Sections 53, 54, 55 and 56
Ontario Water Resources Act
R.S.O. 1990

GUIDE FOR APPLYING
FOR
APPROVAL OF
SEWAGE WORKS

Version 1.0

CONTENTS OF THIS DOCUMENT ARE SUBJECT TO CHANGE WITHOUT FURTHER NOTICE

PIBS 7339e
The Ministry of the Environment’s (Ministry) approvals program requires that all undertakings requiring approval under Ministry legislation are carried out in accordance with the Acts and applicable regulations and guidelines administered by the Ministry. These requirements are updated from time to time by the Ministry as environmental standards and environmental management approaches are modified.

As requirements are changed, the information needed to demonstrate compliance with them may also change. In recognition of this, the Ministry will update this Guide regularly to ensure that it provides accurate guidance relating to current policies, Acts, regulations and application requirements. All website addresses referred to in this Guide were current at the time of release.

While every effort has been made to ensure the accuracy of the information contained in this Guide, it should not be construed as legal advice.

To obtain an updated copy of this Guide, please visit the Ministry’s website at www.ene.gov.on.ca/en/publications/forms/index.php

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- Guide for Applying for Approval of Industrial Sewage Works, November 1999, PIBS 3070e01; and
- Guide for Applying for Approval of Municipal and Private Water and Sewage Woks, August 2000, PIBS 4063e.

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INTRODUCTION

Purpose

This Guide is intended to provide guidance to Applicants of sewage works, when requesting approval under section 53 of the Ontario Water Resources Act, R.S.O. 1990, Chapter O.40 (OWRA). This Guide describes the approval process in general, clarifies the information required by the application form and specifies the technical information that may be required in support of the application.

Background

The mandate of the Ministry of the Environment (Ministry) is to ensure the protection, and where degraded, rehabilitation of the natural environment. This mandate also includes preservation of material resources for the enjoyment and benefit of present and future generations, both human and animal.

This mandate is sanctioned by several pieces of legislation in the Province of Ontario, which include the Ontario Water Resources Act (OWRA), the Environmental Protection Act (EPA), the Pesticides Act (PA), the Safe Drinking Water Act, 2002 (SDWA), the Nutrient Management Act, 2002 (NMA), the Environmental Assessment Act (EAA), and the Environmental Bill of Rights, 1993 (EBR), together with numerous regulations made under these Acts.

These Acts and regulations establish the authority and responsibility of the Ministry, the legal requirements for Applicants of various proposals, obligations of the owners of existing facilities and equipment with respect to their impact on public health and the environment, and the rights of residents of Ontario with respect to those proposals, facilities and equipment. These requirements and rights include the need to obtain approvals or permits prior to the implementation of proposals that may have the potential to impact public health and/or the environment, and include the right of the residents of Ontario to be made aware of proposals in order that the public has the opportunity to comment on those proposals.

The statutory requirement for sewage works approvals is contained in section 53 of the OWRA. Section 53 requires that approval be obtained from the Director before establishing, altering, extending or replacing a sewage works.

Ontario Regulation 525/98, Approval Exemptions, made under the OWRA, exempts certain minor sewage works from the approval requirements of the Act. These exempted works include sewer service connections and appurtenances, and same size and capacity replacement sewers (not including combined sewers), as well as stormwater management facilities designed to serve a single lot or parcel of land (excluding industrial land) and discharging into a storm sewer (but not a combined sewer).

In 1998, amendments to the OWRA and the EPA have brought under the jurisdiction of the OWRA, in addition to other changes, the construction and operation of large (design flow capacities more than 10,000 L/d) sewage collection and treatment systems with subsurface effluent disposal (e.g., septic tank and leaching bed systems), previously approved under Part VIII of the EPA by the local Health Units and Regional Offices of the Ministry.
How to Use this Guide

Applicants should be aware that, in addition to the approvals and permits required by the Ministry, other Ontario ministries and other levels of government (e.g., federal or municipal) may have approval or permit requirements. It must be emphasized that approval under one Act does not abrogate the requirement to obtain approval under other Acts or any other legislation. For example, in addition to approvals under the EAA and section 53 of the OWRA, the proposal may require approvals under section 9 of the EPA for discharge of contaminants, including noise, into the natural environment as well as under Part V of the EPA for waste disposal sites. The local District Office of the Ministry can help Applicants determine what approvals are required.

It is the Applicant's responsibility to be aware of and to understand all legal requirements of the OWRA and other applicable legislation. Applicants should refer to the Acts and regulations for a comprehensive review of those requirements. Similarly, for an in-depth understanding of the Ministry’s guidelines and procedures, Applicants should refer to the publications section on the Ministry’s website at www.ene.gov.on.ca/en/publications/forms/index.php.

Reference Documents

The Ministry has developed examples of high quality and complete application packages for various activities that are subject to the requirement to obtain a Certificate of Approval (C of A), including applications for Sanitary and Stormwater Collection Systems and Stormwater Management Facilities. The sample application package includes completed forms and all supporting documentation that is required for that specific type of application.

These examples have been developed as a means to establish a common expectation for the level of documentation that is required to demonstrate compliance in order to obtain a C of A. They have been developed for the benefit of Applicants to illustrate the approval requirements for a typical application. Additional technical information and documents may be required for a site-specific situation depending on the nature of the application that is to be submitted.


Throughout this Guide there are references to supporting documentation, either Ministry publications or pieces of legislation, which Applicants are encouraged to review. To obtain supporting documentation published by the Ministry, please refer to the publications section on the Ministry’s website at www.ene.gov.on.ca/en/publications/forms/index.php or contact the Environmental Assessment and Approvals Branch by telephone at 416-314-8001 (toll free at 1-800-461-6290) or by e-mail to eaabgen.moe@ontario.ca. To access legislation, please visit Ontario’s e-Laws website at www.e-laws.gov.on.ca, contact ServiceOntario by telephone at 416-326-5300 (toll free at 1-800-668-9938) or by e-mail to e-laws@ontario.ca.
PART 1 SEWAGE WORKS APPROVAL PROCESS

1.1 Penalty for False Information

Applicants are reminded that it is an offence under section 98 of the OWRA to knowingly give false information to the Ministry in respect to matters under the Act or regulations. Penalties for this and other violations could result in fines of up to $4,000,000 for the first conviction and up to $6,000,000 for each subsequent conviction where the offence is committed by an individual, and $6,000,000 and $10,000,000 respectively where the offence is committed by a corporation.

1.2 Application Preparation

The Applicant is responsible for preparing a complete application in order to obtain approval under section 53 of the OWRA. The work to be completed in this stage is independent of the Ministry process, and timing will be highly variable based on the available resources and background information provided by the Applicant.

1.2.1 Pre-Application Consultation

Pre-application consultation is a dialogue between the Applicant, the Ministry, and possibly other stakeholders prior to the submission of an application for approval. Pre-application consultation is meant to assist Applicants in defining the environmental objectives for the project, such as effluent requirements, establishing general acceptability of the proposal, identifying any special approval related requirements and determining the need for public notification and consultation.

1.2.1.1 Consultation with the Ministry of the Environment

Where pre-application consultation is required or desired, it should be initiated by contacting the local District Office of the Ministry serving the area in which the proposed sewage works is to be located. The District Office may call upon or direct the Applicant to other offices, branches or sections of the Ministry which may play a role in the approval process. To find the appropriate Ministry District Office, please visit the Ministry’s website at www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist.

In the pre-application consultation with the Ministry, the Applicant should be prepared to discuss the nature of the proposal, identifying in general the proposed processes, sewage treatment and disposal options, expected effluent quality and environmental impacts, location of the proposed discharge point and any applicable requirements under other statutes, including EBR and EAA requirements, if applicable, and any confidential information concerns. The Ministry will assist the Applicant in identifying all provincial environmental legislation, policies, objectives, guidelines and procedures applicable to the project; provide information on applicable public consultation and notification requirements under the EBR and EAA; and discuss with the Applicant the need for, and the scope and specifics of, the various types of information and documentation which may be required to be submitted with the application (e.g., scope of any required groundwater or surface water impact assessment, financial assurance requirements).

As a result of pre-application consultation, Applicants will be better prepared to develop the environmental objectives (including public health) for the project with a clear understanding of
the Ministry’s requirements and complete any required public consultation process (especially any process required under the EAA). The Applicant will also be better able to design the facility to meet these objectives and address potential public concerns and will therefore submit a more complete application.

In accordance with the Ministry’s Procedure D-5-2 entitled, “Application of Municipal Responsibility for Communal Water and Sewage Services”, the Ministry requires municipal ownership and responsibility for operation and maintenance of proposed new communal sewage works as well as the existing privately-owned communal sewage works when they are proposed for expansion. In addition, municipal responsibility is for privately-owned large subsurface communal works that service permanent full-time or seasonal residential uses, or other occupancy as determined by Ministry staff. Where municipal ownership of communal works cannot be achieved, this issue must be addressed in pre-application consultation with the local District Office of the Ministry and resolved prior to submitting an application for approval of the works. The signed Municipal Responsibility Agreement (MRA) should be included with the application for the communal system.

1.2.1.2 Consultation with Local Municipality

The Applicant should meet with the municipality and resolve municipal issues including the requirements for source protection, when applicable, including restricted land uses as identified for purposes of section 59 of the Clean Water Act, 2006 (CWA), prior to submitting an application. This also includes confirming with the municipality that the zoning in place is consistent with the proposed use of the land.

As part of the review process, municipalities are asked to provide comments to the Ministry regarding the application. Consultation with the municipality prior to the submission of the application will work to ensure that issues contentious to the municipality have been resolved prior to Ministry review. Applications for Comprehensive Certificate of Approval for a sewage works include a mandatory municipal consultation component. Please refer to Section 4 of this Guide for additional details.

Applications with inadequate zoning will be considered incomplete and the application will be returned minus the non-refundable administrative processing fee.

The Applicant must provide a copy of the complete application package to the municipality and the Ministry District Office at the time of submission.

1.2.1.3 Public Notification/Consultation

Applicants must carry out public notification in accordance with the requirements of the EBR. Applications for sewage works are “Class II Proposals” if the sewage works approval is intended to set new or increase existing limits on the discharge of specific contaminants from a discharge point to surface waters. Applications for sewage works are “Class III Proposals” if the sewage works crosses a municipal boundary or requires a hearing under the OWRA. The EBR also includes provisions for a proposal for a sewage works being excepted from the requirement for public participation. Please refer to the Ministry’s guide entitled, “The Requirements of the Environmental Bill of Rights for Prescribed Instruments” (November 1994), PIBS 3323e for additional details regarding the applicability of the EBR to a specific sewage works application.
Class II Proposals must be posted for a minimum of 30 days on the Environmental Registry and must include at least one of the following additional forms of public consultation:

- news release;
- notice through news media;
- door to door flyers;
- signs;
- mailings to the public;
- notice to community leaders and political representatives;
- notice to community organizations;
- notice on the Environmental Registry, additional to the minimum 30 days; or
- any other means of notice that would facilitate more informed public participation in the decision-making process.

The specific requirements for public participation are determined by the details of the proposed facility, including but not limited to: proposed facility operation, site location, and surrounding community and stakeholder interests. Applicants should consult with their local District Office of the Ministry to determine what level of stakeholder and community consultation will be required for their proposed facility.

Class III Proposals must be posted for a minimum of 30 days on the Environmental Registry and must include a public hearing.

It is expected that the Applicant will carry out the public notification and/or stakeholder consultation prior to the submission of the application and that stakeholder concerns expressed through the process are addressed (as appropriate) in the application. The posting of the proposal on the Environmental Registry is the only exception to the above requirement.

The Ministry may advise an Applicant at any time during the review process to carry out additional public consultation, including consultation with Aboriginal people, for reasons that include environmental significance, complexity of the proposal, public interest and to provide time for the public to make informed comments.

It is important to note that the onus for completing adequate public consultation and notification is on the Applicant and not the Ministry.

Please refer to Part 2 of this Guide for additional details regarding the EBR requirements.

### 1.2.2 Environmental Assessment

Under the EAA it is prohibited to grant an approval under any Ontario statute for an undertaking subject to the EAA unless all applicable requirements of the EAA have first been satisfied. Therefore, the Director cannot grant an approval under section 53 of the OWRA until all requirements under the EAA have been fulfilled.

In the Environmental Assessment Act (EAA) Requirements section, the Applicant must indicate whether the proposal is subject to the EAA, and if so, how the applicable EAA requirements have been fulfilled. One of the following options provided in the application form must be checked, and where applicable, the required additional information must be provided:
1. The undertaking is subject to the EAA but **exempt from its requirements under a Regulation or an Exemption Order made under the EAA.**
   [Note: The applicable exempting Regulation or Order must be identified. If the Regulation or Order does not refer to the proposed works directly, the Applicant must enclose with the application a written rationale for the assumption that Regulation or Order does apply to the works.]

2. The undertaking is subject to the EAA and is **proceeding under the “Class Environmental Assessment for Municipal Water and Wastewater Projects” (Class EA) prepared by the Municipal Engineers Association of Ontario.**
   [Note: Schedule A, A+, B or C, under which the undertaking is categorized in the Class EA document with respect to the magnitude of its potential environmental impact, must be identified.]

3. The undertaking is subject to the EAA and is **proceeding under** an individual environmental assessment (EA) process approved by a **signed Notice of Approval.**
   [Note: The Notice must be identified in the space provided, and a copy enclosed with the application.]

4. The undertaking is **not subject to the EAA.**
   [Note: The Act stipulates that a project is subject to the requirements of the EAA if it is undertaken by a provincial or municipal government or any of their agencies, or if the project is specifically designated by the EAA, or a regulation issued under the EAA, to be subject to the requirements.]

   **Note:** Under the EAA it is prohibited to grant an approval under any Ontario statute for an undertaking subject to the EAA unless all applicable requirements of the EAA have been first satisfied. Applications for OWRA approval for proposals subject to the EAA requirements will be closed (cancelled) if it is determined that the applicable EA process has not been completed. For further clarification of the requirements of the EAA, please refer to “Environmental Assessment Act (EAA)”.

Applications for approval of proposals subject to EAA will be returned to the Applicant if it is determined that the applicable EA process has not been completed.

### 1.2.3 Mandatory and Discretionary Hearings

Applications submitted under section 53 of the OWRA may be subject to a mandatory hearing or a discretionary hearing. Pursuant to section 54 of the OWRA, where the proposed sewage works would cross any municipal boundaries, a public hearing is mandatory. Other proposals for sewage works are subject to a discretionary hearing pursuant to section 55 of the OWRA.

If a mandatory hearing is required, the Applicant will be notified in advance and will be requested to pay the hearing fee. A decision on whether a discretionary hearing will be required for a particular proposal will be made by the Director prior to granting approval.
1.3 Approval Process

The approval process generally consists of pre-application consultation, review of application, and issuance of approval. These steps are outlined below to give Applicants an understanding of the process requirements and enable them to account for those requirements in the scheduling of their projects in order to avoid unforeseen delays.

1.3.1 Screening of Applications for Approval

Upon receipt by the Environmental Assessment and Approvals Branch (EAAB) of the Ministry, the application is assigned to an Application Assessment Officer who screens it for completeness. If an application is grossly incomplete, it will be returned in its entirety.

All other applications undergo a detailed assessment of the entire submission for adequacy of the submitted fee, completeness of the application form, and presence of the required supporting information and documentation. If required, based on the results of the assessment of the submission, the Application Assessment Officer generates a letter of acknowledgement identifying the missing supporting information and documentation and the details of any fee discrepancy.

If the Applicant fails to submit the outstanding fee or address the request for additional information or documentation identified in the letter of acknowledgement within the time allowed, the Application Assessment Officer will initiate the process of cancelling the application and refunding the submitted application fee in the amount reduced by any applicable non-refundable portion of the fee, as stipulated in the fee regulation O. Reg. 364/98, Fees – Approvals.

Once it is ascertained that a submission is complete, including all appropriate fees, the submission is assigned to a Review Engineer.

For applications that are subject to the EBR requirements for public participation in the approval process, after mailing the letter of acknowledgement, the Application Assessment Officer would place the EBR Proposal for the application on the Environmental Registry (ER) for a minimum of 30-day public comment period. This ER notice to the public provides a summary of the proposal (application for approval), and identifies the locations where the complete application can be viewed and the end date of the public comment period. During this period, the public is given the opportunity to review the application and submit comments on the proposal to the Environmental Assessment and Approvals Branch of the Ministry. For applications subject to the EBR, the Director’s final decision on approval cannot be rendered until the notification period has expired and only after all relevant comments have been taken into consideration. This process runs concurrently with the technical review of the application.

1.3.2 Technical Review of Applications for Approval

Upon receipt of the application, Review Engineer will determine if the application requires any supplementary review (e.g., comments on the submitted environmental impact analysis from the Technical Support Section of the appropriate Regional Office of the Ministry) and if required, will request such reviews without delay.

During the technical review of an application, the EAAB Review Engineer will assess/consider:
a) The completeness and adequacy of the submitted application and supporting information.

b) The compliance of the proposal with the Ministry Acts, regulations, policies, objectives, and environmental guidelines.

c) The conformance of the design to the principles of sound engineering and environmental conservation.

d) The adequacy of controls and contingencies provided to facilitate the proper operation of the system.

e) The amount of financial assurance if required.

f) Comments and concerns of any supplementary reviewers provided by the Ministry District and Regional offices.

g) All public comments received during the public comment period identified in the Environmental Registry notice for the EBR Proposal, as applicable and/or during the supplementary public consultation.

h) Level of reliability and redundancy. Failure of any single component must not prevent the works from meeting its site-specific effluent objectives.

i) Monitoring/reporting. Frequency and number of parameters assessed according to the environmental sensitivity and expectations of compliance.

j) Process equipment sizing and selection.

k) Emergency and contingency plans.

Please note that if there is significant public comment/concern on a proposal, the Ministry may extend the posting beyond the minimum 30-day requirement. The Ministry may also require that additional public consultation be carried out by the Applicant including public meetings, open houses, etc. It is therefore in the interest of the Applicant to ensure that public consultation is completed prior to the submission of the application and that all concerns have been addressed.

Review Engineer will hold Applicants accountable to document compliance and are required to identify deficiencies in the application and supporting information.

During this review it may be determined that additional information is necessary for proper assessment of the application, or that the application involves aspects which require submission of additional fees. A failure to provide the additional information/fee requested within the Ministry stipulated timeline, or to work with the Ministry to negotiate a new timeline will result in the cancellation of the application.

If during the review a non-compliance with published Ministry requirements is identified, the Director will issue a non-compliance letter requiring a revision to the proposal. If the Applicant fails to revise the proposal so that compliance with the Ministry’s requirements is accomplished, the application will be refused in accordance with the process described below.

On case by case basis, the review of one application may be coordinated with the review of other applications from Air & Noise and/or Waste infrastructure. A coordinated approval means that when the review process is completed for all applications the Cs of A are issued simultaneously.
1.3.3 **Recommendation/Refusal for Approval**

Upon completion of the review, Review Engineer prepares a recommendation to the approving Director to either approve the application, in which case they would prepare a C of A, or to refuse the application. This recommendation considers the District Office input, the conclusions of any supplementary reviews, and all public and municipal input.

1.3.4 **Issuance of Approval**

Upon considering the recommendation, the approving Director may grant approval for the proposal or, if in his/her opinion it is in the public interest to do so, refuse to grant approval or grant approval on such terms and conditions as he/she deems necessary.

The Director may grant his/her approval of the proposal by issuing one of the following documents:

(i) A new C of A
   - Issued to approve the establishment of a new sewage works, or for expansions or alterations to existing unapproved facilities

(ii) An Amended C of A
   - Usually issued to approve expansion or alteration to existing previously approved sewage works
   - Revokes and replaces the existing C of A

(iii) A Notice amending an existing C of A
   - Usually issued to approve modifications to existing previously approved sewage works or modifications to the terms and conditions of an existing C of A
   - Becomes part of the C of A it amends

In granting an approval, the Director usually imposes terms and conditions on the C of A. These conditions cover the operation and performance of the sewage works and may cover such items as design, maintenance and operation of the sewage works and minimum performance requirements necessary to achieve compliance with the EPA and all applicable regulations and guidelines.

If an EBR Proposal Notice was posted, a Decision Notice on the final decision will be provided to the public via the Environmental Registry. The notice will include the outcome of the Ministry’s review of the application, how many comments were received on the proposal, as well as what impact these comments had on the decision to issue or refuse the C of A. If the decision was to approve a proposal, a copy of the C of A may be included in the Decision Notice posting.

1.3.5 **Appeal Provisions**

Section 100 of the OWRA allows the Applicant to request a hearing by the Environmental Review Tribunal (ERT) if the Director:

- Refuses to issue, grant or renew, or cancels, suspends or revokes a C of A;
- Imposes terms and conditions in issuing a C of A; or
• Alters the terms and conditions or imposes new terms and conditions on a C of A after it is issued.

In addition to the Applicant’s rights of appeal, residents of Ontario have third party appeal rights under the EBR and may ask the ERT for the opportunity to receive “leave to appeal” of a Director’s decision to approve a C of A within 15 days of the decision being posted on the Environmental Registry. For additional information regarding third party appeals please see the Ministry’s guide entitled, “The Requirements of the Environmental Bill of Rights for Prescribed Instruments”, PIBS 3323e.

1.4 Public Access to Application Information

The public release of information contained in application forms and documentation submitted in support of applications is subject to the provisions of the Freedom of Information and Protection of Privacy Act, R.S.O. 1990, and/or the Municipal Freedom of Information and Protection of Privacy Act, R.S.O. 1990. These Acts define what may and may not be disclosed to the public, and are used to assess all requests for information contained in the documents on file with an application for approval.

Information in the application form with the exception of an individual’s name and mobile phone number is not considered confidential and therefore can be released to the public upon request.

If an Applicant considers a component of the supporting documentation to be proprietary in nature, then the Applicant must clearly identify all sections of the supporting documentation which are to be considered confidential or proprietary. If during the EBR comment period a request from the public is made to view the file, the Ministry will make the non-confidential information available to the public without further notice to the Applicant. A request for the information that is marked confidential would be handled through the Freedom of Information (FOI) process. Requests to view the file submitted to the Ministry after the completion of the EBR comment period will also be handled through the FOI process.
PART 2  INSTRUCTIONS FOR COMPLETING THE APPLICATION FORM

2.1  General Instructions

Applicants are responsible for ensuring that they are working with the most recent “Application for Approval of Sewage Works” form, PIBS 7340e.

To obtain the application form and any supporting documentation, please refer to the publications section on the Ministry’s website at www.ene.gov.on.ca/en/publications/forms/index.php, contact the Environmental Assessment and Approvals Branch at the address below, or go to your nearest Ministry District Office.

Questions regarding completion and submission of this application should be directed to the Environmental Assessment and Approvals Branch of the Ministry at the address below.

Environmental Assessment and Approvals Branch
2 St. Clair Ave. W., Floor 12A
Toronto ON  M4V 1L5
Phone: 416-314-8001
Toll Free: 1-800-461-6290
E-mail: eaabgen.moe@ontario.ca

Subject to what is stated in Part 4 of this Guide regarding the Transfer of Review Program, a complete application package must be submitted to the Environmental Assessment and Approvals Branch.

A copy of the complete application package must also be submitted to the District Office of the Ministry in which the sewage works is/will be located. A covering letter addressed to the Director, Section 53, OWRA at the Environmental Assessment and Approvals Branch should indicate that a copy of the complete submission has been sent to the local District Office. To find the appropriate Ministry District Office please visit Ministry’s website at www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist.

Note: For applications involving sewage works with subsurface disposal of effluent (also known as "septic systems"), where a particular project requires submission of an environmental impact analysis report (i.e., a “reasonable use” assessment of the groundwater impact), this reasonable use assessment should include a hydrogeological assessment prepared by a qualified professional (e.g., a Professional Geoscientist or a Professional Engineer with expertise in groundwater). If the discharge is to a surface water receiver, an assimilative capacity assessment of the surface waters, together with the proposed effluent criteria for the works, two (2) copies of the report must be included with the application submitted to the Environmental Assessment and Approvals Branch. If the discharge of effluent to groundwater is in proximity to a surface water body, consultation should be made with Ministry District and Regional staff to determine whether a surface water impact assessment should also be undertaken.

2.2  Who Is the Applicant

The statutory requirement for sewage works approval is contained in section 53 of the OWRA. Section 53 requires that an approval be obtained from the Director before establishing, altering,
extending or replacing a new or existing sewage works. It is the Applicant’s responsibility to be aware of, and to understand all legal requirements of the OWRA and other applicable legislation. Applicants should refer to the Acts and regulations for a comprehensive review of those requirements or seek legal counsel.

The responsibility for obtaining approval for the sewage works lies with the owner of the proposed works. If the owner is a corporation, the person signing the application on behalf of the corporation must be an officer or director of the corporation as listed on the documents of incorporation, or must be an employee of the company who is specifically authorized by the corporation to do so. If the person signing the application is not an officer of the corporation, the application must be accompanied by a letter signed by an official of the corporation authorizing the person to act on its behalf for that purpose.

### 2.3 When to File Applications

Applicants are encouraged to submit their completed application as soon as possible in order to avoid delays in construction and operation. However, the submitted applications must be complete and they must include all relevant supporting documentation identified in this Guide and the application form. An application will be considered incomplete if it lacks finalized design plans. Incomplete applications will be cancelled and returned minus the non-refundable administrative processing fee.

The length of time required for the Ministry to review an application is dependent on several factors, including: the complexity of the proposed operation, the quality of the application and the associated documentation, the District Office and municipal concerns, and public interest in the application.

As described previously in this Guide, it is recommended that Applicants carry out pre-consultation with the local municipality and District Office prior to finalizing the application. It is expected that the submitted application package will address all relevant comments and concerns that were identified through the consultation process. Failure to undertake the pre-consultation and/or address the identified concerns may result in significant delays being incurred in the review process.

If the application is submitted before the proper zoning for the proposed location is in place, the application will be cancelled and returned including the application fee minus the non-refundable administrative processing fee.

Note: If the proposed activity is prohibited in an approved source protection plan in an area where this proposal is applicable, then the application will be cancelled and returned with fees minus the non-refundable administrative processing fee.

If the facility is subject to the EAA, applications for a C of A can only be submitted once all of the requirements of the EA process have been satisfied. Applications for facilities that have not met their EA requirements will be cancelled and returned minus the non-refundable administrative processing fee.
### 2.4 Completing the Application Form

The application form is organized into the following sections:

- Application Summary
- Section 1: Applicant Information
- Section 2: Project Information
- Section 3: Site Information
- Section 4: Facility Information
- Section 5: Regulatory Requirements
- Section 6: Supporting Information
- Payment Information
- Schedule A: Pipe Data Form

Several interactive features have been incorporated to assist the Applicant with completing the form. To take advantage of all these features, the form must be completed using version 8 or above of the Adobe Acrobat Reader software, available for free at [www.adobe.com](http://www.adobe.com). Some features may not work as expected in earlier versions of the program or other PDF reader software.

The form can be filled out and saved using the free Adobe Acrobat Reader software.

The form will calculate certain values based on the information entered by the user. For example, the cost associated with the application is calculated automatically by the form.

The Application Summary section of the form will indicate if any section of the form has not been completed. Each section of the form will be identified as complete (green checkmark) or incomplete (red X). The checkmark or X will appear on the left hand side of the form, next to the section heading. A corresponding checkmark or X will appear next to the section heading on the Application Summary page.

If a specific field or section of the form is not required to be completed, based on other information entered in the form, the user will be unable to enter information into the “not required” field(s). For example, if the user indicates that an address in the form is the same as the Applicant Physical Address then the same address information is not required a second time.

Please note that the majority of the ancillary explanatory information related to the actual completion of the application form has been imbedded in the electronic version of the form and can be accessed by clicking on the text description of the field. For example, clicking on the text field for “Applicant Name” will provide the user with a description of the information being requested in that field.

Note: If the form is being completed manually, the ancillary explanatory information is found in an appendix to the form.

The following sections describe in general terms what is required in the form. Additional explanatory information has been provided below for completing the “Application Summary” section and “Section 5: Regulatory Requirements”.
2.4.1 Application Summary

The Application Summary section is where the Project Name and Project Description Summary are identified for the proposal. This section of the form (electronic version only) will advise the Applicant whether the application is complete. The application costs summary is also included in this section. The application costs are generated automatically if the electronic version of the form is used.

If the form is being completed manually, the Applicant must calculate the costs using the form entitled, “Costs for OWRA s.53 Applications - Supplement to Application for Approval” (PIBS 4107e). The current version of this form can be obtained from the Ministry’s website at www.ene.gov.on.ca/en/publications/forms/index.php.

2.4.1.1 Completing the Project Description Summary

The Project Description Summary is a brief description (less than 100 words, if possible) summarizing the details of the proposed sewage works application. If the proposal is subject to requirements under the EBR, then the Project Description Summary will also serve as the EBR proposal abstract that will be posted on the Environmental Registry. The specific details of the proposal are not required, however the main or basic components, processes or items should be listed (i.e., size and/or treatment/processing capacity). A good Project Description/EBR proposal abstract uses simple, easy to understand language and avoids all technical jargon that may be difficult for some readers to understand.

The Project Description/EBR proposal abstract should include the following elements:

1. Type of sewage works
2. Size and/or treatment capacity
3. Service area
4. Brief description of processing operations
5. Receiver of effluent
6. Requested changes to terms and/or conditions of existing approval, (where the application is for an amendment to an existing approval).

For additional information, please refer to the Ministry’s guide entitled, “The Requirements of the Environmental Bill of Rights for Prescribed Instruments” (PIBS 3323e) on the Ministry’s website at www.ene.gov.on.ca/en/publications/forms/index.php.

2.4.2 Section 1: Applicant Information

Applicant Information is the information identifying the individual or organization having legal responsibility for the proposed works/facilities. Typically the Applicant is the legal owner of the works/facilities. All ancillary guidance required to complete this section is embedded in the application form.
2.4.3 Section 2: Project Information

Project Information is the information identifying the type of application for which the Applicant is applying. The identification of the Project Technical Information Contact is also identified. All ancillary guidance required to complete this section is embedded in the application form.

For information on an application for a Comprehensive Certificate of Approval, please refer to Section 4.1 of Part 4 of this Guide.

2.4.4 Section 3: Site Information

Site Information is the information identifying the location where the activity/works being applied for is to take place. This section also requires the Applicant to identify the owner of the property, to identify the operating authority for the sewage works, to indicate whether the sewage works is subject to development control under either the Niagara Escarpment Planning and Development Act or the Oak Ridges Moraine Conservation Act, 2001.

This section of the form also requires information regarding the relationship between the activities occurring or proposed at the sewage works and source protection requirements. Include in the application form the location of the sewage works in one of the 38 source protection areas in the province. In addition identify the specific vulnerable area, identified in a Ministry approved Assessment Report, within which the sewage works is located within the source protection area. This could be a wellhead protection area, intake protection zone, significant groundwater recharge area, or highly vulnerable aquifer.

The sewage works may have or propose to have several activities occurring on site that could be identified as threats to sources of drinking water in a Ministry approved Assessment Report. The only activities that are eligible for consideration to be a drinking water threat are within section 1.1 of Ontario Regulation 287/07 under the Clean Water Act, 2006. The tables of drinking water threats released by the province identify the circumstances and associated reference numbers for the activities that could be drinking water threats. Based on the specific circumstances associated with the activity (i.e., volume of effluent discharge, amount of fuel stored, etc.) and location of the activity (i.e., which vulnerable area and scoring associated with that area) the risk associated or type of drinking water threat is identified as significant, moderate or low. Each different activity is identified separately as a significant, moderate or low drinking water threat. Where activities are identified as significant drinking water threats there will be policies in Minister approved source protection plans that direct how those activities are to be risk managed. This will impact the content of the terms and conditions within the sewage works approval.

For more information about source protection, contact your local conservation authority or visit the Ministry’s website at www.ontario.ca/ONT/portal51/drinkingwater.

All ancillary guidance required to complete this section is embedded in the application form.

2.4.5 Section 4: Facility Information

This section of the form requires information to be provided regarding the type of sewage works, the name and type of receiver for the sewage effluent, the service area and whether waste disposal site leachate will be received at the facility. If the application involves storm/sanitary
sewers, ditches, forcemains and/or pumping stations, this section also requires the Applicant to fill out Schedule A of the application form entitled, “Pipe Data Form”. All ancillary guidance required to complete this section is embedded in the electronic application form.

2.4.6 **Section 5: Regulatory Requirements**

This section of the form requires the Applicant to identify whether the proposed sewage works is subject to the EAA and if applicable, whether the Applicant has fulfilled the obligations under the EAA. The Applicant is also required in this section to identify whether the sewage works being applied for is subject to a section 54 OWRA mandatory hearing. This section also requires the Applicant to identify whether the proposal is a prescribed instrument under the EBR and to provide the details of all public notification and consultation that the Applicant has completed.

2.4.6.1 **Section 5.2 – Environmental Bill of Rights (EBR) Requirements**

*Is this a proposal for a prescribed instrument under EBR?* The Applicant, after pre-consultation with the Ministry, must indicate whether the application is a proposal which is a prescribed instrument under the EBR.

All types of EBR prescribed instruments (i.e., the types of instrument proposals subject to any EBR requirements) are listed and classified in O. Reg. 681/94, Classification of Proposals for Instruments. In accordance with O. Reg. 681/94, section 53 OWRA approvals (sewage works approvals) are Class II or III EBR prescribed instruments only if the proposed sewage works are crossing a municipal boundary or if the sewage works approval is intended to set new or increase existing limits on the discharge of specific contaminants from a discharge point to surface waters.

*Is the proposal excepted from public participation?* The Applicant must indicate whether the proposal is believed to be excepted from the public participation requirement under the EBR. The EBR allows for exception from the public participation requirement only in specific situations as identified below. If none of the allowed reasons are applicable, the proposal cannot be excepted from public participation.

If the Applicant requests that the proposal be excepted from public participation, the Applicant must indicate which of the situations identified by the EBR as legitimate reasons for exception from the public participation requirement are applicable to the proposal. One of the following options (reasons) provided in the application form must be checked and where applicable, all required additional information must be provided.

Legitimate reasons for exception from the public participation requirement are as follows:

1. **Equivalent Public Participation (section 30, EBR)**
   - This exception requires that all environmentally significant aspects of the proposal have already been considered in a process of public participation that was substantially equivalent to the requirements under the EBR.
   - The Applicant must include with the application an attachment providing details of the completed provincewide public participation including:
     - type of the provincewide public participation;
     - description of how it was conducted;
- number of people that participated;
- the type of public comments that were received;
- actions taken as a result of the public comments;
- an indication whether or not Ministry staff were involved in the process; and
- documentation verifying the public participation.

2. Emergency (section 29, EBR)

- This exception requires a situation where the delay involved in giving notice to the public, allowing time for public response to the notice, or considering the response(s) to the public notice would result in danger to the health or safety of any person, harm or serious risk of harm to the environment, or injury or damage or serious risk of injury or damage to any property.

- The Applicant must include with the application an attachment providing information demonstrating that there is an emergency situation and that the proposal will minimize the adverse effects of the emergency situation.

3. Environmentally Insignificant Amendment or Revocation (section 22, EBR)

- This exception requires that an amendment to, or the revocation of an existing approval will have an insignificant effect on the environment.

- The Applicant must include with the application an attachment demonstrating that the proposed amendment/revocation will have no significant impact on the environment.

4. EAA or an Environmental Review Tribunal (ERT) Decision (section 32, EBR)

- This exception requires that the application is either:
  - a step towards implementing an undertaking in accordance with a completed environmental assessment process under the EAA;
  - a step towards implementing an undertaking that has been exempted by a regulation under the EAA; or
  - a step towards implementing a decision made by the ERT after affording an opportunity for public participation.

- The Applicant must include with the application proof of completion of the applicable environmental assessment process, the exempting regulation, or a copy of the ERT decision.

Note: Despite an exception from the mandatory public participation requirement, an undertaking of significant public interest may still be posted on the Environment Registry as an “information only posting”, under section 6 of the EBR.

2.4.7 Section 6: Supporting Information

This section of the application identifies all of the supporting documentation that is required in the application package. The electronic version of the form identifies what supporting documentation is to be included in the application package based on the type of application that is being submitted and the information that the Applicant has completed in Sections 1 through 5 of the form.
2.4.8 Payment Information

If the C of A application form is being completed manually, the Applicant must complete and submit “Costs for OWRA s.53 Applications - Supplement to Application for Approval”, PIBS 4107e, as part of the complete application package. If the application form is being completed electronically, the application fee will be calculated automatically and the Cost Summary table at the beginning of the form will be populated accordingly.

The last page of the application form is where the payment information is recorded and where a certified cheque or money order is attached, if either is the selected method of payment. Applicants are not to include the Payment Information page in the copies of the application form that are sent to the District Office and to the local municipality.

2.4.9 Schedule A: Pipe Data Form

Schedule A of the application form and associated stamped engineering drawings must be completed whenever the application involves storm sewers, sanitary sewers, ditches, forcemains and/or pumping stations.

Appendix A to this Guide contains some sample templates for storm and sanitary sewers design.
PART 3 APPROVAL REQUIREMENTS

A complete application package consists of:

a) A properly completed application form.

b) All supporting information and documentation, including, if any, approved effluent criteria established by the Ministry Regional Technical Support.

c) A cover letter that:
   i. is addressed to the “Director, Section 53, OWRA, Environmental Assessment and Approvals Branch”; and
   ii. identifies all other recipients of the complete application package.

d) A financial assurance estimate which is required for industrial and private sewage works for the implementation of remedial measures, in the event that the owner is unwilling or unable to do so. For more information, reference should be made to the “Financial Assurance Guideline”, Guideline F-15, PIBS 0226e03.

e) A fully executed Municipal Responsibility Agreement, where required, between the owner of privately-owned works and the municipality.

Please note that if there is any discharge to the air or transportation/management of waste, an application for approval under section 9 or Part V of the EPA may be required. If such applications are required they must be submitted concurrently with the application for the sewage works C of A.

The following sections provide a summary of the legislative and regulatory requirements applicable to various types of sewage works applications, and outline the technical supporting documentation that is to be included in an application package. Applicants should always refer to the Acts and regulations for a comprehensive review of the requirements prior to submitting an application.

3.1 Industrial Sewage Works

Industrial sewage works are defined as any works for the collection, transmission, treatment or disposal of wastewater generated from industrial activities. These include works to handle storm runoff and domestic sewage from industrial sites and wastewater from site remediation activities at industrial sites.

3.1.1 Application Requirements

In addition to a completed application for a C of A, the following additional technical support documents are required when submitting an application for approval of an industrial sewage works.

Note: Due to the variety of proposals, it may still be necessary to submit more site-specific information, if requested. It must be emphasized that all engineering design information must be prepared and properly certified by a professional engineer licensed in Ontario.

A. Site Plan

Site plans should be drawn to a scale of approximately 1:5000 or larger and should identify the
following:

1. Property and municipal boundaries, roads, rail tracks.
2. Waste disposal sites and temporary holding areas for waste.
3. Geographic north should be indicated on every plan.
4. Manufacturing, process, administrative, office and laboratory buildings and free standing process units.
5. Storage areas and loading/unloading areas.
6. Lay out of all wastewater treatment facilities including lagoons, ponds, tank sumps with clearly labelled incoming streams.
7. All effluent streams, stormwater ditches and conduits, sewer systems (e.g., sanitary, storm, process), open channels/ditches, emergency overflows, discharge points to, and intakes from, the local watercourses together with the direction of flow. All separate systems should be labelled clearly and differentiated from one another.
8. The locations of existing or proposed wastewater sampling points, sampling devices, auto-analyzers and flow measuring devices. Where applicable, Ministry Municipal Industrial Strategy for Abatement (MISA) control points should be noted.
9. The areas and components of the works under consideration for approval should be highlighted.

Note: All dimensions and sizes should be in metric units.

B. Sewage Quantity and Quality Characteristics

1. A brief process description of the production operations should be provided, including names of raw materials, chemicals used or stored on the site and the finished products.
2. The characteristics of all main raw wastewater streams as they enter the sewage works must be identified. The characteristics for process wastewater streams must include the peak and average flow rate, temperature, concentration of all design parameters that are known to be present or for which a limit is prescribed in a regulation.
3. The characteristics for cooling water streams must include the peak and average flow rates, temperature, concentration of all cooling water additives and a list of all contaminants that may enter the stream through leaks or spills to the system. Where possible, the expected concentration of those contaminants entering the system through leaks and spills should be reported.
4. The characteristics for stormwater streams must include the peak flow rate for the design storm, a list of contaminants that may be present and an expected range in concentration for each of these contaminants.
5. For existing sources, the reported concentration should be based on monitoring results. If this is not possible, best estimates may be used.

C. Design Brief/Report

The basis for design for all sewage works components must be supplied. The size of the unit, the value of all design variables used to determine that size and the design method or equation must be reported. The value of all design variables must be supported by bench scale
experiments or reliable literature sources. Standard design methods should be used, however, new design methods may be used if they can be justified.

If the sewage works have potential to impact on other media, such as air, groundwater or land, the basis for design must cover those measures used to prevent or mitigate the impact of the sewage works on that medium. For example, the basis for design of a sewage lagoon must address the water tightness of the lagoon. A geotechnical report should accompany the proposal and describe the design permeability, the construction materials to be used, the construction practices to be employed and the impact on groundwater of any residual seepage from the lagoon.

For sewage works that use land application for disposal of sewage, a hydrogeological report must accompany the proposal which addresses the design methods for determining the appropriate hydraulic and contaminant loading rates for the soil, the impact on groundwater, the impact on local surface water streams, if any, buffer zones and reasonable use assessment.

The design engineer responsible for the basis for design should be familiar with all Ministry guidelines relating to the subject. These should be discussed with the Ministry at the pre-application consultation stage.

D. Engineering Drawings and Specification

The engineering drawings should contain:

- a sewage works process flow diagram,
- piping and instrumentation diagrams, and
- plan and profile drawings for all treatment works.

The drawings should show all dimensions and capacities in metric units.

The process flow diagram (PFD) must include all treatment steps, the direction of flow of all wastewater streams, recycle streams and waste streams and the location of all chemical addition points. The PFD must also show the maximum and average flow rates of all streams entering and leaving each component of the works as well as a mass balance for all design parameters around each treatment component.

Piping and instrumentation diagrams (P&IDs) are required for the complete sewage works. P&IDs must include all controls, piping arrangements, pumps, valves and equipment capacities.

Plan and profile drawings (PPDs) including sections are required for all major components of the treatment works. PPDs must verify that all sizing and configuration requirements determined by the process design calculations (basis for design) are incorporated into the equipment design. PPDs must contain elevations for inlets, outlets, weirs, etc.

A block diagram showing the various flow linkages should be included in order to provide a simplified overview of the works and their function. Where the works are additions to existing systems, the new components should be highlighted on the various diagrams.
E. Environmental Impact Analysis

E.1 Surface Water Impact

For new or expanded facilities with a direct surface discharge (including direct discharges to wetlands), the present downstream use and assimilative capacity of the receiver must be reported. The requirements for the assimilative capacity study must be discussed with the Ministry Regional Technical Support Section during pre-application consultation. The effluent criteria adopted for the project must have been accepted in writing by the Ministry Regional Technical Support Section and a copy of such written acceptance must be submitted with the application. The requirements will vary from site to site, however, in general, the Applicant should provide the following information:

1. Limiting conditions within the receiving water body, including:
   a. low flow conditions in the receiving water body, e.g., the 7Q20 for a stream, i.e., the 7-day average low flow occurring once in 20 years;
   b. the 75th percentile background concentration for each parameter of concern;
   c. the maximum allowable downstream increase for each parameter of concern, e.g., the difference between the background level and the Provincial Water Quality Objectives; and
   d. a proposed waste load allocation for the facility based on the entire watershed and watershed users (downstream/upstream).

2. Actual effluent flow, including:
   a. design daily/monthly flow or average daily/monthly flow for one year if the data are available.

3. Actual effluent quality, including:
   a. the maximum expected loading at design flow and the highest concentration under normal operation for all parameters of concern in the final effluent.

4. Impact analysis, including:
   a. methods used to reduce impact of the effluent on the receiving water body, e.g., use of diffusers, effluent and receiving water density considerations, discharging at rates proportional to stream flow; and
   b. in-stream monitoring programs to ensure that information is available to assess acceptability of the effluent impact.

5. Proposed mixing zone:
   a. the “mixing zone”, defined as “the area of water contiguous to the point source where the water quality does not comply with the Provincial Water Quality Objectives”, should be mapped out for the proposed maximum allowable discharge rate. The allowance of a mixing zone may depend on the sensitivity of the receiver. The Applicant must also report on the acute toxicity of the effluent at the end of the pipe and in the mixing zone.
E.2 Groundwater Impact Assessment

A groundwater impact assessment must be undertaken by the Applicant for all activities (production related or sewage works) that may impact in any way on the groundwater, e.g., material storage areas, disposal of sewage on land, seepage from lagoons or tailings basins.

The requirements for the groundwater impact assessment will vary from site to site and should be discussed with the Ministry staff during pre-application consultation. In general, the Applicant should provide the following information:

1. The background levels of contaminants in the groundwater.
2. The expected discharge rate of contaminants to the groundwater.
3. An allowable amount of degradation based on the current and potential future uses of the groundwater, i.e., “reasonable use concept”.
4. Measures taken to reduce and prevent groundwater contamination.
5. An appropriate monitoring program to assess the proposed control measures and downstream impacts.

This work must be undertaken by a professional qualified as a Professional Geoscientist (P.Geo.) or a Professional Engineer (P.Eng.).

When conducting environmental impact analysis, Applicants should refer to the following Ministry publications:

- Water Management - Goals, Policies, Objectives and Implementation Procedures of the Ministry of the Environment, Revised May 1984
- Incorporation of the Reasonable Use Concept into MOEE Groundwater Management Activities, April 1994, Guideline B-7

F. Stormwater Management Report

For applications involving stormwater management (i.e., quantity control or quality control or both), a stormwater management report must be prepared and submitted with the application. The stormwater management report should include, but not necessarily be limited to, the following:

1. Identification of the drainage area and the effluent receiver (waterbody, stormwater management pond, sewers/ditch).
2. Summary of the design criteria (e.g., major and minor flows, site-specific target flow rates, land use restrictions, i.e., maximum percentage of imperviousness, minimum watercourse buffer strips, required level of treatment, etc.) and identification of their sources (i.e., Master Drainage Plan, Watershed Plan and/or Sub-Watershed Plan) or names of the authorities (municipality, conservation authority, Ministry of Natural
Resources, Ministry of the Environment) who established or approved the design criteria.

3. Summary of design storms and flows generated for pre-development, uncontrolled post-development, controlled post-development conditions with hydrographs, including the methodology used for calculations (computer models, rational method, runoff coefficients, etc.).

4. Hydraulic capacity of the receiving watercourse, swale, natural channel or existing storm sewers to accept the design flows, including water balance calculations for determining the receiving stream baseflow and assessment of impacts on the receiver.

5. Identification of the type of the proposed stormwater detention facility, e.g., rooftop, parking lot, underground storage (oversized sewer, detention tank), detention pond (wet and/or dry) or infiltration pond.

6. Identification of the type of the proposed stormwater quality control facilities, e.g., on-lot source control, infiltration (i.e., perforated pipes, trenches, swales, basins, etc.), stormwater ponds (i.e., wet, extended wet, extended dry), wetlands, disinfection facilities.

7. Description and design details (including calculations) of the stormwater management works, including minor and major stormwater conveyance systems and stormwater quantity and quality control facilities, together with the discharge control and emergency overflow features, and any temporary and permanent erosion and sediment control facilities.

8. Hydraulic routing of the major (i.e., 100-year or Regional) storms through the works, including hydrographs.

9. Detailed description of the proposed operation and maintenance procedures for the works.

G. Other Information

Depending on the nature of the proposal, there may be a need to submit additional special information specific to that proposal. For example, for sites where chemicals are to be stored on site, the Applicant must include a spill prevention and containment plan.

3.2 Municipal and Private Sewage Works

The following publications prepared by the Ministry, or with the participation of the Ministry, are recommended to be consulted in the design of sewage works:

- Design Guidelines for Sewage Works 2008 (Ministry of the Environment)
- Determination of Treatment Requirements for Municipal and Private Combined and Partially Separated Sewer Systems (Ministry of Environment and Energy, 1994, Procedure F-5-5)
- Guidelines for the Design of Servicing in Areas Subject to Adverse Conditions (Ministry of the Environment, January 1985)
- Interim Stormwater Quality Control Guidelines for New Development (Ministry of the Environment and Ministry of Natural Resources, May 1991)
- Procedures to Govern Separation of Sewers and Watermains (Ministry of the Environment, Procedure F-6-1)
- Recommended Standards for Wastewater Facilities (GLUMRB, 2004)*

* The Ministry is a member of the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (GLUMRB), and participates in the development of and subscribes to the Board's recommendations for sewage and water works standards known as the “Ten States Standards”.

Note: The above publications should not be confused with regulations or standards which must be adhered to in order to obtain a C of A. It is not the intention of the Ministry to stifle innovation, and if the design engineer can demonstrate that all environmental and public health protection requirements can be satisfied on a consistent basis by the proposed works, such a proposal will be considered for approval.

It is recognized that the process of planning and engineering design of sewage works varies with the size and complexity of the undertaking, and not all items of documentation listed in Section 6 of the application form may be required for a particular project.

In that, the multi-stage process of planning and design of complex municipal works such as new sewage treatment plants will involve preparation of a number of separate documents including an Environmental Study Report (a requirement of the EAA), a Preliminary Engineering Report (which may be part of the Environmental Study Report), a design brief (basis of detailed engineering design), final plans (engineering drawings), and specifications (construction process, materials and equipment).

On the other hand, the design of a sewermain extension may only require preparation of a single engineering drawing with the basis of design and specifications included on its face.

The information required to be submitted in support of applications for approval of various types of sewage works is outlined below in the form of individual documents normally prepared in the process of planning and design of complex sewage works. All pertinent information is to be included in the submission.

Note: When requesting an approval in principle for works whose detailed engineering design has not been finalized, i.e., approval subject to approval of final plans and specifications (see Part 4 of this Guide for information as to when such an approval may be issued), the application should contain, as a minimum, the information outlined below under the heading Preliminary Engineering Report.
3.2.1 Application Requirements

A. Environmental Impact Analysis

The most important aspect of the environmental impact considered in the assessment of any proposed sewage works is the anticipated impact of the works’ final effluent on the receiver (i.e., surface water body, land area, soil and/or groundwater) and its potential users.

Note: It is the responsibility of the Applicant to assess the assimilative capacity, and determine the actual and potential uses of the intended receiver of the effluent from the proposed works, and derive from this analysis the effluent quality and discharge regimen criteria for the proposed works. The effluent criteria should be prepared in consultation with staff of the Technical Support Section of the appropriate Regional Office of the Ministry as that Office’s concurrence with the criteria is prerequisite for any proposed works to be approved.

All proposed undertakings which may result in any change in the quality and/or quantity of effluent from existing sewage works must be assessed in terms of the receiver’s assimilative capacity and uses. In the case of an existing sewage treatment plant where the receiver assimilative capacity has been previously established, any proposed works that may affect the performance of the treatment plant must be assessed in terms of the previously established effluent compliance criteria and the approved rated capacity of the treatment plant. Expansions of existing sewage treatment and disposal works would usually require re-assessment of the receiver’s assimilative capacity and development of new effluent criteria. The need for such a re-assessment of the assimilative capacity of the receiver should be established by the Applicant in pre-application consultation with the District and Regional staff of the Ministry.

The assessment of the assimilative capacity of the receiver must be done at the beginning of the planning and design process as part of the problem identification phase of the project. The effluent requirements based on the assessment should serve as one of the criteria for comparison of alternative solutions to the identified problem. Established effluent quality and quantity criteria are especially essential in the development of design alternatives for the contemplated sewage treatment and/or disposal works. If the eventually established sewage works are to meet the established effluent criteria on a consistent basis, the criteria must be available before the commencement of design and must form the basis of design.

A.1 Surface Water Impact

For new or expanded sewage treatment works and for water works wastewater disposal, the assimilative capacity, and existing and potential downstream use of the receiver must be assessed. The requirements for the assimilative capacity study must be discussed with the Ministry Regional Technical Support Section. The requirements may vary from site to site, but usually, the Applicant must provide the following information:

1. Limiting conditions within the receiving water body, including:
   a. low flow conditions in the receiving water body, e.g., 7Q20 for a stream, i.e., the 7-day average low flow occurring in the stream once in 20 years;
   b. the 75th percentile background concentration for each parameter of concern;
c. the maximum allowable downstream increase for each parameter of concern, e.g.,
the difference between the background level and the Provincial Water Quality
Objectives; and

d. a proposed waste load allocation for the facility based on the entire watershed and
watershed users (downstream/upstream).

2. Proposed effluent quantity and flow rate (design daily/monthly flow), and actual historical
average daily/monthly flow based on at least one year monitoring data, if available.

3. Proposed effluent quality expressed as the maximum expected daily/monthly loading at
design flow and highest expected concentration in the effluent under normal operating
conditions for all parameters of concern.

4. Receiver impact analysis including:
   a. methods proposed to be used to reduce impact of the effluent on the receiving water
      body, e.g., use of diffusers, effluent and receiving water density considerations,
      discharging at rates proportional to stream flow; and
   b. in-stream monitoring programs to ensure that information is available to assess
      actual impact of the effluent discharge upon start-up of operation of the proposed
      works.

5. Proposed receiver mixing zone defined as “the area of water contiguous to the point
source where the water quality does not comply with the Provincial Water Quality
Objectives”, which should be mapped for the proposed maximum effluent discharge rate.

Note: Whether it is acceptable to create such a mixing zone for a particular
project, is dependent on sensitivity of the receiver. The restrictions regarding
mixing zones in a particular receiver should be confirmed with the Technical
Support Section of Ministry’s appropriate Regional Office.

A.2 Groundwater Impact Assessment

For works with sewage effluent disposal on land and into the ground (spray irrigation systems,
exfiltration/infiltration lagoons, leaching beds, and deep injection wells) which may have any
impact on the groundwater, the Applicant must undertake a groundwater impact analysis. The
requirements for the assimilative capacity study of groundwater must be determined through
discussions with the Technical Support Section of Ministry’s appropriate Regional Office. The
requirements may vary from site to site, but usually, the Applicant must provide the following
information supported by appropriate studies:

1. Expected rate of contaminants discharge to the groundwater.

2. Background levels of contaminants in the groundwater.

3. Estimated allowable amount of degradation based on the current and potential future
uses of the groundwater in accordance with the Ministry’s Guideline B-7 entitled,
“Incorporation of the Reasonable Use Concept into MOEE Groundwater Management
Activities”.

4. Proposed measures to be taken to reduce or prevent groundwater contamination.

5. Proposed monitoring program to assess the effectiveness of the proposed groundwater
contamination control measures.
B. Preliminary Engineering Report

If a Preliminary Engineering Report is being submitted for a proposed sewage works, it should present the following information, *where applicable*:

1. Description of the proposal, and where applicable, a description of the associated existing sewage works.

2. Discussion of the assimilative capacity of the receiver (e.g., lake, river, groundwater aquifer, soil, vegetation) and the proposed effluent quantity and quality criteria, i.e., effluent discharge/application regimen, and contaminant concentrations and loadings supported by appropriate receiver impact analysis studies, or where applicable, a reference to the Environmental Study Report, if all these issues were already addressed in that document.

3. Extent, nature and anticipated population and population densities of the area to be serviced, facilities proposed to serve the area, and provisions for future expansion of the system to include additional service areas and/or population growth, or where applicable, a reference to the Environmental Study Report, if all these issues were already addressed in that document.

4. Itemization and discussion of present and future average and peak domestic, commercial, institutional and industrial sewage, and extraneous flows to the proposed works, or where applicable, a reference to the Environmental Study Report, if all these issues were already addressed in that document.

5. Discussion of raw sewage characteristics and possible effect of any toxic substances which may be present or added (e.g., shock loading of hauled septage proposed to be accepted at the plant) and require special treatment. Wherever possible, the variation in sewage strength should be substantiated by data from sampling surveys or treatability studies.

6. Discussion of adequacy of the proposed sewage treatment and effluent disposal facilities for the anticipated raw sewage quantity and characteristics in terms of the developed effluent quantity and quality criteria. This discussion should include a summary of basic process design parameters of all major components of the treatment and disposal facilities, including operational reliability of key process units, unit redundancy, and back up reliability. **Note:** The discussion of adequacy of the effluent disposal facilities must be supported by appropriate studies, e.g., effluent dispersion calculations for outfall diffusers; site topography, vegetative cover and soil assessment for spray irrigation systems, chemical and hydraulic assessment of the unsaturated soil strata of the site for exfiltration and rapid infiltration lagoons; and assessment of the site topography and the chemical and hydraulic characteristics of the unsaturated soil strata for absorption beds (i.e., leaching beds and similar subsurface disposal methods).

7. Discussion of the proposed sludge management, including sludge treatment, storage, and utilization or disposal program. Where off-site sludge utilization or disposal is proposed, evidence must be provided that such utilization/disposal is available.

8. Discussion of the proposed flow metering, sampling and monitoring program, including monitoring of bypasses and overflows.
9. Brief discussion of the location of all significant sewage works structures with respect to the land use in surrounding areas, especially in consideration of noise and odour generation potential and susceptibility to flooding.

10. Discussion of any anticipated wet weather bypass and overflow conditions (i.e., possibility, frequency, volumes, quality and impact on the receiving water) and approaches to be used to avoid or minimize bypassing and overflows.

11. Assessment of the need to provide standby power facilities for the works (sewage treatment plants and pumping stations) in accordance with “Design Guidelines for Sewage Works 2008”.

12. Discussion of the design criteria used for the proposed storm and sanitary sewers, including design flows. For combined sewers, in addition to the sewer design criteria and explanation of the method used to estimate the combined sewage flow, the information should include an analysis of the impact of the proposed sewers on the operation of the downstream combined sewer overflows (CSOs).

   Note: No new combined sewer systems, new CSOs within the existing systems or increased volume of overflows at the existing CSOs will be allowed. Further, any extension of the existing combined sewer systems is discouraged, and wherever feasible, separate stormwater collection and disposal systems must be provided for the extension areas (justification must be provided where this cannot be achieved).

13. Description of proposed pumping stations, including location of the pumping station and forcemain (including point of discharge), number and capacities of duty and standby pumps and provision of station bypass and emergency overflow facilities (including identification of the proposed receiver for the station’s emergency overflow; and an assessment of the capacity of the downstream sewers, pumping stations and treatment plant to handle the pumped flows).

   Note: All sanitary and new combined sewage pumping stations must be designed to handle all incoming flows, and the emergency overflow facilities are intended to handle true emergencies only, i.e., those resulting from a system failure or upset.

14. Description of any proposed stormwater management and/or treatment facilities, including analysis of stormwater flows, methods for stormwater source controls, retarding runoff, routing and regulating flows through and in the collection system, retention and detention of stormwater, proposed methods of treatment; and description of water quantity and quality targets as documented in the official Watershed and/or Subwatershed Plans.

   Note: Where Watershed and/or Subwatershed Plans have not been developed for the area, other guidelines and/or plans should be used, e.g., Ministry of Natural Resources Fishery Plans, Conservation Authority’s Erosion and Sediment Control Plans, or the “Interim Stormwater Quality Control Guidelines for New Development”. In those cases, the appropriate local municipality or conservation authority should be contacted to establish the need for any stormwater management, and the Technical Support Section of Ministry’s appropriate Regional Office should be contacted to establish the need for any stormwater quality control. Recommendations of these authorities must be referenced in the submission of applications for approval.

15. Discussion of the planning for any future extensions and/or improvements to the sewage works.
16. Preliminary design plan(s), all bearing the project title, name of the municipality, name of
the development or facility with which the project is associated, name of the design
engineer and preparation date, and where applicable also the plan scale, north pointer
(i.e., north arrow), land surveying datum and any municipal boundaries within the area
shown, providing the following information (where pertinent):
   a. general layout of existing and proposed storm and sanitary sewers (including
      drainage areas), and location of all major components of other existing and proposed
      sewage works, including all effluent discharge and sewage overflow points;
   b. all existing and future water works that could be affected by the proposed sewage
      works (e.g., wells, water intakes, watermains);
   c. existing and future development in the vicinity of the works (except for sewers);
   d. general layout (line diagram) of the works (except for sewers);
   e. process flow diagrams for all treatment processes, showing all process components,
      the direction of flow of all processed sewage, recycle and waste streams, the
      location of all chemical addition points; and the maximum and average flow rate of all
      streams entering and leaving each component of the process and a mass balance
      for all design parameters around each process component.

C. Design Brief

A design brief, summarizing the design criteria and presenting the design calculations used in
sizing individual components of the works, should be submitted along with final plans and
specifications.

Note: Where a preliminary report has not been or is not being submitted for the project,
or where some parts of the information in the earlier submitted preliminary report are no
longer valid or applicable, the design brief should include the information outlined above
under the heading Preliminary Engineering Report as well as the applicable information
outlined below.

If a Preliminary Engineering Report has been submitted for the proposed sewage works, the
design brief for the particular type of sewage works should include the information outlined
below.

C.1 Design Brief – Sanitary Sewers

   1. Population served (current and design) and per hectare population densities.
   2. Area served (current and design) in hectares.
   3. Per capita sewage flows.
   4. Infiltration allowances expressed in cubic metres per day per hectare.
   5. Industrial and commercial flows.
   6. Design flow rates, i.e., peak sewage flow, including infiltration and industrial and
      commercial flows, for local, interceptor and trunk sewers.
   7. Capacity of the existing downstream sewers, pumping stations and treatment plant to
      receive the design flow from the proposed sewers.
   8. Design data and calculations for individual sewers, including the required capacity,
      sewer slope, roughness coefficient, pipe capacity, flow velocity when full, depth of flow
and actual flow velocity at peak design flow if depth of flow is less than 0.3 of the pipe diameter.

9. Minimum separation distance from watermains provided.

C.2 Design Brief – Storm Sewers

1. Identification of sub-drainage areas and their runoff coefficients.
2. Design rainfall frequency and intensity.
3. Generated flows and capacity of sewers selected.
4. Capacity of the receiving watercourse or existing storm sewers at each discharge point to accept the anticipated design flows.
5. Design data and calculations for individual sewers, including the required capacity, sewer slope, roughness coefficient, pipe capacity, flow velocity when full, depth of flow and actual flow velocity at peak design flow if depth of flow is less than 0.3 of the pipe diameter.
6. Minimum separation distance from watermains provided.

C.3 Design Brief – Sewage Pumping Stations

1. Location of the proposed pumping station, and identification of the intended receiver of the discharge (sewer, another pumping station or sewage treatment plant).
3. Per capita sewage flows.
4. Design flow rates, i.e., peak sewage flow including infiltration and industrial and commercial flows, for initial and design conditions.
5. Type of pumping station and facilities provided.
6. Length, size and type of material of the pumping station’s forcemain, flow velocity in the forcemain under initial and design flow conditions, together with calculations of the total dynamic head requirements of the pumps, and evaluation of transient pressure conditions.
7. Number and type of sewage pumps, and their individual and combined capacities (capacity ranges for variable speed pumps) at the design dynamic pumping head (pump and system curves should be provided), and the type, power and speed (or speed range) of pump motors.
8. Details on sizing and installation of the standby power generator (where required).
9. Details of pump control and alarm system, and any screening, grit removal or comminution facilities.
10. Number and storage capacity of wet well compartments, and the station’s time to overflow under minimum and peak flow conditions.
11. Wet well operating level and its relationship to inlet sewer minimum flow velocity when inlet sewer is submerged.
12. Wet well emergency overflow elevation in relation to basement elevations in the area upstream of the pumping station.
13. Capacity of the station’s emergency overflow and/or bypass facilities, and name of the receiver of emergency overflows and description of the overflow discharge route.

14. Documented evidence of the capacity of the downstream sewage works (receiving sewers, pumping station and/or sewage treatment plant) to handle adequately the sewage flow from the proposed pumping station, and if there are any existing overflows within the downstream sewage works, it must be shown that the addition of flows from the proposed pumping station will not result in any increase in frequency or volume of currently occurring overflows.

15. Description of the flow monitoring and recording equipment, and other equipment proposed to be provided, e.g., heating and ventilation, sump pumps.

C.4 Design Brief – Stormwater Management

1. Identification of the drainage area and the receiving water body.

2. Summary of the design criteria (e.g., major and minor flows, site-specific target flow rates, land use restrictions, i.e., maximum percentage of imperviousness, minimum watercourse buffer strips, required level of treatment, etc.) and identification of their sources (i.e., Master Drainage Plan, Watershed Plan and/or Subwatershed Plan) or names of the authorities (municipality, conservation authority, Ministry of Natural Resources, Ministry of the Environment) who established or approved the design criteria.

3. Summary of design storms and flows generated for pre-development, uncontrolled post-development, controlled post-development conditions with hydrographs, including the methodology used for calculations (computer models, rational method, runoff coefficients etc.).

4. Hydraulic capacity of the receiving watercourse, swale, natural channel or existing storm sewers to accept the design flows, including water balance calculations for determining the receiving stream baseflow.

5. Identification of the type of the proposed stormwater detention facility, e.g., rooftop, parking lot, underground storage (oversized sewer, detention tank), detention pond (wet and/or dry) or infiltration pond.

6. Identification of the type of the proposed stormwater quality control facilities, e.g., on-lot source control, infiltration (i.e., perforated pipes, trenches, swales, basins, etc.), stormwater ponds (i.e., wet, extended wet, extended dry), wetlands, disinfection facilities.

7. Description and design details (including calculations) of the stormwater management works, including minor and major stormwater conveyance systems and stormwater quantity and quality control facilities, together with the discharge control and emergency overflow features, and any temporary and permanent erosion and sediment control facilities.

8. Hydraulic routing of the design and major (i.e., 100-year or Regional) storms through the works, including hydrographs.

9. Detailed description of the proposed operation and maintenance procedures for the works, including an agreement between the local municipality and the Applicant outlining a maintenance program that contains the name of operating authority or the person responsible for the maintenance and operation.
C.5 Design Brief – Sewage Treatment and Disposal Works

1. Basic data on the volume and composition of the wastewater anticipated from the population and area to be served including:
   a. design period;
   b. design service population and area [hectares], and population density;
   c. estimated quantities and characteristics of the domestic sewage, industrial wastewater (including identification of all major industrial categories and wastewater characteristics, especially those contaminants that may affect the sewage treatment process), septage, landfill leachate, inflow and infiltration, and stormwater (combined sewer systems); and
   d. total design sewage flow (minimum, average, peak), and waste concentration and loadings.

2. Summary of the proposed effluent quantity and quality criteria, i.e., effluent discharge/application regimen, and contaminant concentrations and loadings, objectives and compliance criteria, including identification of the receiver.

3. Description (types, number and sizes) of all treatment units and equipment, and effluent disposal facilities; and identification of their process design parameters (i.e., velocities and surface settling rates in grit removal units; surface settling, solids loading, and weir overflow rates, and depths and detention times in clarifiers; volumetric and organic loading in septic tanks; anticipated biochemical oxygen demand and suspended solids removals in septic tanks and primary and final clarifiers; organic loading to aeration tanks, lagoons, biological contactors, etc.; aeration rates of aeration systems; capacity of phosphorus removal chemical application system; filtration and backwash rates of effluent filters; capacity of chlorination facilities and detention time provided by chlorine contact tank; irradiation capacity of UV disinfection system; outfall diffuser exit velocities at initial and ultimate sewage flow; effluent application rates and schedules for spray irrigation, rapid infiltration and subsurface disposal system; sludge (primary, chemical and waste activated) volumetric production rates; volatile solids loading rate, detention time, capacity of heat exchangers and mixers, and gas storage capacity in primary anaerobic digesters; sludge retention time and aeration system capacity in aerobic digesters; volume and available storage [months] in sludge holding tanks; capacity of sludge thickening and dewatering equipment and its efficiency; capacity of sludge incineration facilities; etc.).

4. Detailed process design (or sizing) calculations for all treatment units and equipment and effluent disposal facilities.

5. Analysis of the process impact of recycling of plant secondary streams such as sludge thickener and digester supernatant, heat treatment decant liquor, sludge dewatering centrate, etc.

6. Hydraulic calculations for all process streams within the sewage treatment plant, influent works and the plant outfall sewer and diffuser and other effluent disposal facilities (spray irrigation, rapid infiltration, subsurface disposal) under minimum and maximum flow rates.

7. Description of the proposed flow metering, sampling and monitoring equipment, procedures and schedules, including monitoring of any plant or unit bypasses.

8. Description of the existing facilities (for expansion or upgrading projects at existing sewage works), including pertinent process and hydraulic design data, and discussion of
their adequacy in terms of the new design criteria (existing facilities may need to be de-rated or upgraded).

9. Identification of all air pollution (including odour and noise) sources (e.g., open tankage, boiler stacks, internal combustion engines, incinerators, air blowers) together with the distances from the points of emission to the property lines and the nearest private residence.

10. Description of the steps proposed to be undertaken during construction of expansion and upgrading projects at existing treatment facilities to ensure uninterrupted and adequate treatment of all incoming sewage throughout the construction process.

11. Where the proposed works incorporate processes that are innovative or in an experimental stage, or include equipment and materials where the available data from full scale operation is limited or unreliable, the following information must also be provided:
   a. all available data pertaining to the proposed process, equipment or material;
   b. results of any testing programs which have been undertaken by independent testing agencies, research foundations, universities, etc.;
   c. identification of any known full-scale applications of the proposed process/equipment/material, including a description of the type of application and the name and address of the person who could be contacted for technical information on the application;
   d. discussion of the impact of a potential failure of the proposed process/equipment/material; and identification of the measures proposed to be undertaken to preclude any health or environmental hazard or approval non-compliance as a result of such a failure; proposed contingencies to modify or replace the proposed process/equipment/material in case of their failure; and liabilities associated with the proposal;
   e. description of the monitoring, testing and reporting program proposed to be undertaken during the experimental period; and
   f. the proposed duration of the experiment.

D. Final Plans

All final plans submitted in support of applications for approval of sewage works must bear at a minimum the project title, name of the municipality, name of the development or facility with which the project is associated, and name of the design engineer, including a signed and dated imprint of his/her registration seal, and where applicable, also the plan scale, north pointer, land surveying datum, and any municipal boundaries within the area shown.

Detailed engineering plans should include plan views, elevations, sections and supplementary views which, together with the specifications and general layout plans, would provide the working information for finalizing of the construction contract for the works. These drawings should show dimensions and relative elevations of structures, the location and outline of equipment, location and size of piping, ground elevations, and liquid/water levels at the minimum and maximum flow conditions.
D.1 Final Plans – Storm and Sanitary Sewers

1. General Plan – A comprehensive general plan of the existing and proposed sewage works should be submitted for projects involving new sewage collection systems or substantial additions to existing systems. This plan should show:
   a. all major topographic features including existing and proposed streets, contour lines at suitable intervals, drainage areas, watercourses, municipal boundaries, land surveying datum used (or assumed bench mark), etc.;
   b. location and size of existing and proposed sewers; and
   c. location and nature of all existing and proposed sewage works associated with the proposed sewers, including any existing sewer overflows.

2. Detailed Engineering Drawings – Detailed plan and profile drawings should be provided for the proposed and adjacent existing sewers. The profiles should have a horizontal scale of not more than 1:1000 and a vertical scale of not more than 1:100. The plan view should be drawn to a corresponding horizontal scale. Detailed engineering drawings should show:
   a. location of streets and sewers;
   b. existing and proposed ground surface, shape, size, slope, material and class of pipe, pumping stations, manholes, overflows and other appurtenances;
   c. location of all known existing structures which might interfere with or be affected by the proposed sewers, especially any watermains and other water works;
   d. details of sewer bedding and anchoring, manholes and manhole connections, service connections, bridge crossings, stream crossings, support structures for existing structures in the path of construction, trench bracing, etc., and for sewage forcemains, also thrust blocks, air and vacuum release valves, connection to the terminal manhole, surge suppressor, special connections, etc.; and
   e. any additional descriptive specifications and information, not included in a separate specifications document, required to inform the contractor of all project requirements regarding the type and quality of construction materials and prefabricated components, quality of workmanship, testing of structures and materials to meet design standards and operating tests for the completed works and component units (e.g., pressure testing of sewers and forcemains).

D.2 Final Plans – Major Sewage Works (Sewage Treatment and Disposal Facilities, Stormwater Management Facilities, Pumping Stations)

1. General Plan – A comprehensive general plan of the existing and proposed sewage works should be submitted or all projects involving new major sewage works. This plan should show:
   a. location of the proposed works and the area to be serviced by the works;
   b. all major topographic features including drainage areas, existing and proposed streets, watercourses, contour lines at suitable intervals, municipal boundaries, land surveying datum used (or assumed bench mark), etc.; and
   c. location and nature of all proposed sewage works and existing sewage works associated with the proposed works, including pumping stations, treatment plant, effluent discharge points, **together with their individual georeference coordinates (UTM Easting and Northing)**, and identification of the main point of reference.
whose georeference coordinates are entered in the Site Information section of the application form.

2. Site Plans – Individual site plans must be provided for all proposed major sewage works and modifications/upgrades of such facilities. Each site plan should show:

a. the entire property where facility is to be or is located, including the property lines, and identification of the nature of the adjoining lands;

b. topographic features of the property and adjoining lands, including existing and proposed streets, contour lines at suitable intervals, drainage areas, watercourses, the elevation of the highest known flood level, municipal boundaries, and the land surveying datum (or assumed benchmark) used;

c. layout, size and nature of the existing, proposed and future structures on the property showing distances from property lines, and private residences and other structures on adjoining properties; and

d. test borings and groundwater elevations within site limits.

3. General Layout and Detailed Engineering Drawings – The following general and detailed engineering layout drawings should be provided for all proposed new major sewage works and modifications/upgrades of existing major sewage works:

a. process flow diagrams showing all process components (including type, size, pertinent features, and rated capacity of process units and major equipment, i.e., tanks, reactors, pumps, chemical feeders, blowers, etc.), direction of flow of all process, recycle and waste streams (including bypass and overflow lines), and the location of all points of chemical addition and treated sewage sampling and monitoring; and indicating the minimum, maximum and average flow rates of all streams entering and leaving each process component as well as a mass balance for all design parameters around each process component;

b. accurate hydraulic profiles through treatment plants, pumping stations, etc. prepared for minimum and maximum flow conditions to a vertical scale adequate to clearly show the elevations of tank tops, channel and trough inverts, weirs and other features directly affecting the hydraulic gradient (for pumping stations, minimum, maximum and overflow liquid levels in the wet well should be shown.);

c. general layout plans for all major facilities of the works (e.g., layout of all aeration tanks together) including all associated process flow channels and piping (show direction of flow), process and ancillary equipment, air and chemical feed lines, points of chemical addition, etc.;

d. construction scale plan and profile drawings (with dimensions and elevations) of all facilities proposed to be constructed or modified, including any additional descriptive specifications and information not included in a separate specifications document;

e. process and instrumentation diagrams showing the inter-connection and operation control arrangements for all process and ancillary equipment and appurtenances.

E. Sewage Works – Specifications

Detailed technical specifications must be provided for all sewage works projects. In the case of minor works such as minor storm or sanitary sewer extensions, these specifications can generally be noted on the final plans. For more extensive works, separate specifications documents will generally be required.
The specifications should include all construction and installation information not shown on the drawings and required to inform the contractor of all project requirements regarding:

1. Type and quality of construction materials and prefabricated components.
2. Quality of workmanship.
3. Type, size, rating, operating characteristics and quality of mechanical and electrical equipment and installations (e.g., process and ancillary equipment and appurtenances, valves, piping, and pipe joints; electrical apparatus, wiring, and metering and monitoring equipment, laboratory fixtures and equipment, special tools).
4. Type and quality of process materials (e.g., filter media) and chemicals.
5. Testing of structures, materials and equipment necessary to meet design standards.
6. Operating tests for the completed works and component units (e.g., pressure testing of sewers, forcemains and other piping).
7. Maintenance of operation of existing works within the requirements of current C of A during the construction of new works (unless otherwise approved by the Ministry).

F. Detailed Description of Proposed Works

It is the Ministry’s current practice to describe the approved works in the approval document in detail sufficient to locate and identify the works in the field without the use of engineering drawings, and availability of such a detailed description of the proposed works would facilitate and expedite preparation of the approval document by the Ministry staff. Therefore, it is recommended that, in addition to the project description summary required to be provided in the application form, the Applicant attach a detailed technical description of the proposal clearly identifying all components of the proposed works.

With the exception of sewers, such a detailed description would specify the locations, names, types, number, sizes and capacities of all vital structures and pieces of equipment in the proposed works, and identify the role of the individual components in the process flow. The individual components of the works should be described in separate paragraphs in order of their appearance in the process flow.

Storm sewers and sanitary sewers should be described in a tabular form indicating the street on which the works are to be located and their location on that street with respect to the nearest intersecting streets. Separate tables should be prepared for storm sewers and sanitary sewers.

The following are some examples of description of various types of sewage works.

F.1 Detailed Description – Storm and Sanitary Sewers

<table>
<thead>
<tr>
<th>Street</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary sewers</td>
<td>Tap Court</td>
<td>Bing Avenue</td>
</tr>
<tr>
<td>Storm sewers</td>
<td>Moore Crescent</td>
<td>Roseland Drive (west intersection)</td>
</tr>
</tbody>
</table>
F.2 Detailed Description – Sewage Pumping Station

- a 3.0 m diameter precast concrete wet well sanitary sewage pumping station, located on the south side of Maple Street approximately 55 m west of Oak Street, equipped with two (2) submersible pumps, each rated at 10.3 L/s at a TDH of 10.4 m, connected to the below described 100 mm diameter sanitary forcemain on Maple Street.

F.3 Detailed Description – Sanitary Forcemain

- a 100 mm diameter sanitary forcemain from Maple Street P.S. to the sanitary sewer on Oak Street, as follows:

<table>
<thead>
<tr>
<th>Street</th>
<th>From Description</th>
<th>To Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maple Street</td>
<td>Approx. 55 m west of Oak Street (Maple Street P.S.)</td>
<td>Oak Street</td>
</tr>
<tr>
<td>Oak Street</td>
<td>Maple Street</td>
<td>Approx. 120 m north of Maple Street (sanitary sewer discharge)</td>
</tr>
</tbody>
</table>

F.4 Detailed Description – Stormwater Management Facilities

- a 2.2 hectare rooftop providing a detention volume of approximately 896 m³, with 35 rooftop drains restricting the peak release rate during the 1:100 year design storm to 20 L/s each, discharging into the site storm sewer system draining into the pond described below;

- a 1.3 hectare parking lot providing a total detention volume of 759 m³ at a maximum ponding depth of 0.22 m, with five (5) catchbasins equipped with orifice control devices restricting the peak discharge rate during the 1:100 year design storm to 215 L/s each, discharging into the site storm sewer system draining into the pond described below;

- a 0.15 hectare extended detention pond receiving stormwater runoff from a total drainage area of 9.8 ha (including the above-described rooftop and parking lot), having a total storage volume of 1650 m³ at a maximum pond elevation of 93.4 m, a 450 mm diameter inflow pipe and headwall, and an outlet well with an overflow inlet weir restricting the maximum discharge rate during the 1:100 year design storm to 240 L/s, discharging into a 300 mm diameter 120 m long outlet sewer to the municipal drain.

F.5 Detailed Description – Sewage Treatment Plant

Plant Building

- a building housing the below-described sewage treatment facilities and the associated office, staff and laboratory facilities, including two (2) independent negative pressure ventilation systems for the high and low odour process areas, one equipped with a bio-filter and the other with an activated carbon filter installed on the respective system’s discharge to the atmosphere for the purpose of odour control.
Influent Works

- a plant influent channel system consisting of a 600 mm wide 850 mm deep plant inlet channel splitting into two (2) screen inlet channels, each 300 mm wide and 1000 mm deep;
- two (2) 350 mm wide and 850 mm deep screen channels, each equipped with a mechanically raked bar screen with 15 mm openings rated at 4450 m³/d;
- two (2) circular vortex grit removal units installed downstream of the bar screens, each having a diameter of 2.0 m and a side water depth of 3.1 m, each rated at a peak flow of 4450 m³/d, and each with an air lift grit removal system, a 300 mm diameter inlet and a 600 mm diameter outlet port, discharging into individual outlet channels leading to the secondary treatment facilities’ inlet channel;
- one (1) screw conveyor grit classifier serving both vortex grit removal units, with drain connections to both screen outlet channels;
- two (2) flow metering Parshall flumes in the two vortex grit removal units’ outlet channels, including ultrasonic level indicators and transmitters.

Secondary Treatment Facilities

- two (2) parallel continuous inflow sequential batch reactors (SBR), operated on a time cycle basis adjustable in the time range of 4 to 2.4 hours and set up in such a way that at no time effluent is discharged from the two reactors simultaneously, each reactor consisting of a tank 26.0 m long x 7.3 m wide x 4.0 m maximum side water depth, operated in the depth range of 2.9 m to 4.0 m, and each equipped with the following facilities:
  - a system of inflow distribution piping connected to the SBR influent splitter box designed to distribute the influent sewage evenly throughout the bottom of the reactor,
  - a system of fine bubble diffusers with associated distribution piping designed provide aeration for biological oxidation and mixing, connected to the compressed air supply system described below,
  - one (1) submersible centrifugal waste activated sludge pump rated at 150 L/min at a TDH of 6.1 m, with a discharge line to the waste activated sludge holding tank described below, and
  - one (1) motorized effluent decanter rated at 57.9 L/s, equipped with a pivoting float scum guard, and discharging into a channel feeding the UV disinfection channel described below;
- three (3) (two duty, one standby) positive displacement air blowers serving as the compressed air supply for the SBR aeration system, each rated at 9.3 m³/min standard air (329 SCFM) at a discharge pressure of 44.8 kPa, and each equipped with an inlet air filter, inlet and outlet silencers, flexible connectors, pressure relief valve, discharge check valve and isolation valves.

Phosphorus Removal Chemical Application Facilities

- one (1) 18,000 L capacity alum solution storage tank, together with two (2) (one duty, one standby) diaphragm type chemical metering pumps rated at 30 to 300 L/hr, with an alum solution feed line to the SBR influent splitter box.
Effluent Disinfection Facilities

- a 9.5 m long x 610 mm wide x 1220 mm deep UV disinfection channel, equipped with a 5810 mm long fixed serpentine weir on the outlet to the plant effluent outfall sewer, designed to maintain the liquid level in the channel at a depth of 624 mm, and a low pressure mercury vapour ultraviolet irradiation lamp system having 65% of the radiation output at the wave length of 253.7 nm, providing a UV irradiation density of 3.35 watts per litre at the design instantaneous peak effluent flow rate of 61.0 L/s, consisting of 128 UV lamps in sixteen (16) independently removable lamp modules arranged in two (2) banks in series.

Plant Effluent Outfall Sewer

- a 500 mm diameter plant effluent outfall sewer extending from the Plant Building into the St. Lawrence River approximately 200 m offshore, equipped with three (3) 100 mm diameter diffuser ports installed on the end section of the outfall sewer.

Sludge Digestion and Storage Facilities

- one (1) 45 m³ capacity waste activated sludge holding tank, equipped with one (1) progressive cavity type thickener feed pump, capable of pumping sludge at a rate of 100 to 500 L/min at a discharge head of 3.0 m and a suction lift of 3.5 m;
- one (1) 1 m wide gravity belt thickener capable of thickening waste activated sludge at a sludge feed rate of 200 to 500 L/min, including a liquid polymer feed system;
- one (1) 10 m³ capacity thickened sludge holding tank;
- one (1) two-stage autothermal thermophilic aerobic digestion (ATAD) system located outside of the Plant Building, consisting of:
  - two (2) insulated 2.9 m diameter and 3.0 m high batch feed and discharge sludge digestion reactors, each reactor equipped with one (1) adjustable nozzle induced suction jet type air injector installed on the digester feed/recirculation pipe, one (1) propeller type foam cutter, all associated sludge feed and removal piping and appurtenances, and a reactor venting system, including a foam trap, discharging to the air intake pipe of the SBR aeration blowers described above,
  - four (4) (two duty, two standby) screw type centrifugal sludge pumps, each rated at 20.0 L/s at a TDH of 7.0 m, together with an integrated system of piping and appurtenances for transfer of sludge from the thickened sludge holding tank to the digestion reactors, between the reactors and from the reactors to the digested sludge storage tanks, and
  - a standby heat supplementing system serving the ATAD system, consisting of a tube heat exchanger installed on the ATAD system’s sludge recirculation piping, supplied with hot water at 93°C from four (4) hot water boilers serving also the plant’s heating system;
- one (1) two-chamber 712 m³ capacity digested sludge storage tank, equipped with a progressive cavity type sludge recirculation and tanker truck transfer pump, rated at 1000 L/min at a discharge head of 7.0 m and a suction lift of 2.5 m, together with the associated sludge suction, recirculation and transfer piping.
Emergency Power Supply System

- a diesel engine standby power generator rated at 150 kW, together with two (2) 200 L capacity fuel tanks.

F.6 Detailed Description – Sewage Lagoon and Effluent Spray Irrigation

- a sewage stabilization and storage lagoon system consisting of two (2) cells operated in series, as follows:
  - a clay lined settling cell (Cell “A”), receiving sewage via an existing forcemain in Side Road 20, having a total area of 1.6 ha, a total depth of 3.1 m (including a 0.3 m sludge storage bottom zone and a 0.66 m freeboard), and an effective storage capacity of 21,600 m³, including a forcemain inlet structure with a 200 mm diameter valved connection (valve normally open) to the forcemain in Side Road 20, a 250 mm diameter valved cell outlet pipe to the storage cell (Cell “B”), and a 300 mm diameter cell overflow pipe to Cell “B” with a rip-rap berm protection at both (Cell “A” and Cell “B”) ends of the pipe;
  - a clay lined storage cell (Cell “B”), receiving settled sewage from the above-described Cell “A”, having a total area of 6.2 ha, a total depth of 3.1 m (including a 0.3 m sludge storage bottom zone and a 0.66 m freeboard), and an effective storage capacity of 109,925 m³, including a forcemain inlet structure with a 200 mm diameter valved connection (valve normally closed) to the forcemain in Side Road 20, and a 1.5 m deep reinforced concrete lagoon effluent intake sump in the bottom of the cell, having walls extending 0.3 m above the bottom of the cell with stop log guides for extension of the walls up to 0.6 m above the bottom of the cell;

- a lagoon effluent pumping station consisting of a 3.0 x 3.6 m wood frame building located adjacent to the lagoon, housing one (1) 75 hp electric motor driven centrifugal sewage pump rated at 132 L/s at a TDH of 38.0 m with a 250 mm diameter suction pipe to the above-described lagoon effluent intake sump in Cell “B” with a self-cleaning rotating intake strainer, and a 300 mm diameter discharge pipe to the below-described South Field effluent distribution system, equipped with a magnetic flowmeter;

- a 23.0 ha effluent spray irrigation field (South Field), located immediately to the north and east of the above-described sewage lagoon, consisting of four (4) spray irrigation sites equipped with independently operated systems of sprinkler heads serviced by dedicated systems of distribution mains and laterals with valved connections to the above-described pumping station’s discharge pipe, with the individual spray irrigation sites sized as follows:
  
<table>
<thead>
<tr>
<th>Site</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>65,293 m²</td>
</tr>
<tr>
<td>B1</td>
<td>37,643 m²</td>
</tr>
<tr>
<td>C1</td>
<td>65,564 m²</td>
</tr>
<tr>
<td>D1</td>
<td>16,312 m²</td>
</tr>
</tbody>
</table>

- an 18.6 ha effluent spray irrigation field (North Field), located northwest of the above-described South Field, consisting of three (3) spray irrigation sites equipped with independently operated systems of sprinkler heads serviced by dedicated systems of distribution mains and laterals with valved connections to an approximately 630 m long 250 mm diameter transmission forcemain from the above-described pumping station’s discharge pipe at the north end of the South Field, with the individual spray irrigation sites sized as follows:
  
<table>
<thead>
<tr>
<th>Site</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>65,293 m²</td>
</tr>
<tr>
<td>C1</td>
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</tr>
<tr>
<td>D1</td>
<td>16,312 m²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>37,643 m²</td>
</tr>
<tr>
<td>C1</td>
<td>65,564 m²</td>
</tr>
<tr>
<td>D1</td>
<td>16,312 m²</td>
</tr>
</tbody>
</table>
F.7 Septic Tank and Subsurface Disposal System

- a 500 L capacity prefabricated concrete box grease trap overflowing to the septic tank described below;
- a 20,000 L capacity prefabricated concrete two-cell septic tank, equipped with a 3 mm slot 250 mm diameter tube screen on inlet to the tank overflow pipe discharging to the pump chamber described below;
- a 5,000 L capacity prefabricated concrete pump chamber equipped with a 1.0 hp submersible sewage pump, together with pump control and alarm level switches, and an above-ground control panel, feeding the leaching bed distribution system; and
- a 750 m² leaching bed, together with a pressure tight distribution box and 300 m of 32 mm diameter perforated distribution pipe arranged in ten (10) 30 m long parallel runs independently connected to the distribution box, spaced at centre line distance of 2.0 m and placed in 0.8 m deep x 0.6 m wide gravel trenches.
PART 4 SPECIALIZED APPROVALS

4.1 Comprehensive Certificate of Approval

A Comprehensive Certificate of Approval (CCA) for sewage works provides a certificate holder with the operational flexibility to make changes to defined aspects of the works without a requirement to obtain further approvals. It allows the owner to plan and to make changes to their facilities in a timely manner and reduces the delays associated with the traditional approvals process.

Please note that final decision regarding eligibility for a Sewage Works CCA lies with the Ministry and applications may be rejected for several reasons that include but are not limited to: municipal concerns, or increased public interest in the application. The Ministry may remove an Applicant at any point in the application process. Applications that are rejected and are deemed ineligible for a Sewage Works CCA may be assessed through the regular process (i.e., treated as a non-Comprehensive application).

The issuance of a CCA will not relieve the certificate holder from obtaining all other necessary approvals and permits from other applicable agencies.

4.1.1 Application Requirements

In addition to the requirements previously referred to in Part 3 of this Guide, an application for a CCA for sewage works shall provide the following additional information.

A. Mandatory Consultation with Ministry Local District Office

Applicants submitting an application for a Sewage Works CCA are required to consult with the local District Office to discuss if there are any site-specific issues that should be addressed in the application. The Applicant must identify in the cover letter to the Director, Section 53, OWRA, EAAB who was consulted with at the local District Office. Significant local concern, including a history of outstanding environmental issues or complaints could make the applicant ineligible for a Sewage Works CCA.

B. Mandatory Consultation with Local Municipalities

Applicants submitting an application for a Sewage Works CCA are required to carry out pre-consultation with the local municipal authorities (upper and lower tier as appropriate) prior to submitting the application. An application for a Sewage Works CCA must include confirmation that site is adequately zoned. Failure to provide confirmation of zoning will result in the application being ineligible for a CCA.

The pre-consultation must include discussions with the municipality about how any local by-laws and/or other land use management instruments might affect the envelope of operational flexibility of the Sewage Works CCA.

It is the expectation that applications received for Sewage Works CCA have adequately addressed the concerns of the local municipality. If a municipality expresses significant concerns about an application it may result in the application being ineligible for a Sewage Works CCA.
C. Preparation of an Engineer’s Report

An application for a Sewage Works CCA includes the requirement that an Engineer’s Report be prepared. This is a report that defines the operational envelope of a CCA. The Engineer’s Report must contemplate each of the aspects of the sewage works that will be afforded operational flexibility. This report will form part of the application and will be made available as part of the public record under the EBR. Any change to this document will require an application to amend the Sewage Works CCA.

The Sewage Works CCA will include conditions that pre-approve identified modifications to the works that are within the operating envelope defined in the Engineer’s Report.

The Engineer’s Report must be prepared and stamped by a qualified Professional Engineer, who is not a direct employee of the Applicant. The engineer must independently verify the details of the site design and operations and must include in the report a statement of accountability indicating that the information presented in the report is accurate.

The Engineer’s Report must contain:

1. A commitment by the certificate holder to adhere to specific engineering standards, design codes, Ministry guidance documents, industry best management practices that the Applicant will adhere to in making any modifications to the sewage works.
2. The details of any design constraints imposed on the sewage works by municipal sewer use by-laws, or conservation authorities (in the case of stormwater management projects).
3. A detailed identification and assessment of the changes that can be made to the sewage works under the operational flexibility envelope.
4. Appropriate conservation authority clearance and zoning approvals as necessary.
5. A statement declaring that the proposed modifications were designed and stamped by a licensed Professional Engineer in Ontario and are not likely to result in an adverse effect.

D. Enhanced Environmental Bill of Rights Posting (if applicable)

The proposal description for the Environmental Registry posting must clearly define the operational flexibility that is being requested.

E. Enhanced Financial Assurance Evaluation (if applicable)

The financial assurance information provided must include a detailed assessment of the amount of financial assurance required for each of the sewage works scenarios presented in the application. The evaluation must be prepared in accordance with Ministry’s “Financial Assurance Guideline” (Guideline F-15).

F. Quality Control / Quality Assurance (QA/QC)

An application for a Sewage Works CCA is only considered valid if the following declarations are included in the submission.
1. Applicant Statement

The following statement must be signed and dated by the Signing Authority.

- I am a representative of (company name) and I am authorized and have the knowledge to make the following statements.
- I have retained/directed the person(s) responsible for preparing this Application.
- I have not knowingly withheld any information necessary for the Applicant and/or Project Technical Information Contact and/or Engineer to complete the Application.
- To my knowledge, the information presented in this Application is a true representation of the sewage works.

2. Project Technical Information Contact Statement

The following statement must be signed and dated by the Project Technical Information Contact.

- I am a representative of (company name) and I am responsible for the preparation of the technical content of the application.
- I have followed the requirements listed in the “Guide for Applying for Approval of Sewage Works”, PIBS 7339e.
- I have used technical and scientific principles in accordance with current and generally accepted ethics and practices.
- I have verified that the details of the Design and Operations Report, Financial Assurance Estimate and Engineer’s Report presented in the Application is accurate, and I have checked that the information presented in any tables, figures, drawings and/or calculations is correct.
- I have not withheld any necessary information provided by the Applicant in the completion of Application.
- To my knowledge, the information presented in the Design and Operations Report and Engineer’s Report is a true representation of the sewage works.

The Project Technical Information Contact may be the Applicant or a consultant hired by the Applicant.

Note: In order to be eligible for a Sewage Works CCA, it is mandatory that the Project Technical Information Contact has completed the Ministry Sewage Works CCA orientation and is in good standing with EAAB.

3. Third Party Professional Engineer Statement

The following statement must be signed and dated by the engineer that prepared the Engineer’s Report.

- I am a representative of (company name) and I am authorized and have the knowledge to make the following statements.
- I have used engineering or scientific principles in accordance with current and generally accepted ethics and practices, as recognized by members of
environmental engineering or science professions/disciplines for sites in similar geographic locations.

- In preparing the Engineer’s Report I have independently verified that details of the Design and Operations Report and Engineer’s Report, and to the best of my knowledge, the information presented in the reports is accurate.
- I have not knowingly withheld any information necessary for the Applicant and/or Project Technical Information Contact to complete the Application.

The Third Party Professional Engineer must not be a direct employee of the Applicant. If the Third Party Professional Engineer has also been identified as the Project Technical Information Contact for the Application he/she must complete both statements.

Note: In order to be eligible for a Sewage Works CCA, it is mandatory that the Third Party Professional Engineer has completed the Ministry Sewage Works CCA orientation and is in good standing with EAAB.

4.1.2 Scope of Operational Flexibility

A CCA for sewage works provides the certificate holder operational flexibility with respect to the specific aspects of the sewage works. The certificate holder will be required to adhere to specific engineering standards, design codes, Ministry guidance documents and industry best management practices in making the changes. The following describes the aspects of the sewage works subject to pre-approval:

1. Make modifications to the sewage works’ equipment: The Sewage Works CCA will allow the certificate holder to modify, add, upgrade, or enhance equipment used as part of the sewage works. These modifications will be allowed only for modifications covered within the Sewage Works CCA, meeting its requirements and for those modifications which are not intended to piecemeal major alterations or expansions. For example, a certificate holder would be able to replace/upgrade pumps, add a supervisory control and data acquisition (SCADA) system, improve the disinfection process and use equivalent oil/grit separators, while continuously meeting the effluent limits and not exceeding the sewage works’ rated capacity.

2. Make modifications to the sewage works’ operational procedures: The Sewage Works CCA will allow the certificate holder to make changes to the operations of the works that are consistent with the function of the approved operations. These modifications will be allowed as long as the operational methodology and treatment technology are not modified. For example, a wastewater treatment plant would be allowed to modify the coagulant chemical type and dosage used in a treatment process, but modifications that produce additional/new by-products, new contaminants and/or increased contaminant loadings to effluent receivers will not be covered under the CCA.

3. Make modifications to the sewage works that are routine, with predictable effects that are environmentally insignificant: The Sewage Works CCA will allow the certificate holder to make modifications to the sewage works that are routine, predictable and are environmentally insignificant. Such activities should be outlined in the operational envelope specified in the Engineer’s Report. Modifications considered to be administrative would also not require a further approval.
The Director, Section 53 of OWRA or the District Manager will have the discretion to refuse proposed modifications as meeting the CCA conditions if he or she is not satisfied that the proposed modifications have not been designed to satisfy the CCA operational flexibility.

### 4.1.3 Limitation

A Sewage Works CCA **does not** provide the certificate holder with operation flexibility for the following:

1. **Increase the rated capacity of the works:** A Sewage Works CCA will not allow the certificate holder to increase the rated capacity of the sewage works as approved under the existing certificate.

2. **Modify the catchment area for stormwater management projects:** A Sewage Works CCA will not allow the certificate holder to expand or reduce the catchment area serviced by a stormwater management facility.

3. **Modify the works affecting effluent quantity and quality and receiver:** A Sewage Works CCA will not allow the certificate holder to make changes to the works which would affect effluent quantity and quality and effluent receiver location. An example of this would be installing a larger orifice on a storm sewer outfall, or the relocation of an outfall structure, or modifications that include restrictions under the EBR.

4. **Make modifications to the works that are not identified in the Engineer's Report:** The Engineer’s Report defines the operational envelope of a Sewage Works CCA. Only modifications outlined in the operational envelope can be performed.

5. Make modifications to the works that have requirements under the OWRA.

6. **Make modifications to works which are exceeding effluent limits or under a non-compliance order by the Ministry:** Any works which are currently exceeding effluent limits or under a non-compliance order by the Ministry do not have operational flexibility under a Sewage Works CCA.

7. Make modifications that involve change of process chemicals/materials and operations that may constitute a significant change or a change that may alter the intend of operations and may have impacts on sewage works, effluent quantity and quality.

**Note:** The above limitations apply to activities identified in Table 1, Municipal and Private Sewage Works, and Table 2, Industrial Sewage Works, of this Guide.

### 4.1.4 Notifications

A Sewage Works CCA will require that the certificate holder demonstrate ongoing compliance with the section 53 of the OWRA and other performance requirements in accordance with the conditions in the certificate. In return for the operational flexibility the certificate holder will include the following requirements:

Requirement to provide notification reports to the Director and the local District Office prior to taking advantage of the operational flexibility afforded by the certificate. The report shall include:
1. A description of the modification to the sewage works including an assessment of the anticipated environmental effects of the change.

2. Updated versions of all relevant technical documents that are affected by the change such as design reports, design drawings, stormwater management reports and water quality study reports.

3. Signed statements by a director of the certificate holder and by a Professional Engineer who is not a direct employee of the Applicant declaring that the modifications being carried out are within the pre-approved operating envelope of the Sewage Works CCA and that the changes to the operations are consistent with industry’s best management practices and are in compliance with EPA, OWRA and will not result in an adverse effect to the natural environment.

4. Appropriate conservation authority clearance and zoning approvals if necessary.

After the certificate holder demonstrate ongoing compliance with the Sewage Works CCA and after 30 calendar days of receipt of this notification report by the Director and the District Office, and having not received objections or any request of additional information, the certificate holder may proceed with the terms of the proposed modifications governed by the Sewage Works CCA operational flexibility.

4.1.5 Guidelines for Operational Flexibility in Typical Projects

This section provides guidelines for typical projects and whether operational flexibility is intended or not. The activities listed are general in nature and it is the scope of the Engineer’s Report to customize a table detailing specific activities covering all activities that the CCA will afford operational flexibility. These activities have been grouped in: (1) Municipal and Private Sewage Works and (2) Industrial Sewage Works.

(1) Municipal and Private Sewage Works

Table 1 shows the most common activities for Municipal and Private Sewage Works noting whether operational flexibility is afforded or not. Table 1 was adapted and expanded from the Municipal Class Environmental Assessment activity tables for projects considered Schedule A and Schedule A+.

(2) Industrial Sewage Works

Table 2 shows the most common activities for Industrial Sewage Works noting whether operational flexibility is afforded or not.
### Table 1. Municipal and Private Sewage Works

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Afforded operational flexibility under CCA?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Normal/Emergency operational activities (*)</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Increase pumping station capacity by adding or replacing equipment where new equipment is located within an existing building or structure and where the existing rated capacity is not exceeded</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Expand/refurbish/upgrade sewage treatment plant including outfall up to existing rated capacity where no land acquisition is required</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Install chemical or other process equipment for operational or maintenance purposes in existing sewage collection system or existing sewage treatment facility</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Provide additional treatment facilities in existing lagoons, such as aeration, chemical addition, post treatment, including expanding lagoon capacity up to existing rated capacity, provided no land acquisition nor additional lagoon cells are required</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>Expansion of the buffer zone between a lagoon facility or land treatment area and adjacent uses where the buffer zone is entirely on the Applicant’s land</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Dispose of, utilize, or manage biosolids on an interim basis (e.g., further treatment in drying beds, composting, temporary holding at transfer stations), at: a) An existing sewage treatment plant where the biosolids is generated, or b) An existing landfill site, incinerator or organic soil conditioning site, where the biosolids is to be utilized or disposed of</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>Establish a new biosolids organic soil conditioning site</td>
<td>Yes</td>
</tr>
<tr>
<td>9</td>
<td>Increase sewage treatment plant capacity beyond existing rated capacity through improvements to operations and maintenance activities only, but without construction of works to expand, modify or retrofit the plant or the outfall to the receiving water body, with no increase to total mass loading to receiving water body as identified in the Comprehensive Certificate of Approval</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>Establish, extend, or enlarge a sewage collection system and all necessary works to connect the system to an existing sewage outlet, where it is required as a condition of approval on a site plan, consent plan of subdivision or plan of condominium which will come into effect under the Planning Act prior to the construction of the collection system</td>
<td>No</td>
</tr>
<tr>
<td>11</td>
<td>Establish new or replace or expand existing stormwater detention/retention ponds or tanks and appurtenances including outfall to receiving water body, provided that all such facilities are in either an existing utility corridor or an existing road allowance</td>
<td>Yes</td>
</tr>
<tr>
<td>12</td>
<td>Replace traditional materials in an existing watercourse or in slope stability works with material of equal or better properties, at substantially the same location and for the same purpose</td>
<td>No</td>
</tr>
<tr>
<td>13</td>
<td>Reconstruct an existing dam weir at the same location and for the same purpose, use and capacity</td>
<td>Yes</td>
</tr>
<tr>
<td>No.</td>
<td>Activity</td>
<td>Afforded operational flexibility under CCA?</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>14.</td>
<td>Expand, improve or modify existing patrol yards, equipment and material storage facilities, maintenance facilities and parking lots for service vehicles, where no land acquisition is required</td>
<td>X</td>
</tr>
<tr>
<td>15.</td>
<td>Sewage projects planned and approved under Ontario Regulation 586/06 (Municipal Improvements – service connection)</td>
<td>X</td>
</tr>
<tr>
<td>16.</td>
<td>Roadside ditches, culverts and other such incidental stormwater works constructed solely for the purpose of servicing municipal road works</td>
<td>X</td>
</tr>
<tr>
<td>17.</td>
<td>Construction of stormwater management facilities which are required as a condition of approval on a consent, site plan, plan of subdivision or condominium which will come into effect under the Planning Act prior to the construction of the facility</td>
<td>X</td>
</tr>
<tr>
<td>18.</td>
<td>Establish, extend, or enlarge a sewage collection system and all necessary works to connect the system to an existing sewage or natural drainage outlet, provided all such facilities are in either an existing road allowance or an existing utility corridor, including the use of Trenchless Technology for water crossings</td>
<td>X</td>
</tr>
<tr>
<td>19.</td>
<td>Retire a facility which would have been planned under Schedule A or Schedule A+ of the Municipal Class EA for its establishment</td>
<td>X</td>
</tr>
<tr>
<td>20.</td>
<td>Increase pumping station capacity by adding or replacing equipment where new equipment is located within an existing building or structure and where the existing rated capacity is exceeded</td>
<td>X</td>
</tr>
<tr>
<td>21.</td>
<td>Installation or replacement of standby power equipment where new equipment is located in an existing building or structure</td>
<td>X</td>
</tr>
<tr>
<td>22.</td>
<td>Modify, retrofit, or improve a retention/detention facility including outfall or infiltration system for the purpose of stormwater quality control. Biological treatment through the establishment of constructed wetlands is permitted</td>
<td>X</td>
</tr>
<tr>
<td>23.</td>
<td>Installation of automation and control equipment, SCADA systems, including the replacement of pumping equipment on existing buildings, provided that the existing rated capacity is not exceeded</td>
<td>X</td>
</tr>
</tbody>
</table>

(\*) Normal or emergency operational activities may include, but are not limited to, the following:

- modify, repair, reconstruct existing facilities to provide operational, maintenance or other improvements such as reducing odour, insulating buildings to reduce noise levels and conserve energy, landscaping
- ongoing maintenance activities
- normal operation of sewage treatment plants
- installation of new service connections, catch basins and appurtenances from existing sewers
- maintenance and/or minor improvements to grounds and structures
- addition of minor buildings, sheds and equipment and materials storage areas
- repairs, cleaning, renovations or replacement of sewage treatment facilities, pumping plant equipment or outfalls
- cleaning, relining, repairs and renovations to existing sewage collection system
- installation or replacement of standby power equipment where new equipment is located within an existing building or structure.
### Table 2. Industrial Sewage Works

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Afforded operational flexibility under CCA?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>1.</td>
<td>Modifications to the freeboard elevation on sewage ponds, provided all such modifications are included within the Engineer’s Report specs and dam stability is not compromised</td>
<td>X</td>
</tr>
<tr>
<td>2.</td>
<td>Changes to the monitoring conditions as approved in writing by the District Office, provided that positive feedback is obtained first from the Ministry Regional Technical Support</td>
<td>X</td>
</tr>
<tr>
<td>3.</td>
<td>Minor equipment changes and installation of chemical or other process equipment for operational or maintenance purposes in existing sewage collection system or existing sewage treatment facility (e.g., location, treatment and process chemicals being used) with no impacts to plant capacity and final effluent quality and quantity</td>
<td>X</td>
</tr>
<tr>
<td>4.</td>
<td>Normal/Emergency operational activities (*)</td>
<td>X</td>
</tr>
<tr>
<td>5.</td>
<td>Increase pumping station capacity by adding or replacing equipment where new equipment is located within an existing building or structure and where the existing rated capacity is not exceeded</td>
<td>X</td>
</tr>
<tr>
<td>6.</td>
<td>Expansion of the buffer zone between sewage works or land treatment area and adjacent uses where the buffer zone is entirely on the Applicant’s land, and when minimum separation distance guidelines are observed (Guideline D-2, Compatibility between Sewage Treatment and Sensitive Land Use)</td>
<td>X</td>
</tr>
<tr>
<td>7.</td>
<td>Expand, improve or modify existing patrol yards, equipment and material storage facilities, maintenance facilities and parking lots for service vehicles, where no land acquisition is required</td>
<td>X</td>
</tr>
<tr>
<td>8.</td>
<td>Installation or replacement of standby power equipment where new equipment is located in an existing building or structure</td>
<td>X</td>
</tr>
<tr>
<td>9.</td>
<td>Installation of automation and control equipment, SCADA and instrumentation systems, including the replacement of pumping equipment on existing buildings, provided that the existing rated capacity is not exceeded</td>
<td>X</td>
</tr>
</tbody>
</table>

#### 4.2 Transfer of Review Program

Applications for approval of sewage works having low technical complexity and low potential for significant environmental or public health impact, proposed to be located within certain designated municipalities may be routed through the appropriate designated municipal authority under the Transfer of Review Program. All other applications must be submitted directly to the Ministry.

The Transfer of Review Program is a program where a designated municipal authority reviews the application and supporting documentation on behalf of the Ministry. The municipal authority then submits the application to the Ministry together with their recommendations for approval, or comments explaining why an application is not recommended for approval.

The types of works covered by the program depend on individual agreements between the Ministry and the designated municipal authority, and they usually include storm and sanitary
sewers (except for new stormwater outfalls), sewage pumping stations (except for those pumping directly to a sewage treatment plant), and in some cases, stormwater management facilities.

Appendix B of this Guide lists the municipal authorities participating in the program and specifies the types of water and sewage works which individual municipal authorities are authorized to review on behalf of the Ministry. However, it is recommended that before submitting an application to a designated municipal authority for review under the Transfer of Review Program, the Applicant contact the Engineering Department of the municipal authority to confirm that approval for the particular type of works can be processed under the Transfer of Review Program by that municipal authority.

For an application to be processed under the Transfer of Review Program, the Applicant must submit two (2) copies of the completed application form and supporting documentation, together with an appropriate application fee, to the designated municipal authority, and one (1) copy of the completed application form and supporting documentation to the Ministry local District Office.

4.3 Approvals Subject to Approval of Final Plans and Specifications

When requested, in some special circumstances, the Director may grant an approval in principle for works whose detailed engineering design has not been finalized, provided that the design has advanced to the stage where all significant technical decisions having a potential to affect performance and/or environmental impact of the works have been already made. [Note: Such an approval in principle is not an authorization to construct the proposed works.]

Such an approval in principle would include a special condition prohibiting construction of any part of so approved works until the Director has received and approved in writing detailed engineering design drawings, specifications, and a final engineering design report containing detailed design calculations for that part of the works.

A request for such an approval will be considered if the entity financing or approving the financing of the project (e.g., the Ontario Municipal Board) requires the Applicant to provide a proof of the Ministry’s acceptance of the proposal prior to their release or approval to release funds for the undertaking of the detailed engineering design.

Similarly, an approval in principle, subject to a separate approval of final engineering design for the proposed works, or its part, may be granted for a large project with agreed upon phased implementation of its various components, or a “design-build” project, i.e., a project intended to be implemented through a single contract between the Applicant and a Contractor who would both design and construct the works.

In the Ministry’s experience, the submitted final design often introduces significant changes to the preliminary design approved in principle, which then means an in-depth reanalysis of the entire proposal. This reanalysis very significantly increases the total time that the Ministry has to spend reviewing the proposal, and indirectly, increases the turnaround of all other applications for approval.

Therefore, requests for such staged approvals will only be considered where the Applicant has included with the application for approval an adequate written justification for the proposed
course of action. It is highly recommended that, where the Applicant intends to take this route, the issue be discussed in the pre-application consultation.

The technical information (including the environmental impact and/or water source information, where applicable) required to be submitted in support of various sewage works applications for such an approval in principle is outlined in Part 3 of this Guide.
APPENDIX A

SAMPLE TEMPLATES TO ASSIST WITH COMPLETING SCHEDULE A: PIPE DATA FORM
Schedule A, Section 2 - Storm Sewers, Section 2.5  
Sample Template for “Storm Sewer Hydraulic Design Sheet”

<table>
<thead>
<tr>
<th>STORM SEWER HYDRAULIC DESIGN</th>
<th>Ref #</th>
<th>Checking Date: n=</th>
<th>Reviewer:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site location (City)</td>
<td></td>
<td>Design Storm: The</td>
<td>Year Storm Event</td>
</tr>
<tr>
<td>Rational Formula: Q = 2.78*CIA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where: Q: peak flow (L/s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: runoff coefficient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I: rainfall intensity (mm/h)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: area (ha)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rational Formula: Q = 2.78*CIA
Where: Q: peak flow (L/s)
C: runoff coefficient
I: rainfall intensity (mm/h)
A: area (ha)

Concentration time: tc = ti + tf (minute)
Where: ti: inlet time before pipe (minute)
tf: time of flow in pipe (minute)

Manning Equation:
Qcap. = (D/1000)^2.667*(S/100)^0.5/(3.211*n)*1000 (L/s)
D: pipe size (mm)
S: slope (grade) of pipe (%)
n: roughness coefficient

### Runoff

<table>
<thead>
<tr>
<th>Street Name</th>
<th>From</th>
<th>TO</th>
<th>Area</th>
<th>Section</th>
<th>Accum.</th>
<th>Peak Flow</th>
<th>Length</th>
<th>Slope</th>
<th>N. D.</th>
<th>Qcap.</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH/CB</td>
<td>(ha)</td>
<td>(ha)</td>
<td>(ha)</td>
<td>(Min.)</td>
<td>mm/hr</td>
<td>(L/s)</td>
<td>(m)</td>
<td>%</td>
<td>(mm)</td>
<td>(L/s)</td>
<td>(m/s)</td>
</tr>
</tbody>
</table>

### Pipe

<table>
<thead>
<tr>
<th>Street Name</th>
<th>From</th>
<th>TO</th>
<th>Area</th>
<th>Section</th>
<th>Accum.</th>
<th>Peak Flow</th>
<th>Length</th>
<th>Slope</th>
<th>N. D.</th>
<th>Qcap.</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH/CB</td>
<td>(ha)</td>
<td>(ha)</td>
<td>(ha)</td>
<td>(Min.)</td>
<td>mm/hr</td>
<td>(L/s)</td>
<td>(m)</td>
<td>%</td>
<td>(mm)</td>
<td>(L/s)</td>
<td>(m/s)</td>
</tr>
</tbody>
</table>
Schedule A, Section 3 - Sanitary Sewers, Section 3.4  
Sample Template for “Sanitary Sewer Design Sheet” 

<table>
<thead>
<tr>
<th>Location</th>
<th>Individual</th>
<th>Accumulative</th>
<th>Peaking</th>
<th>Pop.</th>
<th>Extran.</th>
<th>Design</th>
<th>Length</th>
<th>Size</th>
<th>Slope</th>
<th>Capacity</th>
<th>Velocity</th>
<th>Q(d)/Qcap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>From</td>
<td>To</td>
<td>P</td>
<td>Area</td>
<td>Factor</td>
<td>Q(p)</td>
<td>Q(e)</td>
<td>Q(d)</td>
<td>L</td>
<td>D</td>
<td>S</td>
<td>Qcap</td>
</tr>
<tr>
<td>MH</td>
<td>MH</td>
<td>(person)</td>
<td>(ha)</td>
<td>(person)</td>
<td>M</td>
<td>(L/s)</td>
<td>(L/s)</td>
<td>(L/s)</td>
<td>(m)</td>
<td>(mm)</td>
<td>(%)</td>
<td>(L/s)</td>
</tr>
</tbody>
</table>

Residential Unit average daily flow (q): \( L/\text{cap.d} \) (225~450 \( L/\text{cap.d} \))

Unit extraneous flow (E): \( L/\text{ha} \) (0.1~0.28\( L.s.ha \))

- \( q \): average daily per capita flow \( (L/\text{cap.d}) \)
- \( I \): Unit of peak extraneous flow \( (L/s.ha) \)
- \( Q(p) \): peak population flow \( (L/s) \)
- \( Q(I) \): peak extraneous flow \( (L/s) \)
- \( Q(d) \): peak design flow \( (L/s) \)

**Review Date:** month/day/year

**Site location (City):**

**Ref #:**

**n:** roughness coefficient

**Review:** 0

**Manning Equation:**

\[ Q_{\text{cap.}} = \frac{(D/1000)^2.667(S/100)^0.5}{(3.211^n)^*1000} \text{ (L/s)} \]

\[ Q_{p} = \frac{(P/1000)qM/86.4}{(L/s)} \]

\[ Q_{I} = IA \text{ (L/s); where } A = \text{ Area in hectares} \]

\[ Q_{d} = Q(p) + Q(I) \text{ (L/s)} \]
APPENDIX B

MUNICIPALITIES CURRENTLY UNDER THE TRANSFER OF REVIEW PROGRAM
Municipalities Currently under the Transfer of Review Program

* Barrie, The Corporation of the City of
  Brantford, The Corporation of the City of
  Chatham-Kent, The Corporation of the Municipality of

* Durham, The Regional Municipality of
  Greater Sudbury, City of
  Halton, The Regional Municipality of
  Hamilton, City of
  Kingston, The Corporation of the City of

* London, The Corporation of the City of  (includes limited sediment control ponds/wet ponds for “basic” quality control)

* Markham, The Corporation of the Town of

* Muskoka, The District Municipality of
  Niagara, The Regional Municipality of
  Norfolk County, The Corporation of

* North Bay, The Corporation of the City of

* Orillia, The Corporation of the City of

* Peel, The Regional Municipality of (includes stormwater management works in the City of Mississauga only)
  Peterborough Utilities Services Inc.  (drinking water systems only)

* Richmond Hill, The Corporation of the Town of
  Sault Ste. Marie, The Corporation of the City of  (sewage works)
  PUC Services Inc. (Sault Ste. Marie)  (drinking water systems)

  St. Clair, The Corporation of the Township of (includes watermains and storm and sanitary sewers (no pumping stations))

  Thunder Bay, The Corporation of the City of
  Timmins, The Corporation of the City of
  Toronto, City of
  Waterloo, The Regional Municipality of

* York, The Regional Municipality of  (excludes works in the Town of Markham and the Town of Richmond Hill (listed separately))

* includes stormwater management facilities (not for quality control)

Note: Except as indicated above, the types of works covered by the program include:
watermains, water booster pumping stations, storm and sanitary sewers (except for new stormwater outfalls), and sewage pumping stations and forcemains (except for those pumping directly to a sewage treatment plant). Watermains are excluded for highlighted municipalities, which have licences for all of their drinking water systems.