisms for QP involvement through conditions on the other is not as clear-cut as it appears to be for requesting information in the pre-application phase (Figure 1; Box 3.1 – 3.3). In general terms, however, a standard set of permit conditions that can be tailored to individual applications may be sufficient for activities associated with low or predictable risks. As activities get more complex, more detailed plans may be required.

Box 8: QP involvement as specified in plans prepared by applicant

Depending on the regime and activity at issue, an applicant or operator may be asked to prepare any one of a series of plans. This includes management plans, monitoring plans, restoration plans, and others (see box 4 above). Plans may be required by legislation or code (e.g., *Mining Code* s. 10.1.4), or as a result of operational policy, and they may be requested either in the pre-application phase, or as a condition of authorization. Where merited by the circumstances, plans should be prepared by qualified QPs (see Box 4 above), and applicants could be encouraged to use these plans to integrate QPs into day-to-day operations, monitoring, and decommissioning activities.

Box 9: Audit / oversight of by independent QP.

There are several different mechanisms that allow for audit or supervision of activities by an independent QP.

- A. Under the *Mines Act*, an inspector may order the owner, agent or manager of a mine to provide an independent study prepared by an engineer or other licensed professional respecting health and safety at the mine or safety of its equipment, buildings, workings or structures at the expense of the owner (s. 18(a)).
- B. Under the *OGAA*, an official may issue an order requiring a permit holder to arrange for an independent audit of the permit holder's operations if the order is necessary to mitigate a risk to public safety, to protect the environment, or to promote the conservation of petroleum and natural gas resources (s. 49(1)(b); s. 49(4)(p)).
- C. A license condition used under the *Water Act* requires the licensee to retain a professional engineer who will provide services to the (*Water Act*) Engineer for the regulation of construction and commissioning of the works.
- D. Under the *Greenhouse Gas Reduction Targets Act*, Environmental Offsets Regulation, validators are used to validate the offset scheme, and verifiers are used to verify whether credits claimed

by the scheme are actually achieved (s. 4, 6). The validating bodies are companies, rather than individuals, that are accredited by international accreditation bodies.

3.4. Use of QPs in troubleshooting and problem-solving

3.4.1. Problems arising during implementation and decommissioning

Mechanisms discussed in this section are not part of the “normal” authorization and implementation process. Rather, they are triggered if problems emerge during or after the active phases of a project. Different regimes contain different mechanisms for dealing with emerging problems, and the type of intervention available often depends on whether or not the operator is in compliance. Some specialized regimes (*EMA* Part 7 Division 1 (Assessment, prevention and abatement) and Part 4 (Contaminated Sites) are designed explicitly to detect and correct environmental problems.

Box 10: Information-gathering by QP to investigate problems

Examples listed below provide powers that go beyond regular monitoring requirements imposed by legislation or permitting. Although the first two examples fail to expressly mention QPs, the nature of the work means QPs will likely be involved in many cases.

- A. Under the *OGAA*, an official may issue an order requiring a permit holder to conduct tests, take samples, conduct analyses and submit records and information to the [Oil and Gas] Commission if the order is necessary to mitigate a risk to public safety, to protect the environment, or to promote the conservation of petroleum and natural gas resources (s. 49(1)(b); 49(4)(f)).
- B. Section 83(2) of the *EMA* authorizes a director who is satisfied on reasonable grounds that a substance is causing pollution, to order a person to provide information, and to undertake investigations, tests, and other actions necessary to determine the extent and effects of the pollution.
- C. A contract clause for new tenures under the *Land Act* provides the ministry with the right to request a report, prepared at the licensee’s expense, from a qualified and independent professional as to the environmental condition of the land, provided there is a reasonable basis for believing that the licensee is in breach of any obligations relating to hazardous substances.

Box 11: QP involvement in remediation / correcting problems

Mechanisms available to correct problems and effect remediation differ between regimes, and they may involve amendment of existing authorizations (e.g., *EMA* s. 16), or separate orders (*FRPA* s. 74; *EMA* s. 81(1) & 83(2); *Water Act* s. 88(1); *OGAA* s. 49(1) & (4)). Several regimes include powers to make orders specifically aimed at environmental remediation. As for Box 11 above, these powers usually make no explicit mention of QPs, but QPs are often likely to be involved in practice.

- A. Under *EMA* (s. 83(2)), a director who is satisfied on reasonable grounds that a substance is causing pollution, may order a person to
 - acquire, construct or carry out any works or measures that are reasonable necessary to control, abate or stop the pollution;

- adjust, repair or alter any works to the extent reasonably necessary to control, abate or stop the pollution;
 - abate the pollution;
 - carry out remediation in accordance with any criteria established by the director.
- B. Under s. 88 of the *Water Act*, engineers and officers can make a variety of orders, including
- ordering the alteration, installation, replacement or repair of works.
 - ordering the restoration or remediation of any changes in and about a stream.
- C. Section 49 of the *OGAA* establishes a series of order-making powers, including the power to order the repair of damage to the environment (s. 49(4)(c)).

3.4.2. Contaminated sites

The contaminated sites regime (*EMA* part 4 and *Contaminated Sites Regulations*) is a separate regime that can be triggered long after an activity has been discontinued and the site has been abandoned. The regime includes multiple assessments, orders, and determinations. Rather than try to explain the regime in detail, focus here is on features involving QPs that are unusual or unique to the regime. Some of these have been already mentioned in previous sections.

Powers relating to use of QP under the contaminated sites regime

- Section 42 of the *EMA* gives the director general power to designate classes of persons who are qualified to perform classes of activities, and to establish a roster of such persons. An “approved professional” under the regime is a person who is on the roster.
- A standard document called a summary of site conditions must be submitted when requesting any one of a series of approvals or determinations under the regime (*CSR* s. 7.1(1), Schedule 1.1). The summary of site conditions must be prepared and signed by an approved professional and must be accompanied by a recommendation by the approved professional regarding the matter at issue (*EMA* s. 39(3); *CSR* s. 7.1(1)).
- For non-high-risk sites, the regime uses a mandatory roster review process that is administered by the Contaminated Sites Approved Professionals of British Columbia (see Box 5 above). This process results in an application only going forward if it is accompanied by the recommendation of an approved professional for approval. For some determinations, applications will only be processed if the submission has also undergone an arms’ length review by an approved professional.¹¹
- For applications that are submitted directly to the ministry, the client may request an external contract review, which ensures review within specified time lines. Ministry staff may accept, modify or reject the resulting recommendations.¹² *CSR* s. 10 authorizes a Director to enter into a contract with approved professional to assist in the review of reports or plans. The regulation further provides for payment of fees for services provided by QPs on behalf of the Ministry (Schedule 3 Table 2).

¹¹ *Approved Professionals Procedure*, *supra* note 16 at para. 5.5.

¹² BC Ministry of Environment, *Facts on Contaminated Sites 22: External Contract Review Option: Summary of Fees and Time Schedule* (July 2007), online: < http://www.env.gov.bc.ca/epd/remediation/fact_sheets/pdf/fs22.pdf>.

4. Discussion

4.1. Authority to involve QPs and clarity of QP requirements

QPs are widely used in natural resource operations, and existing regimes include a variety of mechanisms that require or allow for their involvement. In some regimes, powers relating to QPs are detailed and specific. The contaminated sites regime, for example, provides the director with authority to establish a roster of approved professionals, and the role these professionals play in the application and review process is laid out in detail in legislation and associated guidance. Other regimes are far less explicit. The *Land Act*, for example, provides broad powers to ask for information, but existing guidance is not always clear as to whether or not a QP is required for preparing documents or management plans.

Whether or not QP involvement is explicitly required, it often results from factors external to the regime at issue. Where the right to perform a task or practice a profession is restricted by legislation, a QP requirement is automatic if the service falls into the restricted area of practice. In some contexts, QP involvement may result from best practice methodologies, and may be required to meet due diligence requirements (see e.g., *FRPA* s. 72; *OGAA* s. 62(5)(a)). All this means that the degree to which a given regime relies on QPs may not be immediately apparent from the text. *FRPA*— a regime that incorporates reliance on a number of QPs — never explicitly specifies that forest stewardship plans have to be prepared by a professional forester

Once “indirect” routes of QP involvement are taken into account, the largest remaining “grey areas” as to whether or not QPs are required in a given case appear to exist where applicants are asked to submit environmental information such as baseline and monitoring data, or plans that do not clearly fall under a restricted area of practice. For large projects, this type of information will likely be prepared by a team of qualified QPs, and if the project triggers environmental assessment, use of QPs is explicitly required. For smaller projects, guidance is often unspecific, and requiring the same degree of QP involvement may not be justified in all cases.

4.2. Prescriptive vs. outcome-based models: What are QPs relied on for?

Although all QPs are (by definition) qualified to perform a service, the type of work performed differs between QPs, and there are differences in how QPs are used in different regulatory approaches (Figure 2). “Prescriptive”, as used here, refers to an approach to regulation where government prescribes the methods that will be used in implementing an activity. In its most pure form (left column Figure 2), a prescriptive model involves government providing an *a priori* set of procedures. This set of procedures may involve use of QPs, who may be relied on for information collection, as well as implementation of prescribed methods.

At the other end of the conceptual spectrum (right column Figure 2), an “outcome-based” approach to regulation involves government specifying desired objectives or outcomes, and leaving it up to QPs, usually professionals, to determine how those objectives or outcomes will be achieved. Under an outcome-based approach, QPs may have considerable discretion in designing methods, and if the project involves uncertainty and the balancing of multiple objectives, effective exercise of this discretion may require considerable judgement on the part of the QP. Moreover, since there is no direct

government oversight over details of method, an outcome-based approach is weighted towards the front (specifying objectives) and back (assessing outcomes) end of the regulatory process. Required outcomes have to be clearly defined and measurable, and clear mechanisms have to be in place to hold QPs accountable for their work. In many cases, QPs who perform this type of work are organized in professional societies under professional acts. This means outcome-based models often rely on legal structures and standards for the accountability of QPs that are developed and administered outside the resource regime at issue.

Of the regimes examined, *FRPA* and parts of the *OGAA* are most closely designed on an outcome-based model, while parts of the *Mines Act* use a more prescriptive approach. In practice, however, existing regimes fall somewhere along a continuum between these extremes and include a mix of prescriptive and more outcome-based components. Moreover, where formal government approval is required for an activity (central column Figure 2), the degree of reliance placed on methods and plans prepared by QPs can result in a “sliding scale” between more prescriptive and more outcome-based approaches. In these contexts, government decision-makers usually have broad authority to impose conditions, and if little reliance is placed on methods designed by QPs, the resulting approach is close to the prescriptive model: government only approves plans and procedures that government believes will produce the desired results. On the other hand, if high reliance is placed on plans and methods designed by QPs either in practice or as required by statute, the approach is closer to an outcome-based model: government relies on the opinion of the QP that the proposed approach will produce desired results. The spectrum of prescriptive to outcome-based approaches can be applied to any phase of the project life cycle, with different approaches being applied to different phases.

4.3. Potential for expanding the use of QPs within existing frameworks

All regimes examined for this report allow for use of QPs, and in many cases, this use could likely be expanded within the existing legislative framework. Where legislation conveys broad discretion to request information or impose conditions, increasing the effectiveness of QP use or involving new QPs in existing processes should be possible, as long as QP requirements are relevant and reasonable within the overall context of the regime.¹³ Where the role played by QPs is directly specified by legislation or binding codes of practice, more complex changes would be required to change existing procedures. The same is true when it comes to changing how QPs are used in a given regime.

Given the differences in input and oversight structures required, switching from a prescriptive to an outcome-based model will only be effective if all the necessary “building blocks” are in place. Outcome-based models require clearly measurable objectives, mechanisms to assess whether or not these objectives are met, and high standards of competence and accountability on the part of QPs. Many of these “building blocks” may be provided for externally (through certifying organizations, codes of ethics, technical standards, and third party verification) or they may be created by government. Where they all

¹³ see Reader, *supra* note 6 at 7-11, 22-23 for a discussion of basic principles of administrative law, statutory interpretation, and the exercise of statutory powers.

Prescriptive (government specifies “how”)

Outcome-based (government specifies “what”)

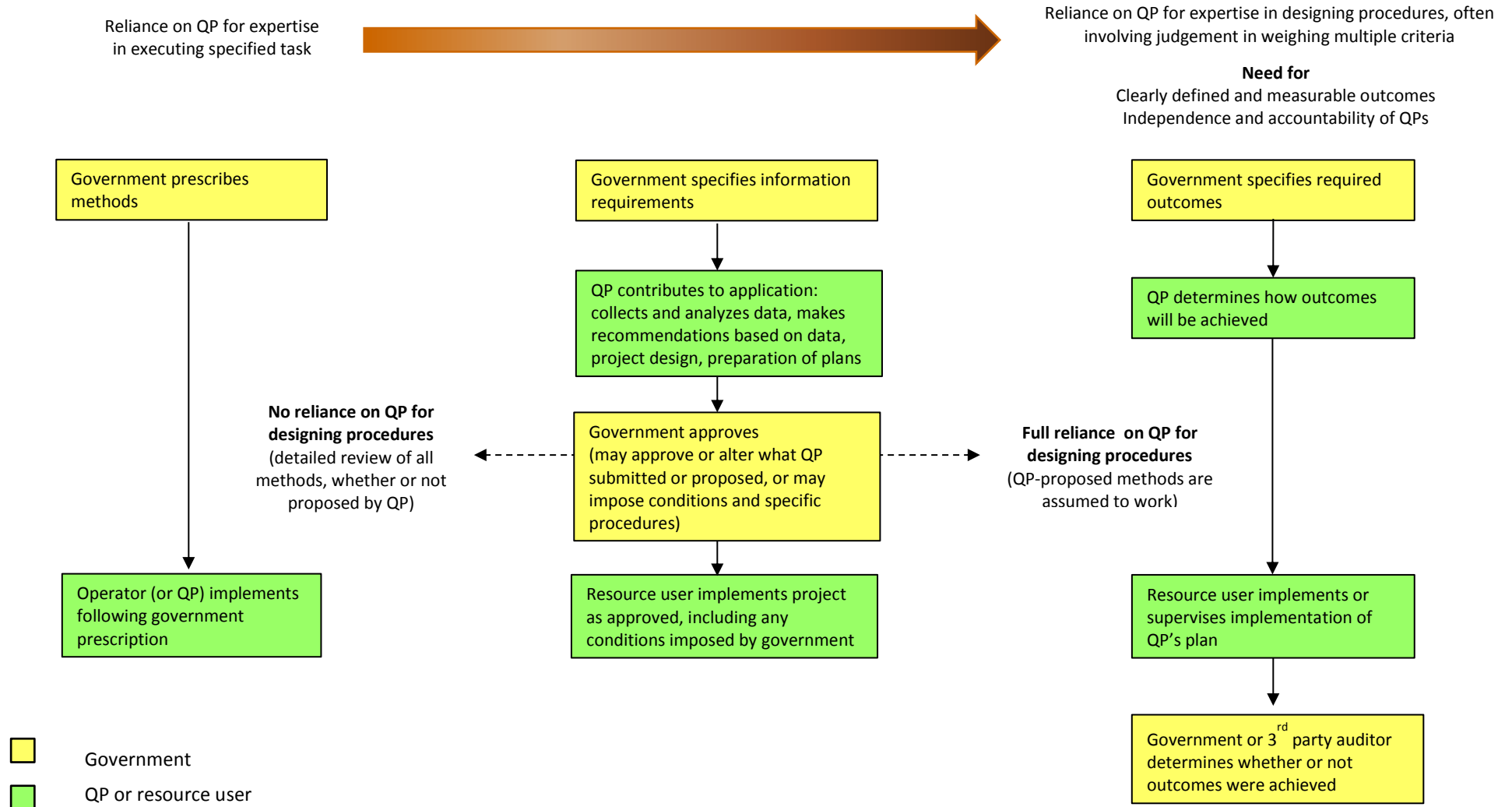


Figure 2: Different models of reliance on QPs. In prescriptive models (left), government determines the methods by which desired outcomes will be achieved, and may rely on QPs for expert execution of those methods. In outcome-based models (right), government specifies required outcomes, and relies on the proponent (and their QPs) to determine how these will best be achieved. Structures needed to support the regulatory framework differ between these models. Existing resource regimes fall between the two extremes in overall structure (centre) and contain different mixes of prescriptive and more outcome-based components. For further explanation, see text.

are in place, strong reliance on QPs may still require authorization, especially if this reliance amounts to a *de facto* determination of a government decision. Whether or not this is the case will depend on context-specific factors, such as the wording of applicable legislation and the importance of the QP's work to the decision as a whole. If there is any doubt, legal advice should be obtained.

5. Conclusion

QPs are widely used in natural resource operations, as a result of a variety of mechanisms that trigger or enable their involvement in the authorization management process. While some of the mechanisms identified are rarely used or unique to specific regimes, others are widely used, and especially where legislation gives broad authority to request information or to impose conditions, there seem to be opportunities for expanding or fine-tuning QP involvement. Ultimately, whether the use of a specific QP or mechanism is possible or appropriate in a given situation will depend on context-specific factors, including the wording of applicable legislation, QP qualifications, and on having suitable accountability and oversight structures in place. Individuals looking to implement specific projects are encouraged to follow up on the examples given here, and to learn from relevant experience gained in other regimes.

Appendix I List of Statutes and Regulations

Resource statutes / regulations and acronyms or abbreviations used	
Environmental Assessment Act, SBC 2002, c. 43. <i>Reviewable Projects Regulation</i> , BC Reg 370/2002.	EAA
<i>Environmental Management Act</i> , RSBC 2003, c 53. <i>Agricultural Waste Control Regulation</i> , BC Reg 131/92. <i>Asphalt Plant Regulation</i> , BC Reg 217/97. <i>Code of Practice for the Slaughter and Poultry Processing Industries</i> , BC Reg 246/2007. <i>Code of Practice for Industrial Non-Hazardous Waste Landfills Incidental to the Wood Processing Industry</i> , BC Reg 263/2010. <i>Code of Practice for Soil Amendments</i> , BC Reg 210/2007. <i>Code of Practice for the Concrete and Concrete Products Industry</i> , BC Reg 329/2007. <i>Code of Practice for the Discharge of Produced Water from Coalbed Gas Operations</i> , BC Reg 156/2005. <i>Cleaner Gasoline Regulation</i> , BC Reg 498/95. <i>Contaminated Sites Regulation</i> , BC Reg 375/96. <i>Municipal Sewage Regulation</i> , BC Reg 129/99. <i>Public Notification Regulation</i> , BC Reg 202/94. <i>Waste Discharge Regulation</i> , BC Reg 320/2004.	EMA AWCR CSR
<i>Fish Protection Act</i> , SBC 1997, c 21. <i>Riparian Areas Regulation</i> , BC Reg 376/2004.	RAR
<i>Forest and Range Practices Act</i> , SBC 2002, c 69. <i>Forest Planning and Practices Regulation</i> , BC Reg 14/2004. <i>Government Actions Regulation</i> , BC Reg 582/2004.	FRPA
<i>Heritage Conservation Act</i> , RSBC 1996, c 187.	
<i>Land Act</i> , RSBC 1996, c 245.	
<i>Mineral Tenure Act</i> , RSBC 1996, c 292.	
<i>Mines Act</i> , RSBC 1996, c. 296. <i>Health, Safety and Reclamation Code for Mines in British Columbia</i>	Mining Code
<i>Oil and Gas Activities Act</i> , SBC 2008, c 50. <i>Drilling and Production Regulation</i> , BC Reg, 282/2010. <i>Environmental Protection and Management Regulation</i> , 200/2010. <i>Geophysical Exploration Regulation</i> , BC Reg 280/2010. <i>Pipeline and Liquefied Natural Gas Facility Regulation</i> , BC Reg 281/2010.	OGAA

<p><i>Water Act</i>, RSBC 1996, c 483. <i>Water Regulation</i>, BC Reg 204/88.</p>	<p>WR</p>
<p><i>Wildfire Act</i>, RSBC 2004 c 31 <i>Wildfire Regulation</i>, B.C. Reg. 38/2005</p>	