Proposal

Wellington Street Engineering Design

Merrickville, Ontario

May 6, 2025

Jp2g Project #24-5047F

Jp2g Consultants Inc.

ENGINEERS · PLANNERS · PROJECT MANAGERS

Table of Contents

Appendices

Appendix 1: Work Plan, Level of Effort and Schedule

1 Project Team Members

1.1 Project Manager

1.1.1 Neil Caldwell, P.Eng PMP

Proposed Role / Responsibility: Neil will be ***Project Manager*** for integrating watermain, sewers, landscaping, and other works, and will lead the design team. Neil will control and monitor the project budget, schedule, and quality of deliverables, maintaining the positive attitude and drive of the consultant project team that will lead to the successful completion of the project. He will ensure that high-quality work is always delivered by the Jp2g team. He will be responsible for the staffing for all phases of phases of the project lifecycle and will also be responsible for sub-consultant and stakeholder coordination/communications. Neil will attend the Public Open House.

1.2 Key Team members

1.2.1 Stephen Arends, P.Eng.

Proposed Role/Responsibility: Stephen will serve as ***Senior Engineer.*** He will ensure that the technical direction meets project requirements through ongoing internal Quality Reviews including documentation review, storm sewer/stormwater management, sewer and water design, temporary water layout, road design and grading.

1.2.2 Michael Smith, P.Eng.

Proposed Role / Responsibility: Michael will serve as a ***Civil Engineer and Lead Designer***. Michael will lead the technical design including field review, sewer and water design calculation and details, specification preparation, cost estimating, temporary water layout, road design/grading, and other duties as required. Mike will also attend the Public Open House.

1.2.3 Andrew Iamello, C.E.T., rcca

Proposed Role / Responsibility: Andrew will provide ***Technical Support*** as a Civil Technologist and assist with CAD Design. He will complete detailed drawing design packages, and cost estimates. He will also coordinate the survey and review the CCTV.

1.2.4 Samual Morton, P.Geo

Proposed Role / Responsibility: Samuel willl be the ***Environmental Project Professional / Senior Hydrogeologist*** responsible for the coordination and overall supervision of environmental requirements to satisfy O.Reg. 406/19. Will is an experienced Qualified Person (QP) in accordance with Ontario Ministry of the Environment, Conservation and Parks (MECP).

1.2.5 Andrea Jahn

Proposed Role / Responsibility: Andrea will provide **Project Coordinator** services to the project, working closely with the Project Manager and Lead Engineers. Andrea will coordinate project activities, resources, equipment, and information. Throughout the project, Andrea will receive, track, and monitor drawings and documentation. Andrea helps Project Managers to monitor project progress, maintain and update project schedules, and coordinates CNN's and CO's. She also assists in report preparation, document control, meeting minutes, specifications and tender package, and provides assistance during Tendering Process.

1.3 Subconsultants

Jp2g will be assisted by St-Lawrence Testing Ltd. (SLT) for geotechnical services on this project. With direct experience in the Merrickville area since the late 1970s, SLT has thorough knowledge of the area and has provided engineering services for hundreds of municipal infrastructure projects throughout Eastern Ontario.

They will conduct the field drilling, do the geotechnical lab tests, do the environmental lab tests (and have noted the requirement for environmental tests for possible reuse or disposal of the excavated soil above the bedrock), prepare the borehole logs, and compile the report.

1.4 Approach

1.4.1 Strategies

Jp2g's approach will involve confirming the existing conditions early in the process to avoid conflicts and surprises at the detailed design and construction stages. During the initial data review and collection phase of the project, our team will prepare for design by completing a thorough field review, utility locates through SLT, and review of the Village's documents. An existing conditions plan will be presented to the Village. Following the Village's review, Jp2g will proceed with the stormwater management plan, design and subsequent preparation of the public information session materials. Possible utility conflicts will be recommended to be hydrovac'd prior to or at the time of construction depending on constraints. Residents will be consulted regarding cross connections to the storm sewer via pamphlet and site visits.

1.4.2 Assumptions

The design of this infrastructure renewal project must be in accordance with Sewer and Watermain Design Guidelines, Road Design Guidelines (e.g. OPSS/OPSS, TAC), and other applicable standards. At this stage, we assume that the critical elements of the design include potential utility conflicts, residents' concerns regarding the new storm sewer installation and disconnection of any sump pumps from the sanitary sewer, roadway re-grading to improve drainage issues, agency approvals, bedrock removal estimates/costs, and vibrations during rock removal activities. Each issue shall be monitored closely to maintain the project schedule.

1.4.3 Issues that Require Attention

The new top of curb elevations will need to be adjusted to match with existing driveway slope constraints so that positive drainage is maintained to the street.

Separating storm drainage at the lot level is challenging. Based on a review of Google Streetview, the roof drainage is mostly directed to the surface. Sump pumps and foundation drainage may discharge to the existing sanitary sewer or rear yard. Redirecting this flow to the new storm sewer may require internal plumbing changes. Obtaining buy-in from residents for any changes will require a collaborative effort between the consultant and Village staff.

Testing costs to satisfy O.Reg 406/19 On-Site and Excess Soil Management can be substantial. Jp2g and the Village will work strategically to identify the needs and test locations to minimize costs. Sampling and testing have been allowed for to provide the contractor with enough information to select an appropriate soil disposal site based on the composition of the material.

1.5 Methodology

Jp2g's methodology addresses the steps taken during each phase of the project:

PROJECT MANAGEMENT: *The following tasks will be ongoing throughout the duration of the design phase and are included within the project managers responsibilities.*

Project Management Reports: Jp2g will track monthly project status updates including schedule, budget, technical issues requiring attention, and status of approvals.

Risk Assessment Matrix: This quality control document will quantify foreseeable risks which could result in delays to project schedule or increased cost. New risks will be communicated to the Village PM so that mitigation plans can be developed proactively.

Stakeholder/Public Communications Plan: Jp2g will identify stakeholders, issues, actions, resolution, and associated dates. The plan will report on issues that arise from public commentary, client input, design revisions, and adjustment to the project cost estimate and design schedule.

DATA REVIEW AND COLLECTION: *Prior to initiating the design, the following tasks will be performed to ensure the design team is using complete and accurate background information.*

Project Initiation Meeting: Jp2g will attend this meeting with the Village PM and staff to confirm scope, project objectives, project requirements, and workplan. We will discuss risk items such as utility conflicts, limited capacity of downstream sewers, and community stakeholder concerns.

Utility Circulation: Circulate base plan information to utility companies and other stakeholders to verify utility and facility locations. Ontario One Call will be contacted to locate utilites. It is recommended to meet with the utilities to review the project to expedite any comments or concerns. Any conflicts that may have a major impact to the design will be recommended to hydrovac in the design stage (hydrovac fees not included with this proposal). Minor conflicts that are anticipated to be resolved during construction will have notes added to the drawings directed the contractor to hydrovac and confirm conflict prior to construction.

***Field Review to Confirm Existing Conditions*:** Jp2g will complete a visual walkthrough to confirm the accuracy of existing plans. We will record dimensions, type, and locations of vegetation and landscaping features, retaining walls, top of foundation walls, poles, street signs, pavement markings, existing structure lids, road widths, flow direction, and obstructive vegetation. Survey will be completed on located utilities to include horizontal location of the utilities on the base plan. Photographs will be taken of existing site conditions and catalogued for later confirmation. Survey of downstream drainage paths will also be completed.

Geotechnical Investigation: SLT will complete the geotechnical investigation. A separate cost will be provided once the scope has been fully defined. Boreholes will be advanced to a depth of 3.5 m or to refusal. It is understood that bedrock is expected to be shallow and close to the road surface. Sampling will be done in accordance with the requirements for environmental testing per O Reg 406/19.

The report will address the underground services and the design for a new pavement. The report will include appropriate commentary on the environmental tests. All field work will be supervised by SLT's Gib McIntee, P.Eng., who will also write the report.

Communication to affected residents: Jp2g will ensure open lines of communication so that all residents feel they can express their needs and concerns. We will offer in-home interviews and site inspections to help homeowners understand the work that will need to be done to disconnect storm services from the sanitary system. We are aware of the challenges facing this step due to entering private residences; however, we will be prepared with alternative approaches including virtual presentations and questionnaires.

Complete Assessment of Past Uses: This will be done through an Eris Ecolog search of environmental databases within a 250-meter radius complemented by a review of aerial photographs, fire insurance plans, and any relevant municipal documents that the Village may have. We will also interview a knowledgeable person from the Village. This information will be used to confirm the environmental testing and reporting requirements to be executed along with the geotechnical investigation.

Project Meeting: The project team will meet to discuss existing conditions and design options before developing CAD plans and geotechnical investigation.

60% DETAILED DESIGN: *Based on the findings of the Data Review and Collection phase of the project, Jp2g will prepare the 60% Detailed Design drawings. The following is a list of tasks to be performed and items to be addressed during this phase.*

Background Plans and Documents: Jp2g will review as-builts drawings, topography, supplemental survey, geotechnical, utility locates, water modelling, and CCTV data provided by the Village. We will verify the proposed design/construction is classified as Municipal Class EA – Schedule A+.

Utility Corridor: Review existing roadway geometry and utility locations. Establish utility and servicing corridors if possible, through discussions with Village and participating utility agencies.

Roadway Modifications: Cross-section drawings will be prepared, with 8.5m road width and complete with barrier curbs. All roadway designs will be based on the guidelines of the Transportation Association of Canada - Geometric Design Guide for Canadian Roads.

Review existing entrance widths, standards, and requirements: We will review existing conditions and assess whether modifications will be required as part of the reconstruction.

Stormwater Management / Storm Sewer Design: Overland flow routes and downstream capacity for the stormwater management system will be reviewed as part of the assignment. It is understood that there is no information available on the capacity of the storm sewer network.

Sewer and Watermain Design: Confirm catchment areas, sizing, slopes, depth, and alignment of proposed sewers and watermain. Watermain designs will be based on the hydraulic network model from the Village of Merrickville. Sewer and drainage infrastructure designs will be based on the guidelines of the MECP, and the Village of Merrickville and emphasis shall be made to ensure that design alternatives minimize long-term operating costs.

60% Design Drawings: Finalize the design drawings to illustrate the proposed design including storm, sanitary and watermain locations, services, proposed hydrant spacing, plan and profiles, cross-sections at 20m intervals and at each entrance, grading, pavement markings, street lighting, landscaping, tree protection, and intersection details for circulation.

Servicing Brief: Prepare a servicing brief including the supporting service area plans, calculations, and data necessary to illustrate conformance to the Village of Merrickville CLI ECA and approvals for proposed water, sewer and drainage works. The brief will include a rationale for design elements (drainage areas, flow calculations, sewer sizing, stormwater management and roadway design) and design constraints.

Class 'B' Cost Estimate: Prepare an estimate of probable construction costs, based on 60% detailed design.

Agency Approvals: Coordinate a pre-consultation with RVCA to confirm required approvals. Consultation with RVCA will include quality control requirements and design approach review.

Public Information Session (if held): Prepare presentation boards and documents required for an open house; attend public open house and provide a report on the issues that arise as a result.

90% DETAILED DESIGN: *Following the 60% detailed design submission, any new information gathered will be added to the design, and any identified issues (such as utility conflicts) will be addressed. The following is a list of tasks to be performed and items to be addressed during the 90% detailed design.*

Coordination Meetings with Major Stakeholders: Meet with the Village PM and other stakeholders to discuss the 60% detailed design.

Review Input from Public Information Session (if held): Organize comments from session, meet with the Village PM, and review comments and concerns brought up at the public information session.

Site Review and Field Work to Complete Design: If required, confirm existing features, utilities, obstructions to provide measurement for tender quantities and highlight/coordinate any required utility relocation.

Roadway Modifications: Finalize cross-sections, road alignment and geometry, and proposed road and driveway grading.

Sewer and Watermain Design: Based on input from the Village and subsurface investigation results, finalize sewer and watermain design and layout.

90% Detailed Design Drawings: Incorporate sub-consultants' plans and complete detailed design drawing set based on circulation comments and detailed requirements, including coordination with utilities.

90% Detailed Design Report: Updated the design report based on final design selections.

Contract Documents: Prepare project-specific and item-specific contract specifications; tender items & quantities.

Class 'A' Cost Estimates: Prepare detailed cost estimates based on drawings and specifications.

Complete Required Permit/Approval Processes: Prepare the applications and supporting documentation or drawings as required for approval submissions or consent to enter agreements. Secure all necessary approvals, including a letter of support from the RVCA for drainage works.

90% Detailed Design Circulating: Provide the Village with 90% design package (Geotechnical Investigation, 90% Detailed Design Drawings & Report, Construction Specifications, Cost Estimate) for review and approval.

TENDER DOCUMENTS: *Final tender package will be submitted including the following items. During the tender phase, Jp2g will provide support as noted below.*

Tender Ready Drawings, Specifications, and Cost Estimate: Provide sealed drawings, tender specifications, quantities, and cost estimate. All Tender Drawings will be finalized in CADD and PDF.

Prepare Construction Schedule: Prepare a high-level construction schedule.

Circulate Issued for Tender Package: Provide the Village PM with the Issued for Tender package.

Assistance during Tendering Process: Respond to inquiries and prepare addenda as required.

2 Proposed Work Plan, Schedule, and Level of Effort

The proposed Work Plan , level of effort and schedule is included in the attached table.

3 Financial

The total upset limit price including all engineering fees, disbursements is **$97,590.00** plus HST.

End of proposal

Appendix 1: Work Plan, Level of Effort and Schedule

Jp2g Workplan and Level of Effort (LOE) and Schedule Proposal May 2025

Village of Merrickville-Wolford Wellington Street

Staff																
NC - Neil Caldwell, Project Manager SA - Stephen Arends, Senior Engineer MS- Michael Smith - Civil Engineer and Designer AI - Andrew Iamello - Technical Support SM Samual Morton- Hydrogeologist AJ - Andrea Jahn - Admin Geotechnical - St. Lawrence Testing - Gib McIntee, P.Eng		Project Manager	Senior Engineer	Civil Engineer	Technical Support	Junior Technical Support	Environmental Engineer	Administration	TOTAL JP2G HOURS	JP2G TOTAL	St. Lawrence Testing - Geotechnical	DISBURSEMENTS	PHASE TOTAL	SCHEDULE	
ID	Task Description	$160	$160	$120	$120	$85	$135	$70						From	To
1.0	Project Startup	2	2	0	0	0	0	0	4	$ 640.00	$ -	$ -	$ 640.00	May 19th	
1.1	Project Kickoff meeting with Village staff	2	2												
2.0	Field Investigation	0	6	0	80	64	20	1	171	$ 18,770.00	$ 20,000.00	$ 1,200.00	$ 39,970.00	May 19th	July 22nd
2.1	Topographic Survey, Structure Review, Inverts (Including for SWM Plan)		1		64	64						$ 500		19-May-25	13-Jun-25
2.2	Circulate the site area plan to utility companies for utility information (i.e. if there is any future works to consider). Complete Ontario One Call and survey locates.		1		4									26-May-25	26-May-25
2.3	Complete geotechnical investigation		1								$ 20,000.00			19-May-25	18-Jul-25
2.4	Home owner consultation letters regarding cross connections to storm sewer and visit homes with Village		1		12							$ 100		7-Jul-25	18-Jul-25
2.5	Complete Environmental Review Per O.Reg. 406/19 Requirements		1				20					$ 600		19-May-25	18-Jul-25
2.6	Coordination Meeting to review design alternatives		1					1						22-Jul-25	22-Jul-25
	DELIVERABLE - GEOTECH INVESTIGATION/ENVIRONMENTAL REPORT														
3.0	60% Detailed Design Phase	5	73	40	114	72	0	4	308	$ 37,360.00	$ -	$ -	$ 37,360.00	June 16th	July 22, 2025
3.1	Base Plan Preparation		2		12									16-Jun-25	20-Jun-25
3.2	Review existing information and confirm the nature of underground and surface deficiencies through review of Village supplied CCTV and background information		2		8									16-Jun-25	20-Jun-25
3.3	Confirm with Village proposed watermain size	1												16-Jun-25	16-Jun-25
3.4	Stormwater Management / Storm Sewer Design		60		60	40								16-Jun-25	22-Jul-25
3.5	Provide recommendations on infrastructure components to be included in the project and present technical rational for the works.	1	1	2										16-Jun-25	22-Jul-25
3.6	Pre-consultation with RVCA/Parks Canada			2										16-Jun-25	22-Jul-25
3.7	Review CLI and pre-consult with other agencies on issues that may affect approvals			2										16-Jun-25	22-Jul-25
3.8	Document Design Criteria for vertical and horizontal alignment, geometric design, RTAC Guidelines, active transportation, grading and drainage, signage ,speed limits and right-of-way widths		2	4										19-May-25	30-May-25
3.9	Prepare plan and profile plans for the proposed work		2	6	24	24								30-Jun-25	4-Jul-25
3.10	Identify potential crossings conflict locations for hydrovac. (hydrovac costs not included).	1		2	2									30-Jun-25	4-Jul-25
3.11	Prepare Class 'B' cost estimate			4	8	8								7-Jul-25	7-Jul-25
3.12	Prepare specifications package (high level items)		2	8				4						7-Jul-25	22-Jul-25
3.13	Prepare design brief - including sanitary and storm drainage areas and design sheets	1		10										7-Jul-25	22-Jul-25
3.14	Submit 60% design packages including drawings, specifications and cost estimate to the Village for review	1	2											22-Jul-25	22-Jul-25
	DELIVERABLE – DESIGN BRIEF, COST ESTIMATE, 60% DESIGN PACKAGE													2 week Village review	
4.0	90% Detailed Design Phase	4	8	26	28	28	0	12	106	$ 11,620.00	$ -	$ -	$ 11,620.00	August 11th	August 29th
4.1	Prepare 90% detailed design drawing package	1	2	8	20	20						$ -		11-Aug-25	29-Aug-25
4.2	Meet with Village, review and address 60% Design/public meeting/agency comments	1		4				4						11-Aug-25	11-Aug-25
4.3	Address temporary water and detour/road closure requirements		1	2										11-Aug-25	29-Aug-25
4.4	Prepare Class 'A Cost estimate			2	8	8								29-Aug-25	29-Aug-25
4.5	Prepare 90% specification package	1	2	8				8						11-Aug-25	29-Aug-25
4.6	Prepare and submit CLI forms for proposed sewer work		1	2										29-Aug-25	29-Aug-25
4.7	Submit 90% design packages including drawings, specifications and cost estimate to the Village for review	1	2											29-Aug-25	29-Aug-25
	DELIVERABLE – 90% DESIGN TENDER DOCUMENTS													2 week Village review	
	DELIVERABLE – LINEAR ECA APPLICATION														
5.0	Public Meeting	4	0	4	4	8	0	0	20	$ 2,280.00	$ -	$ 200.00	$ 2,480.00	TBD	TBD
5.1	Public meeting - prepare advertisement(s), drawing displays, public handouts, including aerial photo. Attend public meeting in person.	4		4	4	8						$ 200		TBD	TBD
	DELIVERABLE – PUBLIC MEETING MATERIAL														
6.0	100% Detailed Design Phase	3	8	6	6	6	0	4	33	$ 3,990.00	$ -	$ -	$ 3,990.00	September 15th	September 26th
6.1	Review and address 90% Design comments	1		2				2						15-Sep-25	26-Sep-25
6.2	Prepare 100% detailed design (tender) package	1	6	4	6	6		2						15-Sep-25	26-Sep-25
6.3	Submit 100% design packages including drawings, specifications and cost estimate to the Village for review	1	2											26-Sep-25	26-Sep-25
	DELIVERABLE – 100% DESIGN TENDER DOCUMENTS														
7.0	Tendering Phase	4	0	4	2	2	0	0	12	$ 1,530.00	$ -	$ -	$ 1,530.00	TBD	TBD
7.1	Provide minor specifications adjustments as necessary for the tendering date			1										TBD	TBD
7.2	Draft an advertisement for tender to be advertised by the Village	1												TBD	TBD
7.3	Provide notice to Biddingo	1												TBD	TBD
7.4	Answering technical questions and issuing addendum to the tender	1		2	2	2								TBD	TBD
7.5	Review the tenders submissions once closed and provide a written recommendation letter to the Village for award	1		1										TBD	TBD
	DELIVERABLE – TENDER REVIEW AND DOCUMENTATION														
8.0	TOTAL	22	97	80	234	180	20	21	654	$ 76,190.00	$ 20,000.00	$ 1,400.00	$ 97,590.00		
	Resource	NC	SA	MS	AI	JT	SM	AJ				HST	$ 12,686.70		
	Resource Distribution (%)	3%	15%	12%	36%	28%	3%	3%				TOTAL	$ 110,276.70		