

## 11.0 CAPITAL WORKS PROJECTS

### 11.1 Introduction

This section discusses the general requirements for engineering consultants involved in the design and/or contract administration of Capital Works projects in the Town.

### 11.2 Principles

In general, Capital Works projects are intended to provide new services to the municipality (e.g., bridges, pumping stations, etc.) and/or upgrade existing municipal services and roads to current standards. The following issues shall be addressed when establishing the scope of work to be undertaken:

- Storm sewers systems shall be designed to ensure a minimum 5-year storm conveyance capacity of the post development condition.
- Sanitary sewer systems shall be designed to ensure sufficient capacity and depth to service their respective service areas
- Watermains shall be designed to ensure adequate supply and pressures
- Rehabilitation and/or replacement of existing sewers and watermains to be determined through condition assessment of existing systems
- Pavement structures shall be upgraded to ensure a minimum life cycle cost to the Town
- Rural roadway sections shall be upgraded to standard urban sections with storm sewers where deemed necessary or appropriate by the Town.
- Sidewalks to be added wherever deemed necessary or appropriate by the Town.
- Stormwater management quality and quantity controls shall be implemented, where appropriate, within uncontrolled drainage areas.

### 11.3 Process

In general, the following process will be followed for Capital Works projects, after award of the project to the design consultant:

#### 11.3.1 Pre-Consultation Meeting

The consultant will coordinate a meeting with relevant Town staff to discuss the various issues surrounding the project and establish direction for execution of the project.

#### 11.3.2 Collection of Base Information

The consultant will coordinate the collection, and be responsible for the synthesis, of relevant base information needed for the design of the works in question. Such information shall typically include, but may not necessarily be limited to:

- Existing above and below ground municipal services
- As-constructed sewer inverts
- Up-to-date detailed topographical survey- based on Geodetic Benchmarks and legal property boundaries.
- Existing basement floor elevations of adjacent houses/buildings
- Location survey of utility locates after marking in the field by utilities, including curb stops and cleanouts/test fittings.
- In sensitive areas, utilities should be exposed and located in the field during design
- Geotechnical information (e.g., pavement structure, subsurface information)
- CCTV inspection for condition assessment of existing sewers and service lateral locations.
- Hydrant flow tests and determination of Hazen-Williams "C" coefficient for watermains
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#### 11.3.3 Preliminary Design

A detailed project time line shall be prepared and submitted to the Town, identifying key target dates of anticipated tasks of the assignment.

Determination of any encroachments and /or easements required to accommodate the design objectives

The consultant will undertake a preliminary design of the works for review and comment by the Town, including any alternatives which may be appropriate including cost estimates.

#### 11.3.4 Public Meeting

If required, the consultant will facilitate, attend and prepare presentation materials for public input.

#### 11.3.5 Detailed Design

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The Consultant shall prepare detailed engineering design drawings in general accordance with the Town's standards and criteria for review and comment by the Town. The consultant shall be responsible for coordinating the review and approval of designs by pertinent regulatory agencies (apart from the Town) and prepare all necessary applications for approvals.

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If required, the consultant will assist in the tendering and contract award process including, but not necessarily limited to the following:

- Quantity take-offs
- Engineers Pre-tender cost Estimate
- Preparation of tender documents, and drawings
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- Preparation of addendums if applicable.
- Analysis of submitted bids
- Award of contract
- Provide digital copies of the tender and construction drawings in a format acceptable to the Town.
- Preparation of 'issued for construction' drawings and cross section rolls.

#### 11.3.6 Contract Administration

If required, the consultant shall undertake contract administration duties including, but not necessarily limited to, the following:

- Act as a liaison to both the Contractor and the Public on behalf of the Town
- Oversee health and safety matters, project timelines and project costs
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- Coordinate, facilitate and attend construction meetings and prepare minutes thereof
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- Review all applicable shop drawings and return comments or approvals to the Contractor
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- General inspection of works, ensuring conformity with contract documents and the Town's specifications and standards.
- Preparation of daily inspection reports and diary of construction activities (daily activities, field observations, field adjustments, etc.)
- Coordination with other consultants (e.g., geotechnical engineer, electrical engineer, structural engineer, landscape architect, etc.)
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- Coordinating the collection of as-constructed data and preparation of as-constructed drawings
- Coordination of field tests for sewers, watermains, compaction, concrete, asphalt, etc.
- Measurement of installed works
- Coordination with utility companies
- Prepare progress reports and payment certificates
- Process and validate change orders

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- Identify deficiencies, prepare deficiency lists, coordinate deficiency rectification
- Assessment of any damages (including third party damages)
- Assistance in dispute resolution between the Town, Contractor and/or residents.
- Preparation of all documents in accordance with the Construction Lien Act
- Project Close-out Tasks - Preparation of final release, following maintenance and warranty periods including any necessary deficiency inspections and repairs. Provide recommendation to the Town of final acceptance and release of all hold backs.