

April 10, 2023

Version 3.0
Matrix 24603-531

Anthony Di Giandomenico, P.Eng.
Storm Drainage Engineer, Environmental Services
City of Mississauga
 Suite 800, 201 City Centre Dr.
 Mississauga, ON L5B 2T4

Subject: Additional Tasks for the Dixie-Dundas Flood Mitigation Project, City of Mississauga

Dear Anthony Di Giandomenico:

1 INTRODUCTION

Matrix Solutions Inc. is providing this letter to summarize our existing progress and the additional tasks required for the Dixie-Dundas Flood Mitigation Project. Since the onset of the project in April 2019, the project scope has continued to evolve, requiring Matrix to adjust focus and efforts to ensure the environmental assessment (EA) outcomes are achieved. Requirements to incorporate major stakeholders were particularly important to ensure the City would be able to confidently proceed into detailed design following the EA. This letter provides an overview of the budget/invoicing to date and a summary of costs which are outside of the original 2019 scope and April 2021 scope change. Estimates of additional meetings and remaining out of scope effort anticipated to finalize the EA are also provided.

2 BUDGET/INVOICING SUMMARY

A summary of the current invoicing to date is provided in Table 1. Project tasks have been rolled into phases to for ease of review.

TABLE 1 Dixie-Dundas Flood Mitigation Project – Phase Budget Summary, February 28, 2023

Phase Name	Budget	Invoicing to Date	Held (Not Invoiced)	Budget Remaining
Project Management and Meetings	\$65,760	\$66,324	\$49,070	-\$49,634
Stage 1 - Feasibility Assessment	\$200,873	\$200,037	-	\$836
Stage 2 - Class EA Process	\$204,295	\$194,294	-	\$10,001
Project Management - Expanded Study	\$28,140	\$28,155	-	-\$15
Stakeholder Engagement - Expanded Study	\$30,135	\$26,233	-	\$3,903
Technical Studies - Expanded Study	\$74,959	\$70,960	-	\$3,999
Dundas Street Crossing - Expanded Study	\$95,830	\$95,565	-	\$265
Channel Stability - Expanded Study	\$13,940	\$13,918	-	\$23
Exposed Sanitary Line - Expanded Study	\$15,000	\$14,974	-	\$26
Dixie Road - Expanded Study	\$166,100	\$110,548	\$6,980	\$49,272
Subconsultant Mark up 5%	\$16,101	\$8,019	-	\$8,082
Total (not including HST)	\$911,832	\$829,025	\$56,050	\$26,757

Notes: The budget overage in project management will be reconciled in subsequent phases. The total invoiced amount will not exceed the PO.

3 REQUIRED ADJUSTMENT OF SCOPE AND BUDGET AMOUNTS

3.1 Matrix Internal Budgeting Adjustments

Internal budgeting adjustments have been made by Matrix to ensure better alignment of our expended efforts with our contractual obligations to the City. Required realignments of our internal budgets resulted in Matrix incurring a \$65,000 write-down of fees due to the following items:

- a. utilizing higher rate employees to fill the role of the previous project manager who left in December 2021 (\$15,525 calculated on 345 hours)
- b. ongoing challenges with the pandemic and increased requirements for communication and workflow adjustments
- c. continued use of 2018 rates (per original contract) through 2023

Please note, Matrix has made these internal adjustments in the best interest of the City and for this project. Items outlined frame the context of additional budget adjustments required for out-of-scope items outlined in subsequent portions of this letter.

3.2 Additions to Existing Project Scope

Matrix has identified the following project tasks/items and associated costs as being outside of the agreed upon original and revised scopes:

1. Additional Meetings (**\$41,820**) – the original 2019 scope of work accounted for 8 meetings, and the 2021 scope change accounted for 3 additional meetings. As of March 2023, we have attended 27 meetings [Note: this does not include biweekly nor other City-Matrix and internal meetings], 16 of which were outside of the original scope. The 2019 scope included a provisional task of 10 additional meetings for a cost of \$26,200. As such, we would request an additional \$41,820 as a prorated amount to cover these costs.
2. Vertical Datum Survey and Correction (**\$5,320**) – Given the BRT/Metrolinx use of a different coordinate system, Matrix was required to survey the area to ensure cross-reference of the datums and account for the vertical difference. The effort related to this task required a field visit, GIS/CAD exercises, and coordination with the project team. Note that this item has already been pre-invoiced under the Preliminary Design budget.
3. Enhanced Sanitary Sewer Assessments (**\$44,170**) – a nominal estimate of effort related to assessment and analysis of the sanitary sewer crossings of Little Etobicoke Creek was accounted for in the April 2021 scope (\$15,000). However, our effort related to this task due to the significant requirements and requests put forward by project stakeholders has far exceeded the initially scoped amount. Note that this item has already been pre-invoiced under the Preliminary Design budget.
4. Costs Memo (**\$4,160**) – cost estimation has always been part of the EA scope; however, the request to provide cost details for the alternatives prior to a decision around the sanitary sewer crossing and the selection of the preferred alternative required extra effort. This included four separate revisions to the cost as requested by the City for discussion with the Region prior to the alternative selection. Note that this item has already been pre-invoiced under the Preliminary Design budget.

5. Additional Model Simulation (**\$4,950**) – as the request of the Region of Peel and approved by the City, Matrix completed an additional model assessment simulation that maximized the channel capacity in the hopes of allowing the existing sanitary sewer to remain in place. The results were presented to the City and Region at a meeting held January 2023, thereby allowing a final decision for the future sanitary sewer alignment to be made. Note that this item has already been pre-invoiced under the Preliminary Design budget.

3.3 Ongoing/Future Cost Items

The following additional costs have been estimated to complete the EA and 30% design assuming the project will be completed by the end of 2023:

Matrix Solutions Items

- Project Management (**\$19,000**) – Includes time for the project team to coordinate with stakeholders, liaison with the City (emails, ad-hoc and bi-weekly meetings), and prepare invoices. Note, no further project management scope is available given completion of various additional scope items (per Section 3.2 above).
- Additional Stakeholder Meetings (**\$20,850**) – We anticipate up to 8 additional stakeholder meetings with the City, Region, and/or TRCA will be required to carry out the remainder of the project. Two meetings with the Region and TRCA are anticipated for April 2023.
- Topographic Survey (**\$25,000**) – A survey allowance of \$25,000 was requested in the 2018 RFP, for detailed channel or topographic surveys if required for detailed design. We are requesting that this allowance be included in this scope change to support the 30% design deliverables.
- SUE/Topographic Survey Coordination (**\$5,700**) – Matrix prepared an RFQ on behalf of the City to ensure utilities and features within the Dixie Road corridor are described well enough to allow more confident decision making. This component of the project would normally be a part of detailed design. We have reviewed the quotes received, and recommended a preferred vendor for this work (see additional below for SUE). Cost to develop the RFQ, review the quotes, retain the SUE/Topographic Survey subconsultant and coordinate their efforts is included in this task.

Subconsultant Items

- RVAnderson - Preliminary (30%) Design for the Jarrow Avenue Sanitary Sewer relocation, Figure 1 (**\$46,970**) – prepare a preliminary design to relocate the 450 mm diameter sewer on Jarrow Avenue to facilitate the recommended flood mitigation alternative solution for Little Etobicoke Creek. Works include preliminary municipal design services, sewer hydraulics review, and preliminary drafting layout and coordination.
- RVAnderson - Preliminary (30%) Design for the 900 mm Trunk Sewer relocation, Figure 1 (**\$93,327**) – prepare a preliminary design to relocate the 900 mm diameter trunk sanitary sewer on Dixie Road to facilitate the recommended flood mitigation alternative solution for Little Etobicoke Creek. Works include preliminary municipal design services, sewer hydraulics review, and preliminary drafting layout and coordination.

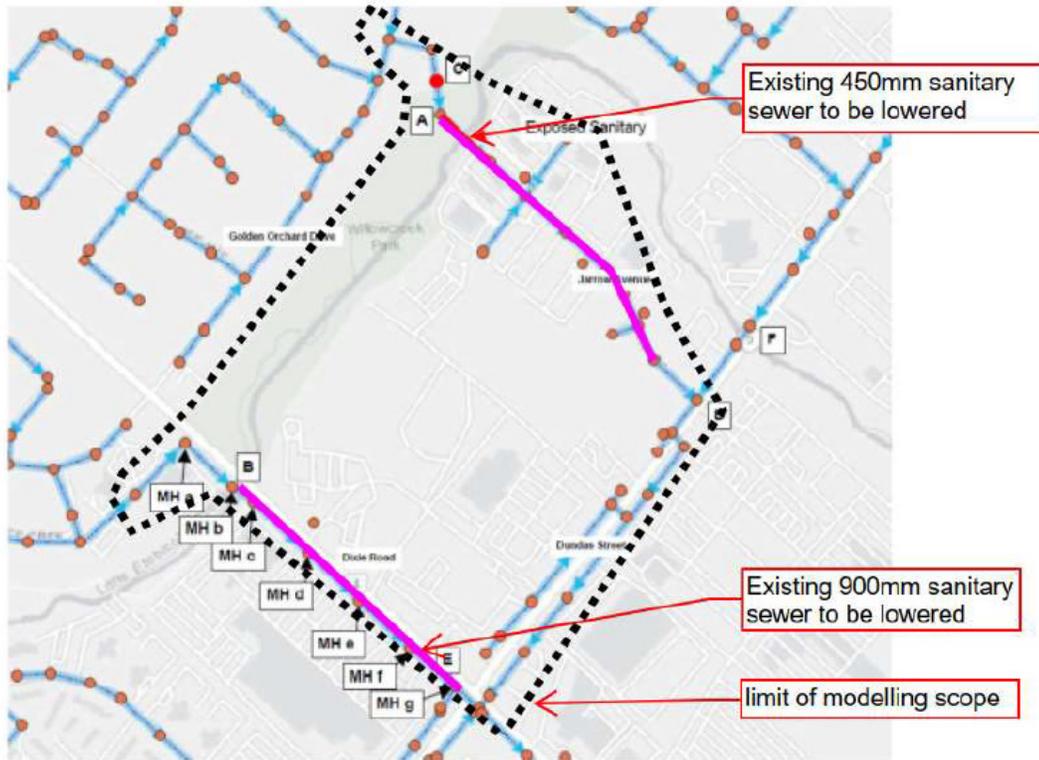


FIGURE 1 Sanitary Sewer Relocations Overview

- RVAnderson – Meeting and Project Coordination Effort (**\$5,749**) – additional effort for RVA to complete the Dixie Road bridge design with stakeholder input/consultation. The additional effort is required due to the extension of the project schedule and increase meeting requirements.
- JD Barnes SUE Services / Topographic Survey (Road) (**\$68,775**) – carry out the requested SUE and topographic survey services along Dixie Road, Jarrow Avenue and Little Etobicoke Creek corridor (infrastructure only). The data will be used to support the 30% design and future design deliverables.
- JD Barnes OLS Services (**\$9,240**) – carry out any necessary Ontario Land Survey requirement to support ongoing property and the 30% design deliverable. Cost assumes 4 days of surveying at a typical day rate.

3.4 Total Scope Change Request

A summary of the total requested items in the scope change is outlined in Table 2. We have included a 10% contingency to cover any potential requests from the City or additional investigations that are required to finish the EA and 30% design. The contingency fund will not be accessed without prior approval.

TABLE 2 Scope Change Request Summary

Task	Costs	Notes
Additional Meetings	41,820	incurred, not invoiced
Vertical Datum Survey and Correction	5,320	Pre-invoiced
Enhanced Sanitary Sewer Assessments	44,170	Pre-invoiced
Costs Memo	4,160	Pre-invoiced
Additional Model Assessment	4,950	Pre-invoiced
Project Management	19,000	ongoing, not invoiced
Future Stakeholder Meetings	20,850	anticipated
Topographic Survey	25,000	requested
SUE/Topo Coordination	5,700	partially incurred, ongoing
RVA - 30% Jarrow Ave 450 mm Sewer Relocation	46,970	requested
RVA - 30% Dixie Road 900 mm Sewer Relocation	93,327	requested
RVA - Project Coordination / Meetings	5,749	partially incurred, ongoing
JD Barnes - SUE/Topographic Services	68,775	requested
JD Barnes - OLS Survey	9,240	requested
Total	395,031	
Additional Investigations (Provisional)	39,503	
Total (not including HST)	434,534	

Notes: *subconsultant fee, estimates include 5% mark up for invoice processing

4 CLOSURE

Any questions regarding the enclosed information should be directed to Amanda McKay at 289.323.3780 (amckay@matrix-solutions.com) or Stephen Braun at 289.323.0975 (sbraun@matrix-solutions.com).

Sincerely,

MATRIX SOLUTIONS INC.



Amanda McKay, P.Eng., PMP
Water Resources Engineer

Reviewed by



Stephen Braun, P.Eng.
Principal Water Resources Engineer

AM/eh

DISCLAIMER

This work plan was prepared for the City of Mississauga. The work plan may not be relied upon by any other person or entity without our written consent and that of the City. Matrix Solutions Inc. has exercised reasonable skill, care, and diligence in assessing third-party information obtained during preparation of this work plan. While Matrix Solutions Inc. believe that the information provided is correct, Matrix Solutions Inc. accepts no responsibility for the accuracy or reliability of such third-party information however obtained. Any uses of this work plan by a third party, or any reliance on decisions made based on it, are the responsibility of that party. Matrix Solutions Inc. is not responsible for damages or injuries incurred by any third party, as a result of decisions made or actions taken based on this work plan.

VERSION CONTROL

Version	Date	Issue Type	Filename	Description
V1.0	04-Nov-2022	Final	24603-531 Dixie-Dundas SC 2022-11-04 F V1.0.docx	Issued to client
V2.0	31-Mar-2023	Final revised 1	24603-531 Dixie-Dundas SC 2023-03-31 F V2.0.docx	Revised; reissued to client
V3.0	10-Apr-2023	Final revised 2	24603-531 Dixie-Dundas SC 2023-04-10 F V3.0.docx	Revised; reissued to client

ACKNOWLEDGEMENT OF MATRIX WORK PLAN AND COST ESTIMATE

We accept the work plan and cost estimate dated April 10, 2023 with respect to Additional Tasks for the Dixie-Dundas Flood Mitigation Project, City of Mississauga (24603-531). We authorize Matrix Solutions Inc. to proceed with the described scope of work upon the attached terms and conditions.

CITY OF MISSISSAUGA

Per: _____

Name: _____

Title: _____

Date: _____

[Please return by email, fax, or regular mail]



15 March 2023

Amanda McKay, P.Eng., PMP
Water Resources Engineer
General Manager, Eastern Engineering
E-Mail: amckay@matrix-solutions.com

RE: Request for Quotation - Dixie-Dundas SUE and Level D through B Investigations and Topographic Survey
J.D. Barnes Ref: P-114341

Dear Amanda,

Thank you for your consideration of J.D. Barnes Limited Group of Companies for this opportunity.

The J.D. Barnes Group of Companies offers clientele the resources of over 500 full-time staff spread across 16 regional office locations in Ontario. The Group's experience of providing services within the transportation industry now spans more than 60 years. The Topographic Survey component will be completed by our Utility Surveys Division. The SUE services will be completed by our wholly owned subsidiary - OnSite Locates.

J.D. Barnes Ltd. understands that Matrix Solutions Inc. (MSI) intends to award a contract for the Topographical and SUE Level B/C Engineering services for Dixie Road, Jarrow Avenue, and Little Etobicoke valley corridor in the City of Mississauga.

The success of this project is highly dependent on J.D. Barnes Ltd. ability to satisfy MSI's requirements as described by the Terms of Reference within the RFP document. In acknowledging this, the Execution Plan presented within this proposal aims to fulfil MSI's expected as well as unexpected needs during the course of this work.

Project Limits

1. Dixie Road (approximately 450m)

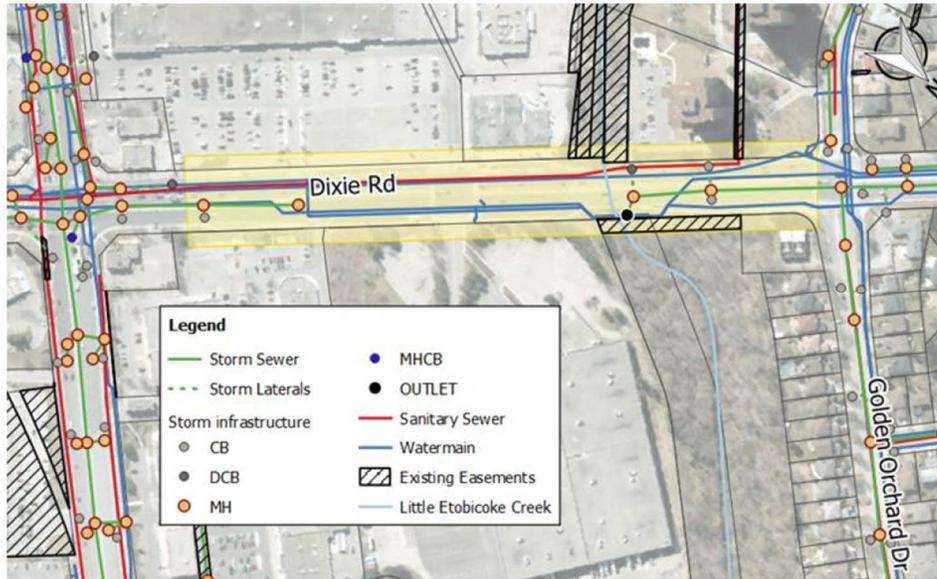


Figure 1 – SUE Investigation and Topographic Survey up to 20m beyond Dixie Road right-of-way limits. Approximate limit outlined in yellow.

2. Jarrow Avenue (approximately 475m)

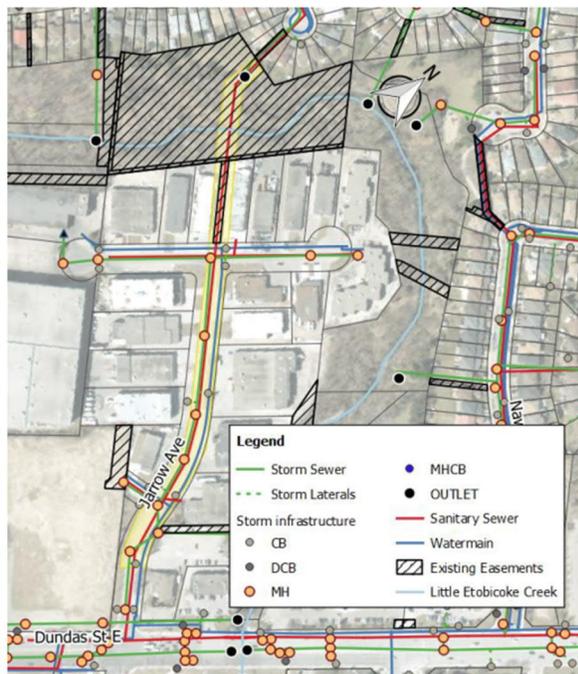


Figure 2 – SUE Investigation and Topographic Survey up to 20m beyond Jarrow Avenue right-of-way limits. Approximate limit outlined in yellow.

3. Little Etobicoke Creek (Approximately 2km in length)



Figure 3 – SUE Investigation only. Approximate limit outlined in yellow.



Scope of Work

Our services will be completed using high accuracy Leica Robotic Total Station and Leica/Septentrio RTN GNSS receivers for our Topographic Survey. SUE services will be completed using an RD7000 and Vivax underground utility locators. Our data will be geo-referenced to the UTM Zone 17 NAD83 CSRS Geodetic Coordinate System or to the City of Mississauga survey specifications.

Topographic Survey:

The Topographic Survey will include but is not limited to the following features:

- All above ground physical features will be surveyed
- Survey of individual trees outside of forested areas with tree type (deciduous or coniferous), trunk diameter and crown radius noted, as well as the dripline of all forested areas.
- Top/Bottom of banks will be surveyed at all water feature crossings as well as the edge of water.

SUE services:

- Obtain record information from utility companies and incorporate it with the Topographic survey data
- OSL shall carry out Level B to D Subsurface Utility Engineering (SUE) Study as per CSA Standard S250 "Mapping of Underground Utility Infrastructure" and ASCE Standard 38-02 "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data".
- All utility markings will be tied to the same accuracy as the Topographic Survey.
- The scope of work is exclusive of the investigation of services to private dwellings and businesses.

Deliverables

Topographic Survey:

- Base Plan /Topographic survey of proposed areas in CAD format
- Control Report

SUE Services:

- SUE data to be referenced and integrated to the J.D. Barnes Ltd. Topographic survey
- Level B SUE Report including:
 - a description and a sketch or image of the limits,
 - a general description of the pertinent utilities,
 - a description of the investigation methodologies (including basis of Level C), and
 - a summary of all reference and base information collected and used in the studies
- CAD file in the clients preferred coordinate system including:
 - designated utilities from the Level B investigation
 - compiled utility information from the utility companies
 - sewer investigation information (inverts, diameters, pipe material etc.)



Staffing

Topographic Survey and SUE services will be completed under the direction of John Yuen, OLS, Manager of the Utility Surveys Division. Mr. Yuen will be responsible for all technical and administrative duties associated with this project and will report to the MSI Project Manager. Haron Afzalzada, OLS will be the Project Supervisor and will be responsible for the supervision of all field and office personnel to ensure the project is progressing in a timely manner. Cassandra Sioukas-Madden will be the Supervisor for our SUE services.

Budget and Project Schedule

1. Dixie Road

ITEM	DELIVERABLE SCHEDULE	BUDGET
Topographic Survey	8 to 10 Weeks (from award)	\$ 23,000.00 +HST
SUE Services		\$ 11,300.00 +HST
Budget Total		\$ 34,300.00 +HST

2. Jarrow Avenue

ITEM	DELIVERABLE SCHEDULE	BUDGET
Topographic Survey	6 to 8 Weeks (from award)	\$ 11,000.00 +HST
SUE Services		\$ 7,400.00 +HST
Budget Total		\$ 18,400.00 +HST

3. Little Etobicoke Creek

ITEM	DELIVERABLE SCHEDULE	BUDGET
SUE Services	8 to 10 Weeks (from award)	\$ 12,800.00 +HST
Budget Total		\$ 12,800.00 +HST

The above budgets and schedule are valid until Dec 31st, 2023. The above budgets include traffic control costs.



Execution Plan for SUE Services

Quality Level D Study

Record and Information Research – Conduct utility record research to assist in identifying utility owners that may have facilities within the project limits or be affected by the project. Sources of information may include, but are not limited to: land owner records, title research, One-call notification centre, municipal records, personal interviews, visual inspection.

Record Collection – Collect applicable records identifying the existence and approximate location of existing utilities. Records may include: utility owner base maps, 'as-built' or record drawings, permit/construction drawings, field notes, Geographic Information System data, and oral recollections.

Records Review – Review records for indications of additional available records, duplicate information, credibility of such duplicate information and any need for clarification by utility owners.

Compilation and Presentation of Data – Exercise professional judgement to compile the applicable utility records and develop utility composite drawings or equivalent. For all involved utilities the presentation can include the following (if available): utility type and/or ownership, date of depiction, accuracy of depicted appurtenances, line status (active, abandoned or out of service), size and encasement material.

Quality Level C Study

Identification of Surface Utility Features – Identify surface features from project topographic data (if available) and from field observations that are appurtenances of existing subsurface utilities.

Field Survey and Verification – Survey surface features of subsurface utility facilities if such features have not already been captured by the project topographic data. If previously captured, check survey accuracy and completeness for applicability with the existing project.

Correlation and Presentation of Data – Exercise professional judgement to correlate applicable utility records with the surface features, taking into account the geometries and indications on the records of these features. Determine when records and surface features do not agree and resolve discrepancies. Upgrade the utility composite drawings to now reflect the integration of the Quality Level C data.

Quality Level B Study

Line Detection and Marking – Select/apply appropriate surface geophysical methods to search and detect subsurface utilities within the project limits. Mark the indications of utilities on the ground surface for subsequent survey.



Survey – Survey all markings that indicate the presence of a subsurface utility. Survey will conform to the accuracies and precision consistent with survey industry standard. The survey will be related to the appropriate project coordinate system and vertical datum.

Sanitary and Storm Networks – Maintenance hole and catch basin invert measurements will be collected where accessible and visible from the surface without entering the structures. Data collected will consist of: lateral pipe diameter, depth of lateral inverts, and direction of lateral. If laterals are recessed or too deep to measure, Confined Space Entry (CSE) techniques can be utilized at an additional cost.

Correlation, Interpretation and Presentation of Data – Exercise professional judgement to interpret and correlate the Level B investigation with the Level D and C results. Develop the final presentation and report detailing the results of the investigation and recommendations of additional measures to resolve differences if they still exist.

Quality Level A Study (exclusive of this scope of work)

Test Pit Location Selection and Marking – Confirm or adjust test pit locations utilizing the Level B investigation results and the client requirements. Test pits will require client approval before the coring and hydro-vacuum investigation begins.

Survey – Survey all required elevations and horizontal locations of the required utilities. This includes collecting surface elevations for each test pit, elevations for the top and bottom of each exposed utility, and horizontal location and width of each utility.

Correlation, Interpretation and Presentation of Data – Exercise professional judgement to interpret and correlate the Level A investigation with the Level D, C, and B results. Develop the final presentation and report detailing the results of the investigation and recommendations of additional measures to resolve differences if they still exist.

CCTV Study (exclusive of this scope of work)

Asset Inspection and Marking- Closed circuit television investigation used to investigate condition and location of the sanitary and storm laterals of interest. Mark the indications of utilities on the ground surface for subsequent survey.

Survey – Survey all markings that indicate the presence of a subsurface utility. Survey will conform to the accuracies and precision consistent with survey industry standard. The survey will be related to the appropriate project coordinate system and vertical datum.

Correlation, Interpretation and Presentation of Data – Exercise professional judgement to interpret and correlate the CCTV investigation with the Level D and C results. Develop the final presentation and report detailing the results of the investigation and recommendations of additional measures to resolve differences if they still exist.



Dye Testing (exclusive of this scope of work)

Asset Inspection and Marking - Dye testing to identify the connections of the site services to the main sewer lines (sanitary, storm, or combination). Connections will be verified with CCTV. Mark the indications of utilities on the ground surface for subsequent survey.

Survey – Survey all markings that indicate the presence of a subsurface utility. Survey will conform to the accuracies and precision consistent with survey industry standard. The survey will be related to the appropriate project coordinate system and vertical datum.

Correlation, Interpretation and Presentation of Data – Exercise professional judgement to interpret and correlate the CCTV investigation with the Level D and C results. Develop the final presentation and report detailing the results of the investigation and recommendations of additional measures to resolve differences if they still exist.

Assumptions

- The proposed fees and schedule assume snow free, ice-free, free site access and unobstructed work areas.
- Schedule is contingent on weather conditions.
- Site conditions in active work areas will only be surveyed once. Any re-surveys required due to site activities do not form part of the scope of work.
- No Legal (boundary) survey services of any kind are to be provided as part of our scope of work.
- The Level B scope of work does not include the investigation of service connections to dwellings and businesses. This information will be compiled from available records (Level C/D).
- Client will provide all known records or as-builts which are pertinent to the investigation.
- Budgets are based on topographic data provided by J.D. Barnes Ltd.
- Confined Space Entry (CSE) investigation of sewer structures is not part of this scope of work and is subject to additional charges.
- The above price does not include catch basin and manhole invert elevation, diameter, size, type, material and orientation.
- The scope of work is exclusive of Confined Space Entry (CSE), CCTV, and sewer tracing.
- The Client will provide to J.D. Barnes Ltd. any site-specific health and safety concerns/information pertinent to this project.
- The City or MSI will be responsible for obtaining any Permits, Permission to Enter (PTE's) prior to mobilization of our field crews

Traffic Control / Health and Safety

The J.D. Barnes Limited and Group of Companies has completed numerous recent pre-engineering survey and SUE Services on highways/railroads and has significant experience developing and managing field programs in accordance with MTO, Ministry of Labour and corporate health and safety requirements. J.D. Barnes has recent experience preparing Traffic Control Plans in accordance with the Temporary Conditions Manual/Book 7 for Engineering survey work on and adjacent to public roads and highways.



All field crew Party Chiefs will be equipped with cell phones for immediate contact with the office, and all JDB vehicles are equipped with 360° amber lights and advance signing in accordance with the MUTCD. Personal protective equipment will include hard hats, reflective safety vests and safety glasses. A field supervisor will make regular inspections to ensure proper safety procedures are being followed. The supervisor has been trained and is experienced in preparing Traffic Control Plans and interpreting the Occupational Health and Safety Act.

The J.D. Barnes Limited and Group of Companies team is vitally interested in the Health and Safety of its workers, the public, and the environment, and we make every effort to provide a safe and healthy work environment. We are dedicated to reducing injuries, accidents, environmental impact, and ensuring compliance. We achieve this by providing high quality training, comprehensive workplace evaluation, emergency response, and manage regulatory information.

OnSite Locates is dedicated to ensuring that its staff are properly trained and educated on all aspects of the diverse working conditions encountered on the variety of sites our workers are exposed to daily. All OSL employees take the following safety training with annual renewal unless otherwise noted:

- Shell's 12 Life Saving Rules (LSR)
- 4-Hour Utility Locate Awareness (Ontario)
- Ground Disturbance Level I&II
- WHMIS
- Petroleum Orientated Safety Training (POST)
- e-RAILSAFE
- Hydro One Electrical Safety Awareness
- Confined Space Awareness
- Imperial Oil Loss Prevention System (LPS) Safety Training (every two years)

It is a mandatory requirement by all OnSite employees to have the following PPE on all work sites:

- Work boots (CSA Z195-M92 approved with minimum 6 inches high ankle support)
- Visi-vest (CSA Z96-09 level 2)

It is a mandatory requirement by all OnSite employees to have the following PPE while on petrochemical and construction sites:

- Work boots (CSA Z195-M92 approved with minimum 6 inches high ankle support)
- Visi-vest (CSA Z96-09 level 2)
- Hard hat (CSA Z94.1-92, Class E)
- Cut Resistant Gloves (ANSI Level 2) (task appropriate)
- Safety glasses with permanently affixed side shields (CSA Z94.3)

A daily health and safety tailgate meeting and Workplace Hazard Assessment Form (WHAF) will be conducted and filled out every morning of the project prior to work commencing.



Quality Control

It is the objective of J.D. Barnes Limited to achieve a uniform high standards of excellence in providing Topographic Survey and Sub Surface Utility Engineering/Mapping services to clients commensurate with sound professional and business practices.

Responsibility for the quality of any project begins with the technicians and technologists carrying out the work and flows upward through to the supervisory and management level. Ultimate responsibility for the quality of each project rests with the manager of the division undertaking the project.

Quality plan and standard of operation procedures available upon request

We trust that this proposal is satisfactory to your needs we and look forward to your favorable response.

If you have any questions or require anything further, please do not hesitate to contact the undersigned.

J.D. BARNES LIMITED

A handwritten signature in black ink, appearing to read 'John Yuen', is written over a horizontal line. The signature is fluid and cursive.

John Yuen, O.L.S.
 Manager, Utility Surveys
 J.D. Barnes Limited - Division 12
 Utility Surveys
 140 Renfrew Drive, Suite 100
 Markham, Ontario, L3R 6B3
 Office: (905)-477-3600 x313
jyuen@jdbarnes.com
 Fax: (905)-477-3882 www.jdbarnes.com



Terms and Conditions

TERMS OF PAYMENT

All invoices are to be paid within 60 business days of issue date of invoice. OnSite Locates Inc. reserves the right to withhold all plans, services, files and ownership of such information until full payment has been received. Interest will be charged on overdue accounts at 1.5% per month (18% per annum, compounded monthly).

OnSite Locates Inc. will not be subjected to any holdback, and we require full payment of invoices issued as per above.

GENERAL TERMS

1. Taxes (HST) is not included in the prices quoted and will be charged extra.
2. Payment is due 60 days from the invoice date unless otherwise stated in the Payment Terms.
3. Invoices are created at the end of each work week and will be billed on a weekly basis for projects lasting longer than a week.
4. OnSite Locates Inc. (OSL) will contract with the Client to whom this quotation is issued. It is the responsibility of the Client to pay. OSL will not accept responsibility for pursuing payment from other parties not specifically listed on this quotation.
5. Payment Terms - 60 Days from the invoice date.
6. This work will only be scheduled once all billing information has been received and our quotation returned signed to the OSL sender. This signature will be an understanding that you (The Client) agree to our payment terms.
7. Please note that there may be certain obligations on the part of the Client with regards to the work outlined in this quotation. When the Client issues a Purchase Order number to carry out the above work, they also commit to meet the obligations outlined in this quotation.
8. Prices quoted are valid for 30 days from the date of submission.
9. Fees are in accordance with the cost estimate contained in the letter agreement.
10. In the event of a disputed billing, only the disputed portion will be withheld from payment, and the undisputed portion will be paid. Client will exercise reasonableness in disputing any bill or portion thereof. No interest will accrue on any disputed portion of the billing until mutually resolved. If Client fails to make payment of any sum due hereunder, OSL may, after giving 7 days' written notice to Client, suspend the Services until all such sums have been paid in full to OSL.
11. Client may make or approve changes within the general scope of the Services provided written notice

of such changes is given to OSL. If such changes affect OSL's cost of or time required for performance of the Services, an equitable adjustment of the Compensation or of the term hereof will be made through an amendment to this Agreement.

12. If performance of the Services is affected by causes beyond OSL's reasonable control, the Project schedule and the Compensation shall be equitably adjusted by mutual agreement of the parties.
13. The standard of care applicable to the Services will be the degree of care, skill and diligence normally employed by professional engineers or OSL while performing the same or similar services at the time and place that the Services are performed.
14. This Agreement may be terminated for convenience by either party on 15 days' written notice or if either party fails substantially to perform through no fault of the other and does not commence correction of such non-performance within 5 days of written notice and diligently completes the correction thereafter. On termination, OSL will be paid for all authorized work performed up to the termination date plus reasonable termination expenses including without limitation reassignment of personnel, sub-consultant termination costs and related close-out costs. OSL shall be allowed a reasonable period to complete such records as are considered necessary by OSL to place its files to protect its professional reputation and/or limit its legal liability.
15. Upon the written request of either party, the parties shall attempt to resolve all disputes arising out of or about this Agreement, or in respect of any defined legal relationship associated with it or from it, by structured negotiation, on a without prejudice basis, with the assistance of a mediator appointed by them. If a dispute cannot be settled within a period of 30 days after such request, or such longer period as may be agreed to by the parties, the parties shall be free to pursue any other procedures or remedies available to them, including arbitration or litigation, to finally resolve the dispute.
16. Unless otherwise agreed to by the parties in writing, in the event that Client is in default of its obligations under this Agreement, OSL may terminate Client's right and licence to use, disclose and reproduce the Documents upon providing written notice to Client, whereupon Client shall return to OSL all Documents, including all media containing Documents transmitted to Client in electronic or digital form, and ensure that all Documents in electronic or digital form are erased from all memories of Client's computers or information storage devices and from all memories of computers or information storage devices belonging to other persons or legal entities to whom the



Documents have been disclosed by Client, and that no residual copies of any part of any Documents are retained by any of them.

not to delay the Services or to prevent OSL from forwarding instructions to its sub-consultants in good time.

CLIENT RESPONSIBILITIES

Unless otherwise agreed to by OSL in writing, Client shall do the following in a timely manner so as not to delay the Services:

- a. Provide OSL with all information in its possession or control relating to the Services to be performed and, if applicable, the site(s) for the Project (herein called the "Site"), including without limitation all information pertaining to hazardous materials which may exist at the site and records of any underground utilities, services or other hidden obstructions. Client acknowledges that OSL shall be entitled to rely upon full disclosure by Client of the foregoing information to enable OSL to properly perform the Services. OSL shall not be responsible for any incorrect advice, judgement, recommendation, finding, decision or conduct based upon any inaccurate or incomplete information supplied by Client and the Client shall defend, indemnify and hold OSL harmless from and against any claim, loss or damage resulting therefrom.
- b. Where applicable, grant or arrange timely and unobstructed access to the site for all equipment and personnel of OSL required to perform the Services. OSL will take reasonable precautions to minimize damage to the site but it is understood by Client that, in the normal course of events, damage to or at the site, including without limitation damage to underground utilities or services, may occur. The correction of such damage is not part of the Services unless agreed to in writing by OSL and, provided OSL has taken the precautions mentioned above, any such restoration of the site will only be undertaken by OSL at additional cost.
- c. Unless otherwise noted in the proposal letter, obtain any required approvals, licenses, permits or related documents so as not to delay OSL in the performance of the Services.
- d. Give prompt consideration to all reports and other documents relating to the Services furnished by OSL and, whenever prompt action is necessary, inform OSL in writing of its decisions in such reasonable time so as

DOCUMENTS

1. Unless otherwise agreed to by the parties in writing, all the documents (including without limitation drawings and specifications and electronic or digital data) prepared by or on behalf of OSL about the project (herein called the "Documents") will become the property of Client upon full and final payment of the Compensation but the copyright in and to the Documents shall be retained by OSL. OSL grants to Client a non-exclusive right and licence to use, disclose and reproduce the Documents solely for the Project.
2. Client shall not use, permit the use of disclose or reproduce any of the Documents for the construction of another project or work, or in any way amend, alter or revise the Documents, without first obtaining the written consent of OSL, and all reproductions shall include notice of this restriction.
3. OSL shall have no responsibility for any loss or damage suffered by Client or others resulting from any unauthorized use or modification of the Documents, errors in transmission of the Documents, changes to the Documents by others and Client agrees to defend, indemnify and hold OSL harmless from and against all claims, demands, losses, damages, liability and costs associated therewith. The Documents may be relied upon by Client for design and construction work undertaken by other parties with respect to the Project provided such parties verify the accuracy and completeness of the Documents to their satisfaction.
4. Unless otherwise agreed to by the parties in writing, in the event that Client is in default of its obligations under this Agreement, OSL may terminate Client's right and licence to use, disclose and reproduce the Documents upon providing written notice to Client, whereupon the Client shall return to OSL all Documents, including all media containing Documents transmitted to Client in electronic or digital form, and ensure that all Documents in electronic or digital form are erased from all memories of Client's computers or information storage devices and from all memories of computers or information storage devices belonging to other persons or legal entities to whom the Documents have been disclosed by Client, and that no residual copies of any part of any Documents are retained by any of them.

LIMITATIONS AND LIABILITY

1. OSL is not liable for damages, if any, resulting from physical exposure of any 'detectable feature' by the



Client, or their representatives, or their sub-contractors, or any other person, or corporation, based on the information provided.

2. Areas considered to be inaccessible (an "Inaccessible Area") for the Service include, but are not limited to, the following: those of physically restricted access; those covered by a structure or object (i.e. building walls, vehicles, equipment, debris, stockpiles of material or snow, etc.); those covered by open water; those covered by woods or vegetation too thick to permit easy walking; those with surfaces terrain slopes steeper than 1:3; and, those where the safety of the technician is jeopardized (i.e. unstable footing, environmental hazards, uncontrolled roads, etc.). The judgement of the OSL Technician will prevail on accessibility decisions.
3. It is the responsibility of the Client to provide direct and simple access free from surface objects to all survey areas. OSL accepts no responsibility for surveying in any areas where the Client does not provide access and/or appropriate workplace safety measures. Areas considered to be inaccessible for scanning and marking, aside from restricted access, include the following, but not limited to: covered or within 0.8m of a structure or object (i.e. walls, vehicles, equipment, debris, stockpiles of materials, etc.).
4. Limitation of Liability. OSL's liability to Client for claims arising out of this Agreement, or in any way relating to the Services, will be limited to direct damages and to the performance, without additional compensation, of any Services not meeting the standard set forth in General Condition 9 and such liability will, in the aggregate, not exceed the amount of the fees.
5. When providing designating services using geophysical equipment, the client understands the limitations of that equipment to identify all underground utilities. Due to those limitations, it may not be possible to identify the true position of all utilities within an investigation area. OSL shall not be held liable for misidentifying or not identifying any utilities beyond the capabilities of the equipment being used in the investigation.
6. In no event, shall OSL be liable for indirect or consequential damages including without limitation loss of use or production, loss of profits or business interruption nor will it be responsible for the failure of any party not under its control to perform the Services.
7. No claim may be brought against OSL more than 1 year (or the minimum period required to be allowed by the applicable legislation) after the Services were last performed under this Agreement.
8. The limitations of liability contained in this General Condition will apply, to the extent permitted by law, whether OSL's liability arises under breach of contract or warranty; tort, including negligence; strict liability;

statutory liability; or any other cause of action, and will extend to and include OSL's directors, officers, employees, insurers, agents and sub-consultants.

9. Third Party Beneficiaries. This Agreement gives no rights or benefits to anyone other than Client and OSL and has no third-party beneficiaries except as provided in General Condition 9.

CONFIDENTIALITY

1. Confidentiality. OSL shall use reasonable efforts to keep confidential all data and information which is marked confidential and furnished to OSL by Client under this Agreement. OSL's confidentiality obligations shall not apply if such data or information is within the public domain, previously known to OSL, obtained by OSL from third parties without violating any confidentiality agreement or required to be produced by OSL pursuant to any law, subpoena or court order.
2. Personal Information. Unless otherwise agreed to by the parties in writing, Client shall only collect and use individually identifiable information from or about OSL employees if such collection and use is required, Client shall collect and use all Personal Information in accordance with applicable federal or provincial personal information protection legislation.

INSURANCE

1. OSL shall maintain throughout the term of this Agreement the following:
 - Commercial General Liability – including Bodily Injury/Property Damage, Products – Completed Operations Aggregate, Personal Injury, Advertising Injury, Employer Liability, Contingent Employers Liability, and Contractual Liability with \$5,000,000 per occurrence & Aggregate.
 - Non-Owned Automobile Liability \$5,000,000 per occurrence & Aggregate.
 - Commercial Automobile Liability \$2,000,000 per occurrence & Aggregate.
 - Professional Liability Errors & Omissions (Claims Made Policy) \$5,000,000 per Claim & Aggregate.
 - Contractors' Pollution Liability (Claims Made Policy) – Full Gradual Pollution coverage with no time limit on reporting, including events of sudden and accidental pollution. \$2,000,000 per loss & Aggregate.
2. OSL shall provide Client with proof of such insurance upon request.
3. As between OSL and Client, Client assumes sole responsibility and waives all rights and claims against OSL for all loss of or damage to property owned by or in the custody of Client and any items at the site or in



transit thereto however such loss or damage shall occur, including the fault or negligence of OSL. Client agrees to maintain appropriate Property Insurance and shall require its insurers to waive all rights of subrogation against OSL for claims covered under any Property Insurance that Client may carry. Such waivers shall survive termination or discharge of this Agreement.



R.V. Anderson Associates Limited
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Toronto Ontario M2J 4Z8 Canada
Tel 416 497 8600 Fax 855 833 4022
www.rvanderson.com

December 14, 2022

RVA 184319

Matrix Solutions
2500 Meadowpine Blvd.
Suite 200
Mississauga, ON L5N 6C4

Attention: Ms. Amanda McKay, P.Eng., PMP

Dear Mr. Braun:

Re: Scope Change for Dixie-Dundas Flood Mitigation for Dixie Road Trunk Sewer
And Jarrow Ave. Sewer Preliminary Design

R.V. Anderson Associates Limited (RVA) submits herein the requested scope change proposal for engineering services related to a preliminary design of relocation of a 900mm diameter trunk sewer on Dixie Ave. and a 450mm diameter sewer on Jarrow Ave. to facilitate the recommended channel design for Little Etobicoke Creek near to the proposed Dixie Road Bridge that will be required as part of the Dixie-Dundas Flood Mitigation project. Our proposal covers the provision of preliminary municipal design services, sewer hydraulics review, and preliminary drafting layout and coordination.

SCOPE OF WORK

Background Review and Analysis:

RVA will request and review all available information related to the design of the new lowered sewers. This includes as-built drawings, utility drawings, borehole logs, hydraulic reports, fluvial geomorphic reports, Region of Peel sewer models, and any other relevant information. RVA would request that the City of Mississauga (City) provide all useful background information. Using the information available, RVA would initiate concepts for the lowering of the trunk sewer.

See Figure 1 below which shows the proposed sewer relocation concepts:

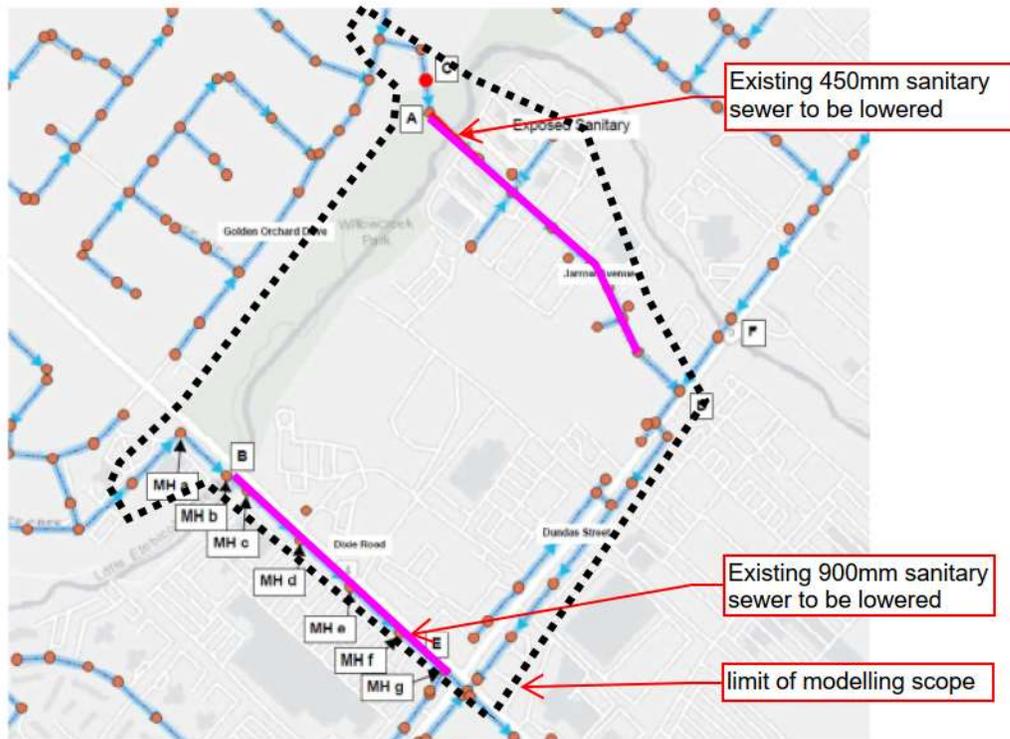


FIGURE 1 Sanitary Sewer Relocations Overview

Site Reconnaissance:

At project startup, municipal engineering team members would carry out a site investigation of existing conditions at the proposed sewer location. An inventory of significant field observations would be completed. Critical features that could impact the design of the sewer would be identified and documented for design purposes. We assume that Matrix will provide a full topographical survey with property information, and subsurface utility engineering (SUE) studies for the areas shown in Figures 2 and 3.

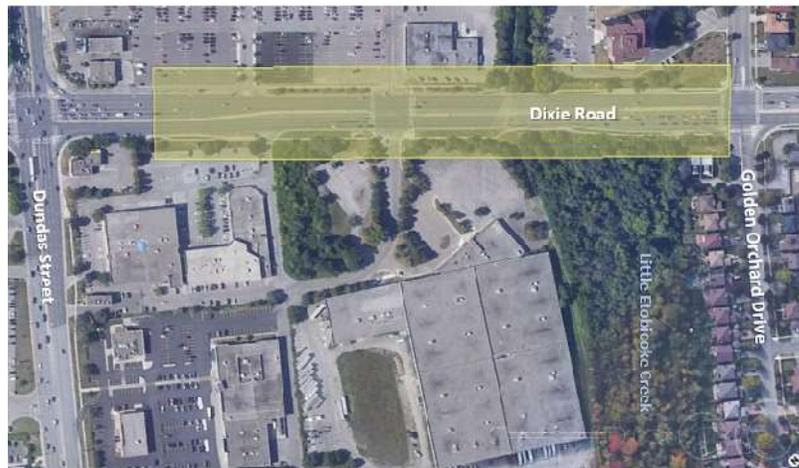


FIGURE 2 Limits of SUE Level D, C, B Investigations and Topographic Survey on Dixie Road

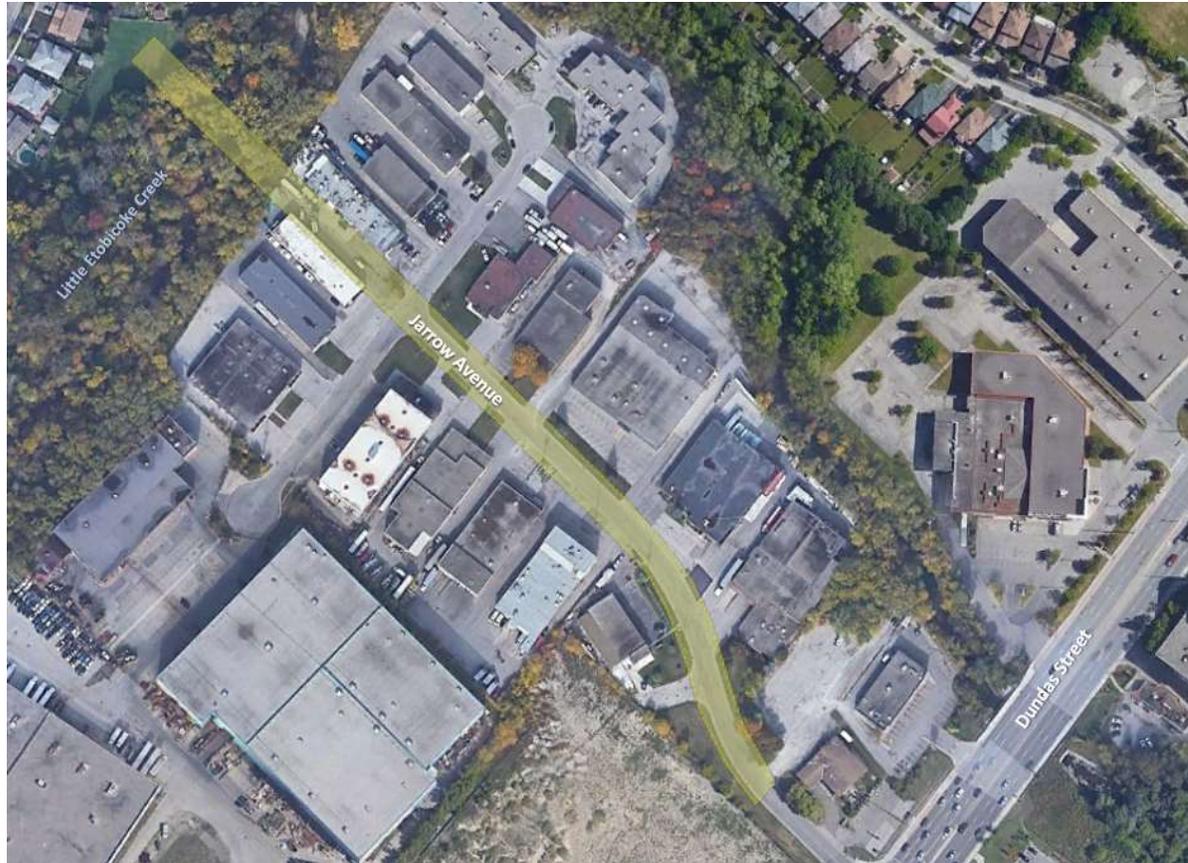


FIGURE 3 Limits of SUE Level D, C, B Investigations and Topographic Survey on Jarrow Ave

Agency and Stakeholder Consultation:

Coordination meetings with the City and Region of Peel (Region) as required would be attended by RVA, with a total of up to seven (7) virtual meetings included in the budget. Additional meetings and/or in-person meetings would be priced separately, if required.

10% Conceptual Design:

RVA would develop a 10% conceptual design for the relocation of the 900 dia. trunk sewer from the Dixie Road Bridge to a preferred location north of the Dixie-Dundas intersection and the 450 dia. sewer at Jarrow Ave. from approximately Fieldgate Drive to north of Dundas Ave., for review and input from the City and the Region. It would be accompanied by a memorandum which describes the preferred relocation design, including discussion on installation by open cut and trenchless methods.

Utility Coordination:

RVA will circulate base plans to utility companies to obtain their existing and future requirements in the project area. Utility conflicts between new construction and existing utilities would then be identified.

Further correspondence and meetings pertaining to utilities will also be attended by RVA.

Mr. Amanda McKay, P.Eng. PMP
December 14, 2022

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R.V. Anderson Associates Limited

Preliminary EA (30%) Design:

All preliminary civil drawings would be provided to Matrix in PDF format, along with digital files. These drawings would include preliminary plan and profile drawings for the trunk sewer. All drawings would be completed in accordance with the Region's standards.

It is assumed that all geotechnical and hydrogeological information along both the sewer alignments will be provided by Matrix for review. All existing relevant sewer models would be requested from the Region. We are expecting the most up to date model that will not require any updates or calibration (or incorporating new developments upstream). Once received, a sewer analysis would be carried out using InfoWorks to confirm the impacts of the re-routing of the sewer. The limit of the modelling analysis is illustrated in the figure attached to this document. Based on the outcome of the modelling, recommended sewer diameters and profiles would be determined and used to develop the 30% Design the lowering of the two sewers. Any designs pertaining to sewer improvements in other affected areas within the modelling area will be covered under a separate scope change.

A cost estimate would be prepared for the sewer relocation designs in accordance with the expected accuracy required of a 30% preliminary design (+/- 30%).

Please advise when you have received authorization to proceed with this scope change, and please contact me if you have any questions.

PROPOSED FEES

Based on the estimated level of effort, the following upset limit for the proposed work under this scope change are as follows:

900mm dia. Sewer on Dixie Rd.....	\$ 88,883.00
450mm dia. Sewer on Jarrow Ave.....	\$ 44,733.00

Time-task breakdowns of the proposed scope changes are attached for your review.

Please contact me if you require and further information.

Yours very truly,

R.V. ANDERSON ASSOCIATES LIMITED



David J. O'Sullivan, P.Eng., PMP
Principal