

ESP Engagement and Administration Manual



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SECTION 1 – PURPOSE

The purpose of this manual is:

- To outline the policies, procedures and guidelines for MIT engagement and administrative processes used in the provision and management of Engineering Service Provider (ESP) services on all Provincial water control and structure projects, where an ESP is hired directly by MIT.
- To outline specific responsibilities and authorities of the ESP when providing these services.
- To outline specific responsibilities and authorities of MIT staff managing the delivery of these ESP services.
- To ensure uniformity and consistency in the application of these processes to MIT. A more detailed description of the ESPs project specific obligations is detailed in the ESP Agreement.

This manual describes the processes to be used by MIT when engaging ESPs. These processes are necessary to ensure that MIT's obligations and/or other MIT requirements are performed and met in a consistent and desired manner. These processes are based on the MIT Highway Planning and Design "Procedure for the Procurement of Engineering Services". The aforementioned document will supersede the ESP Engagement and Administration Manual where there is a discrepancy between the two documents.

Users should note that this manual forms part of the guidelines for provision and management of ESP services on MIT projects and by itself does not provide a complete record of all the processes, responsibilities and authorities of the ESP and MIT in managing the delivery of a MIT project. Other Water Control and Structure's manuals which must be considered include, but are not limited to, the following:

- Structures Design Manual (latest version)
- CADD Standards Manual (latest edition)
- Contract Administration and Construction Inspection Manual (latest version)

The authorities, responsibilities and processes contained in all of these manuals are based on current MIT policy statements, processes, expenditure approval authorities and contracts for ESP services. Users are advised that updates or revisions to existing policy statements or terms of the ESP Agreement may affect these processes, responsibilities and authorities. In the event that changes are made which significantly affect the content of these manuals, users will be advised accordingly.

This manual is not intended to replace or modify the contents of MIT's ESP Agreement. If a conflict or ambiguity exists between this manual and the contract, the Project Manager shall confirm the correct requirements.

SECTION 2 – GENERAL

2.1 INTRODUCTION

These guidelines are to be used for the management, specifically engagement and administration responsibilities, of engineering services on all Manitoba Water Control and Structures projects where an ESP is hired directly by MIT. Where a discrepancy exists between this document and the documents prepared specifically for a project, for example the Terms of Reference, the latter shall take precedence. Because of the evolving nature of standards, guidelines, legislation, regulations, specifications and engineering practices, it is impractical to expect all the contents of this document and the documents referenced to be up-to-date.

The Project Manager and the ESP are responsible for using the current standards, design codes and guidelines and for ensuring that all current legislation and regulations are being followed. In the event of discrepancies, the hierarchy of documents shall be as follows, in descending order:

Legislation and Regulations
ESP Agreement
Terms of Reference
Engineering Technical Design Codes, Standards and Processes
MIT's Water Control and Structures - Structures Design Manual
MIT's Water Control and Structures – CADD Standards Manual
MIT's Water Control and Structures - Contract Administration and Construction Inspection Manual
MIT's Water Control and Structures - ESP Engagement and Administration Manual

In keeping with a spirit of innovation, MIT is interested in receiving innovative proposals from ESPs at the 'Request for Proposal' stage, if it is apparent that projects can be undertaken more efficiently or effectively using an alternative approach rather than that outlined in the Terms of Reference. This spirit of innovation will be encouraged by MIT staff when developing Terms of Reference for a project, and should be considered when evaluating proposals.

The ESP retained by MIT is responsible for the engineering/professional services, integrity and professional liability of all work performed under the ESP Contract, including professional services work by any Sub-ESP. The checking of the ESPs or Sub-ESPs Work by MIT or the signing of Drawings by MIT staff does not relieve the ESP from any responsibility for the work. Therefore these guidelines will generally use the terminology of "acceptance" rather than "approval" when referring to engineering issues submitted to MIT by the ESP (refer to the Water Control and Structures - Structures Design Manual for a more detailed explanation).

2.2 DEFINITIONS

The following words, when used in this document, shall have the meaning as defined below:

Acceptance	Work is accepted by MIT without detailed checking of the engineering principles and calculations.
Agreement	Engineering services agreement between MIT and the ESP, normally called the "ESP Agreement".
Approval	Subject work shall be "approved" by MIT for matters relating to things such as MIT policy, funding or agreement extensions.

Bridge Structure	Structure typically built on the provincial highway network and water control system that cross waterways. Major bridges include channel and box precast girder bridges and I-girder bridges. Typically major bridges are river crossings and highway overpasses/underpasses or railway crossings.
Categories of Work	Categories of Work are the unique areas of specialization that the Engineering Service Providers will be required to register in order to be considered for external engineering assignments in that type of work.
Condition Assessment	A formal assessment of structure condition by completing: a Level 3 specialized inspection (e.g. detailed condition survey, underwater inspection, fatigue inspection), load rating analysis and functionality review. One of the key deliverables is a structure management strategy developed at the conclusion of the assessment of the structure's condition. The data collected will be used in the preliminary and detailed design phases and aid in tender quantity determination.
Construction Contract	The contract between MIT and the Contractor covering the performance of the work.
Construction Tender	One of the deliverable products of the detailed design phase of the project. package normally includes Drawings, Special Provisions, tender documents, an Engineer's Estimate", Amendment(s), cover letter, proposed construction schedules/staging Drawings and traffic control Drawings where applicable.
Contract Price	The original value of the Contract as determined at the tender opening.
Contractor	The person or company that has entered into a construction contract with MIT.
Detailed Design	The project phase where structural engineering design principles and applicable design codes are utilized to produce a structural design complete with Drawings and tender documents in sufficient detail to construct the specific structure/rehabilitation identified as the preferred alternative from the preliminary design phase.
Detailed Design Report	Generally, the Detailed Design Report will include the detailed design calculations, Notes of Meetings, correspondence with stakeholders, notes/emails to MIT, correspondence with utility companies, environmental submissions and approvals, etc. The completed and independently checked package is submitted to MIT. A covering letter is prepared by the ESP for MIT.
Design Exception	<p>A design exception is generally an instance where a value lower than the minimum standard is used. A design exception may also be an instance where a designer has chosen to use a parameter or product which is different from standards or design codes. The product or parameter may be more or less costly to provide. The term is generally used in the context of highway geometric design standards. Documentation of the rationale used for the design exception must be filed as part of the design notes for future reference.</p> <p>All design exceptions proposed by an ESP must be submitted in writing to MIT. MIT will ensure that the appropriate parties are consulted and given an opportunity to have input prior to acceptance/approval of Design Exceptions.</p> <p>Because of the diversity of engineering and planning subjects covered by this guide, there is no one person or party given "sole" responsibility for approval of Design Exceptions. The handling of proposed Design Exceptions shall be managed by the Project Manager in an appropriate way based on the nature of the proposal and project.</p>
Engineering Service Provider (ESP)	The person or company that has entered into an engineering services agreement with MIT.

Estimates

"D" Estimate	<p>A "Program/Planning Estimate" which is a "Ball Park" estimate to be prepared before any design calculations are made for roads and structures.</p> <p>For structures, this estimate is usually produced at the Programming/Planning stage. For bridges specifically, this estimate is usually based on the typical square metre cost for the overall deck area of a bridge.</p>
"C" Estimate	<p>The "C" estimate is produced during the preliminary design phase. These estimates may be updated one or more times before the "B" estimate is prepared. Each subsequent "C" cost estimate submission must be identified as "C1", "C2", and "C3" etc. estimate when a greater accuracy is identified at a later stage of preliminary design. The number will designate generation or occurrence.</p> <p>For structures, the "C" estimate is usually produced when the structure type and overall dimensions are known (length, width, etc.).</p>
"B" Estimate	<p>The "B" estimate is produced during the detailed design phase. These estimates may be updated one or more times before the "A" estimate is prepared. Each subsequent "B" cost estimate submission must be identified as "B1", "B2", "B3" etc. estimate when a greater accuracy is identified at a later stage of detailed design. The number will designate generation or occurrence.</p> <p>For structures, the "B" estimate is usually produced, when the specific structural elements have been designed (i.e. for bridge: piers, abutments, girders, deck).</p>
"A" Estimate	<p>An "Engineer's Estimate" that is prepared immediately prior to tendering when the construction Drawings and tender quantities are available.</p>
Final Contract Administration Package	<p>The package of information that must be compiled and submitted at the completion of construction. A description of the requirements of this package is provided in the Contract Administration and Construction Inspection Manual (Part B - Contract Administration).</p>
FIPPA	<p>Government of Manitoba legislation entitled "Freedom of Information and Protection of Privacy Act."</p>
Land Surveyor	<p>A person registered to perform land surveys in the Province of Manitoba.</p>
MIT	<p>Manitoba Infrastructure and Transportation</p>
Overexpenditure Approval Record	<p>Issued during the actual prosecution of the work to authorize anticipated expenditures in excess of the Contract Price.</p>
Preliminary Design	<p>An engineering process undertaken at the pre-structural detailed design phase.</p> <p>Preliminary design includes some or all of the following: collection of survey information, preliminary geotechnical investigation, hydrological analysis, hydraulic design, hydrogeological investigation, condition assessment, geometric design, traffic forecasting, hazard protection, site location, environmental determinations, consideration of traffic accommodation, identification of constructability issues and possible construction staging, development of alternatives for advancement to structural design, life cycle cost analysis of alternatives and selection of the preferred replacement structure/rehabilitation work. Environmental submissions are prepared and environmental applications are made. During preliminary design, all major stakeholders are consulted and their issues addressed as much as possible.</p> <p>Preliminary design for a replacement structure identifies: structure type, structure location, geometric design of the roadway over the structure, required hydraulic opening or clearance box under the structure, foundation type, important</p>

superstructure details, hazard protection, preliminary details of traffic accommodation, identification of constructability issues and construction staging, and project schedule.

For structures that are being rehabilitated and in cases where a Condition Assessment has been undertaken, the Preliminary Engineering phase will involve identifying the optimum strategy for either preservation or rehabilitation and “revisiting” previously made recommendations as part of the structure management strategy.

Professional Engineer	A person registered to practice engineering in the Province of Manitoba under the APEGM Act.
Project Co-Manager	A MIT staff member primarily responsible for a particular component of work, such as associated road works.
Project Design Brief	This brief lists key points and design assumptions determined during the preliminary design phase and prior to any detailed design work. The purpose of the document is to ensure that the ESP and MIT agree on the main design assumptions before the detailed design begins.
Project Manager	The Project Manager is a MIT employee who is responsible for the delivery of a project.
Record Drawings	Updated contract Drawings that show any changes that occurred during construction. (per APEGM’s guidelines)
Registry	Registry refers to the listing of prequalified Engineering Service Providers, identified by Categories of Work, which can be called upon to provide external engineering services to Manitoba Infrastructure and Transportation.
Registered Office	A registered office is an Engineering Service Provider office that has been prequalified in one or more Categories of Work and is included in the Registry. Only Registered Offices will be considered for assignments within the listed Categories of Work. Firms with multiple offices may register more than one office.
Request for Proposal	A formal document, including a Letter of Intent that defines: the requirements of the proposal to be submitted, evaluation criteria and methodology, and insurance requirements expected of the ESP. The Terms of Reference are appended to it.
Request for Quote	A formal document, including a Letter of Intent that defines: the requirements of the quotation to be submitted and insurance requirements expected of the ESP. The Terms of Reference are appended to it.
Road Drainage Culverts	Culverts with an equivalent diameter of less than 2.0 meters that are typically included with the road design and construction packages.
Significant Bid Item	Any bid item with an extended value greater than 7% of the Tender Price or \$100,000 in value.
Sub-ESP	A person or company that enters into an agreement with the ESP to carry out part or all of the work covered in the Agreement.
Surety	Contractor’s bonding company providing the performance and material bonding for the Contract.
Terms of Reference (TOR)	A document that describes the assignment, project requirements or scope of the work to be performed, schedules and expected deliverables.

Warranty Period	Period of time that the Contractor warrants the Work to be free of any defect or failure and to withstand climatic, maintenance and normal operational conditions.
Work	All or any part of the work to be performed under the Contract by the Contractor, whether complete or incomplete, as originally set forth or as revised by MIT, and any or all of the Plant and Material supplied by or for the Contractor.

2.3 ROLES AND RESPONSIBILITIES

2.3.1 ESP

2.3.1.1 Responsibilities

The responsibilities outlined below are offered to clarify working relationships with the Project Manager, Project Co-Manager, Contractors and other stakeholders. The list is not intended to be exhaustive, nor does it supersede any of the obligations outlined in any other manual or the ESP Agreement.

Generally, the ESP is responsible to:

- Undertake the work in accordance with the prescribed scope, standards and specifications provided by MIT.
- Confirm requirements by submitting Project Design Brief prior to starting detailed design.
- After agreement regarding the scope of work, the ESP undertakes the work in accordance with the prescribed scope, standards and specifications provided by MIT within approved budget and time frame.
- Liaises with Project Manager and provides reports (monthly status reports, invoices, earned value reports for assignment).
- Keeps the Project Manager informed of progress, issues and problems. All communications with MIT are with the Project Manager.
- ESPs are to prepare/confirm a check list of requirements before submitting design/tender package: examples: Historical Resources Impact Assessment (HRIA), Environmental Design Review, Stakeholder right-of-way.
- Liaises with other MIT staff, major stakeholders and the public, as required.
- Ensures that Utility Companies are contacted well in advance of construction commencement and to determine if there are impacts to the existing plant.
- Proactive in identifying and addressing any landowner issues.
- The ESP is familiar with all the environmental conditions throughout the proposed construction area and ensures that the tender documents thoroughly address all aspects where environmental impacts can occur.
- Notifies the Project Manager of any potential scope changes that may affect the quality, fees payable, and schedule in a timely manner before any additional work is done.
- Obtain approval for costs for any work beyond the scope of the agreement prior to undertaking work
- Manages work undertaken by Sub-ESPs.
- Maintains documentation to support all fees and disbursements claimed from MIT.

Construction

- Arranges and attends Pre-Construction Meeting(s) (which are chaired by the Project Manager).
- Represents MIT as the contract administrator and/or construction inspector on site during all stages of construction and liaises with the Contractor during the construction phase.
- Liaises with Project Manager and provides reports (work progress, test results, invoices, expenditures, progress estimates, estimated final expenditures for both the Construction Contract and ESP Agreement, etc.).

- Monitors the Contractor for compliance to the Construction Contract and takes appropriate action when the standards or specifications are not being met.
- Holds weekly on-site meetings with the Contractor, takes minutes of the meetings and distributes minutes of the meetings to the Contractor, the Project Manager and other stakeholders.
- Monitors the Contractor's compliance with the Traffic Control Plan and takes action (including suspension of work) when the plan is not complied with.
- Advises MIT's Safety Officer, in a timely manner, of serious or ongoing safety issues that are not being resolved by the Contractor.
- The ESP is familiar with all the environmental conditions throughout the proposed construction area and confirms that the Contractor thoroughly addresses all aspects where environmental impacts can occur.
- Monitors the Contractor's compliance with the environment requirements and takes action (including suspension of work) when the requirements are not complied with.
- Advises the Project Manager, in a timely manner, of serious or ongoing environmental management issues that are not being resolved by the Contractor.
- The ESPs on site representative, after having sought and received his own corporate input, may request specification interpretation or other direction from the Project Manager.
- Discusses with the Project Manager any substantial issues or problems (i.e. structural issues, specification compliance problems, significant cost increases, safety concerns, contract overextensions, claims possibilities, potential cost over-runs, etc.) and seeks approval/direction/concurrence.
- Notifies the Project Manager of any potential Extra Work in a timely manner before any additional work is done.
- Meets with Contractor every month to review and agree upon progress payment quantities.
- Promptly notifies the Project Manager of all claims and potential claims. Recommends, in a timely manner, a response to potential claims.
- Arranges for interim inspection of construction project to obtain MIT's input as to the acceptability or otherwise of the project. He/she invites the Contractor, Project Manager(s) and other stakeholders to the interim inspection as necessary and prepares and distributes deficiency list.
- Participates in the Construction Completion Inspection (which is called by the Contractor), records and prepares a deficiency list if any deficiencies are noted and distributes the deficiency list to the Contractor and the Project Manager.

2.3.2 PROJECT MANAGER

2.3.2.1 General

The Project Manager is a MIT employee who is responsible for the delivery of a project from the initiation stage through to project completion and project close-out. MIT may also assign a Project Co-Manager who is responsible for a particular major component of the work on a combined project (e.g. bridge structure and associated road works).

2.3.2.2 Responsibilities

The responsibilities outlined below are offered to clarify working relationships with ESPs, Contractors and other stakeholders. The list is not intended to be exhaustive, nor does it supersede any other responsibilities or obligations contained in other manuals or the Contract documents. The Project Manager:

General

- Ensures funding and necessary approvals are in place prior to issuing a RFP/RFQ or requesting work directly from an ESP.
- Prepares RFP/RFQ Letter of Intent and TOR for the project, reviews the proposals/quotes and participates in the selection process.
- Chairs Project Initialization Meeting. Refer to Appendix B for a sample Initiation Meeting Agenda.

- Manages all aspects of the ESP assignment to ensure that the project-specific engineering services are completed to proper standards and within approved budget and time frame.
- Prepares the necessary documents such as ESP Initiation and Approval form (ESPIAF), work breakdown schedule, overall project schedule, monthly status reports, Project Close-Out report.
- Liaises closely with the ESP to monitor quality of work, schedule, compliance with MIT requirements and overall performance of the ESP.
- Obtains input from appropriate Regional personnel (Director, Construction Engineer, Technical Services Engineer, etc.) or other Branch/Divisional personnel.
- Liaises with various Branches of MIT (administrative, technical, contractual, right-of-way, etc.) and other MITs and agencies as required.
- Liaises with ESPs during all phases of the work and reviews reports, Meeting Notes, test results, expenditures, invoices, etc.
- Reviews and administers Change(s) in Scope of Work, project team changes and contract date extensions. Ensures funding and necessary approvals are in place for all scope and contract changes.
- Assesses the performance of the ESP on a continual basis and prepares the final ESP assessment rating in a timely manner.
- Reviews all ESP invoices for accuracy and recommends approval if satisfied that the appropriate fee for service has been charged.
- Ensures financial coding is accurate for all invoices.

Construction

- Chairs Pre-Construction Meeting.
- In order to assess the performance of the ESP and to ensure consistent application of standards and specifications, the Project Manager (or designate) visits projects that are in progress and advises the ESP regarding any project problems that are noted and/or addresses issues brought forward by the ESP.
- May issue instructions to the ESP to have any construction related problems rectified. If instructions are contrary to what the ESP has advised the Contractor, the Contractor may have to be compensated. MIT and the ESP will review such matters.
- Works with the ESP for interpretation of specifications or potential claim situations.
- Reviews and administers Extra Work Order Requests and completion date extensions.
- Liaises with the ESP, not the Contractor, on contractual matters during construction. The ESP deals directly with the Contractor. During site visits, discussions may be held between MIT staff and the Contractor, but directions are not given to the Contractor unless of an urgent nature.
- Monitors the work to ensure that any safety deficiencies identified by MIT's Safety Officer or Workplace Health & Safety representative are corrected by either the ESP or the Contractor.
- Monitors the work to ensure that any environmental management deficiencies identified are corrected by the Contractor.
- Near completion of construction, the Project Manager attends an interim inspection of the work (organized by the ESP) at which time all aspects of the work which are not satisfactory, are brought to the attention of the ESP. Attendance by the Contractor is strongly advised at this time. A list of deficiencies is produced prior to the departure of the Contractor from the site.
- Upon completion of construction and rectification of the deficiencies, the Project Manager attends the Construction Completion Inspection (which is organized by the Contractor). He ensures that any input from other MIT personnel is gathered prior to the inspection. The Project Manager (or designate) represents MIT and is responsible for the construction completion acceptance. Any further deficiencies identified during the inspection are recorded by the ESP and provided to both the Contractor and the Project Manager in writing. The deficiency list must also include time-lines for the completion of the deficient work.
- Assists with MIT's resolution of Construction Contract Claims and ensures that all correspondence to the Contractor is handled in a timely manner.
- Reviews and recommends all progress estimates for payment.
- Ensures funding and necessary approvals are in place for all Extra Work and contract changes.

2.3.3 PROJECT MANAGER AND PROJECT CO-MANAGER – COMBINED PROJECTS

2.3.3.1 General

In combined projects that include both associated road works and structure construction, the roles of the Roadworks Project Manager and Structures Project Manager are to some extent integrated. It takes considerable communication and co-ordination during the process of delivering a combined project from the initiation stage through to the end of the construction phase. For such a combined project, either the Roadworks Project Manager or the Structures Project Manager will be the overall Project Manager for the entire project. This will depend largely on the predominance of the roadwork and structure work involved as well as the specialty of the work.

On combined projects, the Directors, in consultation with their Managers, will assign a Project Manager and a Project Co-Manager to the project.

2.3.3.2 Responsibilities

On combined projects, the Project Manager and Project Co-Manager are responsible for the following:

- The Project Manager ensures funding and necessary approvals are in place prior to issuing a RFP/RFQ or requesting work directly from an ESP.
- The Project Manager is responsible for preparing the RFP/RFQ and the Terms of Reference after obtaining input from the Project Co-Manager, technical specialist(s), or others as required and will circulate Requests for Proposal/Request for Quote for review.
- The Project Manager will distribute copies of the ESPs proposals/quotes to the Project Co-Manager and other team members for review.
- After the ESP is selected, the Project Manager will arrange and chair the Project Initiation Meeting. Areas of responsibility and reporting procedures will be outlined so that the ESP can effectively communicate with the respective Project Manager/Project Co-Manager. Refer to Appendix B for a sample Initiation Meeting Agenda.
- The Project Manager will deal with administrative processes, approvals, Changes in Scope, changes to the agreement, project team changes, fee schedules, etc., after input from the Project Co-Manager is received. He/she will also deal with technical aspects in his/her area of expertise.
- The Project Co-Manager can deal directly with the ESP staff involved with the project in so far as the technical aspects are concerned and shall apprise the Project Manager of all communications.
- The Project Manager chairs Pre-Construction Meeting(s).
- The Project Manager and Project Co-Manager will review and recommend approval of invoices, progress payments and Extra Work Orders.
- The Project Manager and Project Co-Manager will review Weekly Construction Reports, Project Expenditure Reports, test results, etc.
- Both the Project Manager and Project Co-Manager may attend conceptual design review and detailed design meetings, progress meetings, tender review meetings, etc.
- Both the Project Manager and Project Co-Manager (where applicable), sign off on the tender package before submission to Contract Services Branch.
- Each will ensure that communication is maintained and necessary information is exchanged during the course of the project implementation; that the Directors/Executive Directors are kept informed.
- Final deliverable packages are to be submitted to the Project Manager for review and approval.
- ESP Performance Evaluations are completed by both Project Manager and Project Co-Manager.

It is imperative for the Project Manager and Project Co-Manager to keep their technical support staff informed and foster interaction and involvement in as many phases of the work as possible.

The Project Manager is to conduct periodic meetings at which staff from the Regional office, Traffic Engineering and Structures Design and Construction Branch (and any other applicable MIT staff) will review issues and will be updated on the status of projects by the ESP.

SECTION 3 – PROCUREMENT METHODS FOR ESP SERVICES

3.1 GENERAL

Once MIT decides that ESP services are required for a project, the most appropriate method to procure these services must be determined. Various procurement methods have been established for the hiring of ESPs to provide a wide range of services. These procurement methods fall into a number of separate categories depending on the complexity of the work, pre-programming and the associated risk to MIT (see Figure 1).

Figure 1: Selection Method Matrix - For the Procurement of ESP Services

Procurement Methods And Approval Authorities						
Programming	Approval Authority	Engineering Assignment Value ¹	Procurement Method			
			Direct Negotiation (Untendered)	Request for Quotes (Tendered)	Invited RFP (Tendered)	RFP to All (Tendered)
Emergent Work: Both Capital Project and Engineering Assignment are not Identified in Annual Program	Director Approval	\$0-\$25k	√	√	N/A	N/A
	Executive Director Approval	\$25k-\$50k	√	√	N/A	N/A
	ADM Approval	\$50k-\$100k	√	√	√	N/A
	Deputy Minister Approval	\$100k-\$200k	x	√	√	N/A
	Treasury Board Approval	>\$200k	√	√	√	√
Partially Programmed Work: Capital Project is Identified in Annual Program but Engineering Assignment is Not	Director Approval	\$0-\$50k	√	√	N/A	N/A
	Executive Director Approval	\$50k-\$100k	√	√	√	N/A
	ADM Approval	\$100-\$500k	x	√	√	√
	Deputy Minister Approval	\$500k-\$1M	x	√	√	√
	Treasury Board Approval	>\$1M	√	√	√	√
Fully Programmed Work: Both Capital Project and Engineering Assignment Are Identified in Annual Program	Director Approval	\$0-\$100k	√	√	N/A	N/A
	Executive Director Approval	\$100-\$500k	x	√	√	N/A
	ADM Approval	\$500k-\$1M	x	√	√	√
	Deputy Minister Approval	>\$1M	x	√	√	√
	Treasury Board Approval	>\$100k	√	N/A	N/A	N/A

Key: √ = permissible x = not permissible N/A = not applicable

3.2 PROCUREMENT METHODS

3.2.1 DIRECT NEGOTIATION METHOD

This option allows MIT to select one ESP firm from the registry in the appropriate work category and negotiate a price for the ESP services. The Direct Negotiation Method is suitable for low cost projects where MIT has an accurate estimate of cost and has had projects of similar scope recently completed by ESPs, or small emergency projects such as geotechnical assessments. These projects are small value and/or short-term assignments, with a duration of less than 1 year. The assignments are generally clear and simple and the chance of any variation to the work is minimal. This option may also be used where it can be proven that there is only one company capable of carrying out the project.

Caution is required in the use of this method since it is not cost competitive. However, it is appropriate where it can be demonstrated that MIT can achieve a greater overall value by sole sourcing. An example of this is where the time and costs of utilizing the longer and more comprehensive competitive selection processes outweighs any realistic savings that could be expected from competition.

3.2.2 INVITED REQUEST FOR QUOTES (RFQ) METHOD

This option requires the selection of three ESPs from the registry in the appropriate work category specific to the type of work required. These ESPs are then invited to provide a quotation of fees and the ESP quoting the lowest fee is awarded the project.

When using this method, it is important that the Project Manager ensures that the Terms of Reference are well defined and detailed. This option is recommended for the low cost projects, or higher cost projects where the work is considered routine and cost is the significant issue.

3.2.3 INVITED REQUEST FOR PROPOSAL (RFP) METHOD

This option requires the selection of two to four ESPs from the registry in the appropriate work category who are then invited to submit proposals for a specific assignment. The RFP shall include the MIT Evaluation Summary form (Appendix B) that contains definitions, descriptions and weights of all applicable evaluation criteria for the project. Generally, the ESPs' proposals must include methodology, schedule and costs. The evaluation of the proposals is typically the responsibility of the Project Manager.

An evaluation team may be utilized for average to high cost projects particularly where the specific project requires a high level of technical ability (complex) in a number of different disciplines and there are a number of significant issues for which the solutions are unknown.

3.2.4 RFP TO ALL METHOD

This method is suitable for very high cost projects requiring high levels of technical ability, a number of different disciplines, significant public consultations and developing solutions for numerous complex issues.

This option involves two stages. First, all ESPs in the registry in the appropriate work category are invited to submit a letter of interest and these letters are evaluated by a selection team. The team will use a combination of the following criteria (which must be defined in the invitation): methodology, technical skills, management/organization, relevant experience, and past performance. In the second stage, ESP firms are short-listed on the basis of the above evaluation and two or three firms are invited to submit detailed proposals. The proposals should include: a detailed work plan, allocation of key personnel to tasks identified in the work plan, descriptions of the methodology to be used to achieve each task, detailed descriptions of their project management procedures, location of key staff, and cost.

For the extremely complex jobs, an "explanatory" meeting during the RFP stage may be conducted by MIT to elaborate on the proposed project requirements and answer any questions.

Interviews may also be conducted during the evaluation stage when the evaluation team is not familiar with the ESPs or the project is unusual.

3.3 PRICING METHODS

3.3.1 LUMP SUM OR FIXED PRICE

The ESP undertakes to perform a specified scope of services for a stated amount, usually plus stated reimbursable expenses and all applicable taxes.

This method is best suited for small to moderate sized projects where the scope of services is well defined. Advantages of this method include greater simplicity in billing, payment is explicitly tied to results, and the amount of compensation is known at the beginning of the project bringing in greater competitive pressure. Payments are only made upon successful completion (as determined by MIT) of predefined milestones. Disadvantages include the lack of flexibility and any changes to the contract must be in the form of contract amendments. A major disadvantage is the potential for conflict if there is not a clear understanding between MIT and the ESP regarding the intended scope of services. To avoid controversy, the scope of services (i.e. Terms of Reference) should be clearly defined in writing and thoroughly discussed.

3.3.2 TIME CHARGES PLUS EXPENSES

Time charges based on hours, days, or months of time expended in rendering the service, plus reimbursable expenses.

When fees are based on time charges, certain out of pocket expenses and services are normally reimbursable. An upset limit is almost always employed if a limitation on the cost of ESP services is required.

This method is suitable when the scope of the project is hard to define in advance. The advantages of this method are the flexibility and the fact that an accurate estimate of cost is not required in advance. Disadvantages include the need for the ESP to do detailed and accurate cost accounting during the contract and regular reports to support billing. The client may have no advance statement of cost if an upset limit is not employed. These types of fees can be subject to the lack of controls of other methods and conflict can arise when the client and ESP cannot agree on appropriate levels of time billed, versus perceived overall project progress.

3.4 STANDING OFFER CONTRACT

Another type of ESP service contract is a standing offer contract. Such contracts are defined as those where there are no set deliverables, but rather that a service is contracted for a set period of time. Examples of this type of contract include: providing ongoing expertise in a specialized field such as environmental monitoring, or responding to emergency situations such as major structural damage caused by an accident.

Two selection methods are recommended for this type of contract: the Direct Negotiation Method and the Request for Quotation Method. The Direct Negotiation Method may only be used where there is only one ESP capable of performing the task and providing the quality standard required.

SECTION 4 – ESP ENGAGEMENT PROCESS

4.1 PRE-QUALIFICATION

4.1.1 ESP SERVICES

ESPs who wish to provide ESP services on MIT projects must meet MIT pre-qualification requirements for the categories of work they wish to provide services in. A list of WCS categories of work is outlined below and complete details are provided in Appendix A. ESPs are required to submit details of their firm's staff, capabilities, expertise and experience in the categories of work they wish to be pre-qualified in. A committee of senior MIT staff evaluates all submissions to determine if the ESP submission meets the requirements for pre-qualification in each category, and establishes the registry of all pre-qualified ESP firms for each category of work.

Pre-qualification may be denied if the ESPs credentials are inadequate or if past performance is poor. The categories of work that an ESP is qualified for can change at any time due to unsatisfactory performance or changes within the ESP firm.

The current categories for pre-qualification of Water Control and Structures assignments include:

- Concrete Detailed Condition Surveys (Level III Inspections) - Major and Minor Structures
- Condition Assessment - Major Structures
- Condition Assessment - Minor Structures
- Contract Administration and Construction Inspection - Major Structures
- Contract Administration and Construction Inspection - Minor Structures
- Dam Safety Review
- Detailed Design - Dams
- Detailed Design - Major Structures
- Detailed Design - Minor Structures
- Detailed Visual Inspections (Level II) - Major and Minor Structures
- Emergency Response Plan Preparation - Dams
- Engineering Inspections - Dams
- Geotechnical Investigation and Design - Structure Foundations
- Preliminary Design - Dams
- Preliminary Design - Major Structures
- Preliminary Design - Minor Structures
- Structural Assessment - Dams

An open advertisement on MERX was made to solicit interest and establish the initial registry. For more detail please refer to the "Procedure for the Procurement of Engineering Services" by MIT Highway Planning and Design. ESPs may make a submission for qualification and inclusion in the registry at any time. MIT will make calls for pre-qualification as required to maintain or update the registry and advertise MIT's call for interest within the industry.

4.2 DEVELOPING TERMS OF REFERENCE

4.2.1 GENERAL

The Terms of Reference (TOR) are prepared by the Project Manager in consultation with staff within Water Control and Structures (including the Consultant Services Engineer). The TOR shall be clear and concise in defining: a) the project and the scope of the work when quotes are requested, or b) the project requirements when proposals are requested. The TOR should not be misleading or skew the scope of the project. It should accurately define the deliverables and the schedules to minimize the number of changes to the proposal/quotation. The following guidelines should be used to ensure consistency and clarity in

developing TOR, whether for projects with well-defined scope of work (RFQ) or for projects where the ESP is expected to investigate a number of varied alternatives (RFP). TOR templates and examples of previous TORs are available from the Consultant Services Engineer. The Structures Design Manual and CADD Standards Manual specify the design and CADD requirements for MIT assignments. The TOR should refer to those documents and describe additions or exceptions to those standards.

4.2.2 REQUEST FOR QUOTATION(S)

TOR for Request for Quotation(s) should contain the following information:

- Project descriptor, location and structure site number.
- Period of assignment.
- Brief description of the assignment.
- Requirements of the ESP.
- Background and history of existing structure.
- Scope of work.
- Any special tasks that are required (e.g. environmental approvals must be received, hydrogeological considerations, life cycle cost analysis, stakeholder consultation beyond what is normally required).
- References to applicable design codes, standards and manuals to be followed.
- MIT responsibilities, including technical and steering committee membership, timelines for review of submissions and available information.
- Deliverables.
- Schedules that are expected to be met.
- Any special considerations.
- On combined projects that are expected to last more than one season, it is advisable to indicate an expected construction period for estimating purposes only.
- Information on cost component (e.g. if inflationary clause for hourly rates of ESP team members is to be included, especially if the project is scheduled to be completed 2 years or more following the issuance of the RFP).
- Indicate that projects not on the approved multi-year capital program may be delayed or deleted depending on funding.

4.2.3 REQUEST FOR PROPOSALS

TOR for RFP/RFQualifications should contain the following information:

- Project descriptor, location and structure site number.
- Background.
- Project Requirements
 - Goal(s)
 - Objectives
- Deliverables
- MIT Obligations, including timelines for review of submissions and available information.
- Project and Payment Schedule
- MIT Review, including the Project Manager, technical and steering committee membership, number of copies of draft deliverables (i.e. reports, Drawings) for review, number of technical and steering committee meetings
- Any special considerations.
- On combined projects that are expected to last more than one season, it is advisable to indicate an expected construction period for estimating purposes only.
- Information on cost component (e.g. if inflationary clause for hourly rates of ESP team members is to be included, especially if the project is scheduled to be completed 2 years or more following the issuance of the RFP).
- Indicate that projects not on the approved multi-year capital program may be delayed or deleted depending on funding.

4.2.3.1 Background (RFQ)

The purpose of the Background section is to broadly answer the question “Why is this study being undertaken or why these services are required?” It is meant to give the ESPs an overview of the existing conditions and significant problems. Due to the summary nature of the Background, it should be kept brief. In most cases, one or two paragraphs should suffice. Even in the most complex projects, it shouldn’t exceed a page.

For specific capital projects, typically the history of the existing structure(s) is provided.

4.2.3.2 Project Requirements (RFP)

This is the most important section of RFP for assignments where the ESP is expected to investigate a number of varied alternatives. It lays out the project scope and defines the specific requirements that must be addressed.

The first paragraph of this section should be a clearly defined overview of the project goals and objectives. It should adequately define the overall problem and the scope of the required solution.

Subsequent paragraphs should explore the project objectives in more detail. Specific problems and areas of investigation can be described. Care must be taken to ensure that unnecessary restrictions are not placed on potential solutions. However, it should always be made clear if there are known limits to potential solutions. In general, the objectives should be described in terms of end results and not processes to be followed. How an ESP arrives at an end is less important than how well the end product matches the objectives. This approach also reduces risk to MIT by reducing the opportunities for oversight and discrepancies.

In general, it is MIT practice to withhold internal budget information from the ESPs. The rationale for this is that most project budgets for ESP work are defined at a very high level. This is particularly the case for preliminary work. Since the solution to a functional issue is unknown at the time of programming, the program estimate can only be cursory in nature. MIT generally has the flexibility to change the budget as part of the subsequent approval process for the ESP assignment. Therefore, releasing the initial cursory budget would be misleading and likely counterproductive.

There is an exception to that practice, and if it applies, should be addressed in this section of the RFP. The exception is for projects where the budget forms a predetermined constraint. This is more commonly the case for cost shared projects where there is a fixed budget agreement with the partnering, external agency. In this circumstance, the project objective is to obtain the most effective solution within the available budget. Therefore, this budget constraint is described in the RFP and it is indicated that proposals that exceed this amount will not be considered. Since budget information remains a sensitive issue, clearance must be obtained from the Executive Director to include it in the RFP.

The guiding principle in this section of the RFP is to provide all of the information necessary for a complete understanding of the project goals and objectives. This requires striking a balance between providing sufficient information for understanding versus providing too much detail that could compromise the ESPs flexibility.

4.2.3.3 Deliverables (RFQ/RFP)

The project deliverables must be clearly defined in the TOR, whether for projects with well-defined scope of work or for projects where the ESP is expected to investigate a number of varied alternatives. Where MIT standards or policies exist for deliverables, these should be stated as a requirement for fulfillment.

Virtually all ESP work will require a report of some kind at the project completion and this should be a specified requirement. For small projects this can be as little as a few pages.

At a minimum, any project report must:

- a) Fully describe the project recommendations and findings at a level of detail compatible with the type of work.
- b) Summarize the data collection and analysis used to develop the solution.
- c) Document all significant decisions that led to the final recommendations. In particular, agreed changes from the original Terms of Reference must be documented.
- d) Contain or reference all correspondence that documents agreements, commitments and MIT resolutions. This includes internal agreements with other government departments in addition to external agencies and private concerns.

In detailed design, it is also not uncommon to ask for review Drawings at the 50%, 75%, 90% and 98% levels of completion. For preliminary designs, the norm is to review Drawings at the completion of alternatives and when a recommended alternative has been developed. The Environmental Submission drawings are typically reviewed at the 75% and 98% levels of completion.

4.2.3.4 Schedules (RFQ/RFP)

The TOR, whether for projects with well-defined scope of work or for projects where the ESP is expected to investigate a number of varied alternatives, should specify a schedule for completing the work. If there is a finite date by which the work is required, then this must be specified. However, in many cases, it is adequate to describe the maximum project duration from the date the contract is signed.

This section should also be used to define any milestone dates that are applicable to the project. Examples of this are the date by which an open house must be held or the date by which all survey work must be undertaken.

The anticipated duration of MIT reviews should also be stated. This allows the prospective ESPs to more accurately define the overall project schedule. A four-week period is considered a nominal review time, particularly if a technical committee is employed. If the Project Manager solely conducts technical reviews, then this review time can be shortened to as little as two weeks. Where external agencies must participate in the review, then a review period of six weeks is not unreasonable. The project specific review times will be specified in the TOR.

4.2.3.5 MIT Review (RFP/RFQ)

The Project Manager, and hence primary project contact, will be identified in this section of the TOR. If applicable, the Steering Committee may also be identified. It will also be stated if a separate Technical Committee will also be involved with the project and their membership, if known. Any external parties that are part of either the Steering or Technical Committee will also be listed. This is particularly important for projects that have external agencies participating in the funding and thus have a role in the project management process.

Depending on the make-up of the project management team, there will be different requirements for the number of review copies of reports and Drawings to be submitted. If a Steering Committee and a Technical Committee are employed, there must be at least enough copies for each member.

4.3 ISSUING RFQ/RFP

The four ESP selection methods described in Section 3 of this document require the ESP to either submit a quotation or proposal. The following is a description of the documentation required for each of these methods which should be developed by the Project Manager.

For all selection methods, a Letter of Intent and copy of the TOR is sent to the specific ESP firm or all designated firms. The letter must state the date by which all proposal(s) must be received and the number of copies required. For average complexity, medium cost projects requiring a RFP, a period of four weeks is a reasonable timeframe for developing a proposal. Smaller projects can have a shorter submission period, but not less than three weeks if there is a requirement for the ESP to develop a

project specific methodology. For most projects requiring a RFQ, quotations can be requested in as little as week, or less in emergency situations.

The number of copies of the quotation/proposal should be kept to a minimum. In general, the number of copies should equal the number of members on the selection committee plus one file copy. If the Project Manager is solely responsible for selection, then only two copies are required. One copy of all quotations/proposals must be sent to Administration for incorporation into the ESP Agreement. The Project Manager must ensure that one hard copy of all quotations/proposals, including the successful quotation/proposal, is placed in the site file for permanent record keeping purposes.

4.3.1 DIRECT NEGOTIATION METHOD

This is a sole source method intended for projects that are under \$100,000 in value.

In this case, a very basic proposal or quotation is required from the ESP. The Letter of Intent must identify that the assignment is sole sourced. The Terms of Reference are attached to the Letter as an appendix.

As a general guideline, an ESP proposal with a length of not more than ten pages should be adequate. Depending on the project complexity, a longer proposal can be requested. However, the Letter of Intent should contain a page limit.

The Letter of Intent must specify that the following information is to be included in the proposal:

- a) A basic methodology for the work,
- b) Identification of all personnel to be utilized on the project, along with their proposed rates and hours,
- c) A project schedule, and
- d) Overall project costs, including fee schedule.

4.3.2 REQUEST FOR QUOTATIONS

The RFQ is used for projects where the methodology is straightforward and well defined. In most cases, the RFQ should be a two page letter. A copy of the Terms of Reference is appended as an appendix. If unique methodology is required, it should be described in a separate appendix of the RFQ. The RFQ must identify all firms that have been asked to submit a quote and specify the length of quotation to be submitted by the ESP (typically 10 pages maximum). Evaluation is by the Project Manager.

The quotation submitted by the ESP shall contain the following information:

- a) Identity of all personnel to be utilized on the project, along with their proposed rates and hours,
- b) A project schedule,
- c) Understanding of project scope,
- d) Overall project costs, including fee schedule, and
- e) Confirmation of professional liability coverage.

The ESP is not required to provide a description of methodology and this should also be stated in the RFQ.

4.3.3 INVITED REQUEST FOR PROPOSALS

Under the Invited Request for Proposals (RFP) method, the Project Manager will evaluate the proposals.

In general, the format for the RFP is a covering letter, referred to as the Letter of Intent, with three appendices (Appendix A – List of ESPs, Appendix B – Evaluation Criteria, and Appendix C – TOR). The following information is included in the Letter of Intent:

- MIT's Project Manager and contact information.

- The deadline for submission; generally, this is not greater than four weeks from the date issuing the RFP.
- Name and contact information for the person that the quote/proposal is to be submitted to, usually the Director.
- Proposal evaluation criteria and weighting.
- Required information to be contained in the proposal, including the following:
 - The name of the ESP Project Manager, including a brief description of the individual's experience as it relates to the assignment;
 - The names of key members of the Project team (including a brief description of each team member's experience as it relates to the assignment) and the team organization;
 - Resumes for the proponent's team members
 - The base location of the above-noted personnel (and the base location of firm proposed for the project);
 - Description of the proposed methodology;
 - Detailed work breakdown structure;
 - For each activity, the ESP shall include:
 - Start and projected completion date.
 - List of primary deliverables.
 - Staff assigned to the activity along with their projected hours.
 - Summary of the total cost of the activity including disbursements.
 - A bar chart of the overall schedule that illustrates all of the activities and critical milestone dates.
 - Total project cost based on listed hourly rates of remuneration of all personnel along with their deployment by activity and time; and
 - Confirmation of having the necessary insurance, as per the Standard ESP Agreement.
- The nominal proposal length is 20 pages; however, different page lengths can be utilized depending on the project complexity. MIT defines a "page" using the following maximum parameters: 8 ½" x 11" paper, single-sided information presentation with 1" margins, and single-spaced type using 12-point font.

4.3.4 RFP TO ALL METHOD

The RFP to All Method is intended for large complex projects and therefore has the greatest requirements for documentation.

The Letter of Intent for this method should lay out the same requirements as in the previous section, Invited Request for Proposal, with the exception that the proposal length should not exceed 75 pages; however, a different page limit can be specified depending on the project's complexity.

The following documentation can be incorporated into the Letter of Intent to describe how the ESP is to submit their fee schedule:

- The ESP must state the overall project cost, referred to either as the lump sum price or the upset limit, at the beginning of the proposal section describing costs. This overall project cost must be inclusive of all ESP expenditures associated with completion of the work, with no extraneous costs. The overall project cost shall then be followed by a detailed cost breakdown.
- A detailed listing of project activities, for each task, will form the basis of providing an overall project cost breakdown. The ESPs can use their own activity breakdown; however, they must ensure that every significant task required in undertaking the project is further broken down into the activities required to complete each task.
- Each activity must list the staff members that are assigned to it, the individual hours projected for each staff member, and the extended cost equal to the projected hours times the individual's billing rate. Each task, or activity if more relevant, must also include the projected disbursements. All costs associated with the activities for each task must be summed to provide an overall task cost. There must be no costs outside of the activity breakdowns so that summing all of the activity costs within each task must equal the overall project cost.

- The activity breakdown must also be used as the ESPs means of describing the project schedule in detail. The RFP shall require that the ESP assigns a start and end time for each activity in the breakdown and illustrate how the specified project key milestone dates be incorporated.
- If utilizing the Time Charges Plus Expenses method of payment, each invoice must be accompanied with a progress report and earned value report. The invoices must include a breakdown that is identical to the activity breakdown in the original proposal. Within each task, there must be an accounting of the hours worked by individuals assigned each of the associated activities, the extended cost, and disbursements. For each task, in addition to the amount billed over the last period, there must be a total expenditure to date. The nominal billing period is monthly. This may be reduced to biweekly in special circumstances such as for short term, high cost projects.
- Each invoice must be accompanied by a progress report. The report will include a short narrative that describes the overall status of the project to date and the major work accomplished in the last period. It will also describe the anticipated work in the next billing period.
- The earned value report breaks down the progress by task. This involves the ESP reporting on the percentage of each task complete at the end of the billing period.
- Finally, the progress report must describe new developments or issues that have the potential to affect the schedule or budget along with an assessment of the possible impacts.

4.4 INTERACTION WITH ESPs DURING SUBMISSION PERIOD

There will always be some form of communication between the Project Manger and the prospective ESPs during the submission period. It generally takes the form of one or more of the following types of briefings.

a) Ad Hoc Briefings:

Each ESP may contact the Project Manager independently as questions arise. It may be through phone conversations or office visits. The conversation is usually directed by the ESP with the Project Manager's primary role to answer questions.

b) Common Briefing Session:

All ESPs are asked to attend a common meeting with the primary purpose of elaborating on the project requirements. Afterwards, time is allotted for a question and answer session. All of the ESPs in attendance participate and are thus aware of each other's queries and concerns.

c) Individual Briefing Sessions:

Separate briefing sessions are scheduled for each ESP developing a proposal. A common presentation is usually made that elaborates on the project requirements followed by an opportunity for the individual ESP to ask questions privately.

All of the above forms of communication are permissible. However, the Project Manager may want to restrict the means of communication to just one or two types.

The intent of ESP briefings is to ensure the highest level of common understanding between the prospective ESPs and MIT regarding the project requirements. The intent is to reduce the risks associated with uncertainty. Therefore, the Project Manager should be as free as possible in providing pertinent information. Ideally, all pertinent information would be contained in the RFP, including the TOR. However, there are always potential areas of misunderstanding that can only be discovered and addressed after the ESPs have had a chance to review the RFP.

Ad hoc briefings are initially the easiest to manage since there is no requirement to set up formal communication sessions. However, this initial advantage quickly disappears if individual ESPs identify issues that would be of common concern to all prospective ESPs. In this case, the Project Manager

would have to ensure that the new issues are communicated to all ESPs. This can either mean phoning all the ESPs and discussing new issues as they arise (only permissible if written minutes are kept of these conversations) or writing all ESPs with clarifications on the issues as they are identified. This can become an iterative and inefficient process where numerous issues are identified at separate times by separate ESPs.

The common briefing session is potentially the most efficient overall. Ideally all issues are brought forward at one time and all ESPs receive the identical instructions on how they are to be addressed. Written minutes of this session is a requirement and should subsequently be distributed to all participants.

The disadvantage of this approach is that there is a disincentive to open communication. Many ESPs are reluctant to raise issues that they believe may give away a potential competitive advantage. As a result, the sessions tend to be somewhat quiet affairs with minimal discussion.

Individual briefing sessions have the advantage of freer communication and more control over the dissemination of information than ad hoc briefings. However there are still the disadvantages of a potentially iterative and inefficient process. This is somewhat mitigated by scheduling the initial contacts with all firms up front so that all issues should arise over a short period of time.

The choice over which approach to take is left with the Project Manager. On low cost, well-defined projects, it is difficult to justify the industry costs of formal briefing sessions. The ad hoc method may be the easiest to deal with in this case. For very complex projects, it is recommended that a common briefing be scheduled as part of the RFP. Individual briefing sessions would likely be more appropriate for more moderately sized projects.

4.5 ISSUING ADDENDA AND CLARIFICATIONS

If the ad hoc sessions or the briefing session indicates that there are significant issues that the RFP does not properly address, then consideration should be given to issuing an addendum or clarification. There is a subtle distinction between the two documents. An addendum is used to describe a change in the project scope or requirements compared to what was originally specified in the Terms of Reference. A clarification is an elaboration upon an existing requirement. It does not affect the original scope.

The reason that the distinction between the two documents is described as subtle, is that in practice, both become contract requirements. As is described in a subsequent section, all amendments, statements of clarification and the responses to them are eventually bound as part of the contract. The distinction is made solely to aid in their understanding. When an ESP receives a Statement of Clarification, it should be immediately understood that there is no change to the project scope or requirements. The reverse is then obviously true for an Addendum. As a further distinction, additional time should be added to the original submission date to accommodate an Addendum. Statements of Clarification generally do not require a submission date extension.

4.6 PROPOSAL EVALUATION

4.6.1 PRICE PER POINT METHOD

The Price per Point Method is the preferred method for evaluating proposals under a competitive RFP selection process. Other methods may be used, but they must be approved by the Engineering Services Contract Engineer and must be identified in advance in the RFP.

Each ESP is required to submit a first envelope containing the proposed work plan and project methodology but without financial information. A second, sealed envelope is submitted that contains only the financial information associated with the proposed project budget. Initially, only the first envelope is opened for all proponents. The proposal information contained in the first envelopes is evaluated by scoring the criteria defined in section 4.6.2. Each criterion is scored on a point basis of 1 to 5 (1 = does not meet basic criteria; 5 = significantly exceeds basic criteria) and factored to represent the specified

weighting stated in the RFP. If an ESP scores less than 2 for any of the five major criteria listed in section 4.6.2 their proposal shall be automatically rejected. If there is a determination that the public interest is best served by not awarding the project, then all proposals will be rejected.

After the proposal information contained in the first envelopes is scored for all Engineering Service Providers, the second envelopes containing costs are opened. The costs are initially assessed to determine if they represent a viable level of funding for the workload. Those that are deemed unviable are rejected. For example, if in the Department's experience, the costs represent a level of staffing that is known to be too low to accomplish the work, the proposal can be rejected on that basis. Conversely, if in the Department's experience, the costs represent a level of staffing that far exceeds the workload, then the proposal can be rejected.

For the proposals for which cost has been deemed viable, the total budget amount, described in the second envelope, is divided by the previously assessed score to arrive at a price-per-point. The proposal with the lowest price-per-point is selected as the recommended Engineering Service Provider.

4.6.2 EVALUATION CRITERIA

MIT will provide evaluation criteria to the ESPs as part of the RFP for all methods other than Direct Negotiation and Request for Quotation (Short list). In the former case, there is no evaluation due to it being a sole source method. In the latter case, cost is the sole evaluation criteria and this must be stated clearly in the RFQ.

The evaluation criteria should be developed at the same time that the Terms of Reference are developed. This has the advantage of ensuring a good fit between the project requirements and the evaluation measurements.

Below is a listing of possible criteria along with guidelines for developing a project specific definition of each. The overall intent is to develop evaluation criteria that are objective and measurable to the highest degree possible.

Typical criterion and associated weighting ranges are as follows.

	<u>RFPs</u>
Methodology	20 - 40%
Technical Skills	20 - 40%
Relevant Experience	15 - 30%
Management / Organization	5 - 10%
Location of Key Staff	5 - 10%

In establishing the weightings to be used on a project, all criteria should initially be assigned the minimum range value. The Project Manager adjusts the weightings for the key criteria based on the project requirements to give a total score of 100.

The criteria provided to the ESPs with the RFP/RFQualification will be the broad criteria along with the weights assigned to each. The project specific definitions and breakdown of their weights will not be provided, but are to be used by the selection committee for evaluation purposes.

METHODOLOGY – This is defined as '*the ESPs proposed approach to achieving the required project services*'. To assist in the evaluation of this criterion, the RFP should require the ESP to provide a detailed work plan and divide the project plan into tasks and the associated work activities that are completely delineated. Under each task, the ESP should describe the purpose, methodology, associated activities and proposed output. This criterion should be scored by reviewing how well the ESP understands the problem and the project, the suitability of the methodology, the level of innovation in the methodology, and whether the ESP has considered all tasks required to complete the project. The critical

tasks and associated activities that require a high level of technology or quality results should be given greater consideration in the final scoring.

TECHNICAL SKILLS – This criterion is defined as *‘the skills and experience of the proposed key personnel, in technical areas comparable to the project’*. The ESP should be required to assign individuals to the tasks identified in the work plan and provide descriptions of the individuals’ relevant skills and experience. The Project Manager can then determine whether key personnel are capable of achieving their assigned tasks to the required quality. Greater consideration in the scoring may be given to the key personnel assigned to tasks requiring high technical expertise. The Project Manager will ensure that key personnel listed are actually used, and used as intended, unless replacement personnel have been approved.

RELEVANT EXPERIENCE – This is defined as *‘the ESPs previous corporate experience in technical areas comparable to this project’*. Relevant experience presented in the ESP proposals should be recent. A new company entering the market should be evaluated by the corporate experience of the individuals of that company. Where projects require a high level of technical expertise, the experience should be in an area directly comparable with the project requirements. Where a lower level of technical expertise is adequate, other relevant corporate experience may be considered. The weight given to this criterion in the evaluation procedure should reflect the level of corporate technical expertise required to achieve a quality result.

MANAGEMENT / ORGANIZATION – This criterion is defined as *‘the provision of personnel and management systems for organizing and controlling quality, time and cost’*. The ESP firm should be required to show how they plan to organize and manage the project. A project schedule should be required indicating the duration, level of effort (hours of work) and sequence of work, for each task of the work plan. The ESP Project Manager and assigned Team Leaders shall be evaluated based on their management skills and qualifications, time allocation, commitment, and past performances as managers or team leaders.

LOCATION – This is defined as *‘the location of key personnel at the time of the proposal and during the project period’*. The ESP shall be required to state the location (including office address and phone number) of all key personnel assigned to the project at the time the proposal was written and during the proposed project period. It is preferable that ESPs have key personnel located locally at the time of the proposal and during the project. It is considered desirable for an ESP to have all key personnel located within the province during the project period, particularly if the personnel in question is considered an expert or has a management role in the project.

4.6.3 SELECTION COMMITTEE

A selection committee consisting of 3-5 experienced and senior staff review the proposals in detail. Each member of the committee carries out a preliminary evaluation of the proposal according to the evaluation criteria prior to the meeting.

During the Selection Committee Meeting, the group reaches consensus on each of the criteria. It is important to understand that the proposals are compared to each other and rated accordingly. On major combined projects with a highway and structure component, equal weighting may be given to the highway and structure teams within the project team criteria.

The Project Manager makes official notes during the meeting and fills out the rating sheets. These sheets are confidential and are then filed in Director’s Office. After the committee reaches a consensus, a recommendation is made to the Director for approval to negotiate with the preferred firm. If two ESPs are equal in the ratings, the final decision rests with the Selection Committee. The recommended ESP is only contacted after this approval is received. The selection is based on the best overall value to MIT and not necessarily the lowest cost estimate.

All ESPs will be debriefed on request. All debriefings are done by the Project Manager; and, in some circumstances, the Selection Committee may also be in attendance at the debriefing.

4.6.4 DEALING WITH PROPOSAL DISCREPANCIES

On rare occasions, serious discrepancies between proposals and the RFP could occur due to misunderstandings by some ESPs of the project requirements. This is in spite of the best efforts at project definition and communication. Under certain circumstances, the Project Manager may attempt to resolve the discrepancies and have the proposals amended. The following conditions must be met before this can be pursued:

- a) The discrepancy must involve a significant misinterpretation of a core component of the study.
- b) It cannot apply to a simple oversight. In that case, the firms committing the oversight are simply penalized in scoring during the proposal evaluation.
- c) The need to address a discrepancy must be a MIT initiated request. Unsolicited requests by ESPs to change their proposal after the submission date will not be allowed.

If all of the above conditions have been met, then the Project Manager may consider issuing a Statement of Clarification. Even if the issue has been attributed to only one proposal, the clarification will be sent to all ESPs. The ESPs are then asked to either confirm in writing that their proposal accommodates the enhanced definition of the requirements or else to amend their proposals accordingly. The amendments can include changes to methodology, cost, and schedule.

This process cannot be used to “cherry pick” the best portions of different ESPs proposals. For example, if one ESP proposes a specific methodology, that in hindsight would be beneficial as an overall project requirement, it cannot be used as the basis of an amendment for the other ESPs.

If a misunderstanding is significant enough that all of the ESPs have misinterpreted one of the overall project goals, then consideration should be given to withdrawing the entire proposal call and starting over at a later date with a new RFP.

Finally, ESPs have occasionally placed their own conditions on proposals. Generally the conditions involve trying to place quantified limits on some of the more subjective project requirements. For example, ESPs have occasionally indicated that they will only pursue a fixed number of alternatives within the upset limit and any alternatives beyond that number will be at extra cost. MIT’s response to this is to reject the conditions. The ESP is given two choices. They can either submit in writing a full retraction of the conditions or they can withdraw their proposal.

4.7 CONFLICT OF INTEREST

MIT will not allow an employee to sit on a selection committee, provide input to or otherwise influence the decisions of a selection committee if there is the possibility of a personal conflict of interest. Personal conflict of interest generally occurs when an employee or his/her immediate family:

- Has direct or indirect financial interest in the award of the contract to any proponent,
- Is currently employed by, or is an ESP to or under contract to a proponent,
- Is negotiating or has an arrangement concerning future employment or contracting with any proponent, or
- Has ownership interest in or is an officer or director of any proponent.

Conflict of interest starts as early as the writing of the Terms of Reference. If a MIT employee feels that he/she is in conflict of interest, he/she must withdraw from the selection process; no explanation is necessary. If unsure as to a potential conflict of interest, employees are encouraged to discuss the situation with their Director. Any such discussions will be strictly confidential.

4.8 DIRECT NEGOTIATIONS

The final terms of the Contract are negotiated between the ESP and MIT. A Contract is only drawn up when negotiations are successfully completed. It is important that there is enough lead time for this to be

completed without jeopardizing the scheduling of the project. Details are discussed and worked out between the Project Manager and the preferred firm. Other technical experts may assist with the negotiations as required.

MIT expresses specific concerns, raises questions and requests the ESP provide answers which may be accepted or rejected. When all negotiations are complete, the ESP revises and re-submits the parts of his proposal and fee structure that were of concern.

It is important that the proposal is clear in its objectives. Ambiguities or statements where the ESP opts out of certain obligations (i.e. Prime ESP role) will not be accepted. MIT may or may not accept the revised portions. If the process of negotiations becomes too onerous or unproductive, the option to negotiate with the second rated firm may be exercised.

4.9 RFP APPROVAL NOTIFICATION AND DEBRIEFING

4.9.1 GENERAL

Only after approval documents have been signed by the appropriate authority can the ESPs be notified of the selection outcome. Initially, notification letters must be sent to all ESPs that have submitted proposals or quotes.

In the case of notifying the unsuccessful ESPs, a brief letter is developed to thank the ESP for submitting a proposal, inform them that they were not successful, and identify which firm was selected. No explanation should be given why they were unsuccessful or why the winning firm was selected. The letter is sent strictly for notification purposes.

Similarly, the successful firm must be sent a notification consisting of a brief letter thanking the ESP for submitting the proposal and notifying them that they were successful. This letter should also indicate how the ESP will be contacted in the coming days to initiate work on the project.

4.10 DEBRIEFING

Should the unsuccessful ESP(s) request it, the Project Manager will offer a debriefing session to explain why the ESP was not selected for a particular project. These sessions must be one on one with the individual ESPs and not a common session where all of the unsuccessful ESPs are invited.

Debriefing sessions have one primary purpose, and that is to present an opportunity for the ESP to improve on the quality of his/her submissions for future work. To accomplish this, the tone of the sessions should be frank and objective and offer the ESP a degree of confidentiality. In particular, the ESP should be assured that none of the information discussed would be shared with any competing firms.

The primary tool in undertaking the debriefing is the detailed evaluation. This should be used as a guide in making notes on potential areas of improvement for the ESP. Under no circumstances should the unsuccessful ESPs be given a copy of the detailed evaluation. In particular, evaluation scores of the competing firms shall not be made available.

It is recommended to begin the debriefing with an overview of the positive aspects of an unsuccessful ESPs proposal. This allows the ESP to confirm the strong points in their approach to writing proposals for MIT, which can be used for subsequent projects.

Next, the discussion can focus on the areas of ESPs proposal that could be improved. In essence, this corresponds to all of the criteria where the ESP was rated 2 or less. If the evaluation followed the procedure discussed previously in this document, then the discussion of deficiencies should be fairly straightforward and objective.

For example, a 2 rating is defined as marginally meeting the basic requirements. In other words, there were some issues under this criterion that were missed. The evaluation procedure requires that each rating be supported with a specific reference to a section in the proposal. Therefore, the Project Manager, in conjunction with the Selection Committee if applicable, should be able to document all the deficiencies solely based on the information contained in the ESPs proposal.

In summary, the debriefing should be based on a discussion of the merits of the ESPs proposal compared to MIT's requirements for the project. Conversely, the discussion should never be a comparison of the unsuccessful ESPs proposal to the successful ESPs submission. There should never be a situation where the successful ESPs work is discussed at all in the debriefing session.

4.11 PREPARATION OF ESP AGREEMENTS

MIT has a standard contract template for ESP assignments. This template must be tailored to supply the details specific to a particular project. The original RFP/RFQ, successful ESPs proposal/quotation, any addendum or statements of clarification along with the ESPs responses are to be bound with and form part of the contract.

Since the contract may contain a number of supporting documents, it is important to state an order of precedence. This is used to resolve conflicts where one or more of the supporting documents may contain contradictions. This statement of precedence is to be added to the contract document. For most projects, the order of precedence from highest to lowest is:

- 1) Addendum and statements of clarification
- 2) The ESPs response to the addendum and statements of clarification
- 3) The original terms of reference
- 4) The ESP proposal/quotation

Two original copies of the contract are required. Both MIT's representative and the ESPs representative must sign both copies, with the ESP signing the contract prior to MIT signing.

The distribution of the two-signed contracts is as follows – one copy to the ESP and one copy to MIT (Water Control and Structures Administration Services for record keeping purposes).

The standard ESP contract template contains contractual items that protect and minimize MIT's exposure to risk and claims. These risks are continually being monitored by Manitoba Finance, Risk Management and Insurance and MIT crown counsel. These groups have input into the contractual items and regularly review MIT Contracts (a copy of the standard contract template is available from Highway Planning and Design).

SECTION 5 – ADMINISTERING ESP ASSIGNMENTS

5.1 PROJECT INITIALIZATION MEETING

The Project Manager is responsible for ensuring that each task and phase of the work is completed as scheduled. To do this, prior to any work commencing on a project, The Project Manager will normally call a Project Initialization Meeting at his/her location of choice with the Project Co-Manager (if applicable), ESP team and other MIT staff and stakeholders as required. The purpose of this meeting is to clarify the assignment, expectations and staff roles, to review the scope of the work to be done, safety strategy, reporting requirements (as identified in the Terms of Reference), design codes and standards to be used, time frame for the overall project, as well as any significant milestone dates within that time frame for specific activities. The Project Manager will advise the ESP of all issues that may affect the ESP's work plan (e.g. tendering schedule).

Project administration information such as invoicing requirements, sample forms, revised procedures, etc. will also be provided to the ESP at this meeting.

Details on the ESP Performance Evaluation process will be discussed at the Project Initialization Meeting. The Project Manager will advise the ESP of appropriate form(s) to be used, and as required, also identify the criteria/weighting/timing that will be used as the basis in the evaluation process. Further information on the Performance Evaluation process can be found Section 6 of this manual.

The Project Manager chairs the meeting and one of the ESP team members takes Meeting Notes.

5.2 INVOICING

If utilizing the Time Charges plus Expenses method of payment, invoices need to be broken down into each task of work, along with the corresponding activities for each task, identified in the work breakdown structure as submitted in the Proposal. Invoices should have a detailed list of all individuals completing work under each activity within the tasks, the applicable charge out rate, number of hours being charged, and the extension.

If there are any travel disbursements associated with a specific invoice, they should be accurately documented. A brief description is required acknowledging the number of meals in the month, daily travel "from" and "to", approximate kilometers daily, and total being claimed. There should be enough information so that MIT can follow up with an audit of the ESPs records in the future, if required.

The Project Manager will monitor each task, along with the corresponding activities identified in the work breakdown structure, verify the invoicing details against the original work breakdown structure submitted in the Proposal, and satisfy himself/herself that the ESP invoices are accurate and that the appropriate fee for service has been charged. The Project Manager may request the ESP to provide documentation as to why a certain task could exceed the original budget value for that specific task.

Invoices will be paid up to the contract upset limit for the assignment. It is expected that the ESP will be able to complete the assignment within the upset fees as established in the ESP Agreement. Additional billing beyond the upset fees will not be entertained unless a Change in Scope of Work has been agreed to by both parties.

5.2.1 DISBURSEMENTS

Disbursements will be paid in accordance with the ESP Agreement.

5.2.2 ESCALATION

Escalation will be paid in accordance with the ESP Agreement.

5.2.3 EARNED VALUE REPORT

If utilizing the Time Charges plus Expenses method of payment, an Earned Value Report is to be provided by the ESP at the end of every month and attached to the monthly invoice. This report has columns for initial allotment by task, along with the corresponding activities identified in the work breakdown structure, amount this month, total to date, amount left to come and percentage of work completed to date.

At the bottom of the Earned Value Report, the ESP is also to provide an estimate for the value of fees that:

- have been charged in previous fiscal years,
- will be charged to the end of the current fiscal year (ending March 31), and
- anticipated charges in future fiscal years.

A template for the Earned Value Report form is included in Appendix B.

5.3 CHANGES TO ESP AGREEMENT

5.3.1 CHANGE IN SCOPE OF WORK

The “Change in Scope of Work” form formally recognizes and approves a change in the scope of the work from that specified in the original executed ESP Agreement or as previously amended. It generally means an addition to the scope; however, it can also be a reduction in the scope.

The addition of a culvert replacement is an example of a change in scope for a combined roadwork and structure project. This culvert replacement may require added fees for preliminary design, detailed design, tender preparation, contract administration and increased construction costs.

The Project Manager is required to confirm that additional funding is available within the approved value for the assignment. If additional funding over and above the approved value is required, the Project Manager is responsible for preparing all necessary documents required to obtain the appropriate approval prior to the ESP commencing the additional work.

Once it has been agreed by both parties that additional work is required and the appropriate funding is in place, the Project Manager will request that the ESP complete the “Change in Scope of Work” form and submit to MIT for review and approval. The form should include the new or revised scope, and should also include any revised deliverables or changes to the original schedule(s). The ESP should also attach their proposal to the “Change in Scope of Work” form that includes a work plan, staff names and titles, and hourly charge out rates (consistent with the original proposal and as previously amended) and subtotaled by task as required.

The Project Manager will review, negotiate with the ESP and recommend approval of the change in scope of work. The “Change in Scope of Work” form is then forwarded to the ESP for agreement and then to the Director for approval. When approved, a copy of the Change in Scope of Work form is sent to the ESP advising of the scope change approval with a copy to Water Control and Structures Administration Section for attachment to the original executed and as previously amended ESP Agreement. All revised contract values resulting from approved Changes in Scope of Work are to be included in the Earned Value Report (refer to Section 5.2.3).

5.3.2 CONSTRUCTION DURATION FEE INCREASE (NOT DUE TO DESIGN CHANGE)

This situation is the result of a change in anticipated effort due to a longer construction period than originally specified in the Construction Contract. This would relate to slower than anticipated progress by the Contractor due to inclement weather, limited Contractor resources, difficult site conditions, etc..

The Project Manager will liaise with the ESP to obtain a proposal for the additional contract administration and/or construction inspection services deemed to be required. The proposal should include a new schedule, staff names, titles, and hourly charge out rates (consistent with the original proposal and as previously amended). The Project Manager will review the proposal and when agreed to by both parties will request that the ESP complete the "Change in Scope of Work" form and submit to MIT for review and approval. The review and approval process is then the same as described in Section 5.3.1.

The Project Manager is required to confirm that additional funding is available within the approved value for the assignment. If additional funding over and above the approved value is required, the Project Manager is responsible for preparing all necessary documents required to obtain the appropriate approval prior to the ESP commencing the additional work.

5.3.3 APPROVAL-IN-PRINCIPLE

The Approval-In-Principle process may be used under the following emergent conditions:

- The scope of the work is beyond the control of the ESP and there is an urgency to proceed with the provision of additional services.
- There is urgency for funds to cover the provision of additional services.

The Project Manager will provide a brief description of the additional services required, the reason for the additional services, and best guess or ballpark estimate of additional costs to the Director for review and approval. The Director then advises the Project Manager if Approval-In-Principle is granted. This correspondence will typically occur by email. **The Project Manager is required to confirm that additional funding is available prior to reviewing with the Director, and is to include this information in his/her email to the Director.**

Once the Project Manager has received Approval-In-Principle from the Director, he/she will request that the ESP complete the "Change in Scope of Work" form and submit to MIT for review and approval. The ESP then follows up the "Change in Scope of Work" form, including a detailed proposal and cost estimate, that is submitted to the Project Manager as soon as possible. Notwithstanding that the Contract upset limit will not be adjusted until the detailed proposal and cost estimate is approved by MIT, the ESP may be permitted to proceed with the work if it is urgent to do so.

Once the Project Manager is in agreement with the detailed proposal and verified that the detailed estimate is within the original estimate for the work, the review and approval process is then the same as described in Section 5.3.1. If the detailed estimate exceeds the original estimate, approval is required by the appropriate approving authority prior to approval of the "Change in Scope of Work" form.

It is expected that there will be a limited number of "Change in Scope of Work" forms requiring this process.

5.3.4 DISBURSEMENT (EXPENSE) INCREASES

Disbursement increases will not be considered if escalation has been approved and processed for all fees (including disbursements). Alternately, if disbursement increases are processed for a particular year, and a subsequent escalation increase request is received that applies to the same year, escalation will not be considered on the already approved disbursement increases.

To apply for disbursement increases, the ESP shall submit a request to the Project Manager for review and recommendation to the Director. The Director will review and process for approval as per the appropriate approving authority. Once approved, the Director will notify the Project Manager who will in turn send a letter to the ESP advising of the approval.

5.3.5 PERSONNEL CHANGES

The ESP is required to request prior approval from the Project Manager for any staff changes.

Normally, approval is only required for key staff (i.e. project manager, contract administrator, senior structural designer, senior geotechnical engineer, resident engineer, construction inspector or survey crew chief). The Project Manager will review the change requested, review the resume of the replacement and interview the replacement candidate, if needed. The Project Manager may also wish to discuss to proposed change with the Director or other MIT staff prior to approval. The Project Manager will then notify the ESP of the decision; and, if staff changes are approved, will forward a copy of the notice to the Water Control and Structures Administration Section for filing.

Qualifications of replacement staff must be the equivalent or better than the one(s) being replaced, and the charge out rate should not exceed the original. It is expected that the work will be completed within the same time frame as shown in the original executed ESP Agreement.

5.3.6 ESP CONTRACT COMPLETION DATE EXTENSION

The Project Manager and the ESP must agree to an extension to the original contract completion date. The agreement on the new contract completion date must be based on no changes to the current terms and conditions of the ESP Agreement. The Project Manager will advise the ESP in writing and will forward copies to the Director and the Water Control and Structures Administration Section for attachment to the original executed and as previously amended ESP Agreement.

The Project Manger is responsible for identifying the appropriate value for fees needed in the new fiscal year (if applicable).

5.3.7 OTHER CHANGES

Other changes to the ESP Agreement (such as changes to insurance requirements, etc.) should be reviewed and signed by the ESP and the Project Manager, and may require Director and/or Executive Director approval.

5.4 TERMINATION OF CONTRACT

On rare occasions, the Project Manager may deem it necessary to recommend the termination of an ESP Agreement. In this situation, the Project Manager will prepare a memorandum to the Director describing the reasons for the recommendation, suggested methods to complete the assignment and the associated cost and schedule impacts resulting from the termination. The Project Manager and the Director will jointly review the document and agree that termination of the ESP Agreement is in the best interests of Manitoba. The Director will then review the recommendation with the Executive Director of Water Control and Structures and receive approval to terminate the Contract. The ESP will receive a letter from the Director terminating the contract with copies to the Project Manager and the Executive Director of Water Control and Structures.

5.5 ESP CLAIM

A request for extra fees by an ESP is a change to the legal contract between the ESP and MIT. It is therefore a claim and must be treated with the same level of diligence and thoroughness as a claim on a Construction Contract. The value of ESP claims can be as large or larger than many construction claims in monetary value and commonly much larger as a percentage of the applicable original Contract.

As a fee increase is a change to the contract it can only be approved by the appropriate delegated authority.

5.5.1 PHILOSOPHY

ESPs are entitled to fair and reasonable compensation for the provision of services that add value to MIT. ESPs are expected to demonstrate financial control and management, and to treat the expenditure of public funds with respect and not as a “deep pocket” or “open cheque”.

5.5.2 JUSTIFICATION FOR FEE INCREASE CLAIMS

ESP claims have to be judged against two measures: 1) is the claim justified, and 2) if justified, what is a fair and reasonable settlement.

When an ESP submits a request for fee increase, the justification for the claim can either be:

- Scope Changes requested by MIT

A fair and reasonable increase is negotiated and agreed to with the ESP. Generally, the rates agreed to in the original Contract are used as the basis for the negotiations.

- Situations outside the control of the ESP

The ESP is required to notify the Project Manager immediately after a situation arises and provide the Project Manager with an estimate of the cost of the additional work as soon as possible. The ESP must keep the Project Manager informed of important developments. The ESP must take steps to mitigate the impact on his/her fees and discuss these steps with the Project Manager. The ESP must manage the overrun costs.

This type of situation mainly occurs in the construction phase and is generally a justifiable reason for an increase; however, the ESP must have made all reasonable efforts to mitigate the impact as much as possible. ESP errors that cause the Contractor additional work and hence more ESP inspection time would not be a justifiable reason for an increase in fees.

To determine if situations are within the control of the ESP, the Project Manager should ask the following questions:

- Did the ESP exhibit poor project quality control and quality assurance processes?
- Should the ESP have reasonably foreseen the need for the work? (Is it a requirement of MIT's Construction Specifications, MIT's Structures Design Manual, MIT's Contract Administration and Construction Inspection Manual, Project Terms of Reference, other pertinent reference manuals, etc.?)
- Would it normally be expected that a competent ESP should have known that the work would be required?
- Did the ESP simply misunderstand or underestimate the work required? Generally, this type of situation occurs in the preliminary design phases.

If the answer to any one of these questions is yes, it would generally indicate that the request for increase is not justified and should be rejected. A determination must be made as to the reason the situation arose.

5.5.3 WHAT IS FAIR AND REASONABLE?

Once the Project Manager has agreed that an increase is justified, the next step is to agree on the dollar value of the increase. Rates used should be the same as those in the original executed ESP Agreement. The number of hours should be negotiated with the ESP, and, if necessary, verified through the ESPs time sheets. Lump sum increases need to be reviewed by the Project Manager for reasonableness.

5.5.4 AUTHORITY FOR APPROVAL OF FEE INCREASE

The Project Manager will then prepare a request to the Director in a clear and logical “executive summary” type memorandum with the required backup documentation. The request will be formally recommended by the Project Manager. The Director will review the request to ensure the recommendation and the reasons are justified, clear and concise. This review includes verification with the requirements of the original proposal and Terms of Reference. If the Director finds any points that are unclear, the request will be referred back for further information or clarification. In some circumstances, the Director will request a meeting with the ESP.

If the Director does not agree with the request for fee increase, the ESP will be notified of this decision by letter. If the ESP does not agree with the Director’s position, the ESP may appeal to the Executive Director of Water Control and Structures. Any appeal must be in writing and give reasons for the appeal.

SECTION 6 – ESP PERFORMANCE EVALUATION

6.1 PURPOSE

The final activity associated with an ESP assignment is undertaking an evaluation of the ESP's performance.

The purpose of evaluating the ESP's performance is to:

- objectively document the progress and performance of the ESP,
- identify areas for improvement in ESP performance,
- ensure that ESP performance is maintained at a high level, and
- support the ESP selection process based on past performance.

6.2 EVALUATION CRITERIA THEMES

A common system is used to evaluate the ESP performance for all Water Control and Structures projects. Separate forms have been developed for evaluating ESPs under each of the Categories of Work in the Registry.

The first part of the Performance Evaluation Form is the background information needed for filing purposes and also documents the ESP's ability to complete assignments on time and within budget. This information allows MIT to review how successful the ESP is at managing assignments. Reasons for any delays or extra costs must also be assessed.

Following the evaluation of time and cost, the form evaluates issues that influence the quality of the project. These issues include: project management, key personnel performance, planning and organization, methodology, drawing quality and deliverables. This information will also help MIT staff determine if the end result met expectations and required quality. The short answers in the evaluation form not only provide a breakdown of the ESP's performance, but also provide the ESP with specific areas for improvement. The numerical ratings provide measurable information for MIT to record and use in future ESP selections.

A five point scoring scale is used in the evaluation of the ESP under the different criteria themes. It is important to remember the concept is a balancing of/consideration for all components in the phase being rated.

6.3 ESP PERFORMANCE EVALUATION RATING KEY

The following rating key should be used in the evaluation.

RATING KEY:

1 = Doesn't meet criteria:

MIT is completely unsatisfied with performance, most to all things done very poorly. It would be unusual to score a 1 rating if the ESP rated 3 or higher in any important component of this phase.

2 = Partially meets criteria:

MIT is unsatisfied with performance, some things done well but some to most things done poorly and overall, balance towards poorly. It would be unusual to score a 2 rating if the ESP rated 4 or higher in any important component of this phase.

3 = Meets criteria:

Meets MIT requirements, some things done poorly balanced out by some things done very well. On balance, the ESP performance was satisfactory.

4 = Moderately exceeds criteria:

ESP performed very well, some things done well but was balanced out by majority of things done very well. It would be unusual to achieve a 4 rating if the ESP rated 1 or 2 in any important component of this phase.

5 = Substantially exceeds criteria:

Outstanding performance by the ESP, some things done very well but was balanced out by majority of things done outstandingly. It would be unusual (but possible) to achieve a 5 rating if the ESP rated 1 or 2 or 3 in any important of this phase. It would be unusual (but possible) to achieve a rating of 5 on simple projects. The logic is that it would be difficult to substantially exceed criteria on a simple project.

6.4 PROCESS

Each evaluation form is based on six criteria themes, with each criteria theme weighted appropriately for the type of assignment involved. The weightings are developed by The Project Manager and the ESP at the Project Initialization Meeting. The following table provides recommended weighting ranges (expressed as a percentage of the overall emphasis in project evaluation) for each of the six evaluation criteria themes.

Evaluation Themes	Recommended Weighted Range	Structure Condition Assessment	Preliminary Design	Detailed Design	Contract Administration and Construction Inspection
Project Management	10 to 20%	10 to 20%	10 to 20%	10 to 20%	10 to 15%
Key Personnel Performance	10 to 50%	10 to 30%	10 to 30%	10 to 30%	30 to 50%
Planning and Organization	5 to 15%	5 to 15%	5 to 15%	5 to 15%	5 to 10%
Methodology	10 to 40%	20 to 40%	20 to 40%	20 to 40%	10 to 20%
Drawing Quality	5 to 20%	5 to 10%	5 to 10%	10 to 20%	5 to 10%
Deliverables	10 to 20%	10 to 20%	10 to 20%	10 to 20%	10 to 20%

When established at the Project Initialization Meeting, total weightings will equal 100%.

At the conclusion of the assignment, The Project Manager will complete the ESP Performance Evaluation form and forward to the ESP for review. The ESP then reviews the evaluation of their performance, makes any comments and signs off at the bottom of the form.

At the ESP's request, a meeting can be scheduled to review the evaluation prior to his/her acceptance. Such a meeting will enable the Performance Evaluation to be discussed in detail and provide a better explanation and understanding by both parties. The purpose of this meeting is not to debate MIT's assessment, but rather to elaborate and clarify MIT's findings. The only factor that can lead to the reassessment of evaluation criteria is where the ESP can demonstrate that the facts used to support the assessment are in error.

Once all the issues are addressed, the ESP Performance Evaluation form and any additional comments will be filed with the project for consideration in future ESP selection procedures.

6.5 OVERALL EVALUATION PHILOSOPHY

The primary purpose of the Performance Evaluation is to provide the ESP with information that will allow them to improve future performance; however, there is also an aspect of reward and punishment associated with the evaluation. When MIT develops the Short List for each category of work, superior performance results in a higher ranking for future MIT ESP assignments. Conversely, sub-standard performance results in a lower ranking and reduced opportunities for future work. Since the results of the evaluation carry serious consequences, it requires a high level of objectivity and defensibility.

The key to an effective evaluation is to have good records over the duration of the project. In this manner, detailed documentation of most performance issues is essential. As examples, the ability to maintain schedule and overall cost control should be documented in the monthly status reports. The level of quality should be documented in the technical review summaries. These records should provide the base information for the evaluation assessments. Each of the performance evaluation assessments should contain references to the relevant portions of these documents or any other relevant documentation.

The Project Manager should remember the following while completing the evaluation:

- Recognize that the different phase ratings may be influenced by the overall performance, but try to rate the ESPs down in only one area for one concern. Use different examples in different phases (comment section rationale) to justify your ratings.
- Stick to the facts in the evaluation comments and include backup for all comments.
- Evaluations are to be completed by the Project Manager within the following timelines:
 - Interim evaluation for multi-year projects on a yearly basis.
 - Final evaluation for construction projects within one month of contract acceptance and/or following submission of Final Contract Administration Package.
 - Final evaluation for non-construction projects within one month of project completion.

6.6 APPEAL MECHANISM

Appeals are to be addressed to Director of the appropriate Branch and then the Executive Director of Water Control and Structures.

APPENDIX A

PRE-QUALIFICATION REQUIREMENTS FOR VARIOUS CATEGORIES OF WORK

**Prequalification Requirements
Water Control and Structures
Concrete Detailed Condition Surveys (Level III Inspections) - Major and Minor Structures**

Work Type Name	Concrete Detailed Condition Surveys (Level III Inspections) – Major and Minor Structures
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Concrete Detailed Condition Surveys</i> (Concrete DCS) involve the site reconnaissance, planning, management and execution of field inspection and laboratory testing, interpretation of inspection and testing data and the production of a detailed condition survey report including drawings, with recommendations for the concrete components of Major and Minor Structures. Field Inspection may include component surveys, concrete cover surveys, delamination / surface defects surveys, concrete coring and copper-copper sulphate half cell corrosion potential testing. Laboratory testing may include determination of water soluble chloride content, air void analysis, compressive strength testing, petrographic analysis and other site specific testing requirements. The data collected will be used in the preliminary and detailed design phases and assist in tender quantity determination.</p> <p><i>Major Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Cast-in-place concrete box culverts, or ○ Prestressed concrete box or channel girder bridges with substructure units supported on pile or spread footings, or ○ I-girder or NU girder bridges, or ○ Structural steel girder bridges, or ○ Major river crossings with unique geotechnical conditions, or ○ Post-tensioned concrete box girders supported on falsework during construction, or ○ Truss bridges, concrete or steel arch bridges, or ○ Rigid frames, or ○ Bridges with extensive aesthetic treatments or complex geometry, or ○ Structures with significant staging, or ○ Highway overpasses or underpasses, or ○ Railway overpasses or underpasses. <p><i>Minor Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Culverts – SPCSP and precast concrete, or ○ Precast prestressed concrete channel (PPCC) bridges.
<i>Deliverables</i>	The Concrete Detailed Condition Survey Report.

<p><i>Quality Attributes of Deliverables</i></p>	<ul style="list-style-type: none"> • The Concrete DCS report shall include inspection information, defect quantities, standard report forms, core log worksheets with photos and sketches, drawings supporting inspection findings, field & laboratory testing results, a summary of significant findings and all other documentation identified in the Project Terms of Reference (TOR) • ESP to ensure all aspects of the project are completed in conformance with the Ontario Structure Rehabilitation Manual (OSRM), Ontario Structure Inspection Manual (OSIM), Project TOR, MIT's Structures Design Manual, MIT's CADD Standards Manual and the Quality Assurance plan (QAP) prepared by the ESP. • ESP's QAP must address methods of verifying their work, including review of submissions, incorporation of stakeholder comments and review of final deliverables as well as meeting the specified schedule and budget.
<p>Requirements of the Professional Staff</p>	
<p><i>Minimum Number of Staff</i></p>	<ul style="list-style-type: none"> • Out-of-office personnel may contribute to complete the project; however, the applying office must have an office and in-house staff capable of overall project management and Professional Engineering for the Concrete DCS as a minimum extent of participation. • At least one Professional Engineer is required at the applying office • In addition, one Professional Engineer is required to complete an independent review of the Concrete DCS Report. The Engineer conducting the independent review is not required to be in the applying office. • At least one Certified Engineering Technician or Technologist is required at the applying office. • Number of professional and technical support personnel must be recorded and updated.
<p><i>Professional Requirements</i></p>	<ul style="list-style-type: none"> • Professional Engineer at the applying office: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba. • Professional Engineer conducting the independent review: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba. • Certified Engineering Technician or Technologist: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba.

<p><i>Qualifying Experience of Staff</i></p>	<ul style="list-style-type: none"> • Professional Engineer at the applying office: <ul style="list-style-type: none"> ○ At least one with a minimum of 10 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to complete the project in accordance with Ontario Structure Rehabilitation Manual (OSRM), Ontario Structure Inspection Manual (OSIM), the Project TOR, MIT requirements and all applicable codes, policies, procedures, standards and good engineering practices.. • Professional Engineer conducting the Independent Review: <ul style="list-style-type: none"> ○ A Minimum of 10 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to complete the project in accordance with Ontario Structure Rehabilitation Manual (OSRM), Ontario Structure Inspection Manual (OSIM), the Project TOR, MIT requirements and all applicable codes, policies, procedures, standards and good engineering practices. • Certified Engineering Technician or Technologist: <ul style="list-style-type: none"> ○ Minimum of 10 years of relevant experience. • Satisfactory experience and successful project execution must be demonstrated on a minimum of three similar projects in the last five years. • All professional staff shall provide a list of relevant project experience.
<p>Requirements of the Applying Office</p>	
<p><i>Applying Office Requirements</i></p>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • Laboratories that the ESP intends to use to complete testing must be identified in Request for Qualifications and be CSA Certified. • The applying office must be capable of delivering the drawings in Microstation (current MIT version) and reports in Microsoft Word and Microsoft Excel (current MIT versions).
<p><i>Qualifying Experience of Applying Office</i></p>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of three similar projects in the last five years. • The applying office must be qualified to inspect the structures in accordance with the OSIM and OSRM manuals (current versions). • If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Condition Assessment – Minor Structures**

Work Type Name	Condition Assessment – Minor Structures
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Condition Assessment</i> involves a formal assessment of a structure’s condition by completing some or all of the following tasks:</p> <ul style="list-style-type: none"> ○ Level 3 specialized assessment inspection (e.g. detailed condition survey, underwater investigation, etc); ○ Strength Evaluation; ○ Functionality review; ○ Estimate of expected remaining service life, and ○ Preparation of Structure Management Strategy. <p>The ESP may complete detailed condition surveys for Level III Specialized Inspections with internal resources or external sub-ESP(s). These internal resources or external sub-ESP(s) will have to be prequalified as an applying office under the prequalification category for Concrete Detailed Condition Surveys (Level III Inspections) through this prequalification process.</p> <p>The data collected will be used in the preliminary and detailed design phases and assist in tender quantity determination.</p> <p><i>Minor Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Culverts – Structural Plate Corrugated Steel Pipe (SPCSP) and precast concrete, or ○ Precast prestressed concrete channel (PPCC) bridges, or ○ Timber bridges.
<i>Deliverables</i>	Condition Assessment Report
<i>Quality Attributes of Deliverables</i>	<p>Engineering Service Provider (ESP) to check/verify work in conformance with the Project Terms of Reference (TOR), MIT’s “Structures Design Manual”, ESP’s documented Quality Control / Quality Assurance (QC/QA) Plan, and specifically Ontario Structure Inspection Manual (OSIM), Ontario Structure Rehabilitation Manual (OSRM) and American Association of State Highway and Transportation Officials Manual for Bridge Evaluation (AASHTO MBE). This will require a complete, independent design review. ESP’s QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.</p>

Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • The applying office must have an office and in-house staff capable of total completion of project that meets MIT's schedule, budget and quality requirements for deliverables. • At least two Professional Engineers are required at the applying office. One of the Professional Engineers is required to perform an independent design review of data, calculations, analysis and reports of the other. • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers must be registered in the Province of Manitoba.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Professional Engineers at the applying office: <ul style="list-style-type: none"> ○ At least one of which has a minimum of 10 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas to complete the project in accordance with OSIM, OSRM, AASHTO MBE, the Project TOR, MIT requirements and all other applicable codes, policies, procedures, standards and good engineering practices. • Professional Engineers conducting inspections: <ul style="list-style-type: none"> ○ Minimum of 5 years of experience in bridge inspections. ○ Experienced and knowledgeable with the OSIM and OSRM manuals. • Professional Engineers conducting Strength Evaluations: <ul style="list-style-type: none"> ○ Experienced and knowledgeable with AASHTO MBE. • Satisfactory experience and successful project execution must be demonstrated on a minimum of two similar projects in the last five years. • All professional staff shall provide a list of relevant qualifying experience.
Requirements of the Applying Office	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • The applying office must be qualified to inspect the structure in accordance with the OSIM and OSRM manuals (current versions) and undertake strength evaluations in accordance with AASHTO MBE. • The applying office must be capable of delivering structure plans in Microstation (current MIT version) and reports in Microsoft Word (current MIT version).
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of two similar projects in the last five years. • If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Condition Assessment – Major Structures**

Work Type Name	Condition Assessment – Major Structures
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Condition Assessment</i> involves a formal assessment of a structure’s condition by completing some or all of the following tasks:</p> <ul style="list-style-type: none"> ○ Level III specialized assessment inspection (e.g. detailed condition survey, underwater investigation, fatigue investigation, etc); ○ Strength Evaluation; ○ Functionality review; ○ Estimate of expected remaining service life, and ○ Preparation of Structure Management Strategy. <p>The data collected will be used in the preliminary and detailed design phases and assist in tender quantity determination.</p> <p>The ESP may complete detailed condition surveys for Level III Specialized Inspections with internal resources or external sub-ESP(s). These internal resources or external sub-ESP(s) will have to be prequalified as an applying office under the prequalification category for Concrete Detailed Condition Surveys (Level III Inspections) through this prequalification process.</p> <p><i>Major Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Cast-in-place concrete box culverts, or ○ Prestressed concrete box or channel girder bridges with substructure units supported on pile or spread footings, or ○ I-girder or NU girder bridges, or ○ Structural steel girder bridges, or ○ Major river crossings with unique geotechnical conditions, or ○ Post-tensioned concrete box girders supported on falsework during construction, or ○ Truss bridges, concrete or steel arch bridges, or ○ Rigid frames, or ○ Bridges with extensive aesthetic treatments or complex geometry, or ○ Structures with significant staging, or ○ Highway overpasses or underpasses, or ○ Railway overpasses or underpasses.
<i>Deliverables</i>	Condition Assessment Report

<p><i>Quality Attributes of Deliverables</i></p>	<p>Engineering Service Provider (ESP) to check/verify work in conformance with the Project Terms of Reference (TOR), MIT’s “Structures Design Manual”, ESP’s documented Quality Control / Quality Assurance (QC/QA) Plan, and specifically Ontario Structure Inspection Manual (OSIM), Ontario Structure Rehabilitation Manual (OSRM) and American Association of State Highway and Transportation Officials Manual for Bridge Evaluation (AASHTO MBE). This will require a complete, independent review. ESP’s QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.</p>
<p>Requirements of the Professional Staff</p>	
<p><i>Minimum Number of Staff</i></p>	<ul style="list-style-type: none"> • Out-of-office personnel may contribute to complete the project; however, the applying office must have an office and in-house staff capable of the project management and either the Professional Engineering inspection and analysis, or the independent review of these items as a minimum extent of participation. • At least two Professional Engineers are required at the applying office. • In addition, one Professional Engineer is required to complete an independent review of data, calculations, analysis and report for the assignment. The Engineer conducting the independent design review is not required to be in the applying office. • Number of professional and technical support personnel must be recorded and updated.
<p><i>Professional Requirements</i></p>	<ul style="list-style-type: none"> • Professional Engineers must be registered in the Province of Manitoba.
<p><i>Qualifying Experience of Staff</i></p>	<ul style="list-style-type: none"> • Professional Engineers at the applying office: <ul style="list-style-type: none"> ○ At least one Engineer with a minimum of 15 years, and one Engineer with a minimum of 7 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas to do the project in accordance with OSIM, OSRM, AASHTO MBE, the Project TOR, MIT requirements and all other applicable codes, policies, procedures, standards and good engineering practices. • Professional Engineer conducting Project Review: <ul style="list-style-type: none"> ○ Minimum of 15 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas to do the project in accordance with OSIM, OSRM, AASHTO MBE, the Project TOR, MIT requirements and all other applicable codes, policies, procedures, standards and good engineering practices. • Professional Engineers conducting Inspections: <ul style="list-style-type: none"> ○ Minimum of 5 years of experience in bridge inspections. ○ Experienced and knowledgeable with the OSIM and OSRM manuals. • Professional Engineers (Strength Evaluations): <ul style="list-style-type: none"> ○ Experienced and knowledgeable with the AASHTO MBE. • Satisfactory experience and successful project execution must be demonstrated on a minimum of two similar projects in the last five years. • All professional staff shall provide a list of relevant project experience.

Requirements of the Applying Office	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • The applying office must be capable of delivering structure plans in Microstation (current MIT version) and reports in Microsoft Word (current MIT version).
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of two similar projects in the last five years. • The applying office must be qualified to inspect the structure in accordance with the OSIM and OSRM manuals (current versions) and conduct strength evaluations in accordance with AASHTO MBE. • If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Contract Administration and Construction Inspection – Minor Structures**

Work Type Name	Contract Administration and Construction Inspection – Minor Structures
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Contract Administration</i> involves the services necessary to ensure that proper management of construction inspection, surveying, materials testing and contract administration activities are completed in accordance with the Project Terms of Reference (TOR), MIT requirements, the Contract, Workplace Safety and Health (WSH) requirements and all other applicable laws and regulations. This may include some or all of the following:</p> <ul style="list-style-type: none"> • Ensure that the Contractor performs all Work in accordance with the Contract; • Maintain complete and accurate records of the activities and events relating to the project including as-constructed records of construction; • Obtain necessary approvals and document significant changes to the project; • Interpret Drawings, Specifications (Construction and material) and Special Provisions for the project; • Review all submittals from the Contractor for conformance to the contract and Workplace Safety and Health requirements. • Make recommendations to MIT to resolve disputes which arise in relation to the Contract; • Resolve field problems as quickly as possible, including situations such as: out-of-place piling, out-of-tolerance Work, out-of-specification materials, structural defects, accidental damage, underground obstructions, etc. These problems may have a significant impact on the execution, progress or overall cost of the project. It is, therefore, extremely important to resolve issues as expeditiously as possible. Generally, field problems require some degree of engineering evaluation and decision. • Assist MIT in preparing for dispute resolution or litigation regarding the project. <p><i>Construction Inspection</i> involves the services necessary to ensure that the structure is constructed in accordance with the Contract, MIT requirements, WSH requirements and all other applicable laws and regulations. On-site construction inspection is provided on a full-time basis.</p> <p><i>Minor Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Culverts – Corrugated Metal Pipe (CMP), Structural Plate Corrugated Steel Pipe (SPCSP) and precast concrete, or ○ Precast prestressed concrete channel (PPCC) bridges.

<i>Deliverables</i>	Weekly Construction Inspection Reports, Monthly Project Expenditure Reports, Final Contract Administration Package (including Project Summary Report) and all other record documents as specified in MIT's "Contract Administration and Construction Inspection Manual".
<i>Quality Attributes of Deliverables</i>	<p>Engineering Service Provider (ESP) to complete all work in compliance with MIT's "Contract Administration and Construction Inspection Manual", the Contract, the Project TOR, the Agreement and the ESP's documented Quality Control / Quality Assurance (QC/QA) Plan. The work shall comply with all project specific requirements and include sufficient level of detail. ESP's QC/QA plan must address their methods of verifying their work, including:</p> <ul style="list-style-type: none"> • Work is properly measured and documented in a timely manner, • materials testing for quality assurance purposes, • survey control, • quality of reports and final deliverables, • timely resolution of issues and communication with MIT's Project Manager, and • meeting the specified schedule and budget.
Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • The applying office must have an office and in-house staff capable of total completion of project that meets MIT's schedules. • At least one Professional Engineer is required at the applying office. • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Contract Administrator: <ul style="list-style-type: none"> ◦ Professional Engineer, registered in the Province of Manitoba.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Contract Administrator: <ul style="list-style-type: none"> ◦ Minimum of 7 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas to do the project in accordance with Project TOR, MIT requirements and all applicable design and construction policies, procedures, standards and good engineering practices. • Construction Inspector: <ul style="list-style-type: none"> ◦ Minimum of 5 years of relevant experience in structure construction inspection. ◦ Familiarity with MIT requirements for construction inspection. • Satisfactory experience and successful project execution must be demonstrated on a minimum of two similar projects in the last five years. • All professional staff shall provide a list of relevant project experience.

Requirements of the Applying Office	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • The applying office must be capable of delivering structure plans in Microstation (current MIT version) and reports in Microsoft Word (current MIT version).
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of two similar projects in the last five years. • If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Dam Safety Review**

Work Type Name	Dam Safety Review
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Dam Safety Review</i> involves the systematic review and evaluation of all aspects of design, construction, operation, maintenance and systems affecting a Dam’s safety based on current knowledge and methodology in accordance with the most current Canadian Dam Association (CDA) guidelines.</p> <p>The review shall include:</p> <ul style="list-style-type: none"> • Detailed condition survey (including underwater components) of the Structure, and all appurtenant infrastructure • Detailed condition survey (including underwater components) of the Structure, and all appurtenant infrastructure • Interview with operation and maintenance staff • Review of all investigation documentation, inflow design flood levels, seismic loads, live and dead loads combinations, and reliability and functionality of discharge facilities • Review of the Operation/Maintenance/Surveillance (OMS) manual, Emergency Preparedness and Response Plans (EPP and ERP), overall effectiveness of the safety management plan, and any previously conducted Dam Safety Reviews or consequence of failure analysis • Review of records of any dam safety incidents, and follow-up actions, since the previous review • Stability analysis based on current industry standards and evaluation of the consequences of failure • Observe operation of the flow control equipment
<i>Deliverables</i>	Dam Safety Report (including summary of inspection observations, materials reviewed, results of stability and consequence of failure analyses, and any operational testing)
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work in conformance with Project TOR, MIT’s “Structures Design Manual”, CDA guidelines, and the ESP’s documented QC/QA Plan. This will require a complete, independent review. ESP’s QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.

Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • At least two Professional Engineers are required <i>for each of the geotechnical, hydraulic and structural disciplines; two of which must be from the applying office.</i> • In addition, one Professional Engineer is required to complete an independent check of the data, calculations, analysis and reports for the assignment. The Engineer conducting the independent review is not required to be in the applying office. • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • Registered in the Province of Manitoba.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • A minimum of 10 years relevant engineering work experience. • The Professional Engineer designated as the Reviewer shall have a minimum of 20 years relevant engineering work experience with the design, construction and operations of water control structures. • Satisfactory experience must be demonstrated in the appropriate areas necessary to do the project in accordance with the Project TOR, MIT requirements and all applicable codes, procedures, standards and good engineering practices. • The Professional Engineers identified in the “Minimum Number of Staff” (above) must demonstrate satisfactory experience on at least two projects of at least the same complexity in the last five years.
Requirements of the Applying Office	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • Out of office personnel may contribute to complete the project; however, staff of the applying office must provide overall project management. • The applying office must be capable of delivering drawings in MicroStation (current MIT version) and reports in Microsoft Word (current MIT version). • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba.
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience on at least two projects of at least the same complexity in the last five years. • If the applying office has completed previous assignments with MIT, the project must have met MIT’s schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Detailed Design – Dams**

Work Type Name	Detailed Design – Dams
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<i>Detailed design</i> involves detailed design and production of professionally engineered drawings and tender package(s) for rehabilitation or new construction projects. The work shall conform to acceptable design standards and meet the specific requirements of MIT, Canadian Dam Association (CDA) guidelines, National Building Code of Canada (NBCC) and Manitoba Workplace health and Safety Act, where applicable as identified in the Project TOR.
<i>Deliverables</i>	Project Design Brief, Detailed Design Package and Tender Package (including drawings)
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work and drawings in conformance with CDA guidelines, NBCC (where applicable), Manitoba Workplace Health and Safety Act, Project TOR, MIT's "Structures Design Manual", and the ESP's documented QC/QA Plan. This will require a complete, independent review. ESP's QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.
<i>Requirements of the Professional Staff</i>	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • At least two Professional Engineers are required <i>at the applying office for each of the geotechnical, hydraulic and structural disciplines.</i> • One Professional Engineer is required to complete an independent check of the data, calculations, analysis and reports for the assignment. The Engineer conducting the independent review is not required to be in the applying office. • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • Registered in the Province of Manitoba.

<p><i>Qualifying Experience of Staff</i></p>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • One of the Professional Engineers in each of the disciplines identified in “Minimum Number of Staff” (above) shall have a minimum of 10 years relevant engineering work experience. The others shall have a minimum of 5 years relevant engineering work experience. • The Professional Engineer designated as Reviewer shall have a minimum of 20 years relevant engineering work experience. • Satisfactory experience must be demonstrated in the appropriate areas necessary to do the project in accordance with the Project TOR, MIT requirements and all applicable codes, procedures, standards and good engineering practices, and • Satisfactory experience with the prevalent soil conditions and construction practices in Manitoba, or accepted equivalent, must be demonstrated. • Satisfactory experience must be demonstrated on at least two projects of at least the same complexity in the last five years.
<p>Requirements of the Applying Office</p>	
<p><i>Applying Office Requirements</i></p>	<ul style="list-style-type: none"> • The applying office must have staff capable of total completion of project that meets MIT’s schedule, budget and required quality for deliverables. • The applying office must be capable of delivering drawings in Microstation (current MIT version) and tender documents and reports in Microsoft Word (current MIT version). • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba.
<p><i>Qualifying Experience of Applying Office</i></p>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience on at least two projects of at least the same complexity in the last five years. • If the applying office has completed previous assignments with MIT, the project must have met MIT’s schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Detailed Design – Major Structures**

Work Type Name	Detailed Design – Major Structures
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Detailed design</i> involves detailed design and production of professionally engineered drawings and tender package(s) for rehabilitation or new construction projects. The work shall conform to acceptable design standards and meet the specific requirements of MIT [as described in MIT’s “Structures Design Manual” and Project Terms of Reference (TOR)], American Association of State Highway and Transportation Officials LRFD Bridge Design Specifications (AASHTO LRFD) and the Canadian Highway Bridge Design Code (CHBDC) where applicable as identified in the Project TOR.</p> <p><i>Major Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Cast-in-place concrete box culverts, or ○ Prestressed concrete box or channel girder bridges with substructure units supported on pile or spread footings, or ○ I-girder or NU girder bridges, or ○ Structural steel girder bridges, or ○ Major river crossings with unique geotechnical conditions, or ○ Post-tensioned concrete box girders supported on falsework during construction, or ○ Truss bridges, concrete or steel arch bridges, or ○ Rigid frames, or ○ Bridges with extensive aesthetic treatments or complex geometry, or ○ Structures with significant staging, or ○ Highway overpasses or underpasses, or ○ Railway overpasses or underpasses.
<i>Deliverables</i>	Project Design Brief, Detailed Design Package and Tender Package (including drawings)

<p><i>Quality Attributes of Deliverables</i></p>	<p>Engineering Service Provider (ESP) to check/verify work and drawings in conformance with ASSHTO LRFD, CHBDC (where applicable), Project TOR, MIT’s “Structures Design Manual” and the ESP’s documented Quality Control / Quality Assurance (QC/QA) Plan. This will require a complete, independent design review. ESP’s QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.</p>
<p>Requirements of the Professional Staff</p>	
<p><i>Minimum Number of Staff</i></p>	<ul style="list-style-type: none"> • Out-of office personnel may contribute to complete the project; however, the applying office must have an office and in-house staff capable of project management and Professional Engineering design or independent design review as a minimum extent of participation. • At least two Professional Engineers are required at the applying office. • In addition, one Professional Engineer is required to complete an independent design review of data, calculations and analysis for the design assignment. The Engineer conducting the independent design review is not required to be in the applying office. • Number of professional and technical support personnel must be recorded and updated.
<p><i>Professional Requirements</i></p>	<ul style="list-style-type: none"> • Professional Engineers at the applying office: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba. • Professional Engineer conducting the Independent Design Review: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba
<p><i>Qualifying Experience of Staff</i></p>	<ul style="list-style-type: none"> • Professional Engineers at the applying office: <ul style="list-style-type: none"> ○ At least one Engineer with a minimum of 15 years, and one Engineer with a minimum of 7 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to complete the project in accordance with AASHTO LRFD, CHBDC (where applicable), Project TOR, MIT requirements and all other applicable design policies, procedures, standards and good engineering practices. • Professional Engineer conducting the Independent Design Review: <ul style="list-style-type: none"> ○ A Minimum of 15 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to complete the project in accordance with AASHTO LRFD, CHBDC (where applicable), Project TOR, MIT requirements and all other applicable design policies, procedures, standards and good engineering practices. • Satisfactory experience and successful project execution must be demonstrated on a minimum of two similar projects in the last five years. • All professional staff shall provide a list of relevant project experience.

Requirements of the Applying Office	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • The applying office must be capable of delivering structure plans in Microstation (current MIT version) and tender documents and reports in Microsoft Word (current MIT version).
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of two similar projects in the last five years. • If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Detailed Design – Minor Structures**

Work Type Name	Detailed Design – Minor Structures
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Detailed design</i> involves detailed design and production of professionally engineered drawings and tender package(s) for rehabilitation or new construction projects. The work shall conform to acceptable design standards and meet the specific requirements of MIT (as described in MIT’s “Structures Design Manual” and Project Terms of Reference (TOR)), American Association of State Highway and Transportation Officials LRFD Bridge Design Specifications (AASHTO LRFD) and the Canadian Highway Bridge Design Code (CHBDC) where applicable as identified in the Project TOR.</p> <p><i>Minor Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Culverts – Structural Plate Corrugated Steel Pipe (SPCSP) and precast concrete, or ○ Precast prestressed concrete channel (PPCC) bridges.
<i>Deliverables</i>	Project Design Brief, Detailed Design Package and Tender Package (including drawings)
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work and drawings in conformance with ASSHTO LRFD, CHBDC (where applicable), Project TOR, MIT’s “Structures Design Manual” and the ESP’s documented Quality Control / Quality Assurance (QC/QA) Plan. This will require a complete, independent design review. ESP’s QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.
Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • The applying office must have an office and in-house staff capable of total completion of project that meets MIT’s schedule, budget and quality requirements for deliverables. • At least two Professional Engineers are required at the applying office. • One of the Professional Engineers, for each of the structural and transportation disciplines, is required to perform an independent design review of data, calculations and analysis of the other. • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	Professional Engineers must be registered in the Province of Manitoba.

<p><i>Qualifying Experience of Staff</i></p>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> ○ At least one Engineer with a minimum of 10 years, and one Engineer with a minimum of 5 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to complete the project in accordance with AASHTO LRFD, CHBDC (where applicable), Project TOR, MIT requirements and all other applicable design policies, procedures, standards and good engineering practices. • Satisfactory experience and successful project execution must be demonstrated on a minimum of two similar projects in the last five years. • All professional staff shall provide a list of relevant project experience.
<p>Requirements of the Applying Office</p>	
<p><i>Applying Office Requirements</i></p>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • The applying office must be capable of delivering structure plans in Microstation (current MIT version) and tender documents and reports in Microsoft Word (current MIT version).
<p><i>Qualifying Experience of Applying Office</i></p>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of two similar projects in the last five years. • If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Detailed Visual Inspections (Level II) - Major and Minor Structures**

Work Type Name	Detailed Visual Inspections (Level II) - Major and Minor Structures
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Detailed Visual Inspections (Level II)</i> involves the planning, management, execution and delivery of a large program of detailed visual inspections (Level II), production of detailed inspection reports with recommendations for future maintenance, rehabilitation or replacement and the production of the annual technical report. Execution of the inspection program will also include developing and implementing a safety program for undertaking field inspections.</p> <p><i>Major Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Cast-in-place concrete box culverts, or ○ Prestressed concrete box or channel girder bridges with substructure units supported on pile or spread footings, or ○ I-girder or NU girder bridges, or ○ Structural steel girder bridges, or ○ Major river crossings with unique geotechnical conditions, or ○ Post-tensioned concrete box girders supported on falsework during construction, or ○ Truss bridges, concrete or steel arch bridges, or ○ Rigid frames, or ○ Bridges with extensive aesthetic treatments or complex geometry, or ○ Structures with significant staging, or ○ Highway overpasses or underpasses, or ○ Railway overpasses or underpasses. <p><i>Minor Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Culverts – SPCSP and precast concrete, or ○ Precast prestressed concrete channel (PPCC) bridges.
<i>Deliverables</i>	<ul style="list-style-type: none"> ● Detailed Visual Inspection (Level II) reports. ● Technical Reports and Executive Summary
<i>Quality Attributes of Deliverables</i>	<ul style="list-style-type: none"> ● Inspection reports in hard copy and digital formats include inventory and historical data, scheduled improvements, field inspection information, additional investigations, element data, component condition, recommended work and associated digital photographs. ● Technical Reports and Executive Summary include inspection information, maintenance recommendations, costs, inventory discrepancies, urgent/emergency sites, a summary of significant findings and all other documentation identified in the Project Terms of Reference

	<p>(TOR).</p> <ul style="list-style-type: none"> • The Engineering Service Provider (ESP) to ensure the inspections and reports conform to the Ontario Structure Inspection Manual (OSIM) as modified by MIT, the Project TOR and the Quality Assurance Plan (QAP) provided by the ESP. • The ESP's QAP must address methods of verifying their work, including review of submissions, incorporation of stakeholder comments and review of final deliverables as well as meeting the specified schedule and budget.
Requirements of the Professional Staff	
<p><i>Minimum Number of Staff</i></p>	<ul style="list-style-type: none"> • Out-of-office personnel may contribute to complete the project; however, the applying office must have an office and in-house staff capable of overall project management and Professional Engineering for the detailed visual inspections as a minimum extent of participation. • As a minimum two Professional Engineers, two Certified Engineering Technicians or Technologists and two assistant inspectors are required at the applying office as specified below. • The Project Manager shall be a Professional Engineer. • Field Inspection (FI) teams shall be provided to carry out the inspections for each inspection program assignment. As a minimum, two FI teams are required at the applying office with the exact number dictated by the individual inspection program requirements defined in the Project TOR. Each FI Team shall be comprised of two inspectors: one senior inspector and one assistant inspector. Each senior Inspector shall be a Certified Engineering Technician or Technologist, as a minimum level of education. • Inspection Engineers (IE) shall be provided as required to manage the FI teams and participate in the inspection of critical structural components. Each IE shall manage no more than three FI teams. As a minimum one IE is required at the applying office with the exact number dictated by the individual inspection program requirements defined in the Project TOR. Each IE shall be a Professional Engineer stationed in the field. • Number of professional and technical support personnel must be recorded and updated.

<p><i>Professional Requirements</i></p>	<ul style="list-style-type: none"> • The Professional Engineer acting as the Project Manager at the applying office shall be: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba • The Professional Engineer(s) acting in the role of an IE at the applying office shall be: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba • The Certified Engineering Technicians or Technologists serving as the Senior Inspectors shall be: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba.
<p><i>Qualifying Experience</i></p>	<ul style="list-style-type: none"> • Professional Engineer acting as the Project Manager at the applying office shall have: <ul style="list-style-type: none"> ○ a minimum of 10 years of relevant experience and engineering training, knowledge, and expertise in Bridge Engineering and other appropriate areas necessary to complete the project in accordance with Ontario Structure Inspection Manual (OSIM), the Project TOR, MIT requirements and all applicable codes, policies, procedures, standards and good engineering practices. • Professional Engineer(s) acting in the role of an IE at the applying office shall have: <ul style="list-style-type: none"> ○ a minimum of 10 years of relevant experience in Bridge Engineering, where a minimum of 5 years of bridge inspection background on large scale projects ○ engineering training, knowledge, and expertise in the appropriate areas necessary to complete the project in accordance with Ontario Structure Inspection Manual (OSIM), the Project TOR, MIT requirements and all applicable codes, policies, procedures, standards and good engineering practices. • The Senior Inspectors shall have: <ul style="list-style-type: none"> ○ attained standing as a Certified Engineering Technician or Technologist as a minimum level of education ○ a minimum of 5 years of bridge inspection experience in accordance with OSIM. • The assistant Inspectors shall have: <ul style="list-style-type: none"> ○ a high school education as a minimum level of education ○ a minimum of 10 years of relevant experience • Satisfactory experience and successful project execution must be demonstrated on a minimum of three similar projects in the last five years. • All professional staff shall provide a list of relevant project experience.

Requirements of the Applying Office	
<i>General</i>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • The applying office must be capable of delivering the detailed visual inspection reports in Microsoft Excel (current MIT version).
<i>Qualifying Experience</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of three similar projects in the last five years. <p>If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.</p>

**Prequalification Requirements
Water Control and Structures
Emergency Response Plan Preparation - Dams**

Work Type Name	Emergency Response Plan Preparation - Dams
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Preparation of Emergency Response Plans (ERP) for Dams</i> involves documentation of the procedures the operations staff should follow in the event of an emergency at the structure, the key emergency response roles and responsibilities, in order of priority; and the necessary notification and contact information to cover the full range of flood management planning; including, but not limited to, the dam breach scenario; all in accordance with the Canadian Dam Association (CDA) guidelines.</p> <p>The ERP shall include:</p> <ul style="list-style-type: none"> • Inundation Maps and Dam Break Analysis • Classification of the Structure • Emergency identification and evaluation • Identification of potential emergency indicators and associated response • Preventative and remedial actions • Notification procedures • Site access • Communication systems, equipment and materials • Warning Systems • Site plans showing site access and egress, potential breach locations, • Tables showing variation in flood stage with time <p>Applying offices to note that the preparation of the Emergency Preparedness Plans (EPP) will be undertaken separately, and are not addressed as part of this prequalification category.</p>
<i>Deliverables</i>	ERP document
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work in conformance with Project TOR, MIT's "Structures Design Manual", CDA guidelines, and the ESP's documented QC/QA Plan. This will require a complete, independent review. ESP's QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.
Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • At least two Professional Engineers are required <i>for each of the geotechnical, hydraulic and structural disciplines; two of which must be from the applying office.</i> • In addition, one Professional Engineer is required to complete an independent check of the data, calculations, analysis and reports for the assignment. The Engineer conducting the independent review

	<p>is not required to be in the applying office.</p> <ul style="list-style-type: none"> • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • Registered in the Province of Manitoba.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • At least one of which, in each of the disciplines identified in the “Minimum Number of Staff” (above), shall have a minimum of 15 years relevant engineering work experience and the others a minimum of 7 years relevant engineering work experience. • The Professional Engineer designated as the Reviewer shall have a minimum of 20 years relevant engineering work experience with the design, construction and operations of water control structures. • Satisfactory experience must be demonstrated in the appropriate areas necessary to do the project in accordance with the Project TOR, MIT requirements and all applicable codes, procedures, standards and good engineering practices. • The Professional Engineers identified in the “Minimum Number of Staff” (above) must demonstrate satisfactory experience on at least two projects of at least the same complexity in the last five years.
<i>Requirements of the Applying Office</i>	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • Out of office personnel may contribute to complete the project; however, staff of the applying office must provide overall project management. • The applying office must be capable of delivering drawings in Microstation (current MIT version) and reports in Microsoft Word (current MIT version). • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba.
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience on at least two projects of at least the same complexity in the last five years. • If the applying office has completed previous assignments with MIT, the project must have met MIT’s schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Engineering Inspection - Dams**

Work Type Name	Engineering Inspection - Dams
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Engineering inspection</i> of dams involves a visual assessment of the structure's condition, including identification of any deficiencies and associated remedial actions related to engineering stability, and worker and public safety, based on the Canadian Dam Association (CDA) guidelines and the Workplace Health and Safety Act, and in accordance with the template provided by MIT (in the project TOR).</p> <p>The Dam components to be inspected include:</p> <ul style="list-style-type: none"> • Earthfill embankments • Concrete, wood and/or steel components • All Worker and Public Safety infrastructure at and adjacent to the site <p>All field work shall be carried out in accordance with MIT's Workplace Health and Safety (WSH) guidelines, Department of Fisheries and Oceans (DFO) requirements for fish habitat protection, Navigable Waters and any other environmental considerations, as per MIT's direction. Coordination with DFO and other regulatory agencies will be the responsibility of the Engineering Service Provider (ESP).</p> <p>The data collected may be used in the preliminary and detailed design phases and assist in tender quantity determination.</p>
<i>Deliverables</i>	Engineering Inspection Checklist and cover report, including photographs.
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work in conformance with the Project TOR, CDA guidelines, Workplace Health and Safety Act, and the ESP's documented QC/QA Plan. This will require a complete, independent review. ESP's QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.
Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • At least one Professional Engineer is required <i>at the applying office for each of the geotechnical and structural disciplines.</i> • In addition, one Professional Engineer is required to complete an independent review of the data and reports for the assignment. • Number of professional and technical support personnel must be recorded and updated.

<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • Registered in the Province of Manitoba.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • A minimum of 10 years relevant engineering work experience. • The Professional Engineer designated as the Reviewer shall have a minimum of 20 years relevant engineering work experience. • Satisfactory experience must be demonstrated in the appropriate areas necessary to do the project in accordance with the Project TOR, MIT requirements and all applicable codes, procedures, standards and good engineering practices, and • Satisfactory experience with the prevalent soil conditions and construction practices in Manitoba, or accepted equivalent, must be demonstrated.
<i>Requirements of the Applying Office</i>	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • The applying office must have staff capable of total completion of project that meets MIT's schedule, budget and required quality for deliverables. • The applying office must be capable of delivering reports in Microsoft Word (current MIT version). • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba.
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience on at least two projects of at least the same complexity in the last five years. • If the applying office has completed previous assignments with MIT, the project must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Geotechnical Investigation and Design – Structure Foundations**

Work Type Name	Geotechnical Investigation and Design – Structure Foundations
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Geotechnical Investigation and Design</i> involves the planning, management, execution and delivery of field and laboratory programs, site reconnaissance, stakeholder consultation, geotechnical analysis and design of structure foundations, design alternatives assessment, risk assessment and production of a geotechnical report with recommendations, and/or a tender package.</p> <p>The work may include:</p> <ul style="list-style-type: none"> • Establishing/conducting a site investigation program • Performing preliminary and detailed designs of shallow and deep foundations. • Evaluating site conditions and providing recommendations for mitigating adverse conditions. • Evaluating contractor proposals for the construction of foundations and providing recommendations. • Developing acceptance criteria for driven piles. • Evaluating the need for field testing of driven piles, developing the scope of work required and arranging for the testing, interpretation of results and providing recommendations. • Estimating settlement for structure foundations and embankments. • Designing stabilization measures for new or failed slopes (including rock caissons) and vertical drains for accelerated embankment settlement. • Designing and supervising the installation of geotechnical instrumentation to measure lateral movement, settlement and pore water pressure. • Assessing the hydrogeology of a site. • Designing dewatering systems for the control of groundwater.

<p><i>Deliverables</i></p>	<ul style="list-style-type: none"> • In the case of <i>Functional Design</i>, a Geotechnical Report which includes an executive summary, field and laboratory testing results, assessments, foundation or stabilization recommendations, stakeholder commentary, drawings, estimates and if applicable, approvals and licenses and all other documentation identified in the terms of reference. • In the case of <i>Detailed Design</i>, a Tender Package and a geotechnical Report are required. The Tender Package must include the special provisions, material specifications if applicable, detailed design drawings, erosion and sedimentation control plans and cost estimates. The Geotechnical Report must include an executive summary, construction procedure, risk assessment, monitoring schedule, field and laboratory testing results and all other documentation identified in the terms of reference. • In the case of a third party pursuing <i>Detailed Design</i> based on a the Engineering Service Provider's (ESP) <i>Functional Design</i>, a Certification Letter from the ESP, confirming that the <i>Detailed Design</i> is in accordance with the intent of the <i>Functional Design</i>.
<p><i>Quality Attributes of Deliverables</i></p>	<ul style="list-style-type: none"> • ESP to provide a documented Quality Assurance Plan (QAP). • ESP's QAP must address methods of verifying their work, including review of submissions, incorporation of stakeholder comments and review of final deliverables as well as meeting the specified schedule and budget.. • ESP to check/verify drawings in conformance with the American Association of State Highway and Transportation Officials LRFD Bridge Design Specifications (AASHTO LRFD), Canadian Highway Bridge Design Code (CHBDC - where applicable) the Canadian Foundation Engineering Manual (CFEM), Project TOR, MIT's Structures Design Manual and the ESP's QAP. This will require a complete, independent design review.
<p>Requirements of the Professional Staff</p>	
<p><i>Minimum Number of Staff</i></p>	<ul style="list-style-type: none"> • At least one Professional Engineer is required at the applying office • In addition, one Professional Engineer is required to complete an independent design review of data, calculations, analysis and report for the design assignment. The Engineer conducting the independent design review is not required to be in the applying office. • The services of at least one Certified Engineering Technician or Technologist or Engineer-In-Training must be available to the applying office. • Number of professional and technical support personnel must be recorded and updated.

<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers at the applying office: <ul style="list-style-type: none"> ○ At least one Professional Engineers registered in the Province of Manitoba. ○ Either the Engineer undertaking the work or the Engineer conducting the independent design review must have a specialized post graduate training in geotechnical engineering (M. Eng., M. Sc. or Ph.D.). Fifteen years relevant experience will be considered equivalent to post graduate training. • Certified Engineering Technician, Technologist or Engineer-In-Training <ul style="list-style-type: none"> ○ Registered in Canada.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Professional Engineers at the applying office: <ul style="list-style-type: none"> ○ At least one with a minimum of 10 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to complete the project in accordance with AASHTO LRFD, CHBDC, CFEM, the Project TOR, MIT requirements and all applicable codes, policies, procedures, standards and good engineering practices. • Professional Engineer conducting the Independent Design Review: <ul style="list-style-type: none"> ○ A Minimum of 10 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to complete the project in accordance with AASHTO LRFD, CHBDC, CFEM, the Project TOR, MIT requirements and all applicable codes, policies, procedures, standards and good engineering practices. • Certified Engineering Technician, Technologist or Engineer-In-Training: <ul style="list-style-type: none"> ○ Minimum of 5 years of relevant experience. • Satisfactory experience and successful project execution must be demonstrated on a minimum of three similar projects in the last five years. • All professional staff shall provide a list of relevant project experience.
<i>Requirements of the Applying Office</i>	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • The applying office must be capable of delivering structure plans in Microstation (current MIT version) and tender documents and reports in Microsoft Word (current MIT version).
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of two similar projects in the last five years. • If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Hydrologic and Hydraulic Assignments**

Work Type Name	Hydrologic and Hydraulic Assignments
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Hydrologic and Hydraulic Assignments</i> involve undertaking hydrologic and hydraulic assessments / designs for rehabilitation and/or new construction of proposed water control works or highway related drainage works.</p> <p>Proposed Water Control works involve rehabilitation or replacement of road crossings (culvert/bridge structures), channel construction (or reconstruction), rehabilitation or replacement of dam structures and slope stabilization works.</p> <p>The work may include:</p> <ul style="list-style-type: none"> • Clear identification of contributing drainage area. • Site visit(s) to investigate/confirm drainage area, topographic information, drainage issues, affected areas, etc. • Development of a hydrologic model. • Determination of design flows for a range of frequencies. • Review of existing and relevant records/documentation related to the existing structure to be rehabilitated or replaced. • In consultation with MIT staff, review and/or determination of appropriate hydrologic and hydraulic design criteria. • Development of a hydraulic model. • Determination of required hydraulic opening, hydraulic assessment of existing conditions, hydraulic assessment of proposed conditions (for various structure alternatives).
<i>Deliverables</i>	Preliminary Hydraulic Design Report (including summary of site investigations, reference to existing and relevant documentation reviewed, selected design criteria, environmental considerations, engineering analysis and design – existing and proposed conditions, preliminary design drawings).
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work and drawings in conformance with Project Terms of Reference (TOR), MIT’s “Structure Design Manual”, requirements of all regulatory and environmental approval authorities, and the ESP’s documented Quality Control / Quality Assurance (QC/QA) Plan. This will require a complete, independent design check. ESP’s QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.

Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • At least one Professional (Water Resources) Engineer is required at the applying office. • In addition, one Professional (Water Resources) Engineer is required to complete an independent design check of data, calculations, analysis and report for the design assignment. The Engineer conducting the independent design check is not required to be in the applying office. • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers (at applying office): <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba. • Professional Engineer (Design Check): <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba. ○ Required to complete an independent design check of data, calculations, report, etc. for the design assignment.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Professional Engineers (applying office and design check): <ul style="list-style-type: none"> ○ A minimum of 10 years of engineering experience and training where a minimum of 5 of these 10 years was spent gaining knowledge and expertise in the appropriate areas necessary to do the project in accordance with the Project TOR, MIT requirements and all applicable design codes, procedures, standards and good engineering practices. ○ Provide list of relevant project experience. • Satisfactory experience must be demonstrated on at least two projects of at least the same complexity in the last five years.
Requirements of the Applying Office	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • Out-of-office personnel may contribute to complete the project; however, the applying office must have staff capable of project management and Professional Engineering design or design check as a minimum extent of participation. • The applying office must have local personnel capable of total completion of specialized work for the project. • The applying office must be capable of delivering drawings in Microstation (current MIT version) and reports in Microsoft Word (current MIT version). • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba.
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of two projects of at least the same complexity in the last five years.

**Prequalification Requirements
Water Control and Structures
Preliminary Design – Dams**

Work Type Name	Preliminary Design – Dams
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Preliminary design</i> involves preparing a preliminary design for either rehabilitation projects or new construction that conform to the specific design requirements of MIT, Canadian Dam Association (CDA) guidelines, National Building Code of Canada (NBCC), and the Manitoba Workplace Health and Safety Act, upon which detailed design can be based and may include: site surveys; hydrologic analysis; hydraulic analysis and design; historical high water level, normal summer water level, ice thickness and ice levels; preliminary geotechnical analysis and design (including conducting and coordinating subsurface investigation programs); evaluation and determination of worker and public safety infrastructure; evaluation of environmental and/or regulatory requirements; stakeholder and public consultation process (if required); traffic accommodation (if required); consideration of constructability issues and construction scheduling; consideration of site specific maintenance issues; development and evaluation of functional alternatives.</p> <p>Preliminary design involves a number of inter-disciplinary areas of expertise (i.e. hydraulics, geotechnical, and structural) the ESP is expected to be pre-qualified in all disciplines.</p> <p>The Dam Structures may include:</p> <ul style="list-style-type: none"> • Earthfill embankments • Concrete, wood or steel components • All Worker and Public Safety infrastructure at and adjacent to the site
<i>Deliverables</i>	Preliminary Design Report (including summary of subsurface conditions, design criteria applied, engineering analysis, environmental considerations, stakeholder commentary, preliminary construction scheduling and cost estimate, Preliminary Drawings, Final Environmental Submission Package that will receive approvals.
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work and drawings in conformance with Project TOR, MIT’s “Structures Design Manual”, CDA guidelines, NBCC, the Manitoba Workplace Health and Safety Act, requirements of all regulatory and environmental approval authorities, and the ESP’s documented QC/QA Plan. This will require a complete, independent design check. ESP’s QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.
Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • At least two Professional Engineers are required <i>at the applying office for each of the geotechnical, hydraulic and structural disciplines.</i> • In addition, one Professional Engineer is required to complete an independent check of the data, calculations, analysis and reports for the assignment. The Engineer conducting the independent review is not required to be in the applying office.

	<ul style="list-style-type: none"> • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • Registered in the Province of Manitoba.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • At least one of which, in each of the disciplines identified in the “Minimum Number of Staff” (above), shall have a minimum of 10 years relevant engineering work experience and the others a minimum of 5 years relevant engineering work experience. • The Professional Engineer designated as the Reviewer shall have a minimum of 20 years relevant engineering work experience. • Satisfactory experience must be demonstrated in the appropriate areas necessary to do the project in accordance with the Project TOR, MIT requirements and all applicable codes, procedures, standards and good engineering practices, and • Satisfactory experience with the prevalent soil conditions and construction practices in Manitoba, or accepted equivalent, must be demonstrated. • Satisfactory experience must be demonstrated on at least two projects of at least the same complexity in the last five years.
<i>Requirements of the Applying Office</i>	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • The applying office must have staff capable of total completion of project that meets MIT’s schedule, budget and required quality for deliverables. • The applying office must be capable of delivering drawings in Microstation (current MIT version) and reports in Microsoft Word (current MIT version). • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba.
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience on at least two projects of at least the same complexity in the last five years. • If the applying office has completed previous assignments with MIT, the project must have met MIT’s schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Preliminary Design – Major Structures**

Work Type Name	Preliminary Design – Major Structures
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Preliminary design</i> involves preparing a preliminary design for either rehabilitation or new construction projects upon which detailed design can be based and may include: bridge site surveys; detailed condition surveys; hydrologic analysis; hydraulic analysis and design; historical high water level, normal summer water level, ice thickness and ice levels; preliminary foundation report (including soils investigation); satisfaction of environmental and/or regulatory requirements; stakeholder and public consultation process (if required); traffic accommodation; consideration of constructability issues; consideration of site specific maintenance issues; development and evaluation of functional alternatives; horizontal and vertical controls; and identification of structure type or structure modifications (including span lengths).</p> <p>Preliminary design typically includes the following inter-disciplinary areas of expertise; hydraulics, geotechnical, structural and transportation. Prequalification for Preliminary Design requires prequalification in all of these areas. The Engineering Service Provider (ESP) is expected to have in-office capability in the structural and transportation disciplines as a minimum, and will be prequalified in these areas under this Prequalification Category Definition. Any internal resources or external sub-ESP(s) for the detailed condition surveys on the hydraulics and geotechnical disciplines will have to be prequalified as an applying office under the following Prequalification Category Definitions through this prequalification process:</p> <ul style="list-style-type: none"> ○ Detailed Condition Surveys (Level III Inspections) ○ Hydraulics: Hydrologic and Hydraulic Assignments ○ Geotechnical: Geotechnical Investigation and Design – Structure Foundations <p><i>Major Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Cast-in-place concrete box culverts, or ○ Prestressed concrete box or channel girder bridges with substructure units supported on pile or spread footings, or ○ I-girder or NU girder bridges, or ○ Structural steel girder bridges, or ○ Major river crossings with unique geotechnical conditions, or ○ Post-tensioned concrete box girders supported on falsework during construction, or ○ Truss bridges, concrete or steel arch bridges, or ○ Rigid frames, or ○ Bridges with extensive aesthetic treatments or complex geometry, or ○ Structures with significant staging, or ○ Highway overpasses or underpasses, or

	<ul style="list-style-type: none"> ○ Railway overpasses or underpasses.
<i>Deliverables</i>	Preliminary Design Report, Final Environmental Submission Package that will receive approvals
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work and drawings in conformance with American Association of State Highway and Transportation Officials LRFD Bridge Design Specifications (AASHTO LRFD), Canadian Highway Bridge Design Code (CHBDC – where applicable as identified in the Project TOR), Project Terms of Reference (TOR), MIT’s “Structures Design Manual”, requirements of all regulatory and environmental approval authorities, and the ESP’s documented Quality Control / Quality Assurance (QC/QA) Plan. This will require a complete, independent design review. ESP’s QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.
Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • Out-of-office personnel may contribute to complete the project; however, the applying office must have an office and in-house staff capable of overall project management and Professional Engineering for the preliminary design or independent design review as a minimum extent of participation. • At least two Professional Engineers are required at the applying office for each of the structural and transportation disciplines. • In addition, one Professional Engineer is required to complete an independent design review of data, calculations, analysis and report for the design assignment. The Engineer conducting the independent design review is not required to be in the applying office. • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers at the applying office: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba. • Professional Engineer conducting the Independent Design Review licensed to practice: <ul style="list-style-type: none"> ○ Registered in the Province of Manitoba.

<p><i>Qualifying Experience of Staff</i></p>	<ul style="list-style-type: none"> • Professional Engineers at the applying office: <ul style="list-style-type: none"> ○ At least one Engineer with a minimum of 15 years, and one Engineer with a minimum of 7 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to do the project in accordance with AASHTO LRFD, CHBDC (where applicable), Project TOR, MIT requirements and all other applicable codes, policies, procedures, standards and good engineering practices. • Professional Engineer conducting the Independent Design Check: <ul style="list-style-type: none"> ○ A Minimum of 15 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to do the project in accordance with the AASHTO LRFD, CHBDC (where applicable), Project TOR, MIT requirements and all other applicable codes, policies, procedures, standards and good engineering practices. • Satisfactory experience and successful project execution must be demonstrated on a minimum of two similar projects in the last five years. • All professional staff shall provide a list of relevant project experience.
<p>Requirements of the Applying Office</p>	
<p><i>Applying Office Requirements</i></p>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • The applying office must be capable of delivering drawings for Environmental Submission Package in Microstation (current MIT version) and reports in Microsoft Word (current MIT version).
<p><i>Qualifying Experience of Applying Office</i></p>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of two similar projects in the last five years. • If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Preliminary Design – Minor Structures**

Work Type Name	Preliminary Design – Minor Structures
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Preliminary design</i> involves preparing a preliminary design for either rehabilitation or new construction projects upon which detailed design can be based and may include: bridge site surveys; detailed condition surveys; hydrologic analysis; hydraulic analysis and design; historical high water level, normal summer water level, ice thickness and ice levels; preliminary foundation report (including soils investigation); satisfaction of environmental and/or regulatory requirements; stakeholder and public consultation process (if required); traffic accommodation; consideration of constructability issues; consideration of site specific maintenance issues; development and evaluation of functional alternatives; horizontal and vertical controls; and identification of structure type or structure modifications (including span lengths).</p> <p>Preliminary design typically includes the following inter-disciplinary areas of expertise; hydraulics, geotechnical, structural and transportation. Prequalification for Preliminary Design requires prequalification in all of these areas. The Engineering Service Provider (ESP) is expected to have in-office capability in the structural and transportation disciplines as a minimum, and will be prequalified in these areas under this Prequalification Category Definition. Any internal resources or external sub-ESP(s) for the detailed condition surveys or the hydraulics and geotechnical disciplines will have to be prequalified as an applying office under the following Prequalification Category Definitions through this prequalification process:</p> <ul style="list-style-type: none"> ○ Detailed Condition Surveys (Level III Inspections) ○ Hydraulics: Hydrologic and Hydraulic Assignments ○ Geotechnical: Geotechnical Investigation and Design – Structure Foundations <p><i>Minor Structures</i> is defined as:</p> <ul style="list-style-type: none"> ○ Culverts – Structural Plate Corrugated Steel Pipe SPCSP and precast concrete, or ○ Precast prestressed concrete channel (PPCC) bridges.
<i>Deliverables</i>	Preliminary Design Report, Final Environmental Submission Package that will receive approvals
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work and drawings in conformance with American Association of State Highway and Transportation Officials LRFD Bridge Design Specifications (AASHTO LRFD), Canadian Highway Bridge Design Code (CHBDC – where applicable as identified in the Project TOR), Project Terms of Reference (TOR), MIT’s “Structures Design Manual”, requirements of all regulatory and environmental approval authorities, and the ESP’s documented Quality Control / Quality Assurance (QC/QA) Plan. This will require a complete, independent design review. ESP’s QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.

Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • The applying office must have an office and in-house staff capable of total completion of project that meets MIT's schedule, budget and the quality requirements for deliverables. • At least two Professional Engineers are required at the applying office for each of the structural and transportation disciplines. • One of the Professional Engineers is required to perform an independent design review of data, calculations, analysis and reports of the other. • Number of professional and technical support personnel must be recorded and updated.
<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Engineers must be registered in the Province of Manitoba.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> ○ At least one of which has a minimum of 10 years of relevant experience and engineering training, knowledge, and expertise in the appropriate areas necessary to complete the project in accordance with AASHTO LRFD, CHBDC (where applicable), Project TOR, MIT requirements and all applicable codes, policies, procedures, standards and good engineering practices. • Satisfactory experience and successful project execution must be demonstrated on a minimum of two similar projects in the last five years. • All professional staff shall provide a list of relevant qualifying experience.
Requirements of the Applying Office	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba. • The applying office must be capable of delivering drawings for Environmental Submission Package in Microstation (current MIT version) and reports in Microsoft Word (current MIT version).
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience and successful project execution on a minimum of two similar projects in the last five years. • If the applying office has completed previous assignments with MIT, the projects must have met MIT's schedule, budget and quality requirements for deliverables.

**Prequalification Requirements
Water Control and Structures
Structural Assessment – Dams**

Work Type Name	Structural Assessment – Dams
<i>Work Type Owner</i>	Water Control and Structures
<i>Work Type Definition</i>	<p><i>Structural Assessment of the Dams</i> involves the formal assessment of all structural components of the dam by completing some or all of the following:</p> <ul style="list-style-type: none"> ○ Detailed visual inspection and assessment (including underwater survey, where applicable), ○ Structural stability analysis based on current design standards, ○ Strength Evaluation, and ○ Recommendations for remedial repair. <p>The design work shall conform to acceptable design standards and meet the specific requirements of MIT, Canadian Dam Association (CDA) guidelines, National Building Code of Canada (NBCC) and Manitoba Workplace Health and Safety Act, where applicable as identified in the Project TOR.</p> <p>All field work shall be carried out in accordance with MIT's Workplace Health and Safety guidelines, Department of Fisheries and Oceans (DFO) requirements for fish habitat protection, Navigable Waters and any other environmental considerations, as per MIT's direction. Coordination with DFO and other regulatory agencies will be the responsibility of the Engineering Service Provider (ESP).</p>
<i>Deliverables</i>	Summary Report, including photographs, field observations, recommendation for remedial repair, and results of the stability analysis and strength evaluation.
<i>Quality Attributes of Deliverables</i>	Engineering Service Provider (ESP) to check/verify work in conformance with CDA guidelines, NBCC (where applicable), Manitoba Workplace Health and Safety Act, Project TOR, MIT's "Structures Design Manual", and the ESP's documented QC/QA Plan. This will require a complete, independent design review. ESP's QC/QA plan must address their methods of verifying their work, including review submittals, comments from previous submittals, and quality of final deliverables, as well as meeting the specified schedule and budget.
Requirements of the Professional Staff	
<i>Minimum Number of Staff</i>	<ul style="list-style-type: none"> • At least two Professional Structural Engineers are required <i>at the applying office</i>. • In addition, one Professional Engineer is required to complete an independent design review of the data, calculations, analysis and reports for the assignment. • Number of professional and technical support personnel must be recorded and updated.

<i>Professional Requirements</i>	<ul style="list-style-type: none"> • Professional Structural Engineers: <ul style="list-style-type: none"> • Registered in the Province of Manitoba.
<i>Qualifying Experience of Staff</i>	<ul style="list-style-type: none"> • Professional Engineers: <ul style="list-style-type: none"> • At least one of which shall have a minimum of 15 years relevant engineering work experience and the other a minimum of 7 years relevant engineering work experience. • The Professional Engineer undertaking the independent design review shall have a minimum of 20 years relevant engineering work experience. • Satisfactory experience must be demonstrated in the appropriate areas necessary to complete the project in accordance with the Project TOR, MIT requirements and all applicable codes, procedures, standards and good engineering practices. • Satisfactory experience with the prevalent soil conditions and construction practices in Manitoba, or accepted equivalent, must be demonstrated. • Satisfactory experience must be demonstrated on at least two projects of at least the same complexity in the last five years.
Requirements of the Applying Office	
<i>Applying Office Requirements</i>	<ul style="list-style-type: none"> • The applying office must have staff capable of total completion of project that meets MIT's schedule, budget and required quality for deliverables. • The applying office must be capable of delivering drawings in Microstation (current MIT version) and tender documents and reports in Microsoft Word (current MIT version). • The applying office must hold a valid Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba.
<i>Qualifying Experience of Applying Office</i>	<ul style="list-style-type: none"> • The applying office must demonstrate satisfactory experience on at least two projects of at least the same complexity in the last five years. • If the applying office has completed previous assignments with MIT, the project must have met MIT's schedule, budget and quality requirements for deliverables.

APPENDIX B

TEMPLATES

INITIATION MEETING AGENDA

EARNED VALUE REPORT FORM

EVALUATION SUMMARY

[ESP ASSIGNMENT]

PROJECT INITIATION MEETING

[DATE]

[LOCATION]

AGENDA

1. Review Background and Scope of Assignment
 - a. History of Site and Special Considerations
 - b. Review Terms of Reference

2. Roles and Responsibilities
 - a. MIT's Project Manager
 - b. MIT's Technical Team
 - c. ESP's Project Manager
 - d. ESP's Technical Team
 - e. Lines of Communication

3. Information/Documents
 - a. MIT Information/Documents Required by ESP
 - b. ESP Submissions (ex. Safety Plan for site visits and investigations)

4. Schedule
 - a. Meetings
 - b. Deliverables
 - c. MIT Review Timelines

5. Administrative
 - a. Project Numbers
 - b. Earned Value Reports
 - c. Invoices and Project Summaries
 - d. "Change in Scope of Work" form

6. ESP Performance Evaluation Criteria

7. Other

EVALUATION SUMMARY

Criteria	Weight	ESP:			ESP:			ESP:		
		Comments	Rating	Score	Comments	Rating	Score	Comments	Rating	Score
Methodology Understanding of Problem <i>(consider tasks separately)</i> Suitability of Methodology <i>(consider tasks separately)</i> Level of Innovation <i>(consider tasks separately)</i> Coverage of All Tasks										
Technical Skills <i>(consider individuals separately)</i>										
Management/Organization Organizational Chart Quality Management System Project Schedule <i>(consider tasks separately)</i> Project Manager Team Leaders <i>(consider individuals separately)</i>										
Relevant Experience										
Location										
Total Score										
Price										
Price per Point										
Ranking										

Rating Key: 1 = Does Not Meet Basic Criteria, 2 = Partially Meets Basic Criteria, 3 = Meets Basic Criteria, 4 = Exceeds Basic Criteria, 5 = Significantly Exceeds Basic Criteria