

Play-Based Regulation Pilot Application Guide

July 14, 2015

The information contained in this document applies only to the play-based regulation pilot.

Alberta Energy Regulator

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September 3, 2014	Issued manual number. Appendix 3 – Made minor corrections to the last two columns in table 2, “Performance measures and indicators for the pilot.” Appendix 5 – Added the term “target.” Appendix 6 – New appendix.
December 4, 2014	Section 2.4 – Extended the dates for submitting an application and for the end of the pilot.
July 14, 2015	Section 2.4 – Extended the dates for submitting an application and for the end of the pilot.

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1 About This Guide

This application guide sets out the information that must be included in an application submitted under the Alberta Energy Regulator's (AER's) play-based regulation (PBR) pilot and provides guidance on how to prepare the application.

A complete application enables the AER to evaluate a project, assess the various impacts, and make an informed decision.

The appendices include the pilot objectives and a map of the pilot area (appendix 1), the pilot performance measures and indicators (appendix 3), and a glossary of the terms used in this guide (appendix 5).

This guide does not address federal requirements; Government of Alberta (GoA) ministry, agency, or board requirements; or municipal requirements.

2 Play-Based Regulation

As part of its evolving regulatory process, the AER is conducting a PBR pilot for unconventional oil and gas development. PBR is a regulatory approach to manage the risks of a play through collaborative planning by operators within an area to mitigate and minimize the effects of development. PBR is based on two principles:

- 1) Risk-based regulation – regulatory responses are proportional to the level of risk posed by energy development, with a focus on those areas that present the greatest risk to achieving regulatory objectives.
- 2) Play-focused regulation – the regulatory approach is tailored to a resource “play” (see appendix 5) to achieve environmental, economic, and social outcomes set by the GoA.

Overall, the intent of a play-based approach is orderly and responsible development. Responsible development includes understanding full-scale development and its potential risks in order to minimize cumulative impacts on the land, water, and air. Not only are there more opportunities to reduce cumulative impacts when looking at development in a more comprehensive way (i.e., at a play level) rather than on an activity-by-activity basis, there are also considerable benefits from a collaborative approach among operators in an area or play. While single-operator project planning is an initial step towards more responsible development, the key objective is play-based collaboration among operators in developing risk management plans, planning and implementing stakeholder engagement, and monitoring and reporting on performance.

The pilot builds on the AER's *Discussion Paper on Regulating Unconventional Oil and Gas in Alberta*, released December 2012. PBR holds approval holders accountable for developing and implementing risk management plans to meet objectives defined for a play. This should result in each approval holder contributing to meeting the play-based objectives.

Under the pilot, the AER will trial a risk-based approach across an entire play. This approach involves

- identifying and managing risks to achieve objectives,¹
- focusing on approval-holder performance, and
- ensuring stakeholder engagement throughout the life cycle of an energy development project.

The pilot is a test of a new AER regulatory process for implementing GoA policy. It also represents the start of a change in the way that the AER regulates the energy sector: from activity-by-activity regulation to the regulation of multiple activities across large areas. Under this new approach, applicants will submit a single application for a project as opposed to an application for each project activity. This will result in better opportunities to understand and mitigate cumulative impacts, as well as regulatory efficiencies, with one pass through the regulatory process for the proposed project.

2.1 Purpose of the Pilot

The purpose of the pilot is to

- test the efficacy of a new regulatory approach that is more risk based and emphasizes operator performance and considers cumulative effects through management plans,
- establish risk-based, play-based requirements for the pilot area,
- test a single application and decision-making process for energy development projects,
- test the effectiveness of the single application and play-based requirements in achieving pilot objectives,
- obtain feedback from stakeholders on the PBR approach, and
- identify any changes to current regulatory approaches that are needed to support PBR.

2.2 Expectations of the Pilot

The pilot is the first step towards a new regulatory framework. The AER does not expect all of the benefits of PBR to be realized immediately; processes are still being refined. The intent is to test PBR and improve it for broader implementation. Incremental progress is expected and operator participation in the pilot is voluntary. For example, single applications from individual operators for portions of their land holdings are anticipated to be tested in the pilot, whereas multioperator development plans may be tested in the future.

The AER recognizes that some stakeholders will find the pilot objectives, listed in appendix 1, less prescriptive than current AER requirements for single-activity authorizations. This is intentional. Managing energy development on a landscape level rather than an activity-by-activity level requires that

¹ This is aligned with the GoA's *Common Risk Management Framework*, which is currently being developed.

operators adjust their approach to development. Alberta's regulatory framework must evolve to mitigate cumulative effects and to achieve policy outcomes established by the GoA.

In some cases, GoA policy outcomes are still being developed. The AER is confident that the pilot objectives will inform yet-to-be developed policy and are sufficient to guide operators in the pilot. As GoA policy is developed and refined, the AER will revise and adjust the pilot objectives accordingly.

2.3 How the Pilot Is Different

The PBR approach emphasizes reporting performance in achieving play-based objectives and GoA outcomes and places reporting requirements on approval holders. As a result, approval holders in the pilot are responsible for demonstrating to the public, the AER, and the GoA that risks are being managed and play-based objectives and GoA outcomes are being achieved.

Operators in the pilot area will be asked to

- identify hazards and develop risk mitigation plans to achieve pilot objectives and GoA outcomes,
- plan for the life cycle of an energy development project,
- collaborate with other industry operators throughout the life cycle of an energy resource development project,
- engage and collaborate with stakeholders, including First Nations and Métis, throughout the life cycle of an energy development project, and
- report performance in achieving pilot objectives and GoA outcomes.

As a part of the pilot, applicants will have

- a single application process for all of the activities for an energy development project,
- a new form of approval—the single approval,
- flexibility in the development and operation of energy development projects,
- long-term certainty for development,
- regulatory requirements that reflect the hazards and risks of activities carried out in the play (e.g., as related to optimization of resource recovery), and
- regulatory oversight proportional to the identified risks and dependent on the operator's performance record.

For the pilot, stakeholders will have opportunities to provide input on development planning directly to the applicants. Engagement will continue throughout the life cycle of an energy development project to ensure that stakeholder input is incorporated as development proceeds and area conditions change.

Stakeholder engagement will be conducted for the entire project instead of for the individual activities, resulting in more efficient and effective engagement.

The public participation process under the *Responsible Energy Development Act (REDA)* remains available and has not been changed for the pilot. First Nations consultation must follow procedures established by the Aboriginal Consultation Office (ACO).

2.4 Pilot Participation and Timeline

Operator participation, which is voluntary, may begin at any time during the pilot. Operators may submit applications for any stage of an energy development project (e.g., exploration, appraisal, production); for the pilot, however, operators are encouraged to focus on the appraisal through to production stages.

The timeline for the pilot is shown below.

Table 1. Timeline for pilot*

Date	Pilot activity
April 1, 2014 – August 31, 2014	Pilot design: AER develops requirements and processes.
September 1, 2014 – July 15, 2015	Pilot implementation: Operators that expressed interest in participating in the pilot by March 31, 2015, may submit single applications to the AER. Applications will not be accepted after July 15, 2015.
September 30, 2015	Pilot ends.
After September 30, 2015	The AER makes process adjustments and takes any other essential steps towards broader implementation of PBR.

* Approvals issued under the pilot are not affected by the time period of the pilot.

Upon completion of the pilot (September 30, 2015), the AER will fully assess the value of the PBR approach and identify ways to strengthen the effectiveness and efficiency of the processes and requirements tested in the pilot. The AER will also determine what is required to further operationalize the PBR approach and to what extent it should be operationalized.

3 Government of Alberta Policy

The AER is part of the GoA's Integrated Resource Management System, a system used to ensure responsible resource development.² The PBR regulatory process supports the Integrated Resource Management System and is part of a larger planning approach to implement GoA policy (e.g., *Water for Life*, *Land-use Framework*, and *Caribou Range Planning*). The GoA sets the outcomes for air, land, and water that resource activities are to achieve. These outcomes will play an important role in ensuring that PBR results in responsible energy development. The GoA also has numerous parallel initiatives that align with the AER's move towards PBR. For example, the GoA is investigating the role of mineral tenure in increasing responsible development and planning. Alberta Energy may use this pilot as an opportunity to

² See <http://www.oilsands.alberta.ca/2827.html> for more information.

test extending petroleum and natural gas agreements based on a requirement for industry to produce plans that ensure collaboration with other stakeholders and responsible resource development.

Responsible development of Alberta's energy resources is only one part of ensuring responsible management of all natural resources in Alberta. There is only one landscape where these activities come together and it needs to be managed with a plan for the longer term. Play-based planning is just one of many approaches to manage the cumulative effects of development on air, land, and water.

PBR is intended to manage risks in order to achieve play-based objectives and GoA policy outcomes. The AER will evaluate the performance of PBR in achieving these objectives and outcomes and use the findings from the pilot to strengthen the effectiveness and efficiency of PBR processes. These findings may also be used to identify where policy direction from the GoA is required in order to implement regulatory change.

4 The Single Application

4.1 Overview

The single application is an integrated,³ risk-based, and play-focused submission to the AER requesting approval for an energy development project and its related activities. The single application is based on managing risks to achieve pilot objectives and GoA outcomes. This is a change from the current, more prescriptive application process and may require a different approach from applicants.

The AER will consider requests for waivers or variances from existing requirements if the applicant can demonstrate that a different approach can achieve pilot objectives and GoA outcomes.

The AER may waive or vary requirements if

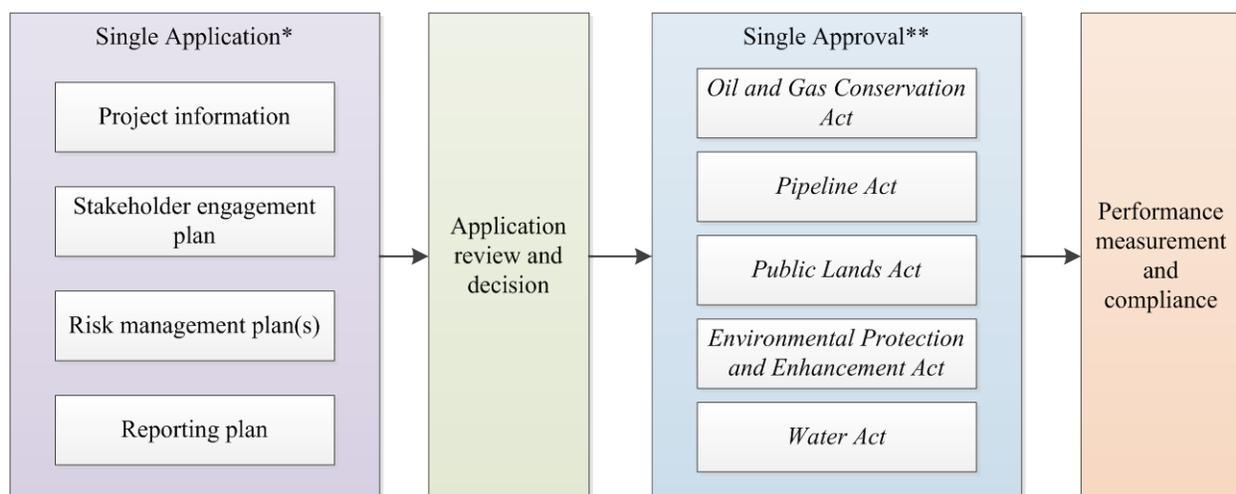
- 1) it has the authority to do so,
- 2) the applicant has requested a waiver or variance, and
- 3) the applicant has proposed appropriate mitigation measures.

Note: Activities that are addressed under the *Water Act Codes of Practice* (specifically, watercourse crossings, pipeline crossings, and diversions of hydrostatic test water) will continue to use the notification process under the *Water Act*. These activities, if any, should be noted in the single application, but will not form part of the application.

4.2 Intent of a Single Application / Single Approval Process

If approved, a single application results in the issuance of a single approval (see figure 1).

³ Integrated in this context means that the application combines activities governed under multiple acts (i.e., the *Oil and Gas Conservation Act*, *Pipeline Act*, *Public Lands Act*, *Water Act*, and *Environmental Protection and Enhancement Act*) into a single submission.



* Although not shown, the public participation process under *REDA* applies to the single application.

** The acts listed are examples of the segments that a single approval may contain.

Figure 1. Single application / single approval process under the PBR pilot.

The intent of a single application / single approval process is to

- decide on and authorize activities to be carried out over one or multiple years of development,
- provide stakeholders, including First Nations and Métis, with enough information to understand the effects of a proposed project and meaningfully engage in the *REDA* public participation process if they so choose,
- minimize the need for additional information after the submission of an application, and
- provide the approval holder with sufficient operational flexibility in the approval conditions to minimize the need for the approval holder to request amendments to the approval over its term.

To achieve this, stakeholders must be engaged, hazards must be identified, and risks must be analyzed in order to identify operational parameters, constraints, ranges, and conditions. This information is essential to the single application / single approval process. Using this approach, the applicant is to address both play-based and site-specific issues (e.g., noise, traffic, setbacks, etc.) in its application, while the single approval would enable operational flexibility; that is, the conditions of the single approval would accommodate some variation in the design and operation of the energy development project. As long as the operator complies with the conditions of the approval, no amendments to the approval would be required.

The AER recognizes that the level of detail that the applicant can provide in application for an entire project may be different than what could be provided in an application for a single activity outside of the pilot. The applicant must find a balance between providing enough detail to allow the AER and other stakeholders to meaningfully consider the development proposed, while allowing for the uncertainty of future development.

5 Single Application Requirements

5.1 Overview

The scale and scope of the information in the single application should represent the scale and scope of the energy development project. The single application

- describes the energy development project and its related activities over one or multiple years of development, including timelines,
- integrates into one application all of the information needed for the AER to make decisions pursuant to the multiple enactments under its jurisdiction, and
- contains the information required under section 5.8.

The requirements in *REDA* and the *Alberta Energy Regulator Rules of Practice (Rules of Practice)* regarding public notice of application, opportunity to file statements of concern, alternative dispute resolution, hearing on an application (if held), and regulatory appeal apply to a single application and single approval.

The ACO will determine the adequacy of consultation with First Nations. Applicants are to carry out First Nations consultation in accordance with the processes described by the ACO.

Collaboration with other operators is encouraged and should be based on proximity to other operators, local and regional considerations, and stage of the proposed development. The AER encourages the applicant to work with local area operators' groups to collectively manage common project risks. This could include sharing infrastructure with other operators or establishing baseline data.

If any clarification is needed after reviewing the application requirements and the appendices, the applicant is encouraged to discuss its application with the AER in the early stages of planning.

5.2 Elements of a Single Application

A complete single application includes

- project information,
- a stakeholder engagement plan,
- a comprehensive risk management plan, and
- a reporting plan.

The application must

- 1) meet the legislated requirements for an application under each applicable act—the *Oil and Gas Conservation Act*, *Pipeline Act*, *Public Lands Act*, *Water Act*, and *Environmental Protection and Enhancement Act*—and any applicable regulations, rules, including the *Rules of Practice*, and directives;
- 2) include a list of requested waivers and variances from existing regulatory requirements;
- 3) include commitments that are clear, measurable, and enforceable; and
- 4) contain a summary of all commitments.

5.2.1 Project Information

In this section of the application, the applicant is to describe the proposed energy development project and all the related activities and set the context for risk management planning and stakeholder engagement planning. The scope of the project information and level of detail are to reflect the level of risk of the project.

The AER expects the project information to be quantitative (to the extent practical).

The AER encourages the use of geographic information system (GIS) mapping in the single application to describe the proposed activities. (See appendix 6 for spatial data standards.)

5.2.2 Stakeholder Engagement Plan

In the stakeholder engagement section of the application, the applicant is to describe its completed, current, and planned stakeholder engagement activities for the life cycle of the project. Stakeholders, including First Nations and Métis, must be engaged throughout the project's life cycle. The extent of these activities will depend on the nature, size, and scope of the project.

Mandatory stakeholder engagement and collaboration throughout the life cycle of an energy development project supports the risk-based, play-based, and performance focus of PBR. Collaboration with stakeholders is fundamental to the PBR approach. Stakeholder engagement should incorporate landowners and municipalities, as well as others stakeholders in the region of the project.

The stakeholder engagement process is to be transparent and understood by stakeholders and is to enable stakeholder participation.

An applicant must begin its stakeholder engagement program before filing an application with the AER.

The AER encourages the use of GIS mapping in the single application to describe the proposed activities and enable the mapping of risks to stakeholders.

The AER expects applicants to meaningfully engage stakeholders in the project area throughout the project's life cycle. This means

- project details are communicated to stakeholders in a way that enables them to understand the proposed activities, determine whether they are directly and adversely affected, and provide meaningful feedback on any concerns that they have;
- as many concerns as possible are resolved before the application is submitted;
- stakeholder feedback is used to develop the single application (e.g., risk management plan and reporting plan); and
- emerging concerns post-approval will be identified, assessed, and resolved by the approval holder.

To achieve the above, the applicant should

- have an understanding of stakeholder concerns throughout the project life cycle,
- use sound processes that ensure stakeholders are effectively engaged,
- use proactive engagement methods,
- have an evaluation process to determine if the stakeholder engagement plan's goals and purposes are being achieved, and
- use adaptive management to improve the engagement process.

5.2.3 Risk Management Plan

In the risk management plan section of the application, the applicant is to identify and analyze hazards, evaluate risks, and provide preventive and mitigation measures in order to achieve the pilot objectives and GoA outcomes. The level of detail in the risk management plan should reflect the level of risk (see appendix 2).

The risk management plan is the tool by which the applicant will demonstrate how it is meeting AER requirements and provide the rationale for requests for variances and waivers from existing requirements. The risk management plan will become part of the approval and will form the basis for monitoring and compliance assurance.

The AER expects the risk management plan to

- 1) provide quantitative risk assessment (to the extent practical) and
- 2) accommodate new risks or changes in risks during the life cycle of the project.

The AER encourages the use of GIS mapping in the single application to describe activities in the risk management plan.

The applicant will develop a risk management plan that

- demonstrates how risks associated with operations throughout the project’s life cycle (including progressive reclamation, decommissioning, reclamation, and site restoration) will be managed to achieve the pilot objectives and GoA outcomes;
- addresses the risk areas and satisfies specific requirements;
- includes risk identification, risk analysis, risk evaluation, and risk treatment, as per figure 2; and
- is updated regularly throughout the life of the project.

The risk management plan is part of the single application, will become part of the approval, and forms the basis for monitoring and compliance.

The stakeholder engagement plan informs the risk management plan. Stakeholder engagement takes place throughout the risk management process (see figure 2) and begins at an early stage with informing the stakeholders of the identified issues.

Detailed information on the risk management plan components is in appendix 2.

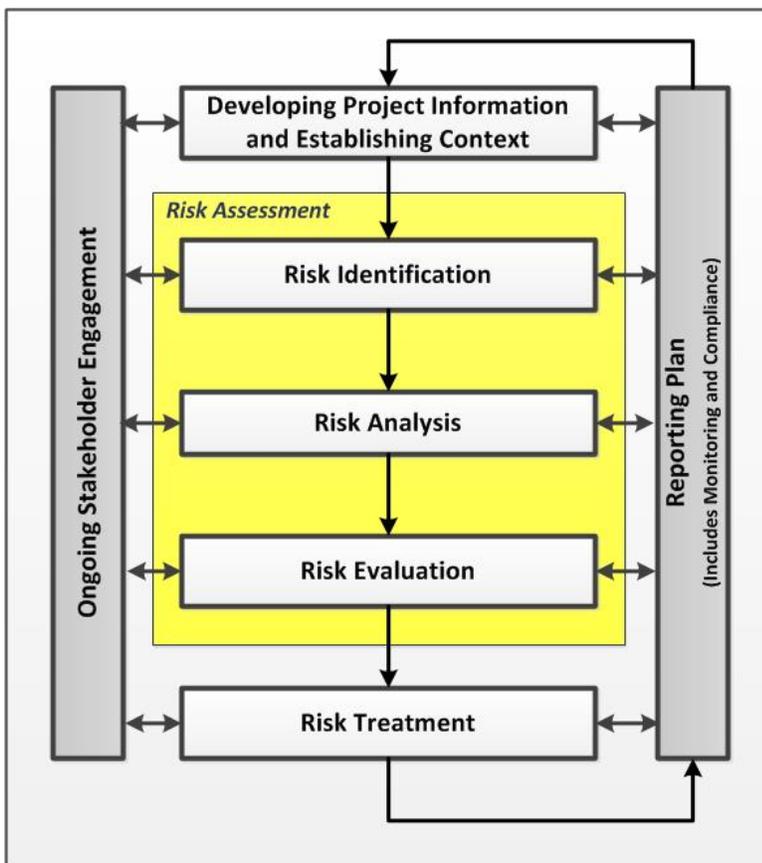


Figure 2. Process for developing the risk management plan

5.2.4 Reporting Plan

In the reporting plan of a single application, the applicant is to explain how it will report (1) progress towards achieving pilot objectives and GoA outcomes, and (2) the development of the project in accordance with the terms and conditions of the single application and approval. The reporting plan must address the performance measures and indicators in the appendices.

The AER will use the reporting plan to ensure pilot objectives and GoA outcomes are being achieved and to determine the efficiency of the PBR process. The AER has established performance measures and indicators for the pilot (see appendix 3).

Approval holders will publicly report their performance in accordance with their reporting plan, making the approval holders accountable for achieving the pilot objectives and GoA outcomes.

The AER expects the applicant's reporting plan to

- 1) provide quantitative data (to the extent practical),
- 2) include data analysis and interpretation and conclusions, and
- 3) include self-monitoring with change procedures in place (e.g. adaptive management).

As shown in figure 2, reporting and monitoring is part of risk management planning.

Performance reporting as set out in the reporting plan will reflect that the energy development project occurs in a manner that protects public safety, meets pilot objectives and GoA outcomes, and maintains stakeholder confidence in the regulatory process.

5.2.5 Accountability

Approval holders are accountable for their actions and for what is included in their application.

The anticipated scale and scope of activities tied to a play-based energy development project warrants a significant level of corporate responsibility and accountability for all aspects of the project over its life cycle. This enhanced level of corporate responsibility and accountability will be reflected in the application through specific commitments. These commitments, along with the rest of the application, will form conditions of the single approval. Given the significant responsibility and accountability that comes with a play-based project, each section of the application requires a summary of commitments that are clear, measurable, and enforceable.

5.3 Application Requirements

This section sets out what the applicant must do and submit to the AER to ensure a complete application. The applicant must provide detailed information on activities to be carried out during the proposed term of the approval and a more general description of activities anticipated for the remainder of the life cycle of the energy development project.

5.3.1 Project Information

The application must do the following:

- 1) Describe the proposed energy development project and the range of activities, including timelines and proposed term for the single approval.
- 2) Identify the location of the project and related activities and provide a description of the area (local and regional). This should include a description of the existing developments of all sectors (e.g., energy, forestry, municipal) in the area (local and regional) where the project will be located.
- 3) Describe activities and operations and their expected durations and impacts throughout the life cycle for each site within the project.
- 4) Describe expected activity levels (e.g., traffic levels) and duration.
- 5) Describe any facilities, works, or undertakings to be constructed and, where possible, identify their locations.
- 6) Describe how progressive-reclamation closure and reclamation will be considered in the project design and development.
- 7) Indicate any collaboration with other operators to develop infrastructure or share existing infrastructure.
- 8) Describe all alternatives considered for using existing facilities, development footprints, or infrastructure and the outcomes of those considerations.
- 9) Describe site selection constraints and site design parameters for surface sites.
- 10) Describe route selection, construction constraints, and design parameters for infrastructure.
- 11) Identify any land-use regions, major river basins, and air sheds affected by the project.
- 12) Describe the anticipated impacts on local communities (e.g., socioeconomic, environmental).
- 13) Indicate how any other applicable information requirements, regulations, and rules will be met.
- 14) Include a map of the project area that details landscape sensitivities and land-use considerations.

These may be identified through stakeholder engagement and First Nations or Métis consultation.

- 15) Include a map (i.e., sketch plans) of the proposed surface activities.

5.3.2 Stakeholder Engagement

The application must do the following:

- 1) Provide a rationale for the extent of stakeholder engagement for the proposed energy development project.

- 2) Describe how identified stakeholders have been engaged and will continue to be engaged throughout planning, construction, operation, closure, and reclamation.
- 3) Provide a schedule for stakeholder engagement over the life cycle of the project, identifying timelines and opportunities to engage.
- 4) Indicate how stakeholders have and will provide input into the planning, development, operation, closure, and reclamation of the project.⁴
- 5) Indicate how stakeholders have been informed of the nature and scope of the project, including
 - a) the context of the project within the pilot area,
 - b) the risks of the project,
 - c) how project risks will be managed to achieve pilot objectives and GoA outcomes, and
 - d) how the applicant will demonstrate that it is successfully mitigating those risks throughout the life of the project.
- 6) Show how clear, relevant, and timely information was provided to stakeholders during project planning. The information to the stakeholders, at a minimum, must contain the following:
 - a) the applicant's name, postal address, phone number, fax number, and e-mail address;
 - b) the location of the project. Include a map (or maps if necessary) at a scale that sufficiently encompasses the stakeholder-engagement area and provide the legal subdivision (LSD) coordinates for the project;
 - c) a description of the project, including the surface infrastructure, as well as the range of activities requiring surface infrastructure;
 - d) a high-level, plain-language summary of the potential socioeconomic and environmental impacts of the project, including impacts to adjacent lands, and the mitigation measures; and
 - e) a schedule that shows regulatory, construction, operating, and reclamation milestones.
- 7) Describe how the following will be communicated to stakeholders:
 - a) project status,
 - b) progress towards achieving pilot objectives and GoA outcomes, and
 - c) collaboration efforts with other land users.

⁴ This will inform both the content of the single application and ongoing administration of the single approval.

- 8) Indicate how feedback from stakeholders has been incorporated into
 - a) the project planning (e.g., in the risk management plan) and
 - b) the development, operation, closure, and reclamation of the project.
- 9) Indicate how the engagement plan will incorporate stakeholder feedback, changes to the project or project area, and new stakeholders.
- 10) Provide the context for risk analysis and risk management decisions related to stakeholder engagement, including
 - a) guiding principles that will be adhered to for stakeholder engagement and
 - b) a list of stakeholders⁵ (individuals and groups) who have been identified for engagement, as well as how they were identified.
- 11) Identify for stakeholders the impacts (positive and negative) associated with the development activities throughout the project life cycle.

If First Nations consultation is involved, the applicant should align its stakeholder engagement plan with processes established by the ACO.

5.3.3 Risk Management Plan

The application must do the following:

- 1) Assess the project risks.
- 2) Provide the context (including the project information outlined in section 5.8.1) for the analysis, assessment, and ongoing monitoring of risks.
- 3) Use a standard or broadly accepted method to identify, analyze, and evaluate risks.
ISO 31000: Risk Management – Principles and Guidelines is the standard that the AER will use to evaluate the suitability of the applicant's risk management plan.
- 4) Classify and maintain an inventory of the risks.
- 5) Discuss the limitations or uncertainties of the risk assessment.
- 6) Identify and evaluate risk mitigation measures and justify the measures selected.

These mitigation measures should incorporate best available technology, best management practices, industry recommended practices, and continuous improvements. This may include a well integrity plan addressing *Directive 083: Hydraulic Fracturing – Subsurface Integrity*, an air quality plan addressing *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*, and a water management plan addressing the *Water Act* and *EPEA*.

⁵ Acquisition and use of personal information must follow the applicable legislation.

- 7) Indicate the measures that have been adopted as a result of stakeholder engagement.
- 8) Describe how risk will be managed to achieve pilot objectives and GoA outcomes over the life cycle of the proposed energy development project.
- 9) Provide a summary of the approval standards under the Enhanced Approval Process that apply to project activities and a list of those approval standards that do not apply (based on the report generated by the Landscape Analysis Tool [LAT], available on the Alberta Environment and Sustainable Resource Development website).
- 10) Describe alternative mitigation strategies to those prescribed in the approval standards under the LAT report and explain how they will contribute to meeting pilot objectives and GoA outcomes, if applicable.

5.3.4 Reporting Plan

The application must do the following:

- 1) Set out the reporting schedule for the life cycle of the energy development project. The schedule must be measurable and enforceable.
- 2) Indicate how progress of the project will be reported.
- 3) List the data to be reported that will demonstrate the approval holder's performance in achieving pilot objectives and GoA outcomes. If a baseline has not been established, establish a baseline for comparison when evaluating approval-holder performance.
- 4) Describe the collection of data through monitoring, including monitoring methods, equipment, schedules, and locations.
- 5) Describe the methods for analyzing or interpreting the data provided in the report.
- 6) Outline when and how stakeholders will receive information and how they can respond.
- 7) Indicate if approval-holder commitments, pilot objectives, and GoA outcomes are being achieved.

5.3.5 Accountability

The application must include the following:

- 1) a summary of the commitments made in each section of the application;
- 2) on those portions of the application completed by a certified professional, the professional's signature;
- 3) the name, position, and signature of the person accountable for the application; and

- 4) a statement of corporate accountability.

This statement must acknowledge that those people engaged in the play-based development by the approval holder are aware of the pilot objectives and GoA outcomes and are managing their component of the project accordingly. This statement must also recognize the long-term nature of the commitments made in the application and include a commitment to adaptive management, continuous improvement, and integrated land management. This statement must be signed by the individual who is accountable for the application.

6 Single Application Submission

Submit the application to the AER in electronic format either by

- e-mail to pbr-applications@aer.ca or
- mail (on a CD or USB stick) to the Alberta Energy Regulator, Suite 1000, 250 – Street SW, Calgary, AB T2P 0R4.

Applications should be clearly marked “PBR Pilot.”

Applications made to the AER under the pilot will be made publicly available, subject to applicable legislation regarding disclosure and confidentiality of information. Any request for confidentiality is to follow the procedure set out in the *Rules of Practice* and may delay processing of the application.

7 Application Assessment

The AER will review the single application to determine if it is complete and then whether the applicant has

- 1) met the legislated requirements and proposed a project that aligns with the relevant pilot objectives and GoA outcomes and policies;
- 2) received from the ACO a letter of adequacy or notice that no consultation is required with respect to the *Public Lands Act*, the *Water Act*, and the *Environmental Protection and Enhancement Act*;
- 3) engaged with stakeholders in accordance with the applicant’s stakeholder engagement plan and, if applicable, incorporated stakeholder feedback into the single application;
- 4) adequately identified the hazards and developed a comprehensive risk management plan; and
- 5) provided a reporting plan for the term of the single approval and the life cycle of the energy development project.

The applicant must indicate any requests for waivers or variances in the application. For any technical items not specifically discussed by the applicant, the AER will conclude that the applicant will meet the current requirements.

The AER may consider an applicant's performance record when making a decision on an application.

Since participation in the pilot is voluntary, an applicant may withdraw its application at any time.

Once a complete application is received, public notice of the application under *REDA* will be provided on the AER's website. The notice will indicate that any person who believes that they may be directly and adversely affected by the application has 30 days to file a statement of concern with the AER.

7.1 Time Periods for Assessment

The AER will review and decide on an application within 45 days of the submission of the complete application. If additional regulatory steps are required (e.g., review of requests for confidentiality, review of statements of concern, alternative dispute resolution, hearing on the application), this time period may be extended.

An incomplete application will be returned to the applicant for revision and resubmission. The AER will work with the applicant to address minor deficiencies.

The applicant may request an amendment to its application. In this situation, the review period restarts and a public notice of application under *REDA* is posted.

8 The Single Approval

A single approval will contain multiple segments, one for each act under the AER's jurisdiction. Each segment will authorize all of the activities required under the referenced act. For example, all wells and other related facilities are captured under the *Oil and Gas Conservation Act* segment of the single approval. The AER will make a decision for each of the segments of the single approval at the same time. Appendix 5 provides a draft outline of a single approval.

The application will form part of the single approval.

All single approvals issued during the pilot will remain in effect for the term that they were issued, including if that term extends beyond the end of the pilot (September 30, 2015).

8.1 Amendment to a Single Approval

If the approval holder wishes to conduct activities outside of the terms and conditions of its approval, an amendment is required.

The review process and review timeline for an application to amend a single approval are the same as for the single application. Public notice of application under *REDA* is required.

9 Compliance Assurance

The AER will use its existing suite of compliance tools to respond when approval holders are not compliant with their single approval or AER requirements.

Compliance will be assured through clear, comprehensive, and regular reporting from approvals holders and through audits of an approval holder's performance and adherence to the single approval, including the risk management plans, project information, and stakeholder engagement plans.

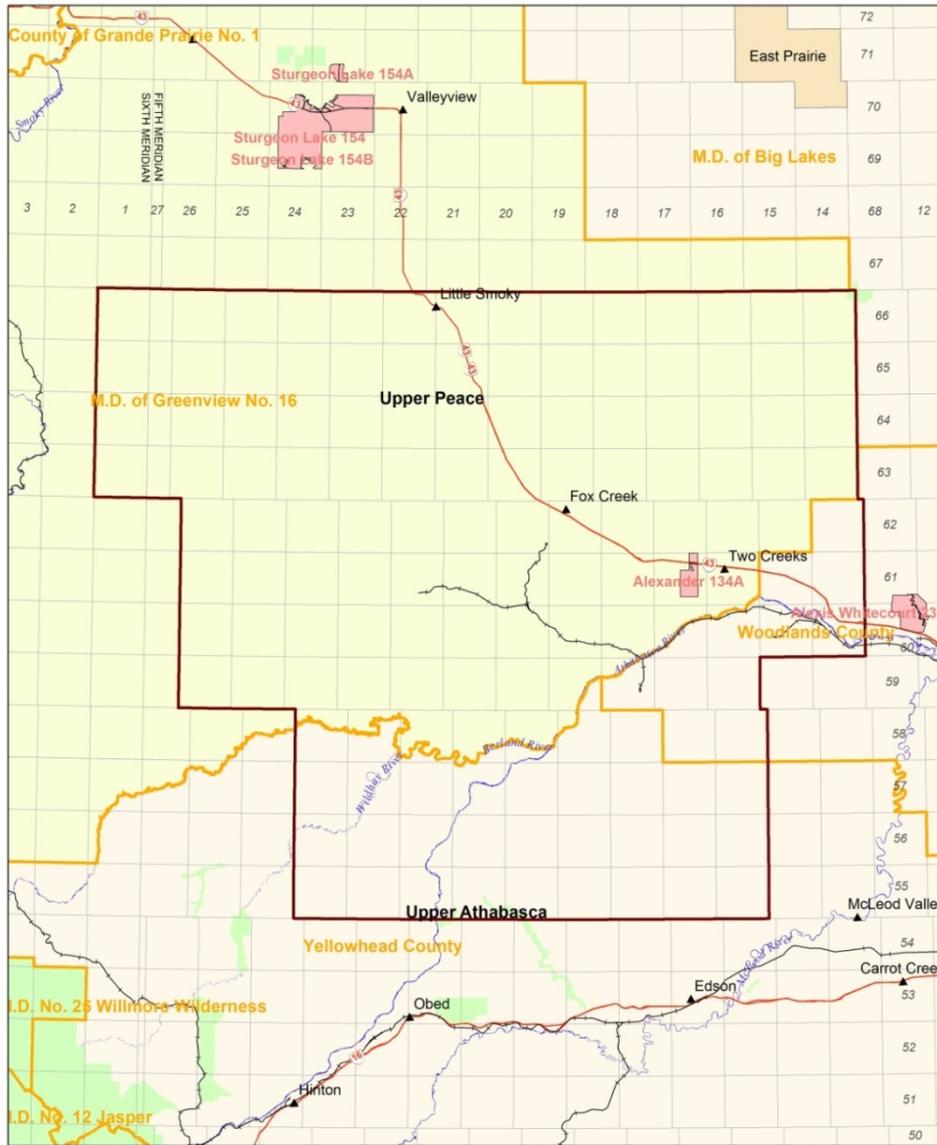
The AER may consider an approval holder's performance record in determining a response to a noncompliance.

Appendix 1 Pilot Objectives and Map of Pilot Area

The Alberta Energy Regulator ensures the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for all Albertans.

The pilot objectives below support this mandate

Category	Objective
Stakeholder engagement	Stakeholders, including First Nations and Métis, are involved over the life cycle of the development. This means stakeholder engagement is transparent, understood by stakeholders, and enables stakeholder participation.
Water management	<ul style="list-style-type: none"> • Reduce use of surface water and nonsaline groundwater. • Increase water reuse. • Protect surface water and nonsaline groundwater. • Protect the aquatic environment.
Surface impacts / infrastructure	Reduce site-specific and cumulative effects by <ul style="list-style-type: none"> • minimizing surface disturbance, • minimizing impacts on air quality, • minimizing impacts on biodiversity, • minimizing community impacts (noise, dust, odours, traffic), and • developing shared infrastructure.
Reservoir management	<ul style="list-style-type: none"> • Optimize recovery of reservoir fluid. • Minimize hydrocarbon waste. • Ensure sufficient data are available to characterize the play and delineate formations.
Life-cycle wellbore integrity	<ul style="list-style-type: none"> • Ensure no unplanned fluid movement inside or outside of the wellbore over the life cycle of the well. • Ensure wellbore gas and fluids are controlled over the life cycle of the well. • Minimize risk of cross-formational flow and impact on any subsurface waste disposal or storage scheme.



**Play-Based Regulation
Duvernay Pilot**

- | | |
|------------------|--------------------------------------|
| Pilot Area | Railways |
| Municipalities | Single Track Rail Line |
| Indian Reserve | Rail Line Spur |
| Metis Settlement | Land-Use Framework Boundaries |
| Parks | Upper Athabasca |
| Major Roads | Upper Peace |



Base Data Provided by Spatial Data Warehouse Ltd.

DISCLAIMER: The Alberta Energy Regulator does not warrant the accuracy or completeness of the information contained in this map and is not responsible for any errors or omissions in its content and accepts no liability for the use of this information.

Energy Statistics Office
Map date: June 2014

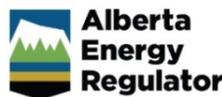


Figure 3. Map of the pilot area

Appendix 2 Components of a Risk Management Plan

The risk management plan is the tool by which the applicant will demonstrate how it is managing risks to achieve pilot objectives and meeting AER requirements and provide the rationale for requests for variances and waivers from existing requirements. Early discussions with the AER will assist the applicant in establishing an appropriate format and structure for the risk management plan.

The risk management plan should focus on high-risk areas and include

- 1) an overview of the applicant's risk management process,
- 2) a defined risk matrix or similar tool to categorize risk,
- 3) relevant references and other supporting evidence, and
- 4) an explanation of how risks will be managed throughout the life cycle of the project.

The risk management plan must provide an easily comprehensible summary of the assessed risks. This may include

- 1) the source of a hazard;
- 2) the transport mechanism and exposure pathway;
- 3) the receptor, or feature valued;
- 4) the consequence, or potential severity, of exposure;
- 5) the estimated probability of exposure, taking account any planned mitigation; and
- 6) the categorization of risk (e.g., very low, low, medium, or high).

Appendix 3 Pilot Performance Measures and Indicators

Performance measures and indicators have been developed (see table 2) to measure achievement of the pilot objectives.

The measures and indicators in this appendix are not exhaustive. Additional measures and indicators may be considered and added to the PBR framework based on pilot results and GoA policy.

Measures will be used to inform the setting of future targets and thresholds.

Considerations for Measuring and Reporting Pilot Performance

For some measures, a substantial period of time may need to elapse before baselines can be established, trends identified, and performance measured and reported. For example, for reservoir management, meaningful performance data will be contingent on whether wells are being drilled and if sufficient time (at least 12–18 months) is available to assess a well. As a result, the AER recognizes that reporting on many of the measures identified may not be meaningful within the timeframe of the pilot.

The applicant will have to make a commitment in the application to report performance.

Table 2. Performance measures and indicators for the pilot

Category	Pilot objectives	Measure (M) Indicator (I)	Target (T) Threshold (Th) Trend analysis (TA)
Stakeholder engagement	Stakeholders, including First Nations and Métis, are involved over the life cycle of the development. This means stakeholder engagement is transparent, understood by stakeholders, and enables stakeholder participation.	I: Stakeholder satisfaction rating that considers <ul style="list-style-type: none"> • awareness and understanding, • confidence in the AER, • access to information, • opportunity for engagement, and • transparency of the PBR process. 	TA: Monitor stakeholder satisfaction trend

(continued)

Category	Pilot objectives	Measure (M) Indicator (I)	Target (T) Threshold (Th) Trend analysis (TA)
Water management	Reduce use of surface water and nonsaline groundwater	M: Percentage of nonsaline water use to total water use (nonsaline + saline + alternatives)	T: To be determined
	Increase water reuse.	M: Percentage flowback reuse/recycle	T: To be determined
	Protect surface water and nonsaline groundwater.	M: Percentage excess fresh sourced water used in oil and gas operations	T: To be determined
	Protect the aquatic environment.	I: Rate of removal of surface water vs. stream flow rate M: Decrease in groundwater level (available head) in observation well	TA: Monitor trend Th: Drawdown limit in production aquifer, as measured in an observation well at a distance of 150 m from the production well, of 35% during first year of operation and no more than 50% over the life of the project.
Surface impacts / infrastructure	Reduce site-specific and cumulative effects by <ul style="list-style-type: none"> minimizing surface disturbance, minimizing impacts on air quality, minimizing impacts on biodiversity, minimizing community impacts (noise, dust, odours, traffic), and developing shared infrastructure. Note: Air quality and community impacts have not been assessed or addressed at this time. ⁶	I: Area of new development on disturbed land by type of new development and existing disturbance (e.g., abandoned well sites, access development on seismic)	TA: Percentage of development on existing disturbance as a proportion of the total project footprint, by disturbance type.
		I: Area of disturbance shared among operators by type (e.g., roads, pipeline rights-of-way, well pads, water storage areas, water intake structures, water distribution systems)	TA: Percentage of development/infrastructure shared
		I: Area and length of new footprint	TA: Percentage new disturbance as a proportion of the total project footprint, by disturbance type
Reservoir management	Optimize recovery of reservoir fluid	I: Recovery factor on consecutive wells drilled	TA: Monitor recovery trend in subsequent wells
	Minimize hydrocarbon waste.	I: Volume of gas flared	TA: Monitor flaring trend
	Ensure sufficient data are available to characterize the play and delineate formations.	M: Percentage improvement in reserves estimates	T: To be determined

(continued)

⁶ Although measures and indicators for air quality, odours, noise, dust, and traffic have not been developed for this pilot, applicants are expected develop performance measurement and reporting strategies that indicate the impact on these areas.

Category	Pilot objectives	Measure (M) Indicator (I)	Target (T) Threshold (Th) Trend analysis (TA)
Life-cycle wellbore integrity	No unplanned fluid movement inside or outside of the wellbore over the life cycle of the well	M: Percentage of wells exhibiting gas migration or surface casing vent flows throughout the life cycle of the well	T: To be determined
	Wellbore gas and fluids are controlled over the life cycle of the well	M: Number of unintended interwellbore communication events that are managed inadequately	T: To be determined
		M: Percentage of deviances from cement program design parameters	T: To be determined
	Minimize risk of cross-formational flow and impact on any subsurface waste disposal/storage scheme.	M: Percentage of abandonments where zonal isolation is questionable	T: To be determined

Appendix 4 Draft Outline of the Single Approval

The single approval captures all relevant authorizations for the play-based project. The outline below illustrates the general format and main elements of the single approval. Any approval issued by the AER will contain the terms and conditions and a map of the project area and location of activities.

Front Page

1.1 Introduction

Specifies the company name of the applicant and identifies the application number

Indicates the five parts of the approval, with each part providing approval under a separate act

1.2 Standard Approval Conditions

Sets out the general provisions that apply to all parts of the approvals. For example, definitions and monitoring and reporting requirements.

Part One: *Oil and Gas Conservation Act* Approval

2.1 Operator Name

2.2 Effective Date

2.3 Expiry Date

2.4 Overarching Statement of Approval

Sets out the authority for approval and what is being authorized

2.5 Terms and Conditions

2.5.1 Waivers and Variances

States the waivers and variances authorized by the AER

2.5.2 Conditions

Lists the approval conditions for the project

2.6 Approved Licences

Lists the wells and facilities

Part Two: *Pipeline Act* Approval

Same outline as part one, but for pipelines

Part Three: *Public Lands Act* Approval

4.1 Operator Name

4.2 Effective Date

4.3 Expiry Date

4.4 Overarching Statement of Approval

Sets out the authority for approval under the act and what is authorized

4.5 Terms and Conditions

4.5.1 General Conditions

States the provisions that apply to all *Public Land Act* disposition types

4.5.2 Waivers and Variances for Specific Dispositions

States the waivers and variances authorized by the AER

4.5.3 Conditions for Specific Dispositions

Lists the approval conditions for the project

4.6 Approved Dispositions

Lists the locations or range of locations of the activities

Part Four: *Environmental Protection and Enhancement Act* Approval

5.1 Approval/Licence Holder

5.2 Effective Date

5.3 Expiry Date

5.4 Overarching Statement of Approval

Sets out the authority for approval under the act and what is authorized

5.5 Terms and Conditions

5.5.1 Waivers and Variances

States the waivers and variance authorized by the AER

5.5.2 Conditions

States the approval conditions for the project

5.6 Approved Approvals/Registrations

Lists the locations or ranges of locations for activities and facilities

Part Five: *Water Act* Approval/Licence

Same outline as part four

Appendix 5 Glossary for the Purpose of the Pilot

Term	Definition
Approval holder	The regulated entity that is given the authorization to undertake activities related to the energy development project for the purposes of the pilot.
Collaborate	To partner with stakeholders at each stage of the decision-making process, including in the development of alternative approaches and the selection of solutions.
Disposition	The authority granted by a regulatory body pursuant to the <i>Public Lands Act</i> to use public land for specific purposes and activities.
Enactment	An act or regulation or any portion of an act or regulation.
Good production practice	When production is not governed by a base allowable, but is conducted in accordance with sound engineering principles.
Hazard	A source of potential harm, situation with a potential harm, or a situation with a potential for causing harm in terms of human injury; damage to health, property, the environment; other things of value; or a combination of these.
Indicator	Metric that provides contextual information to support performance reporting, but is not associated with a specific target.
Life cycle	The progression through different stages of project development, not including geophysical exploration.
Mitigation measure	Any action, strategy, or intervention intended to reduce the adverse effect and potential risks associated with development.
Play	A three-dimensional space that is the target of oil or gas development. Characteristics include the geological formation; surface above the geologic formation, including the air, land, water, and biota; and types of fluids in the rock, as well as other geological and reservoir characteristics.
Play-based regulation (PBR)	A regulatory approach that manages the risks of a play through proactive and collaborative planning by operators within the play area to mitigate and minimize the effects of development.
Performance measures	Measures used to evaluate and improve the efficiency and effectiveness of actions contributing to the outcomes.
Reclamation	The process by which specified land is brought to an equivalent land capability through the removal of site equipment or structures, the decontamination of land and water associated with the site, and the stabilization, contouring, maintenance, conditioning, or reconstruction of the land surface.
Risk	The effect of uncertainty on pilot objectives.
Risk assessment	A process carried out to capture and understand the frequency of events and the nature and magnitude of the consequences that arise from those events. It involves risk identification, risk analysis, and risk evaluation.
Risk management plan	A scheme within the risk management framework specifying the approach, the management components, and resources to be applied to the management of risk.
Single application	A submission that describes an energy development project and its related activities over one or multiple years of development. Activities governed under multiple acts (the <i>Oil and Gas Conservation Act</i> , <i>Pipeline Act</i> , <i>Public Lands Act</i> , <i>Water Act</i> , and <i>Environmental Protection and Enhancement Act</i>) are integrated in the submission.

Term	Definition
Single approval	Project approval of all activities with authorizations provided in segments pursuant to the <i>Oil and Gas Conservation Act</i> , <i>Pipeline Act</i> , <i>Public Lands Act</i> , <i>Environmental Protection and Enhancement Act</i> , and <i>Water Act</i> .
Stakeholder engagement plan	A document that outlines the applicant's completed and planned stakeholder engagement activities over the life cycle of the energy development project.
Stakeholders	Any individual, group of individuals or organization with an interest in the outcome of a decision.
Target	A measurable performance or success level that an organization, program or initiative plans to achieve within a specified time period. ⁷
Threshold	A point at which a decision is required to address a problem condition.
Trend analysis	The monitoring and evaluation of change in an indicator over time.
Variance	A discretionary decision made by a statutory decision-maker with authority to do so that modifies or alters an existing requirement to a certain fact/situation.
Waiver	A discretionary decision made by a statutory decision-maker with authority to do so that the existing requirements do not apply to a certain fact/situation.

⁷ Treasury Board of Canada Secretariat: Results-based management lexicon, URL: <<http://www.tbs-sct.gc.ca/cee/pubs/lex-eng.asp>> [April 2012].

Appendix 6 GIS Mapping – Standards for Spatial Data Submissions

This guide encourages the use of GIS and spatial data to describe proposed activities and map risks. The following standards must be met when submitting spatial data to the AER in support of the single application.

Spatial data must be in geographic coordinates based on the NAD83 datum.

Spatial data products derived from the Alberta Township Survey (ATS) grid must use version ATS 4.1.

The following file formats must be used.

Data type	File format
Spatial vector data	As per <i>ESRI Shapefile Technical Description, an ESRI White Paper – July 1998</i> (Environmental Systems Research Institute, Inc., 1998)
Imagery	GeoTIFF
Elevation data	LASer (LAS) or the United States Geological Survey digital elevation model (DEM)