Project Charter – 2.2 Expansion of Wastewater Treatment Plant – Wastewater Inflow and Infiltration Program

Function: Engineering

Project Team

Project Director:	Director of Engineering
Project Manager:	Manger of Environmental Services, Manager of Parks and Recreation
Project Coordinator:	Project Manager, Infrastructure

Summary

The Wastewater Treatment Plant (WWTP) runs between 70 and 80% capacity in recent years and does not have enough capacity to accommodate proposed development. To allow for future development an expansion is required at the WWTP which will include a Schedule C Class Environmental Assessment, Design and Construction. As part of the project staff will also be completing the Inflow and Infiltration (I and I) Strategy approved by Council in 2021. The Inflow and Infiltration Strategy identifies capital projects and a private property disconnection plan to reduce average day and peak flows at the WWTP.

Deliverables and Objectives

- Increase average day and peak flow capacity to the WWTP to allow for 20-30 years of development in urban Meaford.
- Reduce the quantity of I and I entering the collection system by competing relining, spot repairs and sanitary sewer replacement of damaged and deteriorated pipes.
- Reduce the quantity of I and I entering the collection system from private property by implementing a program that requires residents and businesses to disconnect roof leaders and sump pumps.
- Relocate the off-leash dog park to allow for necessary land for the WWTP expansion.

- Better management of wastewater capacity as an asset that supports economic development and future community needs.
- Risk reduction related to negative impact on capacity from inflow and infiltration.

Benefits

The WWTP expansion will allow for:

- Proposed developments and future development in urban Meaford to proceed.
- Reduced phosphorus loading in Georgian Bay.
- New technologies to be utilized to optimize treatment at the WWTP.

The I and I reduction will allow for:

- Additional capacity in the sanitary sewer collection system.
- Additional capacity at the WWTP.
- Reduced peak flows at the WWTP allowing the plant to function more effectively and reduce the occurrence of exceedances of the rated peak flow capacity.
- Increase the overall condition of the wastewater collection system by fixing damaged pipe.

Scope Description

- Completion of the Municipal Class EA, design and construction of the existing WWTP to allow for additional capacity to support projected future community needs.
- Implementation of I and I Strategy to reduce impacts of rainwater and ground water on treatment capacity.
- Policy identifying capacity allocation for developments that are proceeding prior to completion of the expansion.
- Apply for grant funding if available.
- Relocation of the off-leash dog park

Out of Scope

Full buildout expansion of the WWTP.

Process/Schedule

Schedule C Class EA

The Class EA commenced in May 2021 when Ainley Group was retained to complete the project. To date the Notice of Commencement has been published and site investigations have occurred. Ainley Group is developing alternative design solutions for review and is completing consultation with the Ministry of the Environment, Conservation and Parks (MECP) to confirm design criteria. The following tasks are still required:

- Finalize alternative designs and identify preferred solution.
- Consult public, agencies and indigenous communities.
- Develop Environmental Study Report.
- Publish Notice of Completion.

The project is scheduled to be completed in March 2024.

Concurrently with the Class EA staff will complete public consultation and identification of a new off leash dog park.

Detailed Design

The detailed design will commence following completion of the Class EA. The following tasks will be completed as part of the project:

- Proposal process to obtain consultant.
- Collect background information.
- Site Investigations including survey and geotechnical investigation.
- 30%, 60% and 90% design.
- Public, agency and indigenous consultation.
- Tender development.
- Finalization of the design.
- Grant funding review and submissions (if available).

As this is a very significant project with various components and areas of expertise the timeline for design will be longer then typically seen for engineering projects in Meaford. It is anticipated that the engineering phase of the project will take 2 years (2024-2026).

Prior to construction the relocation of the off-leash dog park will occur to ensure there is no period of time without public access to an off-leash area for dogs.

Construction

Construction will commence following completion of detailed design. The following tasks will be completed as part of the project:

- Tendering process to obtain Contractor
- Project start up and shop drawing approval
- Full time site inspection
- Contract administration
- Construction of expansion of the WWTP
- SCADA updates
- Staff training
- Warranty Period
- Grant reporting (if received)

Following completion of the expansion the following will need to be updated:

- Asset Management Plan
- Development Charges
- Work Order program
- Capital Planning
- Standard Operating Procedures

Inflow and Infiltration Strategy

The Inflow and Infiltration Strategy adopted by Council is currently underway. As part of the 2023 capital program the following projects are being completed to reduce ground water and rainwater from entering the municipal collection system.

- Catch Basin Disconnection
- Downtown Infiltration Remediation
- Wastewater Collection System Infiltration Main Relining Program

The following tasks are still required:

- Replacement of deteriorated sanitary sewer
- Implementation of a private property disconnection program.

Risks

Risk Description	Probability	Impact *significance*	Action to Avoid Risk
Approval authority acceptance – The MECP approval could impact the timing for the project or cause redesign if they do not approve components of the design	Medium	*Moderate*	Consulting with the MECP early in the Class EA process to ensure the design parameters meet Provincial requirements.
Project duration – Delay of any component of the project could result in significant impacts to development timing	Medium	*High*	Identify to consultants that the timing of the project is critical and ensure municipal tasks and review are completed in a timely manner.
Part II Order – Could delay the completion of the Class EA.	Medium	*Moderate*	Ensure necessary consultation occurs throughout the assessment process and complete an unbiased review of all alternatives to ensure the best solutions are identified to ensure reduced impact to the social, natural and economic environment.

Risk Description	Probability	Impact *significance*	Action to Avoid Risk
Development Community	Medium	*Moderate*	Develop policy identifying capacity allocation for developments and have ongoing communication and updates for the Developers.
Lack of buy in from community for disconnection program	High	*Moderate*	Develop a program that incorporates consultation and communication with the community and has necessary review to ensure disconnections have occurred.
Lack of Council buy in	Low	*High*	Provide updates prior to each step in the process to allow Council to have the necessary time to get the needed project information.

Budget / Resources

The project has different stages that will have varying budgetary requirements.

The Class EA is already underway and has an approved budget of $236,000. $20,000 was funded through the 2022 wastewater user pay budget and the remaining is identified to be funded through development charges. The project start-up required assistance from Environmental Services and the Planning Department to compile the required information. As the Class EA proceeds Engineering Services and Environmental Services departments are working with the consultant, Ainley Group. There will be involvement of the

Communications team throughout the project when communication with key stakeholders and the public is required.

The detailed design phase will commence following completion of the Class EA. It is currently estimated that the design will cost $1,200,000. The cost will be refined following completion of the Class EA to reflect the preferred solution and industry costs at the time for similar work. The design phase will take significant internal review from all departments involved to ensure that the final design meets the Municipality's needs. A project manager with specialized water and wastewater knowledge will be critical in the successful completion of the project. This project will require an additional project management staff member and additional internal review from Environmental Services. As we prepare for the detailed design stage and construction, we will complete a detailed review of staff requirements for approval by Council. The additional staff will cost $100,000 annually including salary and overhead.

Following completion of the design, Staff will work with the consultant to develop the construction specification and tender the project. Based on the preliminary information available to date the estimated construction costs are approximately $30,000,000 dependent on the final design of the WWTP and, industry and inflationary pressures. Project management and construction review will require additional internal resources to ensure project success as identified in the detailed design phase.

The costs associated with the work in the 2021 I and I Strategy were identified as $3,401,960. The Toronto non-residential building construction price index for 2021 and 2022 was 15.3% and 14.5% respectively which has not been reflected in the estimated costs above. Taking these into consideration the current cost estimate is $4,500,000. The I and I projects will continue to be identified through the annual budget. The capital projects associated with this Strategy are being competed by the Engineering Department. The disconnection program is being completed by the Operations Department.

The dog park relocation will be completed by the Parks and Community Department. The cost of the work will be identified following completion of public consultation and identified through the budget process.

The estimated staff hours for this project are identified below:

Class EA - 200

Detailed Design – 2,000 annually

Construction – 2000 annually

I and I Strategy - 300

Dog Park Relocation - 100

Charter Adoption

Date: _____

CAO: _____

Project Manager: _____

Appendix 1 – Project Governance (RASCI) Responsibility Assignment Matrix

Individual	Responsible	Accountable	Supportive	Consulted	Informed	Expertise / Reasoning
Director of Engineering	**X**					
Manager of Environmental Services		**X**				
Process & Compliance Supervisor – QMS Rep		**X**				
Environmental Services Foreperson		**X**				
Director / Manager of Planning			**X**			

Individual	Responsible	Accountable	Supportive	Consulted	Informed	Expertise / Reasoning
Parks and Facility Services	**X**					
Communications team			**X**			
Director Team				**X**		
Consultant	**X**					
Public, Agencies, Indigenous Communities				**X**		

Responsible – The project owner. There can be multiple people responsible for a task.

Accountable – This person has final control over a project task and the resources associated with it. They will generally assign and delegate project work responsibilities. Only one person accountable to one task.

Supportive – Supportive people are able to provide resources to the Responsible project team members. They are actively involved in working with the Responsible person to see the project through to completion. Supportive persons and Responsible persons both have the same goals to achieve.

Consulted – Those who are Consulted are there to help the Responsible person finish tasks with success. These people can be consultants in their respective field that bring valuable subject matter expertise to the project.

Informed – These are people who need to be kept in the loop during the project life-cycle. Due to their status as a project stakeholder or the fact they will be impacted by the project, they will need to be informed about progress, at all stages, up-to and including project completion.