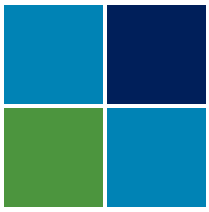

The Model Process for Subdivision Approval and Private Sewage

The Suitability and Viability of Subdivisions Relying on Private Sewage Systems

Prepared by the Alberta Association of Municipal Districts & Counties
in partnership with Alberta Municipal Affairs
Februrary 1, 2011

Partners in Advocacy & Business

Prepared by the Alberta Association of Municipal Districts and Counties
In partnership with Alberta Municipal Affairs
Based on Model Process Reference Document to Guide Municipal Consideration of Subdivision and Development Using Private Sewage Treatment Systems (2004)

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This Model Process provides the municipality with guidance for assessing that the appropriate information, methods and reporting have been carried out by the applicant on the suitability of using PSTS.

Introduction

Private sewage treatment systems (PSTS), commonly called "septic systems", treat sewage from homes and businesses that are not connected to a centralized wastewater treatment system. In most rural municipalities, it is the predominant method of managing and treating sewage. In addition, over the last five years in Alberta, the popularity of community based treatment systems has grown (i.e. cluster systems). These larger systems bring a new set of challenges that need to be addressed to ensure their sustainability. For municipalities, it is critical to recognize that not all land is suitable for PSTS.

This Model Process provides the municipality with guidance for assessing that the appropriate information, methods and reporting have been carried out by the applicant on the suitability of using PSTS. Municipalities need at their fingertips the appropriate information, forms and checklists for considering an applicant's proposal for subdivision, particularly with respect to Site Evaluations and the range of qualified persons who should ideally undertake a site assessment.

Using this Model Process or guide, a municipality is more likely to achieve fair, equitable and timely decisions that support sustainable development with regard to PSTS. By using this guide, municipalities will have a clearer definition of the roles and responsibilities of all interested parties in the planning and evaluation of proposed developments relying on PSTS.

The Model Process is divided into two distinct documents that separate the process of approval requirements from the technical work that is required to complete the submission. Such a division is meant to provide more clarity and interpretation and to make the documents more useful to different review and approval departments within the municipality. These documents are titled:

1. Model Process Guidance Document
2. Model Process Technical Resources

The Model Process Guidance Document provides details of the municipal process to approve subdivision in cases where private sewage is proposed. The document indicates the level of assessment and required information to support the subdivision application.

The Model Process Technical Resources detail the requirements for the site evaluation, methodology, soil log, lot diagrams, water quality, and impact risk assessment.

How does the Model Process Support Alberta's Water for Life Strategy?

Alberta's Water for Life Environmental Policy emphasizes three main goals:

1. safe, secure drinking water;
2. healthy, aquatic ecosystems; and
3. reliable, quality water supplies for a sustainable economy.

These three goals can be met using onsite wastewater systems if the soil and immediate receiving environment is suited to using PSTS and the system is designed and operated properly. Secondary treatment of the wastewater in place of septic tanks can extend the life of typical soil dispersal systems and protect groundwater quality. If a maintenance plan is in place, the advanced pre-treatment system continues to produce highly treated effluent. Without a maintenance plan, the system can fail in a very short time and on a subdivision scale, have catastrophic results.

What legislative authority does the municipality have to ask for a comprehensive site assessment and related information from a subdivision applicant?

The Municipal Government Act ("MGA") outlines the process for subdivision of land in Alberta. Municipalities are responsible for land use planning, subdivision and development approval. Under section 654(1)(a) of the MGA,

> *a subdivision authority must not approve an application for subdivision approval unless the land that is proposed to be subdivided is, in the opinion of the subdivision authority, suitable for the purpose for which the subdivision is intended ... [and that] the proposed subdivision conforms to the provisions of any statutory plan and, subject to subsection (2), any land use bylaw that affects the land proposed to be subdivided.*

Simply put, a municipality has the discretion to determine if the applicant's proposal for subdivision is an appropriate use of the land.

The Subdivision and Development Regulation ("Regulation") under the MGA provides authority for the municipality to require the applicant to provide information related to the suitability and viability of land for PSTS. The subdivision authority (municipality) and the applicant are both required to consider the suitability and viability of using private sewage systems to serve a proposed subdivision.

This includes the requirement to undertake a site evaluation. A complete copy of the Regulation is included in the appendices of the document.

Several provisions of the Regulation support the municipal subdivision authority to request information on the suitability of the proposed site for PSTS. At the discretion of the subdivision authority, the applicant must submit under sections 4(3) and 4(3)(e) of the Regulation:

- *The number of sketches or plans of the proposed subdivision that the subdivision authority requires, drawn to the scale that the subdivision authority requires*
- *If the proposed lots or the remainder of the titled area are to be served by individual wells and private sewage disposal systems, showing*
    - *i. The location and type of any existing or proposed private sewage disposal systems, and the distance from these to existing or proposed buildings and property lines, and*
    - *ii. Showing the existing and proposed access to the proposed parcels and the remainder of the titled area.*

The subdivision authority (municipality) and the applicant are both required to consider the suitability and viability of using private sewage systems to serve a proposed subdivision.

The applicant must also submit, at the discretion of the municipality, under sections 4(4)(b) (c) and (d) of the Regulation:

- *"An assessment of subsurface characteristics of the land that is to subdivided including but not limited to susceptibility to slumping or subsidence, depth to water table and suitability for any proposed on site sewage disposal system;*
- *If a proposed subdivision is not served by a wastewater collection system, information supported by the report of a person qualified to make it respecting the intended method of providing sewage disposal facilities to each lot in the proposed subdivision, including the suitability and viability of that method, and*
- *A description of the use or uses proposed for the land that is the subject of the application."*

These clauses of the Regulation set out some broad requirements for conducting a site evaluation and providing a report to the subdivision authority. The Regulation clearly requires that site evaluations be conducted by a qualified person and that the site evaluation report include a determination on the suitability of each lot or parcel for PSTS. Further, the regulation requires an evaluation of certain subsurface characteristics (depth to water table, etc.), and gives the municipality the flexibility to request whatever information they deem necessary to determine the suitability of the proposed site for PSTS.

The Regulation under sections 7(f) and (g) allows that, "In making a decision as to whether to approve an application for subdivision, the subdivision authority must consider, with respect to the land that is the subject of the application:

- *The availability and adequacy of a water supply, sewage disposal system and solid waste disposal; and*
- *in the case of land not served by a licensed water distribution and wastewater collection system, whether the proposed subdivision boundaries, lot sizes and building sites comply with the requirements of the Private Sewage Disposal Systems Regulation (AR229/97) in respect of lot size and distances between property lines, buildings, water sources and private sewage disposal systems as identified in section 4(4)(b) and (c)."*

The information listed in sections 7(f) and (g) must be provided to the subdivision authority by the applicant. The Model Process will provide the guidance for the municipality to carry out its responsibility in a way that benefits the community and the applicant.

Just as the purpose of Alberta's Land-use Framework is to manage growth in a responsible and sustainable way, so the Model Process is a blueprint for municipalities to make informed decisions for responsible and sustainable treatment of sewage in their community.

The Model Process and Sustainability

A critical question that should always be asked by the municipality is, "are private sewage treatment systems suitable as an effective and sustainable solution for managing and treating wastewater in this subdivision?" The municipality can use the Model Process as a guide or adopt the Model Process in its entirety as part of their subdivision and development policy.

Just as the purpose of Alberta's Land-use Framework is to manage growth in a responsible and sustainable way, so the Model Process is a blueprint for municipalities to make informed decisions for responsible and sustainable treatment of sewage in their community. While the Model Process focuses on the subdivision at hand, it also enables considerations that anticipate future development pressures.

The Model Process provides four (4) levels of investigation based on the relative risk of PSTS. The four levels range from low to high complexity. There is a very simple and low cost investigation applied to simple subdivisions of one parcel, all the way up to a level that requires more in-depth investigation to address the higher level of risk associated with multi-lot subdivisions. The various levels of investigation allow the municipality to assess the potential risk to the environment from low-density farmland to the consequences of sewage system failure in higher density development.

Soils are highly variable in Alberta, with some areas having very limited capacity or no capacity at all for PSTS. Suitability of using onsite systems changes with density and number of developments. Effective investigation of each lot is required to determine overall suitability of the soil for using private sewage systems. As discussed above, the Regulation requires that each proposed lot be evaluated for suitability. In addition to the evaluation of each lot, the overall impact on the receiving environment is to be considered. While evaluation at the time the land is undisturbed may show apparent suitability, if grading of the subdivision or portion of the subdivision is required, the suitability assessment based on the undisturbed land will be of no value.

Private sewage standards that apply in Alberta focus on the soil and site conditions of the property being served. If the proposed subdivision does not consider the combined effects of past, present and reasonably foreseeable land-use activities, known as "cumulative effects", the choices based on the single property conditions may not be suitable for the sustainability of the entire subdivision.

It is recognized that conditions and environmental sensitivities vary from one municipality to another and even within municipalities in the geographic expanse of Alberta. It is also recognized that concurrent with the advances of technologies and the science associated with PSTS, the considerations for the suitability and adequacy of parcels in a subdivision also develop and alter over time. As such, the Model Process is considered a "living document", which may be updated as technologies and environmental risk changes over time.

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1 Model Process

The Model Process is applied when a proposed subdivision relies on PSTS (see Figure 1.1 on Page 9 for a graphic overview of the Model Process) It provides a strategy for the municipality to:

- determine the level of site assessment and evaluation to be carried out by the applicant to assess the suitability of the land for on-site systems;
- ensure the site assessment is carried out properly by a qualified person;
- set site evaluation reporting requirements that result in the site evaluator compiling a clear and useable report for the municipality to consider;
- establish an accepted standard (checklist) for municipal evaluation of site assessment reports; and
- provide municipal officials with reliable data to base their decisions on whether to approve or deny subdivision applications that rely on PSTS.

When to Apply the Model Process

The Model Process may be applied during the subdivision approval phase or the rezoning phase (land use designation). For the greatest benefit to the municipality, the Model Process should be applied at the subdivision approval stage, as this will allow for a more complete evaluation of criteria outlined in the Model Process and Model Process Technical Resources document. In addition, the Model Process will assist the municipality in making informed decisions under the provisions of the Regulation.

At the subdivision approval stage, developers have a clear picture of the development, number of lots, and servicing options. A detailed soils evaluation can be conducted and a preliminary servicing plan should be complete at this time. In some cases, wastewater system preliminary design has been completed. The fieldwork done at this stage may even go beyond the requirements in the Alberta Private Sewage Standard of Practice 2009 (SOP). There is a risk to the municipality and developer that in waiting until the subdivision approval stage to apply the Model Process, the subdivision may be found unsuitable for servicing with PSTS, wasting time and resources.

Choices need to be made about when to investigate the suitability of using private sewage for managing wastewater in a proposed subdivision. It may be appropriate for municipalities to require some level of investigation to show suitability even before making changes to land use designations. Developers need to consider the risk of expending funds and resources prior to knowing what a suitable wastewater management strategy is for the property.

A community onsite sewage treatment system may be proposed for a subdivision. Community PSTS's consist of a common collection, treatment and disposal system. These systems are not considered by the Model Process; however, they use the same principles as a PSTS in that they may use the soil for the final return of the treated effluent to the environment. The consideration of the suitability for servicing a subdivision using this method is equally important as for an individual PSTS. As the principles for a community sewage treatment system are similar to that of a PSTS and much of the required investigation required for a level 4 assessment of this model is appropriate and needed. Community onsite systems that serve two of more lots fall under the jurisdiction of Alberta Environment for final approval of the system.

Alberta Environment regulations include additional requirements that address the wider impact the system has on the receiving environment. While application of the Model Process will provide valuable information in making decisions at the time of subdivision consideration, it does not assure approval of the system by Alberta Environment or that all the considerations Alberta Environment may require have been made.

Figure 1.1

Model Process Overview

Initial Municipal Consultation with Proponent

If the proposed subdivision is one that may be supported, proceed by recommending the type of site evaluation that will be required to ensure the suitability of the pane for a PSTS.

Stage 1: Pre-subdivision Application Preliminary Review

Tool #1 - Level of Assessment Indictors performed by a qualified person (levels one, two, three and four)

Stage 2: Site Assessment Prepared by the Proponent

Tool #2 - Site Assessment Guidelines and requirements for the site evaluator

Appendix A	Appendix B	Appendix C	Appendix D
Detailed Site Evaluation Methodology	BPSTS Soil log form and onsite sewerage system evaluation lot diagram	CPSTS Soil Description Manual	Technical Guideline for Private Sewage Treatment Water Quality Impact Assessment

Stage 3: Municipal Review of Site Assessment Report for Completeness

Tools #3, 4, 5, 6, 7 - Site Assessment Guidelines and requirements for the site evaluator using the checklist provided for assessment level

Is the assessment complete?

- NO → Obtain information before proceeding
- YES

Are there any circumstances that warrant a more advanced assessment of additional professional opinion?

- YES → Perform additional work and submit for approval
- NO

Subdivision Application is accepted and distributed according to Municipal policy?

- In an unaccredited Municipality,circulate to appropriate Municipal officer and Planning staff/agency
- In accredited Municipality,circulate to Safety codes officer and appropriate Municipal officials
- Circulate to Alberta Health and Alberta Environment as required

Stage 4: Municipal Review and Evaluation of Site Assessment Report for Findings

Tool #8 - Assignment of PSTS Suitability Type

- **Type 1** Very Suitable
- **Type 2** Moderate Suitability
- **Type 3** Limited Suitability
- **Type 4** Unsuitable

Type 1, 2, 3 → YES

Type 4 → NO → If type 4, PSTS should not be approved and an alternate Servicing strategy will be required

Stage 5: Preparation of Municipality's Approval Report to Subdivision Authority with recommendations for conditions for approval or non-approval

Subdivision Approved for use of PSTS

- PSTS conditions are met and removed or recorded for carrying forward
- Subdivision Plan is registered
- Any conditions or recommendations are carried forward to PSTS and development Permits
- Check that all recorded conditions are met

Has the proponent submitted a plan on how to communicate to the ultimate land owner what areas are suitable for a PSTS?

- NO → Inform the Proponent of missing information required for issuing the permit
- YES → **ISSUE PERMIT**

Index for PSTS Model Process Review

Beginning on page 16 of this document, five key stages of the standard subdivision application process are outlined and the PSTS Model Process tools and resources associated with each subdivision stage are presented or referenced. The key subdivision application stages the municipality must manage (and their associated Model Process tools and resources) include:

1. Pre-subdivision Application Preliminary Review
    - Model Process Tool #1: Level of Assessment Indicators
2. Site Assessment and Report
    - Model Process Tool #2: Site Assessment Guidelines and Requirements for the Site Evaluator (p. 17)
    - Model Process Resource A: Detailed Site Evaluation Methodology (See Technical Document)
    - Model Process Resource B: Private Sewage Treatment System Soil Log Form and Onsite Sewage System Evaluation Lot Diagram (See Technical Document)
    - Model Process Resource C: PDSD Soil Description Manual (See Technical Document)
    - Model Process Resource D: A Technical Guideline for Private Sewage Disposal Water Quality Impact Risk Assessment (See Technical Document)
3. Municipal Review of Site Assessment Report for Completeness
    - Model Process Tool #3: Site Assessment Report Checklist for Level One Assessment Variation: First Parcel Out (p. 31)
    - Model Process Tool #4: Site Assessment Report Checklist for Level One Assessment (p. 32)
    - Model Process Tool #5: Site Assessment Report Checklist (Level Two Assessment) (p. 33)
    - Model Process Tool #6: Site Assessment Report Checklist (Level Three Assessment) (p. 34)
    - Model Process Tool #7: Site Assessment Report Checklist (Level Four Assessment) (p. 35)
4. Municipal Review and Evaluation of Site Assessment Report for Findings
    - Model Process Tool #8: Evaluation of PSTS Suitability Type Assignment Table (p. 37)
5. Preparation of Municipality's Approval Report for Subdivision Authority

Recommended Levels of Assessment

This Model Process provides for four levels of site assessment. Each level of assessment relate to the level of risk and impact the subdivision served by PSTS may have on the receiving environment and the nature of the proposed development. These guidelines for site assessment can be used at the municipal subdivision authority's discretion to instruct the applicant as to what is expected from the site assessment.

It is important to note that the guidelines and checklists provided in the Model Process are designed to be tools for the municipality to use and amend as necessary. As discussed in the previous section on legislative authority, the municipality is required to request from the applicant the appropriate information to consider an application. Site evaluation requirements may therefore vary from municipality to municipality, or even between certain areas of an individual municipality.

Typical subdivision proposals that often rely on PSTS and generally reflect increasing levels of impact may include:

- First parcel out (large parcel or existing PSTS);
- One additional parcel;
- Three (3) to six (6) residential parcels;
- A comprehensive multi-lot residential development (with more than 6 parcels per quarter section).

Additional criteria that impact site suitability and the level of assessment that must be considered include are environmental sensitivity, presence of unconfined aquifers, and surrounding or future planned development density.

The Model Process helps identify under which Level of Assessment each type of development would typically fall. More information can be found in Tool #1 (p. 14). This tool has been developed to help municipalities determine the level of site assessment to request from an applicant given a variety of site-specific variables and subdivision types. It is also helpful for a municipality to do some groundwork in terms of mapping out and identifying areas where relying on PSTS may be a problem in the municipality. If the municipality has been able to map zones that are environmentally sensitive, existing high-density development, or poor soil conditions, they are better placed to provide feedback and level of assessment requirements to the subdivision applicant at the initial consultation /pre-application stage.

Municipal Subdivision Authority

Why does the Model Process recommend different levels of qualification for Site Evaluators at the different Levels of Assessment?

As the site assessment process becomes more detailed and complex for larger or more sensitive subdivisions, the Model Process recommends that the municipality require increased levels of qualification and certification for the Site Evaluator. While a Level One or Two assessment (with less technical requirements) can typically be carried out by a certified installer, a Level Three or Four assessment (requiring more detailed examination of the site, more information and the rendering of several professional opinions) is likely best performed by a CET, P.Eng. or other professional with qualifications appropriate for the completion of the evaluation. Table 1 below outlines the recommended level of qualification for the site evaluator for each level of site assessment. Equivalencies and the experience of the site evaluator may also be taken into consideration.

Table 1

Level of Site Assessment	Suggested Qualification Or Certification Levels Of Site Evaluator
Level One Variation for a First Parcel Out	Certified PSTS Installer
Level One	Certified PSTS Installer
Level Two	Certified PSTS Installer, CET, P. Eng or Soil Scientist
Level Three*	CET, P. Eng or Soil Scientist
Level Four*	P. Eng, P. Ag.

* — It is strongly recommended that the opinion of a certified PSTS installer related to system type and sizing still be considered in these circumstances.

As the site assessment process becomes more detailed and complex for larger or more sensitive subdivisions, the Model Process recommends that the municipality require increased levels of qualification and certification for the Site Evaluator.

How does the municipal subdivision authority evaluate reports provided by the applicant?

The Model Process provides several "checklist" tools the municipality can use to assess the completeness of site evaluation reports. Model Process Tools #3 - #7 (p. 31 - 35) provide a series of five checklists associated with each level of assessment or variance.

In evaluating a site assessment report from a qualified person, the municipality should ideally consider the following:

- Was the proper level of assessment carried out?
- Is the Site Evaluation Report complete according to the checklist provided in the Model Process?
- Does the Site Evaluation Report find that the parcel(s) is (are) suitable for a typical private sewage treatment system?
- Does the Site Evaluation Report recommend the need for an advanced type of on-site sewage treatment?
- Is there a high cost to providing the private sewage treatment systems recommended by the Site Evaluator?
- Would the suitability/costs change by increasing the proposed parcel size?
- Does the "suitability type" assigned to the lands correspond with the data gathered by the site assessor?
- Are there any indicators that an additional professional opinion might be warranted? (Triggers that may indicate the need to seek an additional professional opinion include unique or non-standard on-site technology recommendations, the need for a complex evaluation to prove out minimum impact on water sources; a soils analysis that differs markedly from historical data, etc.)
- Does the Site Evaluation Report recommend conditions be placed on the subdivision? If yes, does the municipality agree with the recommended conditions?

A tool entitled Assignment of PSTS Suitability Type (Model Process Tool #8, p. 37), categorizes variables into "types" in order to determine the general capability of land to support PSTS. The Model Process Tool #8 provides a good overview of how outcomes can be rated, assessed and grouped in types based on their ability to affect the suitability of land for on-site sewage treatment.

The Assignment of PSTS Suitability Type Table lists four suitability types ranging from "very suitable" to "severely limited" and/or "unsuitable except for holding tanks" (Type 1 to Type 4 respectively). As well, the table works through a number of site variables (such as soil texture and structure, hydraulic capacity of soil, depth to water table, topography, density, etc.) using thresholds and design requirements from the Alberta Private Sewage Standard of Practice to evaluate the general capacity of the land for PSTS. The site evaluator will use this tool as a guide in assigning a suitability type. It is also a useful tool for municipalities to use in:

- Evaluating the information contained in a site assessment report, and
- Considering the appropriateness of conclusions the evaluator drew from the evidence and data gathered at the site.

When should the municipal subdivision authority seek professional involvement or opinion?

The municipality should consider establishing an ongoing arrangement with a municipally sanctioned site evaluation professional, whose services can be used in circumstances where additional professional opinion on a site evaluation report is required. When an additional professional opinion is deemed necessary by the municipality, the cost of obtaining that opinion should be borne by the subdivision applicant. Triggers that may indicate the need for professional involvement include:

- the complexity of the site and reports are extensive;
- there is limited in-house expertise available;
- the original site evaluation report recommends unique or non-standard on-site technology;
- A complex evaluation was undertaken to prove out minimum impact on water sources;
- the on-site soils analysis differs markedly from existing or historical soils survey data;
- the original site evaluation report fails to consider cumulative or density-related impacts where such considerations are warranted
- the submitted site evaluation report does not give an opinion as to the long-term viability of PSTS on the parcel(s) of land.

What PSTS related information and analysis should be included in the applicant's report to the subdivision authority?

Available as a separate document is a sample report on a five-parcel subdivision. This sample was drafted in 2003 and includes the following information:

- A summary of the site evaluation report and commentary on the site evaluator's findings
- The cost of the recommended PSTS system (will the subdivision have a high servicing cost?)
- An outline of recommended PSTS related conditions to be placed on subdivision (that can be removed once satisfied)
- An outline of PSTS related conditions that should be carried over to the PSTS permitting and development permit stages
- Opinions on the suitability of using PSTS systems for the proposed subdivision
- Opinion on the impact the PSTS system(s) may have on nearby water sources and surface waters
- Any other information related to PSTS issues that the subdivision authority has requested consideration of (i.e. information or requirements from an Area Structure Plan) to give a broader view of the subdivision application in the context of municipal policies, bylaws and surrounding conditions.

Note: If the Area Structure plan contemplates a future phased in wastewater collection system, the municipality may want the site assessor to consider placement of the private sewage system to best facilitate future connections. If a future phased-in wastewater system is planned, the municipality may want to consider requiring deferred service agreements on the new lots being created. The deferred service agreement would notify the future owners of the commitment to connect to a wastewater collection system when and if it is deemed appropriate by the municipality. The agreement would also outline the location of the existing system(s), operational and maintenance information and the requirements for decommissioning.

Figure 1

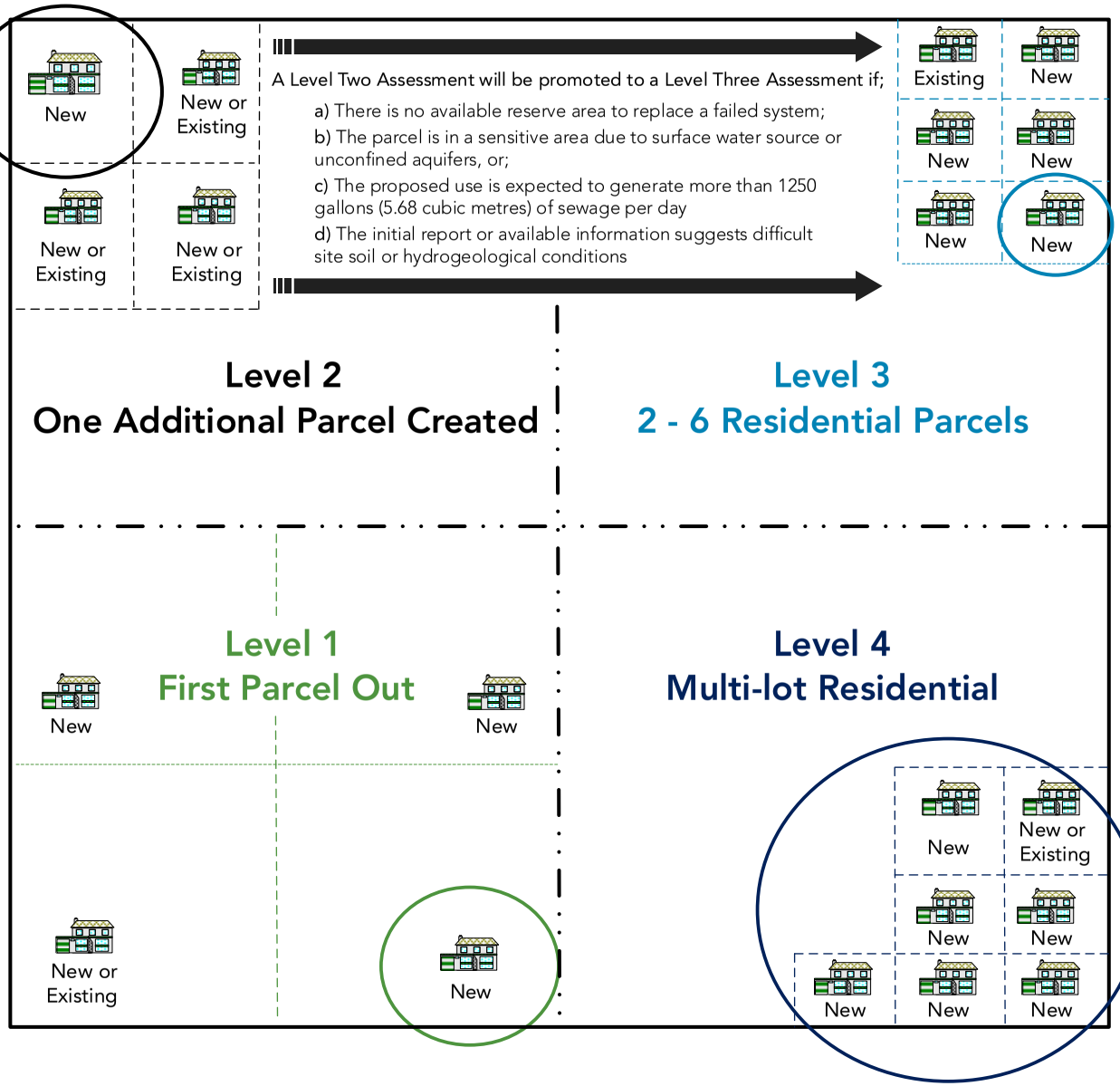
Model Process Tool #1

Level of Assessment Indicators

Considerations include: number of parcels, parcel size, existing or planned density, known soil condition limitations, existing or known nutrient loading concerns

This level of assessment is for a subdivision where one additional parcel is created and where parcel size is relatively small and/or density exceeds 4 parcels within the surrounding 160 acres.

Example
Subdivision of a 160 acre or less section of land where the parcel(s) are 5 acres or less and the density does not exceed 4 parcels within the surrounding 160 acres



This level of assessment would be typically used where two to six additional parcels are created. If there is an existing PSTS system on a parcel, that parcel should be fully evaluated.

Example
Subdivision of a 160 acre or less section of land where the parcel(s) are 5 acres or less and the density does not exceed 6 parcels within he surrounding 160 acres.

The typical application of this level of assessment is for where a PSTS system already exists on the new subdivision being subdivided out of a larger parcel.

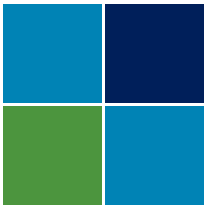
It can also be used for other large parcel subdivisions if the system density does not exceed four (4) systems in the surrounding 160 acres.

Example
A single parcel that is sufficient in area and dimensions to allow the use of an open discharge private sewage system.

The typical application for this level of assessment would be for a comprehensive multi-lot and community system subdivisions with more than 6 parcels.

Example
Subdivision of a 160 acre or less section of land where the parcel(s) are 5 acres or less and the density exceeds 6 parcels within he surrounding 160 acres.

The Five Stages of Subdivision Application Process



2 The PSTS Model Process

Tools supporting municipal consideration of the suitability and viability of relying on PSTS to serve a proposed subdivision

The Model Process provides tools that assist the municipality in gaining the information required to effectively consider the suitability and viability of using private sewage systems to serve the proposed subdivision. The tools help to:

- determine the level of site assessment that is required to assess the suitability of the land,
- ensure the site assessment is carried out properly by a qualified person;
- set site assessment reporting requirements;
- evaluate subdivision assessment reports submitted by an applicant.

These tools include:

1. Pre-subdivision Application Preliminary Review (Tool #1, p. 14)
2. Site Assessment and Report prepared by Proponent (Tool #2, p. 17)
3. Municipal Review of Site Assessment Report for Completeness (Tools #3 - #7, p. 31 - 35)
4. Municipal Review and Evaluation of Site Assessment Report for Findings (Tool #8, p. 37)
5. Preparation of Municipality's Approval Report to Subdivision Authority (p. 42)

3 Stage One

The Pre-Subdivision (Development) Application Preliminary Review

Preliminary review occurs when a subdivision applicant first contacts municipal officials regarding his/her intent to make a subdivision or rezoning application. It is at this stage that the municipality "educates" the applicant on the steps to be taken and the information to be provided in order for the subdivision or rezoning authority to properly consider the application. At this stage,

a) Basic information on the subdivision proposal is reviewed:

- ☐ Are PSTS or on-site systems to be used for development?
- ☐ Is there an existing system on the land to be subdivided?
- ☐ What is the property location? Name of the owner?
- ☐ How many lots/parcels are to be created and what is the typical parcel size?
- ☐ What is the proposed land use? (residential, commercial, industrial)

b) The municipal officer must determine with the available information:

- Surrounding density (existing or planned)
- General soil information (if available)
- If titled area has identified poor drainage or un-developable areas
- If water bodies are nearby
- The sensitivity rating of the area in which the subdivision is being proposed.

c) The municipality, together with certified evaluator, will make an initial determination of the minimum level of evaluation that the applicant must undertake for the proposed subdivision. (A higher level of assessment may be required as information is obtained)

Model Process Tool #1

Level of Assessment Indicators

The Model Process Tool #1 considers indicators such as the number of parcels, parcel size, density, known soil condition limitations, known soil moisture limitations, presence of sensitive surface waters or unconfined aquifers, and existing known nutrient loading concerns. The overall consideration of known factors helps municipal officials and qualified assessors determine what level of site assessment should be requested from the applicant.

This tool will help municipalities determine what level of site assessment to request from an applicant, given a variety of site-specific variables and subdivision types. If they have not already done so, it is also helpful for a municipality to do some groundwork in terms of mapping out and identifying areas where subdivision relying on PSTS may be a problem in the municipality.

If the municipality has been able to map zones that are environmentally sensitive, have existing high-density development, or have poor soil conditions, they are better placed to provide feedback and level of assessment requirements to the subdivision applicant at the initial consultation /pre-application stage.

4 Stage Two

Site Assessment and Report Prepared by Proponent

Once the municipality has made a preliminary determination of the level of site assessment required, the applicant has the site assessment conducted and a report prepared according to the guidelines provided by the municipality for that level of assessment.

The Model Process provides a number of tools to assist the municipality in instructing the applicant on the requirements for various levels of assessment and the expectations for the site assessment report. The applicant should ensure that the site investigation is conducted by a qualified person and follows the outline of requirements for the appropriate assessment level described in Table 1.

Model Process Tool #2

Site Assessment Guidelines and Requirements for the Site Evaluator

This tool provides technical information on the evaluation components, the information required, and the interpretations, conclusions, and recommendations expected for each Level of Assessment. It is designed to assist the Municipality in instructing the applicant or site assessor on the expectations associated with each level of assessment. This tool also sets out detailed instructions for the Site Evaluator about the order of activity and requirements for each of the level of assessment category. It also describes the site investigation process and defines the information and opinions the site evaluator must provide in a completed assessment report for each of the levels.

The municipality can adjust these requirements as local conditions dictate and the tool is available for the municipal subdivision authority's use in instructing Site Evaluators to gather and report the necessary information for each level of assessment. This tool does not set out particular assessment methods for soils. It only addresses the findings that are required and quantified. In addition, the following information is available in the Model Process Technical Resources.

Detailed Site Evaluation Methodology. This document sets out a common methodology for site evaluation to gather information that supports the Model Process. Designed for use by site evaluators, this document outlines the order of activities, process steps and the information to be collected from the site evaluation. Evaluations of soil profiles shall use methods and terminology that is consistent with the Canadian System of Soil Classification.

Private Sewage Treatment System Soil Log Form and Onsite Sewage System Evaluation Lot Diagram. To be used in conjunction with the Detailed Site Evaluation Methodology above, this Soil Log and Lot Diagram help the site evaluator to record information from the site evaluation.

PSTS Soil Description Manual. A comprehensive resource for site evaluators, adapted from the ecological land survey site description manual, designed to assist in identifying and documenting site conditions that affect the suitability of PSTS.

A Technical Guideline for Private Sewage Treatment Water Quality Impact Risk Assessment. Adapted from a similar guideline used in other jurisdictions, this document provides technical guidance to professionals in assessing the potential for groundwater impacts from PSTS through a 3-stage assessment process.

Responsibility of Site Evaluator

The assignment of a level of assessment to a proposed subdivision is largely based on information provided by the applicant and is therefore limited by the scope of information available to the subdivision authority prior to any detailed investigation. Recommended guidelines/requirements in this Model Process tool should not be construed to limit in any way the scope of the assessment that should occur on a given parcel of land and it is the express responsibility of the site evaluator to make judgments regarding the required scope of the assessment as the initial investigation proceeds.

Level One Assessment

This level of assessment is for a traditional first parcel out situation where one additional parcel is created and there is no existing PSTS system. It can also be used for other large parcel subdivisions if the system density does not exceed four (4) systems in the surrounding 160 acres. Where the smaller parcel being created has an existing PSTS system, refer to "Level One Assessment Variation" (p. 20).

Key information obtained from a Level One Assessment

- Any limitations on site due to parcel size
- Suitable and unsuitable system types for the parcel
- Identifies suitability of parcel for PSTS installation (see Model Process Tool #8, p. 37)

Level One Assessment

Evaluation Component	Information Required	Interpretations, Conclusion or Recommendations
1. Site drawing of proposed parcel.	▪ On the subdivision plan, develop a drawing/ sketch showing: - Location of springs, dugouts or wells accessing groundwater under the direct influence of shallow groundwater (GWDUI) providing water for domestic purposes within 500 feet (150 m.) of the proposed system - Location of proposed system, - Location of test pit(s), bore hole(s) and/or core sample(s) ▪ Provide measurements to pertinent features that require separation distances. (e.g. property lines, wells or proposed wells within 200 ft. (60 m.) of proposed system, surface water within 500 ft. (150 m.) (describe type of surface water body), buildings or proposed building sites, right of ways or other encumbrances that affect system siting) ▪ Location and size of the PSTS reserve system area (if any)	▪ Make comment on feasibility for the proposed system to be sited on property and maintain required clearance distances. ▪ Indicate if these required distances cause limitations in developing property. ▪ List the clearance distances required for the proposed system. ▪ List system types excluded because of inadequate land space.
2. Set out type of onsite system proposed for parcel.	▪ Describe proposed land use/type of development expected ▪ Anticipated or typical sewage volumes used in assessment considerations. ▪ Proposed system type	▪ Make comment on suitability of proposed system. ▪ Make comment on system types not suitable for the proposed parcel. ▪ If an open discharge system is proposed, comment on suitability of other systems requiring smaller clearance distances.
3. Assess ground/ soil conditions	▪ Required: Take soil samples from one borehole or test pit to assess soil water conditions and submit soil samples for laboratory soil texture classification;	▪ Document findings and identify soil characteristics that limit the selection of and long-term suitability of an onsite sewage system. Use the soil test pit and borehole methodology – tool 3.
4. Classify parcel suitability for onsite systems.	▪ Consider information from complete evaluation and classify the parcel as: (1) unsuitable except for holding tank, (2) severe limitations, (3) moderate limitations, or (4) well suited.	▪ Identify parcel suitability type assigned and make comment on why it is placed in that classification. (Use Tool #8 "Assignment of PSTS Suitability Type" as a guideline, page 37)

Level One Assessment Variation for First Parcel Out

Evaluation Component	Information Required	Interpretations, Conclusion or Recommendations
1. Site drawing of proposed parcel.	▪ On the subdivision plan, develop a drawing/ sketch showing: - Location and size of existing system ▪ Provide measurements to pertinent features that require separation distances. For example: property lines, wells or proposed wells within 200 ft. (60 m.) of proposed system, surface water within 500 ft. (150 m.) (describe type of surface water body), buildings or proposed building sites, right of ways or other encumbrances that affect system siting	▪ Comment on existing system maintaining required clearance distances. ▪ List the clearance distances required for the existing system.
2. Set out details of existing onsite system	▪ Existing system type	▪ Comment on suitability of existing system and general operation based on visual inspection.

Key information obtained from a Level One Assessment

- System type
- Property lines clearances are maintained for existing system

Level Two Assessment

This level of assessment suits a subdivision where one additional parcel is created and where parcel size is relatively small and/or density exceeds 4 parcels within the surrounding 160 acres.

Example: a 10-acre parcel is divided into two 5-acre parcels.

Variations (requiring a higher level of assessment) to a Level Three Assessment for this type of development should be applied where:

- There is no available reserve area to replace a failed system;
- The parcel is in a sensitive area due to surface water source or unconfined aquifers, or;
- The proposed system is expected to generate more than 1250 gallons (5.68 cubic metres) of sewage per day
- The initial report or available information suggests difficult site soil or hydrogeological conditions

Benefits provided from the Level Two Assessment

- Reduces occurrence of unexpected requirements having to be met by owner of parcels – i.e. open discharge not allowed.
- Identifies opportunities for smaller parcel sizes.
- A clear site assessment provided by the applicant reduces time and resources required by municipality in considering the subdivision proposal.
- Money and resources expended for the assessment will benefit the owner at the time of development and when designing the sewage system.
- Minimizes the chance an unplanned layout of the development will severely limit choices in designing and locating a system.
- Minimize possible impact(s) on adjoining property, e.g. encroaching on a neighboring well or PSTS system.

Key information obtained from a Level 2 Assessment

- Limitations on site due to parcel size;
- Suitable and unsuitable system types for the parcel
- Expected sewage volume used in assessment consideration
- Limiting soil or groundwater conditions
- Topographic limitations
- General suitability type of parcel for PSTS installation (see Model Process Tool #8, p. 37)
- Recommended location for the proposed system based on soil/site assessment

Level Two Assessment

Evaluation Component	Information Required	Interpretations, Conclusion or Recommendations
1. Site drawing of proposed subdivision parcels	▪ On the subdivision plan, develop a drawing/ sketch showing: - location of springs, dugouts or wells accessing groundwater under direct influence (GWUDI) providing water for domestic purposes within 500 feet (150 m.) of proposed subdivision, - location of proposed system(s) and any existing system(s), - location of test pit(s) , bore hole(s) and/or core sample(s) ▪ provide measurements to pertinent features that require separation distances. For example: property lines, wells or proposed wells within 200 ft. (60 m) of proposed system(s), surface water within 500 ft. (150 m) (describe type of surface water body), buildings or proposed building sites, right of ways or other encumbrances that affect system siting location and size of the PSTS reserve area(s)(if any).	▪ Make comment on feasibility for proposed system(s) to be sited and any existing system(s) on property to maintain required clearance distances. Indicate if these required distances cause limitations in developing property. ▪ List the clearance distances required for the proposed system(s) and any existing system(s). ▪ List system types excluded because of inadequate land space.
2. Density	▪ Identify the number of parcels on the quarter section and adjoining quarters	▪ Comment on number of parcels and density of development within the area of assessment
3. Set out type of on-site system(s) proposed	▪ Describe proposed land use/type of development expected ▪ expected sewage volumes used in assessment considerations ▪ type of proposed or existing system(s), land area required for PSTS system at the expected volumes used in assessment considerations.	▪ Make comment on suitability of proposed and/or existing system(s). ▪ Make comment on system types not suitable for the proposed parcel(s).
4. Assess soil conditions	▪ Required: Take soil samples from borehole or test pit to assess soil, determine soil water conditions, and submit soil samples for laboratory soil texture classification;	▪ Identify soil characteristics that limit the selection of and/or the long term suitability of an onsite sewage system ▪ Document soil characteristics using the PSTS Soil Assessment Field Form (or equivalent)
5. Assess topography and surface drainage	▪ Determine surface slopes and surface drainage characteristics.	▪ Identify surface slopes or drainage characteristics that may limit system selection, design or location.
6. Classify parcel suitability for onsite systems.	▪ Consider information from complete evaluation and classify the parcel as: - unsuitable except for holding tank - severe limitations - moderate limitations - well suited	▪ Identify suitability of parcel and make comment on why it is placed in that classification (Use Tool #8 "Assignment of PSTS Suitability Type" as a guideline)

Level Three Assessment

This level of assessment is typically used where two to six additional parcels are created. The parcel should be fully evaluated if there is an existing PSTS system on a parcel.

What are some conditions or variables under which the municipality may reduce the site evaluation for two to six parcels to a Level Two Assessment?

- Open discharge systems are proposed for and suitable for all parcels
- There is no anticipated future development in the area
- There is no documented or projected environmental sensitivity

Some conditions or variables that individually or in conjunction with each other may indicate the need for the municipality to request that the applicant move up to a Level Four Assessment for two to six parcels include:

- Existing high-density development in the area, or the municipality is aware of future plans for higher density development in the area
- Sensitive environmental circumstances exist (i.e. Lakefront property, flood plain, existing concerns regarding high levels of nutrient loading)
- Small parcel size may limit selection of system types and area available for reserve system
- Known soil or environmental conditions that limit system suitability
- Difficult topography
- Known soils or hydrogeological information indicate difficult conditions that may limit system suitability
- The initial investigation reveals limited site suitability
- The proposed use is expected to generate more than 5.68 cubic meters (1,250 gallons) of sewage per day

Benefits provided from the Level Three Assessment

- Provides sufficiently detailed analysis of parcels to increase confidence that sustainable systems will be selected
- Wider geographical scope of assessment results in better identification of environmental sensitivity in area surrounding the proposed subdivision
- Reduces occurrence of unexpected requirements having to be met by owner of parcels – i.e. open discharge not allowed.
- The site assessment description assists the applicant in preparing a complete submission reducing the possibility it will be returned as incomplete.
- Identifies opportunities for smaller parcel sizes.
- A clear site assessment provided by the applicant reduces time and resources required by municipality in considering the subdivision proposal.
- Money and resources expended for the assessment will benefit the owner at the time of development and during the design of the sewage system.
- Minimizes the chance an unplanned layout of the development will severely limit choices in designing and locating a system.
- Minimize possible impact on adjoining property, e.g. encroaching on a neighboring well or PSTS system.

Evaluation Component	Information Required	Interpretations, Conclus Recommendations
1. Site drawing of proposed parcel.	▪ The subdivision area showing lot boundaries: ▪ location of springs, dugouts or wells accessing shallow groundwater (GWUDI) providing water for domestic purposes within 0.5 miles (0.8 km) of proposed subdivision, ▪ location of proposed system and any reserve area; ▪ Soil series included in subdivision as identified by available soils data. ▪ Location of test pits and bore holes and/or core samples, topography contour lines at 1.5 meter (5 foot) intervals ▪ existing or planned drainage courses; ▪ measurements to pertinent features that require separation distances. (For example, property lines, wells or proposed wells within 200 ft. (60 m.) of proposed system, surface water within 500 ft. (150 m.) (describe type of surface water body), buildings or proposed building sites, right of ways or other encumbrances that affect system siting.	▪ Make comment on feasibility for proposed system(s) to be sited on property and maintain required clearance distances. Indicate if these required distances cause limitations in developing property. ▪ List the clearance distances required for the proposed system(s). ▪ List system types excluded because of inadequate land space.
2. Density	▪ Identify the number of parcels on the quarter section and surrounding quarters	▪ Comment on number of parcels and density of development within the area of assessment
3. Set out type of on-site system(s) proposed	▪ Describe proposed land use/type of development expected ▪ expected sewage volumes used in assessment considerations ▪ type of proposed or existing system(s) ▪ Estimate the dimensions of the land area required for PSTS system at the expected volumes used in assessment considerations.	▪ Make comment on suitability of proposed and/or existing system(s). ▪ Make comment on system types not suitable for the proposed parcel(s).
4. Consider information available in soil survey reports	▪ Determine predominant soil series or mapping unit of the subdivision area as well as any significant minor soil series shown on soils maps in the area ▪ List soil profile description (texture, structure and parent material) of expected soil series on the site ▪ Any permeability or drainage classifications/ characterizations provided ▪ Any reference to soil water or soil characteristics that indicate the existence of soil moisture conditions that will adversely affect suitability for onsite systems.	▪ Identify key information from soil survey reports that indicate soil suitability or limiting features for PSTS. ▪ Comment on the consistency or inconsistency of the soil as indicated by the soil survey mapping ▪ Interpret the soil survey information as it applies to the suitability or design of onsite systems.
5. Evaluation of soils on the site	▪ Require an investigation of the soil profile on each lot using excavated test pits or intact cores of soil. At least 50% of the lots created will be investigated using excavated test pits. The ratio of test pits to intact cores of soil used shall be justified by the evaluator considering the consistency of the soil profiles and landscape of the proposed subdivision area. The location of the soil investigation shall be selected based on the most likely area for installation of the private sewage system considering the lot layout and layout of the subdivision. Document the soil conditions and characteristics and document in a soil profile log following accepted onsite soil evaluation practices (use PSTS Soil Assessment Field Form).	▪ Identify soil characteristics that limit the selection of and/or the long term suitability of an onsite sewage system ▪ Interpret soil characteristics identified as they apply to the suitability or design of onsite systems.

Level Three Assessment Continued		
Evaluation Component	**Information Required**	**Interpretations, Conclusion or Recommendations**
6. Evaluation of soil moisture and near surface ground water conditions	▪ Determine soil moisture conditions by an examination of the soil pit or bore hole. ▪ Include in the soil log features indicative of soil moisture conditions that affect soil suitability, system design, and location of the system.	▪ Identify significant soil moisture characteristics that limit the selection of and/or the long term suitability of an onsite sewage system ▪ Interpret soil moisture characteristics identified as they apply to the suitability or design of onsite systems. ▪ Make an estimation of the high ground water level considering soil evaluation findings and possible seasonal fluctuations.
7. Assess topography, surface drainage, and vegetation	▪ Identify cuts, banks or slopes and consider stability concerns created by a proposed onsite system. ▪ Determine surface drainage characteristics present or planned that may affect the system suitability or location limitations. ▪ Identify vegetation indicative of soil moisture conditions	▪ Comment on surface drainage characteristics that may limit system location. ▪ Comment on areas of parcel where vegetation indicates soil moisture conditions may limit system design.
8. Classify parcel suitability for onsite systems.	▪ Consider information from complete evaluation and classify the parcel as - unsuitable except for holding tank - severe limitations - moderate limitations - well suited	▪ Identify suitability of each parcel and make comment on why it is placed in that classification (Use Tool #8 "Evaluation of PSTS Suitability Type" as a guideline)

A municipality may want to require the site assessor to consider placement of the system to best facilitate phased-in wastewate collection or future hook-up to a municipal system at this assessment level.

Key information obtained from a Level 3 Assessment:

- Parcel size and number of parcels in subdivision;
- Suitable and unsuitable system types for each parcel
- Expected sewage volume used in assessment consideration
- Limiting soil or groundwater conditions
- Topographic limitations
- General suitability type of parcels for PSTS installation (see Model Process Tool #8, p. 37)
- Recommended locations for the proposed systems based on soil/site assessment
- Density of development in surrounding half-mile area
- Requirements to accommodate phased-in wastewater collection system (if applicable)

Level Four Assessment

The typical application for this level of assessment would be for a comprehensive multi-lot subdivision with more than 6 parcels.

Benefits provided from the Level Four Assessment

- Assessment considers larger scale environmental impact of development, particularly on ground and surface water in the surrounding geographical area
- Provides sufficiently detailed analysis of parcels to increase confidence that sustainable systems will be selected
- Wider geographical scope of assessment results in better identification of environmental sensitivity in area surrounding the proposed subdivision
- Reduces occurrence of unexpected requirements having to be met by owner of parcels – i.e. open discharge not allowed.
- The site assessment description assists the applicant in preparing a complete submission, reducing the possibility it will be returned as incomplete.
- Identifies opportunities for smaller parcel sizes.
- A clear site assessment provided by the applicant reduces time and resources required by municipality in considering the subdivision proposal.
- Money and resources expended for the assessment will benefit the owner at the time of development and when designing the sewage system.
- Minimizes the chance an unplanned layout of the development will severely limit choices in designing and locating a system.
- Minimize possible impact(s) on adjoining property, e.g. encroaching on a neighboring well or PSTS system.
- Enables municipality to plan for future hook-up to municipal system or phased in wastewater collection system if desired
- Evaluates proposal on subdivision level and quantifies cumulative impacts
- Provides environmental/liability protection
- Aids long-term municipal planning

Key information obtained from a Level 4 Assessment:

- Parcel size and number of parcels in subdivision
- Suitable and unsuitable system types for each parcel
- Expected sewage volume used in assessment consideration
- Limiting soil or groundwater conditions
- Topographic limitations
- General suitability type of parcels for PSTS installation (see Model Process Tool #8, p. 37)
- Recommended locations for the proposed systems based on soil/site assessment
- Density of development in surrounding half-mile area
- Requirements to accommodate phased-in wastewater collection system (if applicable)
- Environmental sensitivities in the area of the subdivision that have been identified
- Level of reliance placed on operation and maintenance of PSTS systems
- Level of cumulative impact on surface and groundwater in subdivision area

Level Four Assessment		
Evaluation Component	**Information Required**	**Interpretations, Conclusion or Recommendations**
1. Site drawing of proposed subdivision	▪ The subdivision area showing lot boundaries: ▪ location of springs, dugouts or wells accessing shallow groundwater (GWUDI) providing water for domestic purposes within 0.5 miles (0.8 km.) of proposed subdivision, ▪ location of proposed system and any reserve area; ▪ Soil series included in subdivision as identified by available soils data. ▪ Location of test pits and bore holes and/or core samples, topography contour lines at 1.5 meter (5 foot) intervals ▪ existing or planned drainage courses; ▪ measurements to pertinent features that require separation distances. (For example: property lines, wells or proposed wells within 200 ft. (60 m.) of proposed system, surface water within 500 ft. (150 m.) (describe type of surface water body), buildings or proposed building sites, right of ways or other encumbrances that affect system siting ▪ any stormwater management plan features	▪ Make comment on feasibility for proposed system(s) to be sited on property and maintain required clearance distances. Indicate if these required distances cause limitations in developing property: ▪ List the clearance distances required for the proposed system(s). ▪ List system types excluded because of inadequate land space. ▪ Comment on the extent to which shallow groundwater (GWUDI) is used on other properties in the 0.5 mile (0.8 km) area
2. Density	▪ Identify the number of parcels on the quarter section and surrounding quarters	▪ Comment on number of parcels and density of development within the area of assessment ▪ Comment on the impact the density of development has on the selection of PSTS systems suitable for individual parcels within the subdivision ▪ Project contaminant loading for subdivision based on density
3. Set out type of onsite system(s) proposed	▪ Describe type of development expected ▪ Anticipated or typical sewage volumes used in the assessment considerations ▪ proposed system type ▪ estimated dimensions of land area needed for PSTS at the anticipated volumes used in the assessment considerations ▪ Determine potable water characteristics that may effect system long term performance, e.g. water SAR	▪ Make comment on suitability of proposed and/or existing systems. ▪ Make comment on system types not suitable for the proposed parcels. ▪ Identify level of maintenance and reliance on maintenance for systems.

Level Four Assessment Continued Evaluation Component	Information Required	Interpretations, Conclusion or Recommendations
4. Consider information available in soil survey reports	▪ Determine predominant soil series or mapping unit of the subdivision area as well as any significant minor soil series shown on soils maps in the area ▪ List soil profile description (texture, structure and parent material) of expected soil series on the site ▪ Any permeability or drainage classifications/ characterizations provided ▪ Any reference to soil water or soil characteristics that indicate the existence of soil moisture conditions that will adversely affect suitability for onsite systems.	▪ Identify key information from soil survey reports that indicate soil suitability or limiting features for PSTS. ▪ Comment on the consistency or inconsistency of the soil as indicated by the soil survey mapping ▪ Interpret the soil survey information as it applies to the suitability or design of onsite systems.
5. Evaluation of soils on the site	▪ Require an investigation of the soil profile on each lot using excavated test pits or intact cores of soil. At least 50% of the lots created will be investigated using excavated test pits. The ratio of test pits to intact cores of soil used shall be justified by the evaluator considering the consistency of the soil profiles and landscape of the proposed subdivision area. The location of the soil investigation shall be selected based on the most likely area for installation of the private sewage system considering the lot layout and layout of the subdivision. Document the soil conditions and characteristics in a soil profile log following accepted onsite soil evaluation practices (use PSTS Soil Assessment Field Form).	▪ Identify soil characteristics that limit the selection of and/or the long term suitability of an onsite sewage system ▪ Interpret soil characteristics identified as they apply to the suitability or design of onsite systems.
6. Evaluation of soil moisture and near surface ground water conditions	▪ Determine soil moisture conditions by an examination of the soil pit or bore hole. ▪ Include in the soil log features indicative of soil moisture conditions that affect soil suitability, system design, and location of the system. ▪ Identify the existence (if any) of an unconfined aquifer ▪ Groundwater Mounding Assessment by approved method such as Hantush.	▪ Identify significant soil moisture characteristics that limit the selection of and/or the long term suitability of an onsite sewage system ▪ Interpret soil moisture characteristics identified as they apply to the suitability or design of onsite systems. ▪ Make an estimation of the high ground water level considering soil evaluation findings and possible seasonal fluctuations. ▪ If an unconfined aquifer or surface water of concern is present, comment on whether it is being used as a potable water supply ▪ Consider and provide opinion on whether additional wastewater load from the subdivision will cause ground water mounding and raise the existing water table levels

Level Four Assessment Continued		
Evaluation Component	**Information Required**	**Interpretations, Conclusion or Recommendations**
7. Evaluation of surface water impacts	▪ Identify the existence of any surface water body that may be impacted by the subdivision	▪ Comment on whether the potential impact on surface water quality affects the choice of suitable PSTS systems for the subdivision
8. Assess topography, surface drainage and vegetation	▪ Identify any cuts, banks or slopes and consider stability concerns created by a proposed onsite system. ▪ Determine surface drainage characteristics present or planned that may affect the system suitability or location limitations. ▪ Identify vegetation indicative of soil moisture conditions	▪ Comment on surface drainage characteristics that may limit system location. ▪ Comment on areas of parcel where vegetation indicates soil moisture conditions may limit system design ▪ Comment on restrictions any stormwater management plan imposes on the selection and location of PSTS systems in the subdivision
9. Determine cumulative Impacts	▪ Accepted source water quality impact assessment report. A sample source water quality assessment tool is described in the Technical Resource for PSTS Systems: Water Quality Impact Assessment (Appendix "D")	▪ Develop and provide an opinion on the extent of any cumulative nutrient load from the subdivision on surface and groundwater quality.
10. Classify parcel suitability for onsite systems.	▪ Consider information from complete evaluation and classify the parcel as: - unsuitable except for holding tank - severe limitations - moderate limitations - well suited	▪ Identify suitability of each parcel and make comment on why it is placed in that classification (Use Tool #8 "Assignment of PSTS Suitability Type" as a guideline)

A municipality may want to require the site assessor to consider placement of the system to best facilitate phased-in wastewater collection or future hook-up to a municipal system at this assessment level.

5 Stage Three

Municipal Review of Site Assessment Report for Completeness

Once the municipality has received the subdivision application, all components of the application, including the site assessment report should be reviewed for completeness. A municipal officer should review the site assessment report to ensure that:

a) complete site map information is provided;
b) the soil reports are complete and the near-surface groundwater conditions have been identified;
c) there is both identification and interpretation of key findings and conclusions;
d) the site assessment report has been prepared by a qualified person;
e) the site assessment report contains or addresses all the checklist items for the level of assessment that was requested.

The Model Process includes assessment checklist tools for the municipality to use in reviewing the site assessment report for completeness. A sample checklist has been developed for each level of assessment or variance. As with all other tools provided throughout the Model Process, the municipality can and should adapt the checklist tools to fit their local situations and priorities where necessary.

Model Process Tool #3

Site Assessment Report Checklist: Level One Assessment Variation for First Parcel Out

Purpose: This tool equips the municipality to assess whether the site evaluation report they receive from the applicant or site evaluator for a Level One Assessment Variation (first parcel out) is complete.

Target Audience: Municipal Officials

- ☐ Does the report include a site map documenting the location and area used for the existing system?
- ☐ Does the report document the distance to wells, surface water, buildings, property lines and rights of way or other obvious encumbrances on the property being created?
- ☐ Does the report comment on whether the proposed parcel size is large enough to allow the existing system to meet required clearance distances?
- ☐ Does the report include comment on the general operation of the existing system? (Note: these comments can be based on a simple visual observation of the system)

Model Process Tool #4

Site Assessment Report Checklist: Level One Assessment

Purpose: This tool equips the municipality to assess whether the site evaluation report they receive from the applicant or site evaluator for a Level One Assessment is complete.

Target Audience: Municipal Officials

- ☐ Does the report include a site map documenting the proposed location for a new system?
- ☐ Does the site map indicate the location and size of the reserve area (if any) and the location of the test pit/bore hole?
- ☐ Does the report document the results of the soil texture analysis, describe the soil structure and identify pertinent soil features in the soil log sheet?
- ☐ Does the report document the distance to wells, surface water, buildings, property lines and rights of way or other obvious encumbrances on the proposed parcel(s)?
- ☐ Does the report document the location of any springs and the presence of any wells that utilize shallow groundwater (GWUDI) and/or dugouts used for domestic water purposes within 200 ft. (60 m.) of the proposed system?
- ☐ Does the report comment on the presence/absence of signs of a high water table (mottling, gleying, saturated soils, water in the hole), the depth at which these signs were noticed, and whether it creates limits on system designs?
- ☐ Does the report identify soil characteristics that limit the selection of and long-term suitability of an onsite sewage system, including horizon, colour, texture, structure, consistence, moisture, presence/absence of roots, % coarse fragments, precipitates, parent material, inclusions (coal fragments, iron stones), mottling and gleying?
- ☐ Does the report offer an opinion on the adequate parcel size for the proposed development using PSTS?
- ☐ Does the report render an opinion as to whether the site will support PSTS and does it assign the parcel(s) a suitability type for an onsite system (see Model Process Tool #8: "Assignment of PSTS Suitability Type"?
- ☐ Does the report indicate any limitations on the type of PSTS suited for the parcel?
- ☐ Does the report include a recommendation for suitable systems, including their size, ideal location, projected cost, and any installation recommendations?

Model Process Tool #5

Site Assessment Report Checklist: Level Two Assessment

Purpose: This tool equips the municipality to assess whether the site evaluation report they receive from the applicant or site evaluator for a Level Two Assessment is complete.

Target Audience: Municipal Officials

- ☐ Does the report include a site map indicating the proposed location of the private sewage installation? Were adequate test sites investigated?
- ☐ Was each lot investigated to determine the soil profile characteristics using appropriate methods of excavated test pits supplemented by solid soil cores if used and justified as described in the level 4 assessment? Does the site map indicate the location and size of the reserve area (if any) and the location of the test pit/bore/core holes?
- ☐ Does the report document the results of the soil texture analysis, describe the soil structure and identify pertinent soil features in the soil log sheet?
- ☐ Does the report document the distance to wells, surface water, buildings, property lines and rights of way on the proposed parcel?
- ☐ Does the report comment on the number of parcels and density of development within the area of assessment?
- ☐ Does the report document the location of any springs and the presence of any wells that utilize shallow groundwater (GWUDI) and/or dugouts used for domestic water purposes within 500 ft. (150 m.) of the proposed subdivision?
- ☐ Does the report comment on the presence/absence of signs of a high water table (mottling, gleying, saturated soils, water in the hole) and the depth at which these signs were noticed?
- ☐ Does the report include information on the soil including horizon, colour, texture, structure, consistence, moisture, presence/absence of roots, % coarse fragments, precipitates, parent material, inclusions (coal fragments, iron stones), mottling and gleying?
- ☐ Are soil samples taken from an area where it is proposed the PSTS be located?
- ☐ Does the report offer an opinion on the adequate parcel size for the proposed development?
- ☐ Does the report render an opinion as to whether the site will support PSTS (and assign a suitability type as per Model Process Tool #8)?
- ☐ Does the report indicate any limitations on treatment system types and offer an opinion on the merits of specific treatment types?
- ☐ Does the report include a recommendation for suitable systems, including their size, ideal location, projected cost, and any installation recommendations?

Model Process Tool #6

Site Assessment Report Checklist: Level Three Assessment

Purpose: This tool equips the municipality to assess whether the site evaluation report they receive from the applicant or site evaluator for a Level Three Assessment is complete.

Target Audience: Municipal Officials

- ☐ Does the report include a site map indicating the proposed location of the private sewage installation?
- ☐ Was each lot investigated to determine the soil profile characteristics using appropriate methods of excavated test pits supplemented by solid soil cores if used and justified as described in the level 4 assessment? Does the site map indicate the location and size of the reserve area (if any) and the location of the test pit/bore/core holes?
- ☐ Does the report document the results of the soil texture analysis, describe the soil structure and identify pertinent soil features in the soil log sheet?
- ☐ Does the report document the distance to wells, surface water, buildings, property lines and rights of way on the proposed parcel?
- ☐ Does the report comment on the number of parcels and density of development within the area of assessment?
- ☐ Does the report document the location of any springs and the presence of any wells that utilize shallow groundwater (GWUDI) and/or dugouts used for domestic water purposes within 500 ft. (150 m.) of the proposed subdivision?
- ☐ Does the report comment on the presence/absence of signs of a high water table (mottling, gleying, saturated soils, water in the hole) and the depth at which these signs were noticed?
- ☐ Does the report include information on the soil including horizon, colour, texture, structure, consistence, moisture, presence/absence of roots, % coarse fragments, precipitates, parent material, inclusions (coal fragments, iron stones), mottling and gleying?
- ☐ Does the report consider available existing soils report information?
- ☐ Are the soil samples taken from an area where PSTS is proposed to be located?
- ☐ Does the report assess topography of the sites and identify any surface drainage characteristics that may limit PST system selection, design or location?
- ☐ Does the report offer an opinion on the adequate parcel sizes for the proposed development using PSTS?
- ☐ Does the report render an opinion as to whether the site will support PSTS over the long-term?
- ☐ Does the report indicate any limitations on treatment system types and offer an opinion on the merits of specific treatment types?
- ☐ Does the report include a recommendation for suitable systems, including their size, ideal locations, projected costs, and any installation recommendations?
- ☐ Does the report assign a suitability type for each proposed parcel?
- ☐ If applicable, does the report consider possible connection to a public or communal sewage disposal system at a later date?

Model Process Tool #7

Site Assessment Report Checklist: Level Four Assessment

Purpose: This tool equips the municipality to assess whether the site evaluation report they receive from the applicant or site evaluator for a Level Four Assessment is complete.

Target Audience: Municipal Officials

- ☐ Does the report include a site map documenting the proposed location of PSTS?
- ☐ Was each lot investigated to determine the soil profile characteristics using appropriate methods of excavated test pits supplemented by solid soil cores, if used, and justified as described in the level 4 assessment?
- ☐ Does the site map indicate the location and size of the reserve area (if any) and the location of the test pit/bore/core holes?
- ☐ Does the report document the results of the soil texture analysis, describe the soil structure and identify pertinent soil features in the soil log sheet?
- ☐ Does the report document the distance to wells, surface water, buildings, property lines and rights of way on the proposed parcel?
- ☐ Does the report document the location of any springs and the presence of any wells that utilize shallow groundwater (GWUDI) and/or dugouts used for domestic water purposes within 0.5 mile (0.8 km) of the proposed subdivision?
- ☐ Does the report comment on the presence/absence of signs of a high water table (mottling, gleying, saturated soils, water in the hole) and the depth at which these signs were noticed?
- ☐ Does the report include information on the soil including horizon, colour, texture, structure, consistence, moisture, presence/absence of roots, % coarse fragments, precipitates, parent material, inclusions (coal fragments, iron stones), mottling and gleying
- ☐ Does the report provide an opinion on the level of groundwater mounding from the added wastewater loading (cumulative impact of entire subdivision)?
- ☐ Does the report consider available existing soils report information?
- ☐ Are the soil samples taken from an area where proposed PSTS be located?
- ☐ Does it provide an interpretation or application of soil findings as they apply to on-site systems?
- ☐ Does the report comment on the effect of the cumulative nutrient load the subdivision proposal will place on unconfined aquifers or surface water bodies in the area?
- ☐ Does the report assess topography of the sites and identify any surface drainage characteristics that may limit system selection, design or location of PSTS?
- ☐ Does the report offer an opinion on the adequate parcel sizes for the proposed development using PSTS?
- ☐ Does the report consider the proposed land use, type of development expected, and anticipated or typical sewage volume?
- ☐ Does the report render an opinion as to whether the site will support PSTS over the long-term?
- ☐ Does the report indicate any limitations on treatment system types and offer an opinion on the merits of specific treatment types
- ☐ Does the report include a recommendation for suitable systems, including their size, ideal locations, projected costs, clearance requirements, any installation recommendations, and level of reliance on maintenance?
- ☐ If applicable, does the report consider possible connection to a public or communal wastewater treatment system at a later date?
- ☐ Does the report assign a general suitability type for on-site sewage installation (see Model Process Tool #8: Assignment of Suitability Type 1- 4) to each proposed parcel and comment on why the suitability types have been assigned?

6 Stage Four

Municipal Review and Evaluation of Site Assessment Report for Findings

Once the site assessment report has been reviewed for completeness, the municipality should review and evaluate the findings of the report. Specifically the municipality should:

- **a)** Review the findings in the applicant's report to determine if unexpected conditions were found (particularly any conditions that may indicate the need for an extended or more detailed site assessment);
- **b)** Determine whether the findings of the applicant's site assessment report support the PSTS suitability type the site evaluator assigned to the lands;
- **c)** Determine if the PSTS systems recommended are consistent with the site assessment report findings;
- **d)** Identify any gaps in the site assessment report (Are there a clear set of conclusions/recommendations? Does the site assessor render an opinion?);
- **e)** Identify the applicant's ability to comply with land use bylaws and municipal development policies (ie. Required setbacks, amount of developable area needed, etc.) on the basis of the report's findings;
- **f)** Refer the site assessment report to outside expertise for further comment if required (the cost for this referral is to be borne by the applicant).

Model Process Tool #8

Assignment of PSTS Suitability Type

Purpose: This tool groups variables in to "types" in order to determine the general capability of the land to support on-site sewage treatment. Site evaluators may use this tool as a guide in assigning a suitability type for PSTS to a parcel (s). Municipal officials may use this tool to evaluate the information contained in a site assessment report and to consider the appropriateness of the conclusions the site evaluator drew from the evidence and data gathered at the site.

Target Audience: Site Evaluators and Municipal Officials

A properly constituted Site Assessment Report should include the assignment of a PSTS suitability type to the lands to be subdivided. Model Process Tool #8 is designed to assist the municipality in evaluating the findings of the site assessment report and further determining whether those findings support the PSTS suitability type that the site assessor has given to the lands. The assignment of PSTS suitability type in Table 3 (p. 38) lists four suitability types ranging from "very suitable" to "severely limited or unsuitable except for holding tanks". As well, the table works through a number of site variables (such as soil texture and structure, hydraulic capacity of soil, depth to water table, topography, density, cumulative impacts, etc.) using thresholds and design standards from the Alberta Private Sewage Standard of Practice to evaluate the general capacity of the land for PSTS.

A number of variables have been grouped in Types to indicate the general suitability of the land for PSTS. The variables are rated, assessed and grouped in Types based on the degree they affect the suitability of land. Limitations on the suitability of land will become progressively greater as the variables move from Type 1 to a Type 4 categorization. For example, the presence of a single variable in Type 3 or 4 may indicate extremely low suitability or absolute unsuitability of the parcel for on-site sewage treatment systems.

Table 3

Site Variable	Suitability Type Type 1. Very *Parcels with all or most of their variables in this group (and no variables beyond Type 2) can be considered highly suitable for on-site sewage. Any system type could be used.*	Type 2. Moderate *Limitations could be easily overcome with selection of an appropriate system type and design. Sites that contain variables in this type should be suitable for most systems unless to accommodate development system size is large.*	Type 3. Limited *Sites that contain variables in this type have limited suitability for on-site sewage. The limitations can be due to a serious single factor or a combination of several limitations. Advanced design and technology of onsite systems is needed. A key limit is depth of suitable soil.*	Type 4. Severely Limited or Unsuitable Except for Holding Tanks *Sites that contain variables in this Type are usually unsuitable for most on-site sewage systems.*
Soil texture and structure See Table 7A.1.5 in Private Sewage System Standard of Practice (PSSSP) for suitable soil texture classifications. (See Figure 2 at the end of this table for preferred soil texture classes)	Soils are of a medium texture and have good structure (strong grade of structure) Texture class in this type typically includes Loamy fine sand, Sandy loam, Loam, Silt loam. Structure is a strong grade of blocky, granular, prismatic or columnar structure.	Soil texture is finer or coarser than ideal but is still suited for treatment field use. Texture class in this type typically includes sandy clay loam, clay loam, loamy coarse sand. Structure is a medium to strong grade of Blocky, granular, prismatic or columnar	Soils have a fine or very coarse soil texture and/or an adverse structure (weak grade with resistance to water flow) Texture class would typically include Silty clay loam, sandy clay, silty clay, clay, very coarse loamy sand, or course to medium Sand and may include a high amount of coarse fragments (40 – 60%). Structure is weak or is platy or massive (no structure)	Soils have very unsuitable texture and structure. Texture classes typically include heavy clay, coarse sand, gravelly or very gravelly loamy sand; extremely gravelly soils (exceeds 45%). Structure is single grained (sand) or massive or platy combined with poor soil texture.
Depth of Suitable Soil	There is greater than 2.5 m (8 feet) in depth of well-suited soil.	Soil is moderately suitable to at least 2.5 m (8 feet) in depth to bedrock, impermeable layers, or saturated soils. Limited suitability at depths below 1.5m (5 feet) may be present.	Soil has less than 1.8 m (6 feet) of generally suitable soils to bedrock, impermeable layers, or saturated soils, but not less than 900 mm (3 feet).	Soil has less than 900mm (36 inches) in depth to bedrock, impermeable layers, or seasonally saturated soil.

Table 3 Continued

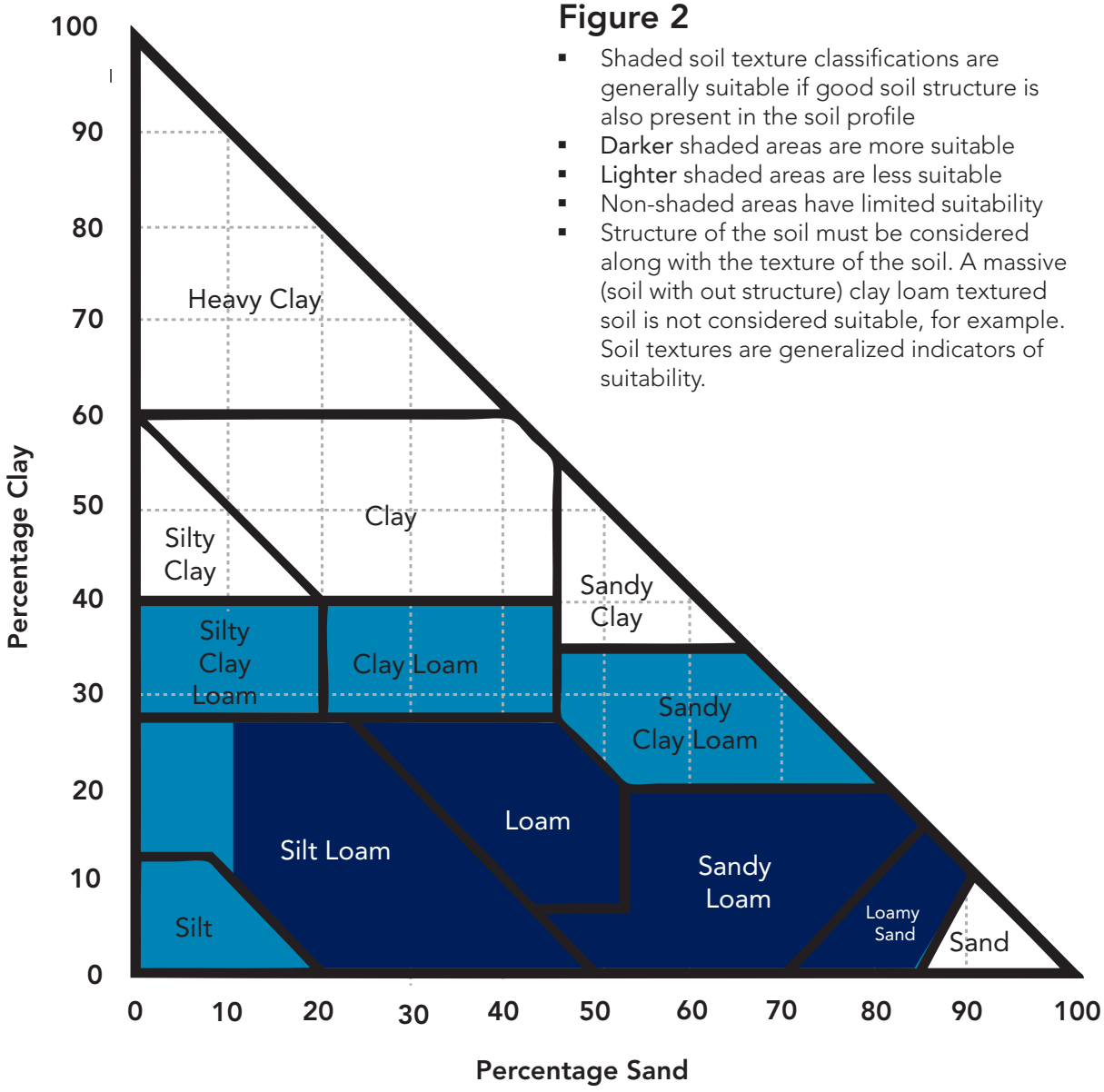
Site Variable	Suitability Type Type 1. Very	Type 2. Moderate	Type 3. Limited	Type 4. Severely Limited or Unsuitable Except for Holding Tanks
Hydraulic Capability of Soil Soil characteristics are required to rate permeability.	Soils are rated as very rapidly to rapidly drained and have good permeability.	Soils are rated as well drained and have good to moderate permeability.	Soils are rated as moderately well drained to imperfectly drained or are very rapidly drained and slowly permeable. Alternatively, the soil could be very permeable, minimizing the capacity of the soil to treat the effluent.	Soils are rated as imperfectly to poorly drained (gleysolic soils or soils restricted by presence of ground water less than 1 m below surface) and or are relatively impermeable or are extremely permeable.
Soil Horizons	Soil horizons have negligible or minor textural contrast or stratified materials	Soil horizons have moderate textural contrast and mild stratification of materials and indicators that suggest moderate restriction to vertical water movement	Soil horizons have significant textural contrast, some stratified materials, and indicators that suggest significant restriction to vertical water movement or include highly permeable lenses.	Soils horizons have severe textural contrast, stratified materials, and indicators that suggest severe restriction to vertical water movement or include highly permeable lenses in soil.
Depth to Water Table	No indication of saturated soil conditions or water table to a depth greater than 2.5 m (8 ft.)	No indication of saturated soil conditions or water table to a depth greater than 2.5 m (8 ft.)	Indication of saturated soil conditions or water table at a depth less than 2.5 m (8 ft.) but is deeper than 900mm (3 feet)	Extremely high water table or signs of saturated soil conditions at less than 3 feet below surface.
Topography or proposed site	Land has a slight slope (0 – 8%) that is convex in nature	Land has a slight slope (0 – 8%) that is convex in nature	Land has a moderate slope (8-12%) that is convex in nature	Land has significant concave slope or a severe slope (over 15%) where soil stability is a concern or surrounding lands cause surface drainage to accumulate on parcel.
Flooding	None, protected	None, protected	Extremely Rare (1 in 100 year event)	1 in 50 year event or more frequent

Table 3 Continued

Site Variable	Suitability Type Type 1. Very	Type 2. Moderate	Type 3. Limited	Type 4. Severely Limited or Unsuitable Except for Holding Tanks
Density	Limited existing or planned development in area.	Existing or planned development of a moderate density. Surrounding density less than 30 parcels per ¼ section.	Existing or planned development of high density. Surrounding density exceeds 30 parcels per ¼ section.	Extreme high density or large number of parcels. Parcels are less than 1,800 sq. meters in area (Standard of Practice threshold for on-site systems).
Encumbrances (ie. Wells, water sources, surface water, buildings, property lines, lines of easement, interceptors or drainage ditches, cuts, banks, fills, driveways or parking areas, existing on-site sewage systems, or underground utilities)	Parcel has two suitable sites identified for an on-site system or parcel size is large enough that few restrictions are created for choosing a site.	Encumbrances cause moderate siting limitations but sufficient setbacks exist and two suitable sites for on-site sewage systems have been identified.	Encumbrances cause significant siting limitations but sufficient setbacks exist and space is available for one onsite system.	Encumbrances cause extreme siting limitations or less than required setback from encumbrances exist.
Parcel Size	Large parcel sizes. Parcels have sufficient space to easily provide a reserve area for a replacement system.	Sufficient parcel size	Marginal parcel size	Parcel size is Less than 1800 sq. meters or insufficient to meet all minimum distance requirements set out in Alberta Standards document for intended system.
Surface Water	No concerns with effect on surface water.	Effect on surface water is not a concern with proper on-site system design and siting. On-site location is not limited by required separation from surface water body.	Effect on surface water is a concern. Advanced treatment levels required to address surface water concerns or on-site location is limited by required separation from surface water body.	Effect on surface water is a very high concern and cannot be adequately addressed by advanced treatment levels or required separation to surface water cannot be met.

Figure 2

- Shaded soil texture classifications are generally suitable if good soil structure is also present in the soil profile
- **Darker** shaded areas are more suitable
- **Lighter** shaded areas are less suitable
- Non-shaded areas have limited suitability
- Structure of the soil must be considered along with the texture of the soil. A massive (soil with out structure) clay loam textured soil is not considered suitable, for example. Soil textures are generalized indicators of suitability.



Preparing your report

7 Stage Five

Preparation of Municipality's Approval Report to Subdivision Authority

Once the site assessment report and other components of the subdivision application have been reviewed, the application can be deemed complete and the referral process is initiated. During this phase, a municipal official/ employee would typically prepare a "referral report" for the subdivision authority.

The portion of this report that deals with the suitability of the lands for PSTS installation should:

a) provide an executive summary of the applicant's site assessment report;
b) comment on the adequacy of the scope of the assessment undertaken by the qualified person;
c) comment on the findings of the report regarding the suitability of the lands for PSTS;
d) identify any special on-site system needs or requirements to address site conditions;
e) recommend any appropriate conditions on subdivision approval;
f) draw a conclusion on suitability of the lands for PSTS.

Thank you

8 Acknowledgments

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Legal Review

- Brownlee LLP

Engineering Review

- EBA Engineers

Installers Review

- Alberta Onsite Wastewater Management Authority

Comprehensive Stakeholder Review

- AAMDC Member Municipalities
- Alberta Rural Municipal Administrators Association
- Regional Planning Agencies and Land Use Planning Community
- Alberta Environment
- Alberta Health
- Alberta Municipal Affairs
- Association of Summer Villages of Alberta
- Alberta Onsite Wastewater Management Authority
- Alberta Safety Codes Council

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Alberta Regulation 43/2002 Municipal Government Act

Subdivision and Development Regulation

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Interpretation

1(1) In this Regulation,

(a) repealed AR 254/2007 s34;

(b) "building site" means a portion of the land that is the subject of an application on which a building can or may be constructed;

(b.1) "ERCB" means the Energy Resources Conservation Board;

(c) "food establishment" means food establishment as defined in the Food Regulation (AR 240/85);

(d) "hazardous waste management facility" means hazardous waste management facility as defined in the Waste Control Regulation (AR 192/96);

(e) "landfill" means landfill as defined in the Waste Control Regulation (AR 192/96);

(f) "rural municipality" means a municipal district, improvement district, special area or the rural service area of a specialized municipality;

(g) "sour gas" means gas containing hydrogen sulphide in concentrations of 10 or more moles per kilomole;

(h) "sour gas facility" means

(i) any of the following, if it emits, or on failure or on being damaged may emit, sour gas:

(A) a gas well as defined in the Oil and Gas Conservation Regulations (AR 151/71);

(B) a processing plant as defined in the Oil and Gas Conservation Act;

(C) a pipeline as defined in the Pipeline Act;

(ii) anything designated by the ERCB as a sour gas facility pursuant to section 3;

(i) "storage site" means a storage site as defined in the Waste Control Regulation (AR 192/96);

(j) "unsubdivided quarter section" means

(i) a quarter section, lake lot, river lot or settlement lot that has not been subdivided except for public or quasi public uses or only for a purpose referred to in section 618 of the Act, or

(ii) a parcel of land that has been created pursuant to section 86(2)(d) of the Planning Act RSA 1980 on or before July 6, 1988, or pursuant to section 29.1 of the Subdivision Regulation (AR 132/78), from a quarter section, lake lot, river lot or settlement lot if that parcel of land constitutes more than 1/2 of the area that was constituted by that quarter section, lake lot, river lot or settlement lot;

(k) "wastewater collection system" means a wastewater collection system as defined in the Wastewater and Storm Drainage Regulation (AR 119/93);

(l) "wastewater treatment plant" means a wastewater treatment plant as defined in the Wastewater and Storm Drainage Regulation (AR 119/93);

(m) "water distribution system" means a water distribution system as defined in the Environmental Protection and Enhancement Act.

(2) The definitions in Part 17 of the Act and section 1 of the Act, to the extent that they do not conflict with Part 17, apply to this Regulation.

AR 43/2002 s1;254/2007

Bylaw, plan prevails

2 Nothing in this Regulation may be construed to permit a use of land unless that use of land is provided for under a statutory plan or is a permitted or discretionary use under a land use bylaw.

ERCB designations

3(1) The ERCB may designate any well, battery, processing plant or pipeline, as defined in the Oil and Gas Conservation Act, not included in section 1(1)(h)(i) as a sour gas facility for the purpose of this Regulation, if it emits, or on failure or on being damaged may emit, sour gas or gas containing hydrogen sulphide in concentrations of less than 10 moles per kilomole.

(2) The ERCB may designate as a sour gas facility for the purpose of this Regulation

(a) a well for which a well licence has been issued under the Oil and Gas Conservation Act,

(b) a battery as defined in the Oil and Gas Conservation Act the location and construction of which has been approved by the ERCB,

(c) a processing plant as defined in the Oil and Gas Conservation Act forming part of a gas processing scheme approved by the ERCB under that Act, or

(d) a pipeline for which a permit has been issued under the Pipeline Act, if the operation of the well, battery, processing plant or pipeline has not commenced at the time the designation is made and the ERCB is satisfied that when it is in operation it will emit, or on failure or on being damaged may emit, sour gas or gas containing hydrogen sulphide in concentrations of less than 10 moles per kilomole.

(3) The ERCB must furnish a copy of each designation and each revocation of a designation made by it under this section to the municipality where the affected sour gas facility is or is to be located.

AR 43/2002 s3;254/2007

Part 1

Subdivision Applications

Application

4(1) The owner of a parcel of land, or a person authorized by the owner of a parcel of land, may apply for subdivision of that parcel of land by submitting a complete application for subdivision to the appropriate subdivision authority.

(2) A complete application for subdivision consists of

(a) a completed application for subdivision in the form set out in the Subdivision and Development Forms Regulation,

(b) a proposed plan of subdivision or other instrument that effects a subdivision,

(c) the required fee,

(d) a copy of the current land title for the land that is the subject of an application, and

(e) at the discretion of the subdivision authority, the information required under subsections (3) and (4).

(3) The applicant must submit the number of sketches or plans of the proposed subdivision that the subdivision authority requires, drawn to the scale that the subdivision authority requires,

(a) showing the location, dimensions and boundaries of

(i) the land that is the subject of the application,

(ii) each new lot to be created,

(iii) any reserve land,

(iv) existing rights of way of each public utility, and

(v) other rights of way,

(b) clearly outlining the land that the applicant wishes to register in a land titles office,

(c) showing the location, use and dimensions of buildings on the land that is the subject of the application and specifying those buildings that are proposed to be demolished or moved,

(d) showing the approximate location and boundaries of the bed and shore of any river, stream, watercourse, lake or other body of water that is contained within or bounds the proposed parcel of land,

(e) if the proposed lots or the remainder of the titled area are to be served by individual wells and private sewage disposal systems, showing

(i) the location of any existing or proposed wells, and

(ii) the location and type of any existing or proposed private sewage disposal systems, and the distance from these to existing or proposed buildings and property lines, and

(f) showing the existing and proposed access to the proposed parcels and the remainder of the titled area.

(4) The applicant must submit

(a) if a proposed subdivision is not to be served by a water distribution system, a report that meets the requirements of section 23(3)(a) of the Water Act,

(b) an assessment of subsurface characteristics of the land that is to be subdivided including but not limited to susceptibility to slumping or subsidence, depth to water table and suitability for any proposed on site sewage disposal system,

(c) if a proposed subdivision is not to be served by a wastewater collection system, information supported by the report of a person qualified to make it respecting the intended method of providing sewage disposal facilities to each lot in the proposed subdivision, including the suitability and viability of that method, and

(d) a description of the use or uses proposed for the land that is the subject of the application.

(5) The subdivision authority may require an applicant for subdivision to submit, in addition to a complete application for subdivision, all or any of the following:

(a) a map of the land that is the subject of the application showing topographic contours at not greater than 1.5 metre intervals and related to the geodetic datum, where practicable;

(b) if the land that is the subject of an application is located in a potential flood plain and flood plain mapping is available, a map showing the 1:100 flood;

(c) information respecting the land use and land surface characteristics of land within 0.8 kilometres of the land that is the subject of the application;

(d) if any portion of the parcel of land that is the subject of the application is situated within 1.5 kilometres of a sour gas facility, information provided by the ERCB regarding the location of the sour gas facility;

(e) a conceptual scheme that relates the application to future subdivision and development of adjacent areas;

(f) any additional information required by the subdivision authority to determine whether the application meets the requirements of section 654 of the Act.

AR 43/2002 s4;254/2007

Application referrals

5(1) For the purposes of subsection (5)(d)(i) and (5)(i), "adjacent" means contiguous or would be contiguous if not for a river, stream, railway, road or utility right of way or reserve land.

(2) For the purposes of subsection (5)(e)(i), "adjacent" means contiguous or would be contiguous if not for a railway, road or utility right of way or reserve land.

(3) For the purposes of subsection (5)(m), "adjacent land" means land that is contiguous to the land that is the subject of the application and includes

(a) land that would be contiguous if not for a highway, road, river or stream, and

(b) any other land identified in a land use bylaw as adjacent land for the purpose of notifications under section 692 of the Act.

(4) For the purposes of subsection (5)(e)(ii), the Deputy Minister of the Minister responsible for administration of the Public Lands Act may, in an agreement with a municipality, further define the term "body of water" but the definition may not include dugouts, drainage ditches, man made lakes or other similar man made bodies of water.

(5) On receipt of a complete application for subdivision, the subdivision authority must send a copy to

(a) each school authority that has jurisdiction in respect of land that is the subject of the application, if the application may result in the allocation of reserve land or money in place of reserve land for school purposes;

(b) the Deputy Minister of Environment if any of the land that is the subject of the application is within the distances referred to in section 12 or 13;

(c) if the proposed subdivision is to be served by a public utility, as defined in the Public Utilities Act, the owner of that public utility;

(d) the Deputy Minister of Transportation if the land that is the subject of the application is not in a city and

(i) is adjacent to a highway where the posted speed limit is less than 80 kilometres per hour, or

(ii) is within 0.8 kilometres of the centre line of a highway right of way where the posted speed limit is 80 kilometres per hour or greater, unless a lesser distance is agreed to by the Deputy Minister of Transportation and the municipality in which the land that is the subject of the application is located;

(e) the Deputy Minister of the Minister responsible for administration of the Public Lands Act if the proposed parcel

(i) is adjacent to the bed and shore of a river, stream, watercourse, lake or other body of water, or

(ii) contains, either wholly or partially, the bed and shore of a river, stream, watercourse, lake or other body of water;

(f) the Deputy Minister of the Minister responsible for the administration of the Public Lands Act, if the land that is the subject of the application is within the Green Area, being that area established by Ministerial Order under the Public Lands Act dated May 7, 1985, as amended or replaced from time to time except that for the purposes of this Regulation, the Green Area does not include,

(i) land within an urban municipality, and

(ii) any other land that the Deputy Minister of the Minister responsible for the administration of the Public Lands Act states, in writing, may be excluded;

(g) the ERCB, in accordance with section 10(1);

(h) the Deputy Minister of Environment if any of the land that is the subject of the application is situated within a Restricted Development Area established under Schedule 5 of the Government Organization Act;

(i) the Deputy Minister of Environment, if any of the land that is the subject of the application is adjacent to works, as defined in the Water Act, that are owned by the Crown in right of Alberta;

(j) the Deputy Minister of the Minister responsible for the administration of the Historical Resources Act if

(i) the Deputy Minister has supplied the subdivision authority with a map showing, or the legal description of,

(A) the location of each Registered Historic Resource and Provincial Historic Resource under the Historical Resources Act or other significant historic site or resource identified by the Deputy Minister, and

(B) the public land set aside for use as historical sites under the Public Lands Act, within the jurisdiction of the subdivision authority, and the land that is the subject of the application is within a rural municipality and 0.8 kilometres of a site referred to in paragraph (A) or (B), or is within an urban municipality and 60 metres of a site referred to in paragraph (A) or (B),

or

(ii) the Deputy Minister and the municipality have agreed in writing to referrals in order to identify and protect historical sites and resources within the land that is the subject of the application;

(k) if the land is situated within an irrigation district, the board of directors of the district;

(l) the municipality within which the land that is the subject of the application is located if the council, municipal planning commission or a designated officer of that municipality is not the subdivision authority for that municipality;

(m) each municipality that has adjacent land within its boundaries, unless otherwise provided for in the applicable municipal or intermunicipal development plan;

(n) any other persons and local authorities that the subdivision authority considers necessary.

(6) Notwithstanding subsection (5), a subdivision authority is not required to send an application for a subdivision described in section 652(4) of the Act to any person referred to in subsection (5).

(7) Notwithstanding subsection (5), a subdivision authority is not required to send a complete copy of an application for subdivision to any person referred to in subsection (5) if the land that is the subject of the application is contained within

(a) an area structure plan, or

(b) a conceptual scheme described in section 4(5)(e) that has been referred to the persons referred to in subsection (5).

AR 43/2002 s5;105/2005;196/2006;254/2007;68/2008

Decision time limit

6 A subdivision authority must make a decision on an application for subdivision within

(a) 21 days from the date of receipt of the completed application in the case of a completed application for a subdivision described in section 652(4) of the Act if no referrals were made pursuant to section 5(6),

(b) 60 days from the date of receipt of any other completed application under section 4(1), or

(c) the time agreed to pursuant to section 681(1)(b) of the Act.

Relevant considerations

7 In making a decision as to whether to approve an application for subdivision, the subdivision authority must consider, with respect to the land that is the subject of the application,

(a) its topography,

(b) its soil characteristics,

(c) storm water collection and disposal,

(d) any potential for the flooding, subsidence or erosion of the land,

(e) its accessibility to a road,

(f) the availability and adequacy of a water supply, sewage disposal system and solid waste disposal,

(g) in the case of land not serviced by a licensed water distribution and wastewater collection system, whether the proposed subdivision boundaries, lot sizes and building sites comply with the requirements of the Private Sewage Disposal Systems Regulation (AR 229/97) in respect of lot size and distances between property lines, buildings, water sources and private sewage disposal systems as identified in section 4(4)(b) and (c),

(h) the use of land in the vicinity of the land that is the subject of the application, and

(i) any other matters that it considers necessary to determine whether the land that is the subject of the application is suitable for the purpose for which the subdivision is intended.

Reasons for decision

8 The written decision of a subdivision authority provided under section 656 of the Act must include the reasons for the decision, including an indication of how the subdivision authority has considered

(a) any submissions made to it by the adjacent landowners, and

(b) the matters listed in section 7.

Part 2

Subdivision and Development Conditions

Road access

9 Every proposed subdivision must provide to each lot to be created by it

(a) direct access to a road, or

(b) lawful means of access satisfactory to the subdivision authority.

Sour gas facilities

10(1) A subdivision authority must send a copy of a subdivision application and a development authority must send a copy of a development application for a development that results in a permanent additional overnight accommodation or public facility, as defined by the ERCB, to the ERCB if any of the land that is subject to the application is within 1.5 kilometres of a sour gas facility or a lesser distance agreed to, in writing, by the ERCB and the subdivision authority.

(2) If a copy of a subdivision application or development application is sent to the ERCB, the ERCB must provide the subdivision authority or development authority with its comments on the following matters in connection with the application:

(a) the ERCB's classification of the sour gas facility;

(b) minimum development setbacks necessary for the classification of the sour gas facility.

(3) A subdivision authority and development authority shall not approve an application that does not conform to the ERCB's setbacks unless the ERCB gives written approval to a lesser setback distance.

(4) An approval under subsection (3) may refer to applications for subdivision or development generally or to a specific application.

AR 43/2002 s10;254/2007

Gas and oil wells

11(1) A subdivision application or a development application shall not be approved if it would result in a permanent additional overnight accommodation or public facility, as defined by the ERCB, being located within 100 metres of a gas or oil well or within a lesser distance approved in writing by the ERCB.

(2) For the purposes of this section, distances are measured from the well head to the building or proposed building site.

(3) In this section, "gas or oil well" does not include an abandoned well as defined by the ERCB.

(4) An approval of the ERCB under subsection (1) may refer to applications for subdivision or development generally or to a specific application.

AR 43/2002 s11;254/2007

Distance from wastewater treatment

12(1) In this section, "working area" means those areas of a parcel of land that are currently being used or will be used for the processing of wastewater.

(2) Subject to subsection (5), a subdivision authority shall not approve an application for subdivision for school, hospital, food establishment or residential use unless, on considering the matters referred to in section 7, each proposed lot includes a suitable building site for school, hospital, food establishment or residential use that is 300 metres or more from the working area of an operating wastewater treatment plant.

(3) Subject to subsection (5), a development authority shall not issue a development permit for a school, hospital, food establishment or residence within 300 metres of the working area of an operating wastewater treatment plant nor may a school, hospital, food establishment or residence be constructed if the building site is within 300 metres of the working area of an operating wastewater treatment plant.

(4) Subject to subsection (5), a subdivision authority shall not approve an application for subdivision for the purposes of developing a wastewater treatment plant and a development authority may not issue a permit for the purposes of developing a wastewater treatment plant unless the working area of the wastewater treatment plant is situated at least 300 metres from any school, hospital, food establishment or residence or building site for a proposed school, hospital, food establishment or residence.

(5) The requirements contained in subsections (2) to (4) may be varied by a subdivision authority or a development authority with the written consent of the Deputy Minister of Environment.

(6) A consent under subsection (5) may refer to applications for subdivision or development generally or to a specific application.

Distance from landfill, waste sites

13(1) In this section,

(a) "disposal area" means those areas of a parcel of land

(i) that have been used and will not be used again for the placing of waste material, or

(ii) where waste processing or a burning activity is conducted in conjunction with a hazardous waste management facility or landfill;

(b) "working area" means those areas of a parcel of land

(i) that are currently being used or that still remain to be used for the placing of waste material, or

(ii) where waste processing or a burning activity is conducted in conjunction with a hazardous waste management facility, landfill or storage site.

(2) Subject to subsection (5), a subdivision authority shall not approve an application for subdivision for school, hospital, food establishment or residential use if the application would result in the creation of a building site for any of those uses

(a) within 450 metres of the working area of an operating landfill,

(b) within 300 metres of the disposal area of an operating or non operating landfill,

(c) within 450 metres of the disposal area of a non operating hazardous waste management facility, or

(d) within 300 metres of the working area of an operating storage site.

(3) Subject to subsection (5), a development authority shall not issue a development permit for a school, hospital, food establishment or residence, nor may a school, hospital, food establishment or residence be constructed if the building site

(a) is within 450 metres of the working area of an operating landfill,

(b) is within 300 metres of the disposal area of an operating or non operating landfill,

(c) is within 450 metres of the disposal area of a non operating hazardous waste management facility, or

(d) is within 300 metres of the working area of an operating storage site.

(4) Subject to subsection (5), a subdivision authority shall not approve an application for subdivision, and a development authority shall not issue a permit, for the purposes of developing a landfill, hazardous waste management facility or storage site unless

(a) the working area of a landfill is situated at least 450 metres,

(b) the disposal area of a landfill is situated at least 300 metres,

(c) the working or disposal area of a hazardous waste management facility is situated at least 450 metres, and

(d) the working area of a storage site is situated at least 300 metres from the property line of a school, hospital, food establishment or residence or building site proposed for a school, hospital, food establishment or residence.

(5) The requirements contained in subsections (1) to (4) may be varied by a subdivision authority or a development authority with the written consent of the Deputy Minister of Environment.

(6) A consent under subsection (5) may refer to applications for subdivision or development generally or to a specific application.

Distance from highway

14 Subject to section 16, a subdivision authority shall not in a municipality other than a city approve an application for subdivision if the land that is the subject of the application is within 0.8 kilometres of the centre line of a highway right of way where the posted speed limit is 80 kilometres per hour or greater unless

(a) the land is to be used for agricultural purposes on parcels that are 16 hectares or greater,

(b) a single parcel of land is to be created from an unsubdivided quarter section to accommodate an existing residence and related improvements if that use complies with the land use bylaw,

(c) an undeveloped single residential parcel is to be created from an unsubdivided quarter section and is located at least 300 metres from the right of way of a highway if that use complies with the land use bylaw,

(d) the land is contained within an area where the municipality and the Minister of Transportation have a highway vicinity management agreement and the proposed use of the land is permitted under that agreement, or

(e) the land is contained within an area structure plan satisfactory to the Minister of Transportation and the proposed use of the land is permitted under that plan.

AR 43/2002 s14;105/2005;68/2008

Service roads

15(1) In this section, "provide" means dedicate by caveat or by survey or construct, as required by the subdivision authority.

(2) Subject to section 16, if the land that is the subject of an application for subdivision is within an area described in section 5(5)(d), a service road satisfactory to the Minister of Transportation must be provided.

(3) Subsection (2) does not apply if the proposed parcel complies with section 14 and access to the proposed parcel of land and remnant title is to be by means other than a highway.

AR 43/2002 s15;105/2005;68/2008

Waiver

16(1) The requirements of sections 14 and 15 may be varied by a subdivision authority with the written approval of the Minister of Transportation.

(2) An approval under subsection (1) may refer to applications for subdivision generally or to a specific application.

AR 43/2002 s16;105/2005;68/2008

Additional reserve

17(1) In this section, "developable land" has the same meaning as it has in section 668 of the Act.

(2) The additional municipal reserve, school reserve or school and municipal reserve that may be required to be provided by a subdivision authority under section 668 of the Act may not exceed the equivalent of

(a) 3% of the developable land when in the opinion of the subdivision authority a subdivision would result in a density of 30 or more dwelling units per hectare of developable land but less than 54 dwelling units per hectare of developable land, or

(b) 5% of the developable land when in the opinion of the subdivision authority a proposed subdivision would result in a density of 54 or more dwelling units per hectare of developable land.

Security conditions

18(1) A development authority may

(a) require an applicant for a development permit to provide information regarding the security and crime prevention features that will be included in the proposed development, and

(b) attach conditions to the development permit specifying the security and crime prevention features that must be included in the proposed development.

(2) Subsection (1) applies even if the land use bylaw does not provide for those conditions to be attached to a development permit.

Approval by council not part of development permit application

18.1 A development authority may not require, as a condition of a completed development permit application, the submission to and approval by council of a report regarding the development.

AR 193/2010 s2

Part 3

Registration, Endorsement

Registration

19 On a proposed plan of subdivision,

(a) environmental reserve must be identified by a number with the suffix "ER";

(b) municipal reserve must be identified by a number with the suffix "MR";

(c) school reserve must be identified by a number with the suffix "SR";

(d) municipal and school reserve must be identified by a number with the suffix "MSR";

(e) a public utility lot must be identified by a number with the suffix "PUL".

Deferral

20 If a subdivision authority orders that the requirement to provide all or part of municipal reserve, school reserve or municipal and school reserve be deferred, the caveat required to be filed under section 669 of the Act must be in the deferred reserve caveat form set out in the Subdivision and Development Forms Regulation.

Endorsement

21 When a subdivision authority endorses an instrument pursuant to section 657 of the Act, the endorsement must contain at least the following information:

(a) the percentage of school reserve or municipal reserve or municipal and school reserve required to be provided under the Act, if any;

(b) the percentage of money required to be provided in place of all or part of the reserve land referred to in clause (a), if any;

(c) the percentage of reserve land referred to in clause (a) ordered to be deferred, if any;

(d) the area covered by an environmental reserve easement, if any.

Part 4

Provincial Appeals

MGB distances

22(1) The following are the distances for the purposes of section 678(2)(a) of the Act with respect to land that is subject to an application for subdivision:

(a) the distance with respect to a body of water described in section 5(5)(e);

(b) the distance, from a highway, described in section 14 or the distance, from a highway, described in an agreement under section 5(5)(d)(ii);

(c) the distance, described in section 12, from a wastewater treatment plant;

(d) the distances, described in section 13, from the disposal area and working area of a waste management facility.

(2) For the purposes of this section,

(a) "wastewater treatment plant" means a sewage treatment facility;

(b) "waste management facility" means a landfill, hazardous waste management facility or storage site.

Part 5

Transitional Provisions, Repeal, Expiry and Coming into Force

Transitional

23 An application for subdivision made under the Subdivision and Development Regulation (AR 212/95) and received by the appropriate subdivision authority on or before June 30, 2002 shall be continued to its conclusion under that Regulation as if that Regulation had remained in force and this Regulation has not come into force.

Repeal

24 The Subdivision and Development Regulation (AR 212/95) is repealed.

Expiry

25 For the purpose of ensuring that this Regulation is reviewed for ongoing relevancy and necessity, with the option that it may be repassed in its present or an amended form following a review, this Regulation expires on June 30, 2011.

AR 43/2002 s25;126/2007;144/2009

Coming into force

26 This Regulation comes into force on July 1, 2002.