



Note: The MUNI implemented in April 2017 replaces OPSS 823 COMMON, November 2014 with no technical content changes.

CONSTRUCTION SPECIFICATION FOR LOW FLOW CHANNELS

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823.01	SCOPE
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This specification covers the requirements for the construction of low flow channels to maintain and enhance fish passage in a waterbody or a culvert.

823.01.01 Specification Significance and Use

This specification has been developed for use in municipal oriented Contracts. The administration, testing, and payment policies, procedures, and practices reflected in this specification correspond to those used by many municipalities in Ontario.

Use of this specification or any other specification shall be according to the Contract Documents.

823.01.02 Appendices Significance and Use

Appendices are not for use in provincial contracts as they are developed for municipal use, and then, only when invoked by the Owner.

Appendices are developed for the Owner's use only.

Inclusion of an appendix as part of the Contract Documents is solely at the discretion of the Owner. Appendices are not a mandatory part of this specification and only become part of the Contract Documents as the Owner invokes them.

Invoking a particular appendix does not obligate an Owner to use all available appendices. Only invoked appendices form part of the Contract Documents.

The decision to use any appendix is determined by an Owner after considering their contract requirements and their administrative, payment, and testing procedures, policies, and practices. Depending on these considerations, an Owner may not wish to invoke some or any of the available appendices.

823.02 REFERENCES

When the Contract Documents indicate that municipal-oriented specifications are to be used and there is a municipal-oriented specification of the same number as those listed below, references within this specification to an OPSS shall be deemed to mean OPSS.MUNI, unless use of a provincial-oriented specification is specified in the Contract Documents. When there is not a corresponding municipal-oriented specification, the references below shall be considered to be the OPSS listed, unless use of a provincial-oriented specification is specified in the Contract Documents.

This specification refers to the following standards, specifications, or publications:

Ontario Provincial Standard Specifications, Materials

OPSS 1005 Aggregates - Streambed Material

Canadian and Provincial Statutes

Fisheries Act, R.S.C., 1985, c. F-14, as amended
Ontario Water Resources Act, R.S.O. 1990, c. 0.40, as amended

823.03 DEFINITIONS

For the purpose of this specification, the following definitions apply:

Low Flow Channel means the part of a streambed occupied by water during periods of low flow.

Streambed means the bottom of the channel where a watercourse flows.

Streambed Material means the material that rests at the bottom of a waterbody and typically consists of natural sand, gravel, cobble, and boulders.

Waterbody means any permanent or intermittent, natural or constructed body of water, including lakes, ponds, wetlands, and watercourses, but does not include sewage works as defined in the Ontario Water Resources Act.

Watercourse means a stream, creek, river, or channel including ditches, in which the flow of water is permanent, intermittent, or temporary.

823.05 MATERIALS

823.05.01 Streambed Material

When the installation of a low flow channel includes supply of streambed material, it shall be according to OPSS 1005 and as specified in the Contract Documents.

823.07 CONSTRUCTION

823.07.01 General

Low flow channels shall be installed in the dry.

Excavation of the streambed and supply of streambed material from off-site may not be required if the existing streambed material can be adjusted to create the required low flow channel as specified in the Contract Documents.

When excavation of the streambed and supply of streambed material are required to achieve the design as specified in the Contract Documents, any materials that are suitable for reuse that must be temporarily removed from the streambed shall be stored on-site as specified in the Contract Documents.

823.07.02 Low Flow Channel

Once the streambed has been prepared, streambed material according to OPSS 1005 shall be installed as specified in the Contract Documents.

Streambed material placement shall be adjusted as necessary to achieve the design as specified in the Contract Documents.

Proper function shall be verified to ensure the flow is contained within the low flow channel, as constructed, when water is returned to the channel and that the grade and transition areas from the low flow channel to the waterbody do not present any barriers to flow or fish passage or direct flow outward towards the waterbody banks.

Streambed material placement may need to be adjusted to rectify any of these conditions.

823.07.03 Protection of Waterbodies and Waterbody Banks

Protection of waterbodies and waterbody banks shall be according to the Contract Documents.

823.07.04 Temporary Flow Control for Construction in Waterbodies

Temporary flow control for construction in waterbodies shall be according to the Contract Documents.

823.07.05 Management of Excess Materials

Management of excess materials shall be according to the Contract Documents.

823.09 MEASUREMENT FOR PAYMENT

823.09.01 Actual Measurement

823.09.01.01 Low Flow Channel

Measurement of low flow channels using existing streambed material shall be in linear metres installed.

Measurement of low flow channels that include supply of streambed material shall be by mass in tonnes of streambed material.

823.09.02 Plan Quantity Measurement

When measurement is by Plan Quantity, such measurement shall be based on the units shown in the clauses under Actual Measurement.

823.10 BASIS OF PAYMENT

823.10.01 Low Flow Channel - Item

Payment at the Contract price for the above tender item shall be full compensation for all labour, Equipment, and Material to do the work.

**Appendix 823-A, November 2014
FOR USE WHILE DESIGNING MUNICIPAL CONTRACTS**

Note: This is a non-mandatory Commentary Appendix intended to provide information to a designer, during the design stage of a contract, on the use of the OPS specification in a municipal contract. This appendix does not form part of the standard specification. Actions and considerations discussed in this appendix are for information purposes only and do not supersede an Owner's design decisions and methodology.

Designer Action/Considerations

The designer should specify the following in the Contract Documents:

- Streambed material. (823.05.01)
- When supply of streambed material is required to construct low flow channels. (823.07.01)
- The gradation of the various components of streambed material according to OPSS 1005 required to construct the low flow channels that are suitable to the Contract site. (823.07.02)

The designer should ensure that the General Conditions of Contract and the 100 Series General Specifications are included in the Contract Documents.

Related Ontario Provincial Standard Drawings

OPS D222.080 Low Flow Channel

