

FEBRUARY 22, 2019

REQUEST FOR PROPOSALS

RAISIN RIVER AND ST. LAWRENCE RIVER FLOODPLAIN MAPPING UPDATE

**SOUTH
GLENGARRY**



Ontario's Celtic Heartland

RFP NUMBER: RFP-01-19

RFP ISSUED: FEBRUARY 22, 2019

SUBMISSION DEADLINE: MARCH 15, 2019

1.0 Introduction

The Township of South Glengarry, Ontario is undertaking an exercise to update the existing floodplain mapping for the Raisin River and St. Lawrence River within the Township boundaries. The Township has acquired funding as part of the Public Safety Canada's National Disaster Management Program. The maximum funding available for this project is \$120,000. The Township is requesting that proposals for work be submitted no later than **12:00 pm (noon) Eastern Standard Time (EST) on March 15, 2019**. Additional details regarding project scope are summarized below.

2.0 Background

The Township of South Glengarry has a total land area of approximately 605 km² and is bordered by the Ontario-Quebec border to the east, the City of Cornwall and Township of South Stormont to the west, the Township of North Glengarry to the north, and the St. Lawrence River to the south. The Raisin River is the region's most significant river and runs through several populated communities before joining the St. Lawrence River. There are three major branches of the Raisin River: North, South and Main branch, comprising a sub-watershed area of approximately 580 km². The Main Branch and South branch flow through the Township boundaries in a general south-easterly direction.

The Township has a population of approximately of 13,150, of which approximately 27% live within close proximity of Raisin River and the St. Lawrence River. These include the communities of Glen Walter, Summerstown, Lancaster, South Lancaster, Bainsville, Curry Hill, Williamstown, and Martintown, as shown on **Figure 1**. These densely populated waterfront communities are therefore vulnerable to flooding of either of the two river systems.

The current floodplain maps of the area are outdated and do not take into account development and cut and fill activities over the last 30 years. Most of the development within the Township was undertaken before the 2005 Ontario Provincial Policy Statement that discouraged or prevented development and site alteration within floodplains and natural hazard areas. It is therefore likely that existing properties are within the floodplain of the Raisin River, posing a risk to residents, properties and infrastructure.

Consequently, updating the current flood plain map is a high priority for the Township. The updated floodplain maps will be used to mitigate and reduce the impacts of flooding, as well as ensure that future development occurs within safe areas outside of the floodplain. The maps will also be used as a tool for emergency planning, flood forecasting and warning, and for land use planning to develop policies within the Official Plan to direct development and re-development outside the floodplain. The approximate area of floodplain of the Raisin River within the Township is 12.0 km².

2.1 Previous Studies Summary

A timeline and summary of previous studies completed for Raisin River and St Lawrence River are provided in **Table 1**.

Township of South Glengarry

Legend

- Arena
- Boat Launch
- Community Centre
- Historic Monument
- Hospital
- Library
- Municipal Office
- OPP - Police Station
- School
- Trail
- Waterfront Trail and Bike Path
- Park
- Fairground
- County Forest
- Highway
- County Road
- Township Road
- Private/Other Road
- Road Allowance / Seasonal Road
- Under Construction
- Future Development
- Railroad
- Settlement Area
- Township Boundary

1:110,000
 1 centimetre = 1.1 kilometre

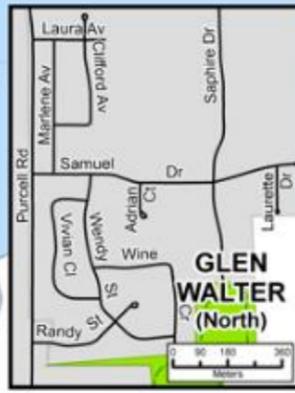
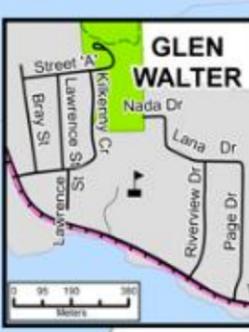
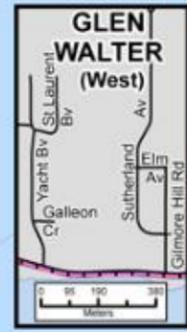
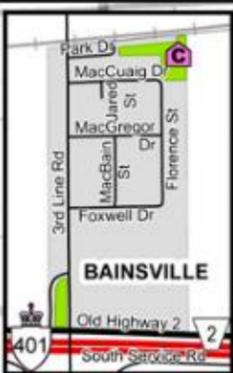
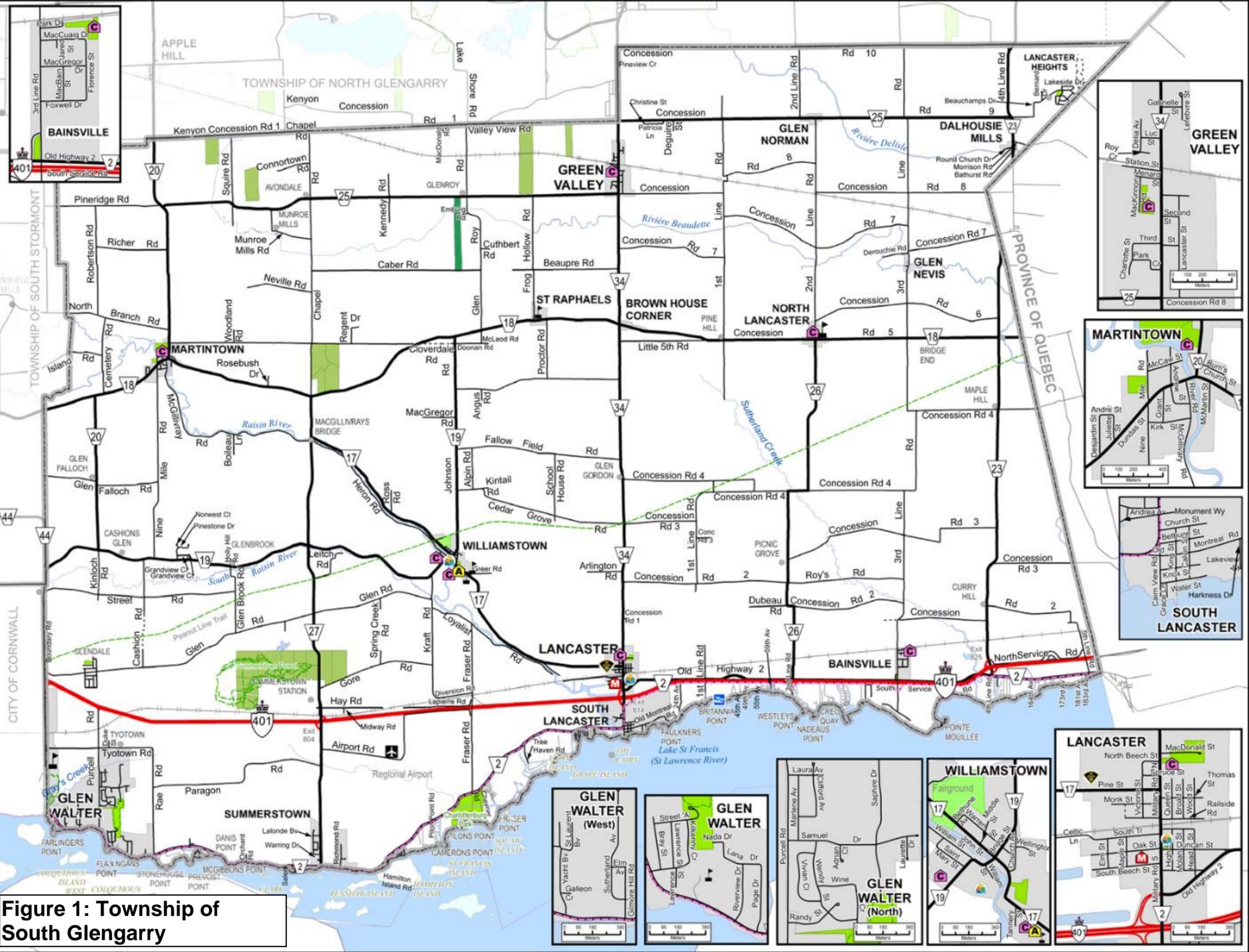


Figure 1: Township of South Glengarry

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Table 1- Timeline of Previous Studies

Year	Author	Summary
1980	Crystler & Lathem LTD	<i>Water Management Study of South Raisin River</i> A study was carried out by Crystler & Lathem for the Raisin Region Conservation Authority that identified the flood prone areas and made recommendations to protect existing and future development within the South Branch of Raisin River sub-watershed.
1981	MacLaren	<i>Water Management Study of the Raisin River (Main Branch).</i> A study was carried out by MacLaren that identified flood and ice-jam prone areas within the Main Branch of Raisin River.
1983	Raisin Region Conservation Authority (RRCA)	<i>Interim Watershed Plan</i> A regional plan for several watersheds including Raisin River and St Lawrence River identified lands subject to flooding and areas of probable ice jam. This report also created a comprehensive program to prevent, reduce and/or eliminate the risks associated with flooding or ice jams.
1986	Garatech	<i>Flood Plain Mapping Raisin River Main & North Branches.</i> A study was carried out by Garatech that updated the Hydrology and expanded the flood mapping of the Main and Upper Branches Raisin River.
1993	Environment Canada	<i>St. Lawrence River Flood Levels</i> A study carried out by Environment Canada that developed 100-year flood levels of the St Lawrence River (including the Raisin River outlet). This report also discussed the impacts of wave action and ice piling.
2016	Parsons Inc	<i>Raisin River Overpass/Highway 401 – Drainage and Hydrology Report</i> A report written by Parsons Inc. for the Ministry of Transportation Ontario Eastern Region (MTO) that reviewed the hydraulic performance of existing bridges and updated the existing hydrology and hydraulic models.
2018	RRCA	<i>Visual Review of Raisin River Crossings, South Glengarry</i> A report that documents the location of river crossings, bridges and low-level crossings on Raisin River within the Township of South Glengarry. This includes a series of photographs, descriptions and identification of which structures have as-built drawings.

3.0 Scope of Work

3.1 Study Area

The study area consists of the two branches of the Raisin River that fall within the Township boundaries, and the St. Lawrence River frontage as shown in **Figure 2**. **Figure 2** also shows the extents of the LIDAR acquisition area with a total of 48 km². It should be noted that even though the extents of the river are limited to the sections that fall within the Township boundaries, any hydrologic analyses completed should consider the upstream areas contributing flow to the system.

3.2 Key Tasks

The purpose of the project is to a) prepare and run the necessary computer models to identify and delineate the flood lines on the Raisin River for 1:2, 1:5, 1:10, 1:25, 1:50 and 1:100 water elevations; and, b) assess the newly acquired LiDAR elevation and delineate the 1:100 flood plain for the St. Lawrence River (note that the 100 year water level for the St. Lawrence is defined by Environment Canada). The key tasks to be completed for this project are summarized below:

1. Detailed review of the background documentation available for the St. Lawrence and Raisin River watersheds and river systems including reports, hydrologic and hydraulic models, GIS data and other resources. It is the proponent's responsibility to identify data gaps and account for how these data gaps will be filled in. A list of the available documentation is included in **Section 4.0**.
2. Review of LiDAR data, when provided, and liaison with the vendor to verify and validate accuracy of LiDAR data.
3. Complete field survey to supplement LiDAR data, particularly within watercourses, as well as compile an updated inventory of culverts, bridges or other structures (e.g. field measurements, bathymetry, cross-sections, data or observations to be recorded and included in final deliverable).
4. Complete all hydrologic and hydraulic modelling in accordance with federal and provincial guidelines for floodplain mapping (including the *Technical Guide, River and Stream Systems: Flooding Hazard Limit, MNRF 2002*). The preferred hydrologic modelling software is a SWMHYMO/OTTHYMO based software and the preferred river modelling software is HEC-RAS. All models, field data and geographic files should be in georeferenced to UTM NAD 83, Zone 18N coordinate system.
5. Generate the 1:2, 1:5, 1:10, 1:25, 1:50 and 1:100-year water surface elevations and flood lines for the Raisin River within the Township of South Glengarry, based on the one-zone concept. The flood lines are to be provided in digital format (i.e. ESRI GIS shapefile format) based on the LiDAR/DEM data.
6. Produce draft and final flood plain maps showing the 1:100-year Regulatory Flood lines and water surface elevations for the Raisin River within the Township boundary. Flood plain maps are to be provided in hard copy (11 x 17) and soft copy (PDF and ESRI shape file format).
7. Produce draft and final flood plain maps showing the 1:100-year Regulatory Flood lines and water surface elevations for the St. Lawrence River within the Township boundary. Flood plain maps are to be provided in hard copy (11 x 17) and soft copy (PDF and ESRI shape file format).

Figure 2: LiDAR Acquisition Areas



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8. Provide a full engineering report signed and stamped by a professional engineer in hard copy and soft copy (PDF format or MS Word). This report should include all field inspection records, photos and observations, hydrologic and hydraulic modelling output, summary of key findings, modelling assumptions, and modelling or analysis methodologies.

4.0 Available Resources

A list of the available background information is summarized below.

1. LiDAR Metadata, 0.5 m Hydro-Flattened DEM with bridges removed and contours (0.5 m interval)
 - The LiDAR data is anticipated to be completed early in the spring (March – April 2019) and will be made available shortly after that. Details of LiDAR resolution outlined in the table below are taken from the agreed-upon scope from the vendor.

Table 2 – LiDAR data parameters

Parameter	QLO
Aggregate Nominal Point density	~ 9.7/m ²
Non-vegetated vertical Accuracy (NVA) – (RMSEZ)	≤ ±0.05m
Non-vegetated vertical Accuracy (NVA) – 95%	≤ ±0.098m
Vegetated vertical accuracy (NVA) – 95%	≤ ± 0.15

2. High-quality DRAPE aerial photography (2014) and associated low-resolution Digital Elevation Model (DEM). It should be noted that this DEM is not detailed enough to be used for modelling but can be used to supplement the LiDAR data and provide additional insight.
3. Existing Hydrologic and Hydraulic Modelling (Raisin River)
 - a. 1986 HYMO Hydrologic Model
 - b. 1989 HEC-2 Hydraulic Model
 - c. 2007 Conversion and joining of original HEC-2 model into HEC-RAS
4. Reports (Digital Copies)
 - a. MacLaren, 1981, Water Management Study of the Raisin River (Main Branch).
 - b. Garatech, 1986, Flood Plain Mapping Raisin River Main & North Branches.
 - c. Environment Canada, 1993, St. Lawrence River Flood Levels
 - d. RRCA, 2018, Raisin River Crossings, South Glengarry
5. RRCA, 2018, Raisin River Crossings, South Glengarry: Photographic documentation and location of river crossings, bridges and low-level crossings
 - a. <http://www.rrca.on.ca/ftp/2018-Raisin-River-Crossings-South-Glengarry.pdf>
6. HYDAT River Flows, Water Survey of Canada
 - a. 02MC001 – Raisin River near Williamstown (main branch, Level and Flow since 1960)
 - b. 02MC027 – Raisin River at Black River (upper reaches, Level and Flow since 1986)
 - c. 02MC030 – South Raisin River near Cornwall (south branch, Spring Level since 2002 and Flow since 1986)
 - d. 02MC023 – St. Lawrence River at Summerstown (Level since 1920)
7. ESRI/GIS Shape files (provided by United Counties of Stormont, Dundas and Glengarry)

- a. Watercourses;
 - b. Wetland;
 - c. Woodland and Significant Woodlands;
 - d. ANSI;
 - e. Bridges and culverts;
 - f. 5m Contour data (covering entire Counties);
 - g. Road network data (originally based off ORN);
 - h. Township Boundary
 - i. Zoning Schedules (along St. Lawrence River only)
8. Township will provide access to as-built/engineering drawings for structures, where available.

5.0 Project Timeline/Schedule

5.1 Project Start Date

The estimated project award date is **March 22nd, 2019**. It is expected that the work will proceed as soon as the project is awarded.

5.2 Project Completion Date

The anticipated project completion date is **February 28, 2020**. As required by the conditions of the Federal funding partner (National Disaster Mitigation Program, run by Public Safety Canada), the project must be fully completed no later than March 31, 2020.

5.3 Project Schedule

An estimated schedule and work plan must be provided in the proposal with estimated completion dates for key project deliverables and milestones.

- The project schedule should account for monthly progress/ update meetings via conference call.
- The project schedule should account for a two week review period for draft and final deliverables submitted to the Township. Peer review of all deliverables will be completed by the Raisin Region Conservation Authority (RRCA).

6.0 Project Budget

This project is jointly funded by the National Disaster Mitigation Program and the Township of South Glengarry. The total funding available is approximately \$120,000.

In order to align with fiscal timelines of the Township and comply with the federal funding requirements, the consultant should be prepared to **pre-bill or advance bill a portion of the work by March 31, 2019**. Further invoicing details will be shared with the winning proponent.

7.0 Project Deliverables

1. 1:100 year Regulatory Flood Lines and Floodplain Map for Raisin River
 - a. Flood plain map to be provided in PDF and ESRI/GIS shapefile format, as well as 11 x 17 paper/printed format.
 - b. Flood lines to be provided in digital format (ESRI GIS Shapefile)
2. Hydrologic and Hydraulic Modelling Files
 - a. Hydraulic model to be provided in HEC-RAS format
 - b. Any supporting hydrologic modelling should be completed using a SWMHYMO or OTTHYMO compatible format
3. Final Engineering Report
 - a. One (1) copy PDF Format (not security locked), MS-Word format also acceptable
 - b. Three (3) paper/hard copies.

8.0 Proposal Submission Requirements

1. All proposals must include, at minimum:
 - a. The proposed methodology, approach for undertaking the work;
 - b. A proposed work plan, including a schedule for completing the work;
 - c. A time-task matrix for all staff on the project;
 - d. The proposed cost to complete the work;
 - e. Three (3) reference projects with corresponding client contacts;
 - f. CVs/Resumes of staff to be involved with the project;
 - g. A signed and completed Form of Quotation (attached); and,
 - h. A signed copy of the Page 11 of this RFP
2. Proposals must be limited to fifteen (15) pages, excluding curriculum vitae, references and corporate literature. The submission deadline is no later than **12:00 pm (noon) EST on March 15, 2019**.
3. One (1) PDF copy of the proposal are to be sent by email, and three (3) hard copies of the proposal shall be addressed to:

Kelli Campeau
Clerk, Township of South Glengarry
6 Oak Street, Lancaster, ON
613-347-1166
kelli@southglengarry.com

All questions are to be submitted by email to Joanne Haley at 613-347-1166 ext 231 or by email at jhaley@southglengarry.com no later than **12:00 pm (noon) EST on March 5th, 2019**. Proponents should allow for three business days to receive responses to questions.

9.0 Evaluation/Selection Criteria

Proposals will be evaluated based on the following criteria:

Table 3 – Proposal Evaluation Criteria

Criteria	Weighting
Quality and content	5%
Knowledge and understanding	5%
Details of proposed methodology, procedures, schedules and work plan	35%
Time-task matrix	10%
Similar Project Expertise/Experience	15%
Project Staff Expertise	10%
Cost	20%

10.0 General Terms and Conditions

INSTRUCTIONS TO BIDDERS

1:1 **Time Limit for Bidding**

1:1.1 Quotations will be received by the Township Clerk at her office at the time and date designated for this RFP which shall be deemed to be the date of Closing of Quotation.

1:1.2 Late Quotes will not be accepted.

1:2 **Form of Quotation**

1:2.1 All Quotes must be upon the Quotation Form for the Contract.

1:3 **Contract**

1:3.1 The party to whom this Contract is awarded will be required to execute the Contract Agreement within ten (10) days, not including Sunday or legal holidays, from the date of mailing of the notice from the Corporation of the Township of South Glengarry to the Contractor according to the address given by him, that the Contract is ready for signature.

1:4 **Unbalanced Quotes**

1:4.1 Each item in the Quotation Form shall be a reasonable price for such item. Under no circumstances will an unbalanced Quote be considered. The Corporation of the Township of South Glengarry shall be the only judge of such matters and should any Quote be considered to be unbalanced, then same will be rejected by the Corporation of the Township of South Glengarry.

1:5 **Ability and Experience of Contractor**

1:5.1 It is not the purpose of the Corporation of the Township of South Glengarry to award this Contract to any Contractor who does not furnish satisfactory evidence that he has the ability and experience in this class of work and that he has sufficient capital and plant to enable him to prosecute and complete the Contract.

1:6 **Right to Accept or Reject Quotations**

1:6.1 The Corporation of the Township of South Glengarry reserves the right to reject any or all Quotations or to accept any Quotation should it be deemed in the interest of the Corporation of the Township of South Glengarry to do so.

1:7 **Informal Quotations**

1:7.1 Quotations that are incomplete, conditional of obscure or which contain additions not called for, erasures, alterations or irregularities of any kind, may be rejected as informal.

1:8 **Insurance**

1:8.1 The Contractor shall procure and maintain for the duration of the Contract and until such time as the Clerk certifies that it is no longer necessary, a General Liability Insurance of not less than \$5,000,000.00 to indemnify and hold harmless the Corporation of the Township of South Glengarry against any liability for property damage or personal injury including death which may arise from the Contractor's operations under this Contract.

1:8.2 The Corporation of the Township of South Glengarry must be shown as a co-insured party on the insurance policy and documents.

1:9 **Taxes**

1:9.1 The prices bid shall include all taxes where applicable but, for material on which the Township is exempt, the prices bid shall not include sales taxes and the Township will provide the Contractor with a certificate of end use.

1.10 **Health and Safety Act Compliance**

1:10.1 The Contractor is to abide by the requirements of the Occupational Health and Safety Act and Regulations, and any other government regulations pertaining to the work to be carried out. In particular the Municipality requires the Contractor to furnish proof of training for WHMIS and a copy of their Health and Safety policy, as well as WSIB certificate with CAD 7 experience. **These documents are to accompany quotation and form part thereof.**

1:10.2 Should the Contractor be in contravention of the above, all work on the project shall cease immediately and remain stopped until adequate corrective measures have been undertaken. The decision of the Public Works Director shall be final in this regard, and the Contractor will immediately take whatever corrective measures necessary.

1:11 **Payment**

1:11.1 Payments shall be considered as compensation in full for the supply of all necessary labour, equipment, trucking and appliances including all material to complete the work as outlined in this Contract.

1:11.2 Payment shall be construed as including protection to all existing plant and structures within the limits of this Contract.

1:11.3 Payment will be processed monthly based on an approved invoice submitted to the Township Clerk.

OTHER

The Contractor Declares

1. No person, firm, or corporation, other than the Contractor, has any interest in this Quote or in the proposed contract for which this Quote is made.
2. This Quote is made without any connection, comparison of figures, or arrangements with, or knowledge of any other corporation, firm, or person making a Quote for the same work and is in all respect fair and without collusion or fraud.
3. The Contractor will hold harmless the Township of South Glengarry and will agree to take responsibility for any health and safety violations as well as the cost to defend such charges as a result of any violation under the *Occupational Health & Safety Act*.

Legal

1. Notwithstanding anything herein, if it is deemed most favourable in the interests of the Township of South Glengarry then the Township reserves the following rights, to be exercised at its sole discretion, in order to select a submission that provides the greatest value based on quality, service and price:

- a) to accept non-compliant submissions where such non-compliance relates purely to a matter of form, is of a trivial nature, or has no effect upon the relative standing of the submissions;
 - b) to accept corrections to a submission after the closing date for obvious clerical errors except those that would vary the bid price;
 - c) to reject any or all submissions;
 - d) to include externalities and full-life cycle costs in determining price;
 - e) to use its own estimates on time requirements or “cost plus” estimates in determining price;
 - f) to award by item, or part thereof, groups of items, or all items of the procurement;
 - g) to reject any submission based on one or more of the following factors: safety, financial stability of the Respondent, potential conflict of interests, the benefits of diversifying the Township’s sources of supply, reliability of a Respondent, and other commercially relevant considerations;
 - h) to issue, prior to the closing date, addenda for any part of the procurement process, including: guidelines, plans, specifications, scope of work, requirements, timelines, etc.;
 - i) to modify, extend, suspend, postpone or cancel any part of this procurement process or any subsequent processes without any liability to anyone;
 - j) in the event of an emergency or pending emergency, to cancel the procurement process and accept, at any time, the submission that best meets the needs of the Township given the emergency;
 - k) to contact any Respondent before, during and after this procurement process, including to clarify or gather additional information regarding their submission;
 - l) to reject any Quotation that has an all-inclusive cost that is more than 40% below the average or more than 40% above the average prices submitted and evaluated.
2. Each Respondent is solely responsible for any and all costs associated with preparing and submitting its submission.
 3. In the event that two or more submissions are ranked as equal the Township shall have the right to break the tie in a manner it deems appropriate.
 4. All submissions become the property of the Township of South Glengarry. Details of submissions may be disclosed after the evaluation process and therefore shall not be treated as confidential unless expressly stated otherwise.
 5. The deposit of the second best evaluated submission shall be held by the Township until such time as a contract can be entered into with the Respondent that submitted the best evaluated submission.
 6. By submission of a clear and detailed written notice, the proponent may amend or withdraw its submission prior to the closing date and time. Upon closing time all submissions become irrevocable for 60 days from the closing time; a Respondent that fails to comply with this shall forfeit their deposit and will be liable for damages.

- 7. A Respondent must be prepared, if requested, to present evidence of experience, ability, service facilities and financial standing necessary to meet satisfactorily the requirements set forth or implied in the procurement process.
- 8. Respondents agree that they shall not pay and shall not enter into any agreements that require a fee to be paid to a third party for successfully obtaining a contract under this procurement process. Should such an event occur the Respondent agrees that the Township may choose, at its sole discretion, to not enter into a contract with the Respondent, cancel the contract with the Respondent without penalty if one has already been entered into, or have the Respondent pay to the Township an amount up to double the value of the fee paid to the third party.
- 9. If this procurement process is a “request for information” or “request for expression of interest” then this process does not give rise to any contractual rights or obligations.
- 10. The Township may restrict a Respondent from participating in future procurement processes if, at any time, they fail to follow any part of the procurement process.

LOWEST OR ANY QUOTATION NOT NECESSARILY ACCEPTED

DATED AT _____ THIS _____ DAY OF _____ 2019

Signature of Witness

Signature of Contractor

NOTE: If the Quotation is submitted by or on behalf of a corporation it must be signed in the name of such corporation by a duly authorized officer and the seal of the corporation must be affixed. If the Quotation is submitted by or on behalf of an individual or a partnership, a seal must be affixed opposite the signature of the individual or the partner.

FORM OF QUOTATION

PROCUREMENT NAME: **RFP 01-19 Raisin River Floodplain Mapping Update**

SUBMITTED BY:

FIRM NAME:

ADDRESS:

HEREINAFTER CALLED THE RESPONDENT

TELEPHONE # _____ FAX # _____

TO: **THE CORPORATION OF THE
TOWNSHIP OF SOUTH GLENGARRY
6 Oak Street
Lancaster, Ontario K0C 1N0**

I/We have carefully reviewed the Request for Proposal and do hereby provide an offer in accordance therewith to enter into a Contract as and when required by the Township of South Glengarry, in strict accordance with the said Contract agree to provide a Raisin River Floodplain Mapping update.

DATED AT _____ THIS _____ DAY OF _____ 2019

Signature of Witness

Signature of Respondent