



# Ontario Provincial Standards for Roads and Public Works (OPS)

OPS User Notes - 2010

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## 1.0 Introduction to the Ontario Provincial Standards

Standards and standardization have existed in our world for a long time. Standardization in our present day industrial world is a powerful force helping to simplify production procedures. Standardization can limit the unnecessary variety of products and components. Duplication is reduced with resulting cost savings and without reduction in quality.

The push towards greater standardization in road building has come from a number of sources, but the contracting associations have often pointed out areas where there is a lack of standardization or where there are too many standards in use by different authorities for virtually the same purpose.

The Ontario Provincial Standards are being produced as a result of recommendation of the *Municipal Project Liaison Committee Report of July 1977*. The then Deputy Minister of the Ministry of Transportation and Communications, Harold Gilbert, established the committee with the purpose of finding ways to improve the administration of municipal road building contracts.

After six years of discussions, reviews, and standards development, the Ontario Provincial Standards were published for the first time in January 1984. Since that time, the standards have been reviewed and revised on an ongoing basis, and new standards have been added as OPS users identify the need.

The OPS organization is co-owned by the Municipal Engineers Association (MEA) and the Ontario Ministry of Transportation (MTO). Working with other private and public associations, the co-owners maintain the standards (i.e., Ontario Provincial Standards Specifications (OPSS) and Ontario Provincial Standards Drawings (OPSD)) through a structure of committees. Standards are revised and developed by nine OPS specialty committees (Committees) through consensus. Membership on the Committees is made up of professional and technical individuals, who volunteer their time and are supported by the organizations for which they work, to represent the OPS owners and partners.

#### **Ontario Provincial Standards Partner Organizations:**

City of Toronto	
Consulting Engineers of Ontario	CEO
Electrical Contractors Association, Ontario	ECAO
International Municipal Signals Association	IMSA
Ontario Good Roads Association	OGRA
Ontario Road Builders' Association	ORBA
Ontario Sewer and Watermain Construction Association	OSWCA

## **2.0 Use of Ontario Provincial Standards**

Use of the Ontario Provincial Standards by the province or municipalities is not mandatory.

The standards in the OPS manuals are for use as pre-printed components of a construction contract. They are not prepared as design aids or as a manual of design procedures, and they will not competently serve those purposes.

Each infrastructure owner (Owner) is responsible for determining implementation dates and directions for use of Ontario Provincial Standards; therefore, manual holders are cautioned about immediately discarding superseded and cancelled standards. Standards are not immediately implemented in MTO. Each set of MTO Contract Documents lists the standards that apply to a particular Contract, and the MTO Contract Preparation System (CPS) lists the standards that have been implemented.

### **2.1 Interpretation**

The following terms apply to the Ontario Provincial Standards:

**. . . shall be according to . . .** This phrase indicates that work, products, or materials are to meet the requirements of another standard or publication. For consistency, as specifications and drawings are being revised or when new standards are being developed, this phrase shall replace or be used rather than phrases such as *shall be in conformity*, *shall be in conformance with*, or *shall be in accordance with*.

**shall, may, should, and will** *Shall* is used to convey a mandatory obligation. *May* is used to convey there is a choice. *Should* is used to convey a recommendation that is not a mandatory obligation. While a common usage of *will* for most people, but not all people, would indicate a mandatory obligation, *shall* is used in the Ontario Provincial Standards. *Will* may still be found in some of the older Ontario Provincial Standards and, in such cases, it is to convey a mandatory obligation. For consistency and to remove all

potential speculation of the meaning of *will*, as specifications and drawings are being revised or when new standards are being developed *will* is being replaced.

**. . . as specified in the Contract Documents** This phrase is used to indicate to the Contractor that the Owner has requirements supplemental to the standard that can be found in other parts of the Contract Documents. Some older specifications use the phrases *specified in the Contract* or *as specified*. For consistency and to remove all potential speculation of the meaning of these phrases, as specifications are being revised or when new standards are being developed they are being replaced by *as specified in the Contract Documents*. Due to space concerns, the phrase *as specified* will be used on the OPS drawings to mean *as specified in the Contract Documents*.

**Contract Administrator:** Term used when referring to the Owner's representative.

**Day, Working Day, and Business Day:** These terms are defined in the General Conditions of Contract. The term *Day* is used rather than *calendar day*. *Working Day* is used when describing the timing of an operation is to be completed based on the controlling operation of the contract. *Business Day* is used when describing the timing based on Monday to Friday.

### 3.0 Appendices in the Ontario Provincial Standard Specification

All of the OPS specifications published since 2000 have at least one appendix attached to them. As the older OPSSs are reviewed, appendices will be added to them. Before an appendix becomes part of the Contract Documents, the Owner/designer must invoke it by reference in the Contract Documents. Appendices are attached to the OPSSs for ease of access to the Owner and are written for use by the Owner.

Appendices are not automatically part of the OPSS or the Contract Documents. This is the default condition. Each Owner is responsible for determining which appendices will be used in their Contracts.

There are three types of appendices in OPSSs:

**Commentary** - this type of appendix provides designers with information on the use of a specification in a Contract. A commentary is required for all construction and material specifications. Owners may have their own Contract preparation documentation that supersedes this type of appendix. Commentary appendices are notes to designers so will never be invoked in a Contract—they are only information to the designer.

**Additional Information** - this type of appendix includes information that can be used as supplementary information to the specification or supplementary requirements to modify a specification. They are written in mandatory language to allow Owners to invoke the additional information option in a Contract without revising the appendix.

The additional information is data that was not included in the specification as it does not represent standard practice in most jurisdictions but some Owners may wish to apply it to their Contracts. Over time, this additional information may become part of the specification as it becomes more widely used and accepted. Examples of additional information are referee testing, retesting procedures, and gradation tables.

**End-Result Specification (ERS)** - this type of appendix provides ERS information written in mandatory language to allow Owners to invoke the ERS option in their Contracts by reference in the Contract Documents. The entire appendix must be invoked to make the specification end-result oriented.

## 4.0 About the Ontario Provincial Standards

### 4.1 OPS Review Process

Standards are not static documents. They must be constantly updated to reflect current industry practices. The OPS process contains a mechanism for revising existing standards and creating new ones and relies heavily upon the participation of the users.

There are three methods that can initiate a review of a standard [Attachment A]:

- Reviews based on the cyclical review schedule (annual work plan) of an OPS specialty committee (Committee)
- Reviews identified by OPS users
- Reviews of specifications developed by MTO or through MEA

The first two methods listed above have always been a part of the OPS review process and apply to the review of specifications and drawings. Whether the review is initiated as part of a committee's cyclical review schedule or due to request from an OPS user, the review follows a set procedure as shown in Attachment B.

In 2006, the OPS Advisory Board (Board) approved a revised OPS review process. In a joint project, the co-owners of OPS revised the OPS review process resulting in the third method to initiate a review of a specification. The review of OPS drawings was not affected by the introduction of the new method. The third method allows for the publishing of three types of OPS specifications [Attachments C and D].

The new method does not produce three sets of independent standards; rather, it produces three different types of OPSSs with common elements for use in different business environments:

- Municipal and provincial common (Common) OPSSs – developed for use in both provincial- and municipal-oriented Contracts. The administration, testing, and payment policies, procedures, and practices reflected in this type of OPSS correspond to those used by many municipalities and the Ontario Ministry of Transportation alike.
- Provincial-oriented (PROV) OPSSs – developed to reflect the administration, testing, and payment policies, procedures, and practices of the Ontario Ministry of Transportation.
- Municipal-oriented (MUNI) OPSSs – developed to reflect the administration, testing, and payment policies, procedures, and practices of many municipalities in Ontario.

### 4.2 Ontario Provincial Standards Publication Dates

The OPS organization publishes its standards, barring any unforeseen circumstances, as follows:

- April 30
  - to correct errors in recently published standards and to publish new or revised Common OPSSs that are time-sensitive (e.g., legislative changes; collision prevention recommendations; and OPSS 127, Schedule of Rental Rates for Construction Equipment, Including Model and Specification Reference)
  - to publish new and revised provincial- and municipal-oriented OPSSs
- November 30
  - to publish new and revised standards
    - OPSDs and Common OPSSs reviewed and revised by the OPS Specialty Committees
    - provincial- and municipal-oriented OPSSs

The publication dates are the anticipated dates that the OPS Unit posts the standards to the OPS/MTO website <https://www.raqs.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage> and sends the standards to

Publications Ontario for publication or cancellation of the hard-copy and CD formats, normally within a month of the publication date.

### **4.3 Distribution of Ontario Provincial Standards**

The hard-copy, CD, and Web versions of the Ontario Provincial Standards are distributed using an eight-volume system as follows:

#### **Municipal and Provincial Common**

OPS Volume 1 General and Construction Specifications  
OPS Volume 2 Material Specifications  
OPS Volume 3 Drawings for Roads, Barriers, Drainage, Sanitary Sewers, Watermains, and Structures  
OPS Volume 4 Drawings for Electrical Work

#### **Provincial-Oriented**

OPS Volume 5 MTO General Conditions of Contract and General & Construction Specifications  
OPS Volume 6 Material Specifications

#### **Municipal-Oriented**

OPS Volume 7 OPS General Conditions of Contract and General & Construction Specifications  
OPS Volume 8 Material Specifications

Many aspects of provincial and municipal road and public works contracts are similar in nature, so:

- OPS Volumes 1 to 4 shall be the standards that both MTO and MEA develop through the Committees. They represent standards that reflect the needs of both MTO and municipalities in their Contracts.

Provincial and municipal contracts for road and public works may differ in such ways as administration, testing, and payment policies, procedures, and practices, so:

- OPS Volumes 5 and 6 shall be the specifications developed by MTO custodial offices and approved by the SMC to publish as Ontario Provincial Standards. They represent specifications that reflect the needs of MTO in its Contracts without the need for numerous SPs. Also, they may be the corresponding provincial-oriented OPSS to a specification developed for municipalities through MEA.
- OPS Volumes 7 and 8 shall be the specification developed by municipalities through MEA and approved by the SMC to be published as Ontario Provincial Standards. They represent specifications that reflect the needs of many municipalities in their contracts. Also, they may be the corresponding municipal-oriented OPSS to a specification developed by MTO.

### **4.4 Ontario Provincial Standard Specification Identification**

The OPS specifications are identified by a publication date and a unique number designation. The specifications are divided into two volumes, construction specifications and material specifications, that are further divided into divisions based on their subject matter [Attachment E].

The date, month, and year, shown in the heading of the first page and the footer of a specification is the date the specification was published. The date changes each time the specification is published.

Specification designations are three numbers for construction specifications and four for material specifications. The number of a specification does not change as long as the subject matter of the

specification remains the same and it remains until the specification is cancelled. The OPS specifications types are identified as follows:

- a) Depending on the type OPSS to be published, the OPS Unit shall ensure that the specification is identified by one of the following designation prefixes on the OPSS number (*nnn*):
    - Common OPSSs - OPSS *nnn*
    - Provincial-oriented OPSS - OPSS.PROV *nnn*
    - Municipal-oriented OPSS - OPSS.MUNI *nnn*
  - i. The specification number refers to a particular subject matter (e.g., pipe sewers are the subject matter of [OPSS] 410). Whether the specification is a Common OPSS or provincial-oriented OPSS or municipal-oriented OPSS for pipe sewers, the specification number is still 410. When there are provincial- and municipal-oriented specifications covering the same subject matter, both types of specifications have the same number though the prefix is different for each, even if one of the specifications is an end-result specification.
  - ii. When there is a Common OPSS for a given subject, there is not a provincial- or municipal-oriented OPSS for the same subject. Likewise, when there is a provincial- or municipal-oriented OPSS, there is not a Common OPSS and there may or may not be a corresponding municipal-oriented or provincial-oriented OPSS, respectively.
  - iii. The fact that a specification is identified as a Common, provincial-oriented, or municipal-oriented OPSS does not restrict its use to a specific Owner (i.e., a municipality could use a provincial-oriented OPSS and vice versa). Users of the various types of OPSSs should ensure their contract systems are compatible with the requirements of the chosen OPSS type.
- b) To further identify the orientation of a specification, the OPSS format is as follows.
    - i. Section 1, Scope – The type of the OPSS and its use shall be reflected in the Specification Significance and Use subsection. Depending on the type of OPSS, this subsection is written specifically for the OPSS type.
    - ii. Section 2, References – The introduction to Section 2 of each OPSS is written specifically for the OPSS type.

#### **4.5 OPS Drawing Identification**

The OPS drawings are identified by a unique number designation, a publication date, and a revision number. The drawings are divided into series based on their subject matter [Attachment E].

OPS drawing numbering format is either three or four numbers before the decimal and three numbers after. Some OPSDs have two numbers after the decimal and as these drawings are revised and, when there are no other OPSDs referencing them, they are renumbered with three numbers after the decimal. In OPS, adding a zero to the end of a drawing number means the number has changed.

The date, month and year, shown in the title block of a drawing is the date the drawing was published. The date changes each time the drawing is published.

The revision number is changed each time the drawing is revised and the drawing number does not change. If a drawing number changes or a new drawing is developed, then the revision number of the drawing is zero and increases by one in each subsequent revision.

## 5.0 Sections in the Ontario Provincial Standard Specifications

Information in OPS specifications follows a standard order:

- a) Specification technical information by section
- b) Tables referenced in the specification
- c) Figures referenced in the specification
- d) Forms referenced in the specification
- e) Appendices:
  - i. Commentary appendix
  - ii. Additional information appendices
  - iii. End-result appendices

The following explanations of the technical information within the sections of the OPS specifications are written in general terms. Some information may be found in sections other than indicated here; however, these are the descriptions of the intended information for each section:

### TABLE OF CONTENTS

Each specification has a table of contents that lists the sections of a specification. Construction specifications are divided into ten sections and material specifications are divided into nine sections. If a section is not used in a particular specification, the section number and title are shown along with the words - *Not Used*.

The table of contents also lists appendices that are attached to the specification. Appendices are not mandatory and do not form part of the specification unless invoked by the Owner. They are listed in the table of contents only for information purposes.

As General specifications do not normally deal with information that can be categorized into the same sections as construction and material specifications, they are not divided into a specific number of sections. However, if they can be categorized as such, the normal section titles should be used.

Some material specifications published before 1998 may contain a Section 10. The section was titled *Designated Sources Requirements* and is being deleted as the material specifications are revised.

### Section 1 SCOPE

Explains in brief and concise terms the purpose and extent of the specification. It gives the reader a quick overview of the specification.

As a part of the scope, there are two subsections: *Specification Significance and Use* and *Appendices Significance and Use*.

#### xxx.01.01 Specification Significance and Use

This subsection outlines the significance of the specification and the fact that its use is according to the Contract Documents. The reader is informed that the specification has been developed for use in either provincial-oriented or municipal-oriented contracts or both. Wording for this subsection depends on the type of specification being published and is standard for all specifications of the same type.

This subsection informs the reader that appendices are not a mandatory part of the specification unless invoked by the Owner, they are only developed for Owner use, and are not used in provincial contracts. Wording for this subsection is standard for all specifications.

## **Section 2 REFERENCES**

A list of all standards and publications referenced in the body of the specification is given in this section by number and title. The year of issue for these documents is a requirement for this section, except for the OPS specifications as it is assumed that all users have an up-to-date set of OPS specifications. Year of issue for the documents is only shown in this section and not in the body of the specification.

Forms referenced in OPSSs that are developed by an organization other than OPS and are published by the organization on its website or in electronic or hard-copy format are considered to be publications.

The introduction to the Reference section is standard wording and discusses how the user should read the OPSS references when the Contract Documents specify the use of common, municipal-oriented, and provincial-oriented OPSSs. The first two paragraphs of the introduction serve this function:

- a) For municipal-oriented OPSSs, the paragraph beginning with: *When the Contract Documents indicate that municipal-oriented specifications are to be used* is used in the introduction.
- b) For provincial-oriented OPSSs, the paragraph beginning with: *When the Contract Documents indicate that provincial-oriented specifications are to be used* is used in the introduction.
- c) For common OPSSs, both paragraphs are used in the introduction.

## **Section 3 DEFINITIONS**

The definitions apply specifically to the specification in which they are given.

Definitions are required for words or phrases:

- a) To improve the understanding or reduce the ambiguity of the word or phrase when the dictionary has several meanings or different senses of a word.
- b) When their intended meaning is different from or is one of several possible dictionary definitions.
- c) When their meaning differs from the meaning found in the GCs.

## **Section 4 DESIGN AND SUBMISSION REQUIREMENTS**

The section is divided into only two subsections: *Design Requirements* and *Submission Requirements*. Specifications may have both subsections, one or the other, or neither.

### **Design Requirements**

This subsection explains the design information required by the Contractor for the design of temporary works or final products. Design criteria for the material may be given in the material specifications.

### **Submission Requirements**

This subsection explains any submissions that are required, usually working drawings, before the Contractor can commence work covered by the required submission. These working drawings may show the design of temporary works, such as falsework. Information as to which working drawings are to be

submitted, how many copies are required, when submissions are to be made, and whether a seal and signature of a professional Engineer should be included in this subsection. Submissions are not limited to drawings but may include submission requirements for such items as proposals and procedures.

## **Section 5 MATERIALS**

This section details the necessary quality requirements of the material to be used in the work and will refer to OPS material specifications or material standards published by other standards organizations (e.g., CSA). Sometimes storage and handling requirements for materials may be specified.

## **Section 6 EQUIPMENT**

This section details only the mandatory requirements of the equipment to be used in the work. The Ontario Provincial Standards are not written to prescribe equipment unless a particular piece of equipment is necessary to complete work that is specialized in nature. Unless a particular piece of equipment is specified, the type equipment used is not important, as long as it fulfills the requirements of the specification. It is the responsibility of the Contractor to complete the work as described in the specification.

## **Section 7 CONSTRUCTION (construction specifications) or PRODUCTION (material specifications)**

In OPS construction specifications, the section is titled *Construction* and in the OPS material specifications it is titled *Production*. The section details the necessary requirements for the construction or production phases of the work and may include tolerances. It may also include the quality control requirements which the Contractor or manufacturer is required to perform.

## **Section 8 QUALITY ASSURANCE**

This section details the sampling and testing requirements. An indication of time required for testing may be included. In OPSSs, quality assurance is assumed to be an Owner responsibility. Statements in the Quality Assurance section are not instructions to Owners; they are information for the Contractor/manufacturer so he or she is aware of what actions the Owner may take that could impact on their work schedule.

## **Section 9 MEASUREMENT FOR PAYMENT (construction specifications) or OWNER PURCHASE OF MATERIAL (material specifications)**

### **Construction Specifications**

This section details units of measurement and other information pertaining to measurement (e.g., slope or horizontal measurement). This section is divided into two subsections: *Actual Measurement* (i.e., field measurement) and *Plan Quantity Measurement* (i.e., pay quantity as shown in the Contract).

### **Material Specifications**

The section exists to standardize the process of material purchases by Owners within the industry. The Owners themselves may use the material specifications to purchase material for supply to a Contractor or for maintenance purposes. The section is not for contract payment to the Contractor as material supplied by the Contractor is included as part of the contract price to do the work.

## Section 10 BASIS OF PAYMENT

The section exists in the construction specifications only. It details the basis of payment. All payment statements or statements affecting payment should appear in the section. The phrase *to do the work* means the work described in the specification, including work relating to references to other documents.

**Note:** Section 10, Designated Sources Requirements, is no longer a part of the material specifications format. Material specifications published before 1997 may still contain this section, but it will be deleted during the next review of the specification.

### 6.0 Modifying Ontario Provincial Standards

Modifying standards should be discouraged and avoided as much as possible. The objective of having one set of standards is to reduce costs and confusion. As soon as a standard is modified it is no longer a standard. Contractor's costs may rise if the modification necessitates a change in their operation or procedure. There is also the fact that the Contractor's staff must learn the new operation, which translates into time, which leads to increased costs. Owner's or Contractor's staff may not be aware of modifications and the required work may not be completed.

If modification is necessary, evaluate the impacts the change creates.

#### 6.1 Ontario Provincial Standard Specifications

The actual Ontario Provincial Standard specifications shall not be modified in any way.

If an Owner determines that an OPSS, as published, does not meet their needs, a special provision should be written to delete, add, or replace information in the specification. The special provision needs to be included in the Contract Documents.

The special provision should state how the OPSS is being modified. The following are some suggested phrases to modify an OPS specification by use of a special provision:

Subsection 310.05.01 of OPSS 310, [version date], is amended by the addition of the following:

OPSS 421, [version date], is amended by the addition of the following information:

Subsection 311.09.01 of OPSS 311, [version date], is deleted and replaced with the following:

Subsection 410.07.01 of OPSS 410, [version date], is deleted in its entirety and replaced with the following:

Subsection 410.07.13 of OPSS 410, [version date], is deleted in its entirety and replaced by the following:

#### 6.2 Ontario Provincial Standard Drawings

Ontario Provincial Standard drawings may be modified to suit the Owners needs when the modification is minor in nature and the intent, design integrity, operation, or the safety of the product or item shown on the drawing is not compromised.

If a drawing has minor modifications, then the drawing shall be marked *MODIFIED* in the space provided in the bottom right corner of the drawing along with the date of modification and the Contract to which the modified drawing applies. The modified drawing number should have an *M* prefix added, for example, *M206.010*. When the drawing is modified, the name of the qualified person responsible for the

modification should be added to the drawing. The remainder of the standard title block may remain unchanged.

When the modification is substantial or compromises the intent, design integrity, operation, or safety of the product or item shown on the drawing, then all references to Ontario Provincial Standards, for example, the OPS logo, should be removed from the drawing and the drawing identified as a drawing belonging to the Owner.

## **7.0 Ontario Provincial Standards Inquiries**

Ontario Provincial Standards are solutions to the needs of OPS users. Comments and suggestions assist in revising existing standards and in developing new standards. This input keeps OPS current and practical. If you have a standard that works in your ministry, municipality, or area, send it to OPS for possible inclusion into the Ontario Provincial Standards.

All inquiries, regarding the use of the Ontario Provincial Standards, to obtain general information about the OPS organization or the standards, or to make comments or suggestions for revisions to the Ontario Provincial Standards, should be directed to:

Head, OPS Administration  
Ontario Provincial Standards Unit  
Design and Contract Standards Office  
Ontario Ministry of Transportation  
Garden City Tower, 2<sup>nd</sup> Floor North  
301 St. Paul Street  
St. Catharines, ON L2R 7R4

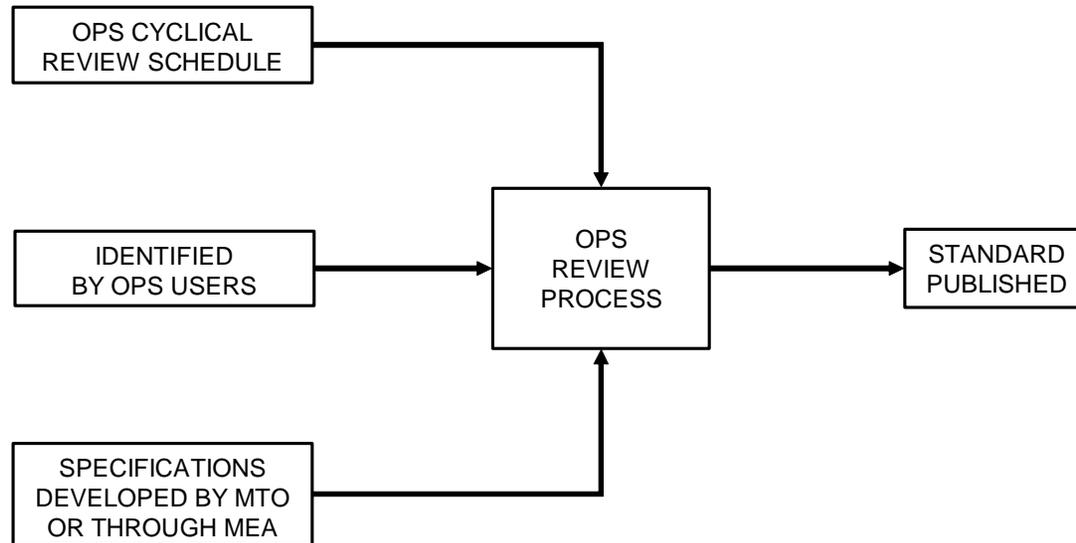
The goal of the OPS organization is to review the standards on a five- to ten-year cycle. Suggestions for revisions to the Ontario Provincial Standards should include the requested change, the rationale for the change, and the name and contact information for the individual that OPS staff can contact for further information.

Owners are encouraged to forward their standards to OPS for consideration by the OPS specialty committees when they revise existing standards or develop new standards.

-OPS-

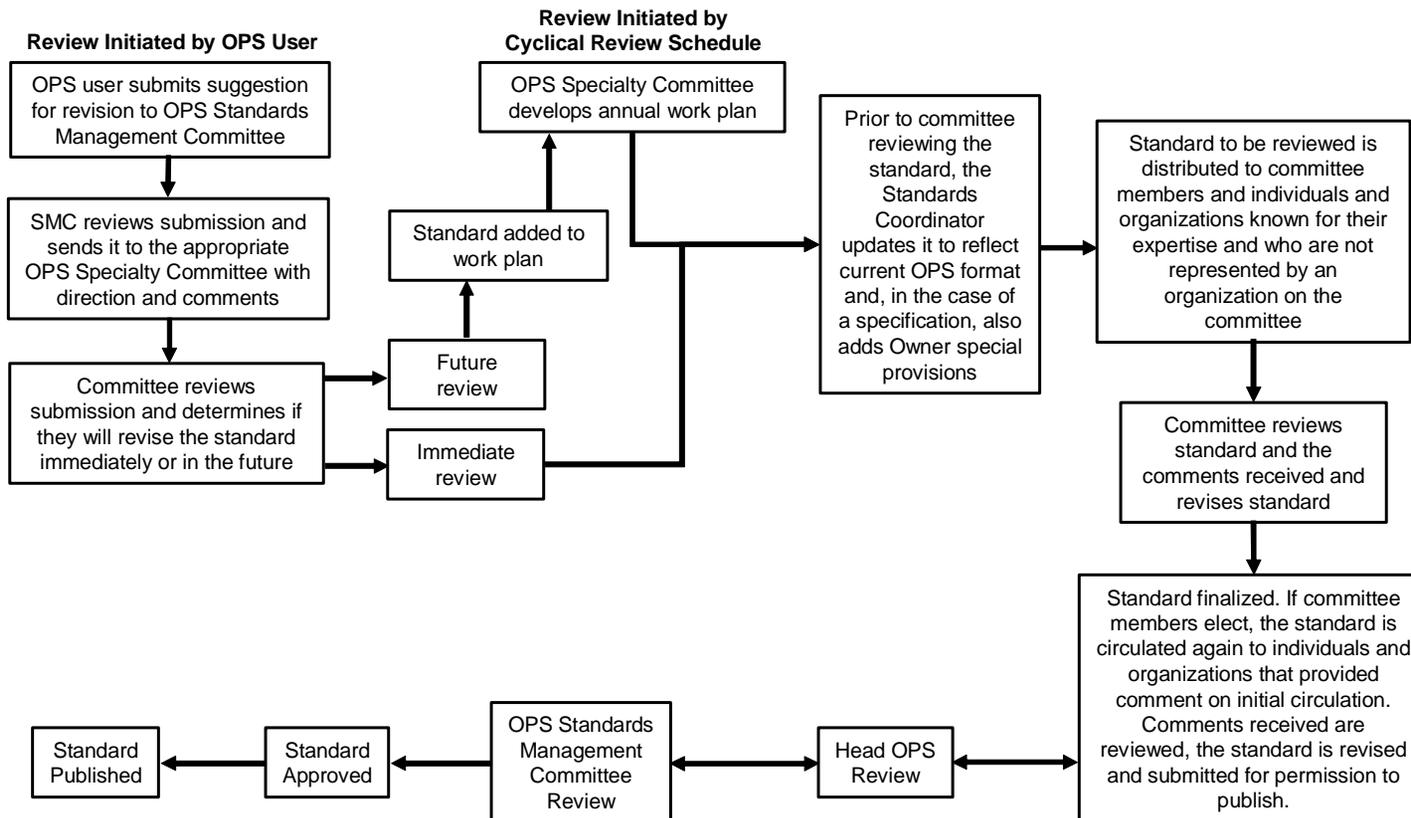
# OPS REVIEW PROCESS

## Three Ways To Initiate A Review



# OPS REVIEW PROCESS

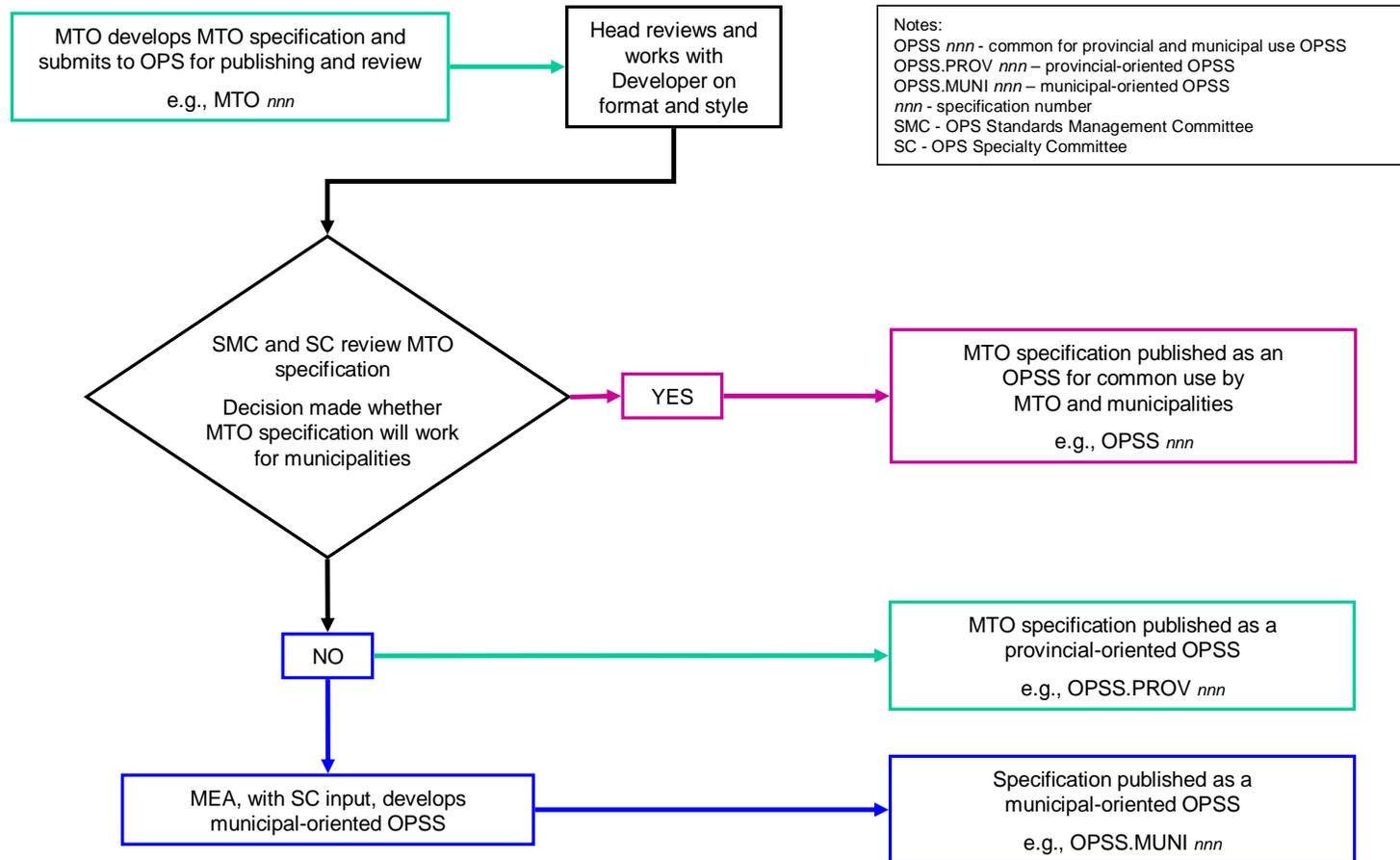
## Initiated by OPS Users and Cyclical Review Schedule



Attachment C  
 Review Initiated by Submission of a MTO Specification

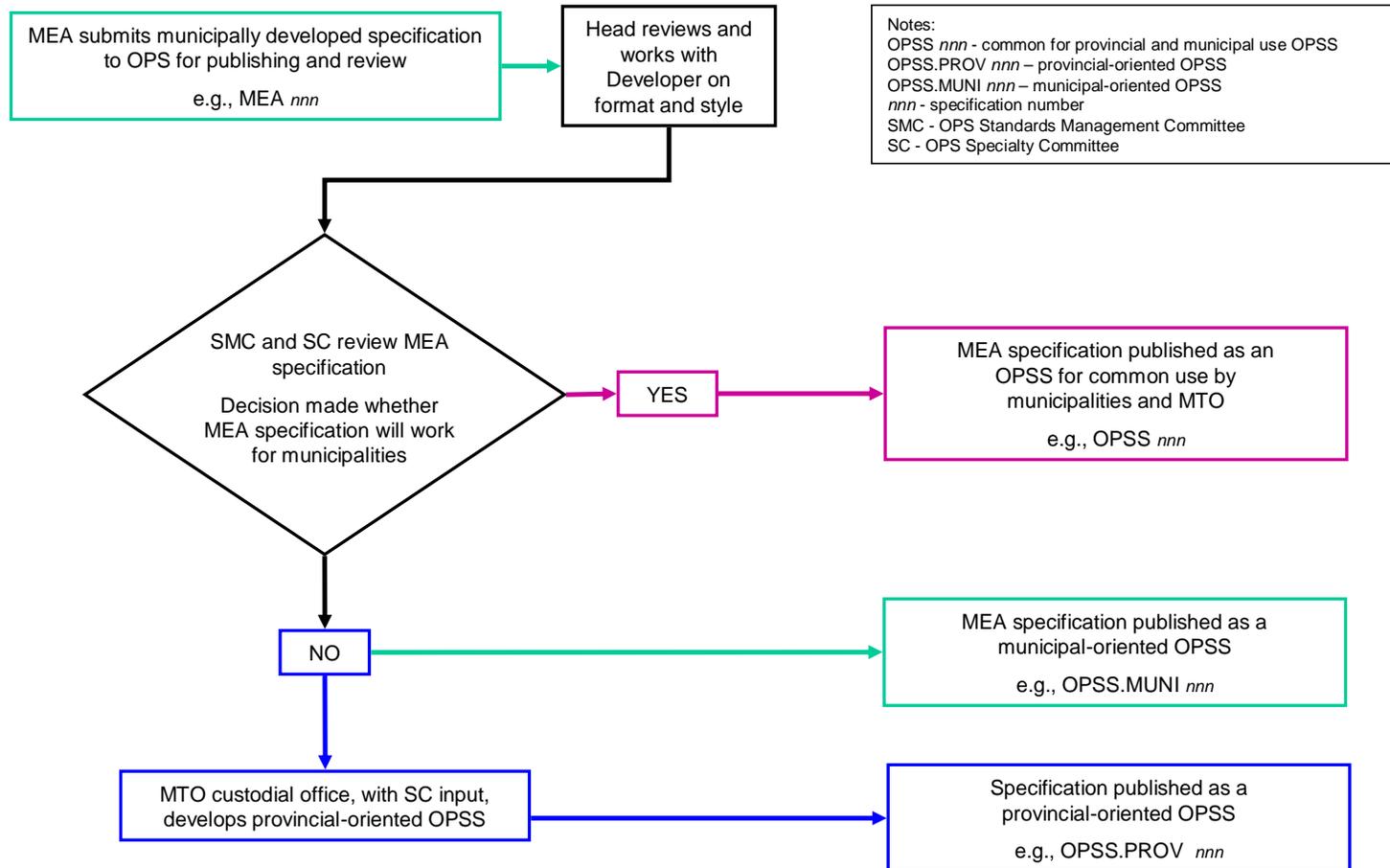
# OPS REVIEW PROCESS

## Initiated by Submission of Specification Developed By MTO



# OPS REVIEW PROCESS

## Initiated by Submission of Specification Developed Through MEA



**Attachment E**  
**Content of OPS Manuals**

**Volume 1, 5, and 7**

General Conditions of Contract  
General Specifications  
Construction Specifications

MTO General Conditions of Contract – Volume 5 only  
OPS General Conditions of Contract – Volume 7 only  
Division 1 - General Specifications  
Division 2 - General Grading  
Division 3 - Pavement (Flexible & Rigid)  
Division 4 - Drainage, Watermain, and Utility  
Division 5 - Miscellaneous  
Division 6 - Electrical  
Division 7 - Traffic Safety  
Division 8 - Environmental and Landscape  
Division 9 - Structural

**Volume 2, 6, and 8**

Material Specifications

Division 10 - Aggregates  
Division 11 - Bitumens  
Division 12 - Seals, Bearings, Waterstops  
Division 13 - Cement and Concrete  
Division 14 - Metal  
Division 15 - Safety Related  
Division 16 - Wood and Plastics  
Division 17 - Coatings  
Division 18 - Pipes and Associated Drainage Items  
Division 19 - Environmental  
Division 20 - Signs and Sign Support  
Division 21 - Clothing, Cloth and the Like  
Division 22 - Miscellaneous  
Division 23 - Unassigned  
Division 24 - Electrical  
Division 25 - Chemicals

**Volume 3**

Drawings for Roads, Barriers,  
Drainage, Sanitary Sewers,  
Watermains, and Structures

Series 100 - Abbreviations  
Series 200 - Grading Sections  
Series 300 - Side Entrances  
Series 400 - Frames and Grates  
Series 500 - Paving  
Series 600 - Curbs and Gutters  
Series 700 - Catch Basins and Maintenance Holes  
Series 800 - Culverts and Drains  
Series 900 - Fencing, Guide Rails  
Series 1000 - Sanitary Sewers  
Series 1100 - Watermains  
Series 3000 - Structures

**Volume 4**

Drawings for Electrical Work

Series 2000 - Abbreviations  
Series 2100 - Underground Work  
Series 2200 - Foundations  
Series 2300 - Work on Structures  
Series 2400 - Purchasing Standards  
Series 2500 - Traffic Signals  
Series 2600 - Sign Lighting