Ontario

Ministry of Transportation

PROGRESSIVE DESIGN-BUILD FOR HIGHWAYS

REQUEST FOR PROPOSALS

<Project Title>

<Region & Location>

NECESSARY AVAILABLE FINANCIAL RATING IS:
$ <Value> in <Category>

NECESSARY AVAILABLE MAXIMUM WORKLOAD RATING IS:
$ <Value>

Group Work Project Number: <####-##-##>

Design Phase Agreement Number: <####-E-####>

Date Issued: <Month Day, Year>

Version 1.0 – October 2026

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OVERVIEW

INTENT OF THE RFP

The Ontario Ministry of Transportation (the "Ministry") intends to enter into an agreement with a Service Provider to deliver the assignment described in this Request for Proposal (RFP) using a Progressive Design-Build for Highways (PDBH) delivery model. Under this model, the Service Provider will retain a qualified Lead Design Firm and work collaboratively with the Ministry throughout the Design Phase to develop the project design in a manner that delivers value and meets the Ministry's Project Goals.

As part of the PDBH process, and at the Ministry's discretion, the Service Provider may also be provided the opportunity to perform Advance Contracts and/or Early Procurement (if applicable) prior to completion of the Design Phase, where such work is beneficial to schedule, site conditions, critical path activities, or reducing overall project risk. Any Advanced Contracts and/or Early Procurement (if applicable) will be undertaken in accordance with the requirements of this RFP.

Following completion of the Design Phase, or earlier, should the Ministry elect to proceed based on an interim Design Phase Stage, the Service Provider will prepare and submit a Construction Phase Tender Item Bid in accordance with the plans, specifications, and requirements developed during the Design Phase. Proponents may submit an optional Construction Phase Lump Sum Bid following Stage 2 or Stage 3 of the Design Phase when design maturity and risk clarity support an earlier transition into the Construction Phase.

If the Ministry, in its sole discretion, accepts the Service Provider's Construction Phase bid, the Parties will enter into a Construction Phase Agreement for execution of the Work. If the Ministry, in its sole discretion, determines that the Construction Phase bid is unacceptable, the Ministry reserves the right, at its sole discretion, to either (a) continue with the Design Phase; or (b) terminate the Agreement and procure the construction of the Project through another method, using all or part of the developed design. In the event the Ministry elects to procure the construction of the Project through another method, the Service Provider shall be eligible to participate and submit a bid in any subsequent procurement process.

If the Service Provider is awarded the construction Contract(s) regardless of the procurement method, the Service Provider shall remain responsible for the design developed, risk management, constructability review, and the identification of information gaps and errors during the Design Phase. Additional payments during construction will not be made to resolve design issues unless they are identified and agreed upon by the Ministry and deemed not part of the original scope, or as a result of a change in conditions that could not have been reasonably anticipated through the Design Phase and at the time of the Construction Phase Bid development.

This Assignment includes the Detail Design, Cost Estimation, Construction Scheduling, Risk Management, Constructability Review, Innovation and Contract Preparation (**Progressive Design-Build for Highways Services** or **PDBH Services**) to deliver **[Note to Draft**: Insert a general description of the project.

- For bidding purposes, the Proponent shall assume that XXXX (#) separate contract packages are required for the Project: XXXX (#) Advance Contracts and XXXX (#) Main Contracts in the Lump Sum price for the Design Phase. The following is an overview of the required contract packaged
    - Advance Contract #1 includes, but not limited to, …
    - Main Contract #1 includes, but not limited to, …]

A detailed description of the project scope and related project-specific requirements are set out in Part B of this RFP.

PROJECT GOALS

[Note to Draft: Use this section to define MTO's high-level goals for the Project. These goals should communicate the desired outcomes the MTO expects the Project to achieve and establish a clear direction for proponents as they develop their strategies.

When drafting this section:

- State the Ministry's intended outcomes clearly and concisely. Goals should define what successful delivery looks like in terms of safety, mobility, corridor function, durability, user experience, and overall public value.
- Identify priorities that are critical to successful project outcomes, such as minimizing traffic disruptions, improving long-term asset performance, enhancing safety for all road users, addressing specific bottlenecks, or enabling future network capacity.
- Include goals that reflect the project's unique context, such as environmental constraints, municipal interfaces, property limitations, stakeholders, or requirements related to staging, schedule, or operational continuity.
- Ensure goals are directional, meaningful, and informative, giving proponents enough clarity to shape their technical approach, risk management strategies, innovation opportunities, and construction planning.
- Avoid prescriptive language. Goals should guide proponents toward targeted outcomes without dictating specific design or construction methods.

The Project Goals should give proponents a comprehensive understanding of what the MTO values most, enabling them to deliver solutions that best achieve these outcomes while maximizing benefits to road users and the public.

Example:

The Project is intended to deliver a new safe, reliable and durable highway with associated facilities that supports the Ministry's broader objectives for mobility, network performance, asset stewardship, and public value.

The Progressive Design-Build for Highways model supports a different approach to delivery. It brings the Ministry, Service Provider, designers, constructors, subcontractors, suppliers and other delivery partners together earlier to develop the design, construction plan, schedule, cost, risk management approach and project solutions collaboratively.

The Ministry expects the Service Provider to bring the leadership, experience, capacity and innovation required to achieve the following Project Goals:

Integrated and Accelerated Delivery:

Innovations and Optimization:

Quality and Long-Term Performance:

Collaborative Management of Risk, Schedule and Cost:

Congestion Relief, Connectivity and Network Performance:

Overall Expectation:]

AN ACTIVE AND INTEGRATED OWNER

The Ministry recognizes that successful implementation of the Progressive Design-Build for Highways model requires active participation and collaboration from both Parties. While responsibility for the performance of the Services remains with the Service Provider, the Ministry is committed to actively supporting achievement of the Project Goals and accelerating Project delivery through timely decision-making, proactive coordination, issue escalation and the effective use of Ministry authorities, relationships and governance structures.

Consistent with its responsibilities and authorities, the Ministry will support Project delivery through activities including:

- Providing timely review, feedback and decisions on Project matters requiring Ministry direction.
- Convening and participating in inter-agency, provincial and federal coordination forums where Ministry leadership or government-to-government engagement is required.
- Supporting coordination and escalation of issues involving utility companies such as [**NTD**: List Utility Companies within the project limits]
- Supporting the advancement of archaeological, environmental, permitting and property-related activities by coordinating Ministry-led processes, facilitating inter-agency discussions and addressing issues requiring Ministry involvement.
- Providing strategic guidance and support related to Indigenous consultation activities, including coordination of Ministry responsibilities and escalation of significant issues where appropriate.
- Facilitating coordination across Ministry programs, initiatives and parallel undertakings that may affect Project delivery.

- Working collaboratively with the Service Provider to identify emerging risks, critical path dependencies and opportunities to accelerate design, procurement and construction activities.
- Supporting resolution of Project issues requiring executive-level engagement or intervention that cannot reasonably be resolved through routine project coordination processes.
- [**Note to Draft**: Revise list according to Project needs and the Ministry team]

Nothing in the foregoing relieves the Service Provider of its responsibilities to perform the PDBH Services, obtain required information, prepare complete and quality submissions, coordinate its activities, manage Project risks or satisfy the requirements of the Contract.

SERVICE PROVIDER CAPACITY AND DELIVERY APPROACH

The Project will require the concurrent advancement of design, procurement, field investigations, regulatory approvals, consultation activities and construction planning across multiple Contract packages. Achieving the Project's accelerated delivery objectives will require a Service Provider with the leadership, organizational depth and specialist expertise necessary to manage a complex and evolving delivery environment.

The Ministry expects proponents to bring sufficient capacity, resource flexibility and specialist support to maintain momentum as Project priorities, risks and work fronts evolve. This includes demonstrating access to qualified personnel, specialist expertise, backup resources and surge capacity in schedule-critical areas such as environmental services, archaeology, Indigenous consultation support, property acquisition, utility coordination, regulatory approvals, geotechnical investigations and major structures.

Proponents must demonstrate how their delivery organization, subconsultant network and resource strategy will support the concurrent progression of multiple work packages and respond effectively to changing Project demands. The Ministry is seeking a team that can scale appropriately, maintain continuity of key personnel, and sustain progress without resource limitations becoming a constraint to Project delivery.

KEY PROJECT COMPONENTS INCLUDE:

- **[Note to Draft**: Insert key project components.**]**

More detailed description of the project scope and related project-specific requirements are set out in Part B of this RFP Qualification Requirements

PROCUREMENT RESTRICTION POLICY

For the purpose of this Assignment, the following definition applies:

U.S. Business means a supplier, manufacturer, or distributor of any business structure (includes a sole proprietorship, partnership, corporation, or other business structure) that:

1. has its headquarters or main office located in the U.S., and
2. has fewer than 250 full-time employees in Canada at the time of tendering the applicable procurement process.

If a Proponent is a subsidiary of another corporation, part 1 of the definition above is met if that Proponent is controlled by a corporation that has its headquarters or main office located in the U.S.

A Proponent's eligibility must be demonstrated before a Proposal may be accepted. The Proponent must not be a U.S. Business, as defined in this Assignment. The Proponent shall submit a Declaration for Bidders Interested in Doing Business with the Government of Ontario (included with the procurement package).

The declaration shall be submitted, in PDF format, to the Qualification Control Unit (QualificationControl@ontario.ca) at the time of Bid Intent.

The Ministry, in its sole discretion, shall have the right to reject any Bid in the event that it determines: (a) a Proponent has made a misrepresentation regarding the requirements of this RFP; (b) a Proponent is a "U.S. Business" as that term is defined in this RFP; and/or (c) a Proponent fails to submit the declaration as noted above.

CONTRACTOR QUALIFICATION REQUIREMENTS

The Proponent's organization shall be a Rated Contractor according to the Ministry's Qualification Procedures for Contractors and must not be a U.S. Business. Phase I proposals shall be accepted only from Rated Contractors and those who are not a U.S. Business as declared on the Declaration for Bidders Interested in Doing Business with the Government of Ontario form.

For further information, please refer to: qualificationcontrol@ontario.ca, with a copy to MTO.CIO@ontario.ca .

i) All proponents must have a valid user ID and password to access the RAQS/MERX website and must have a Ministry approved Contractor Registration Form (CRF) and a Ministry approved Tender Registration Form (TRF).

ii) The Proponent's TRF application must be submitted prior to the date and time as specified in the RFP Schedule. The successful Proponent must have a Ministry approved TRF at the Design Phase Bid submission stage.

iii) The successful Proponent must have a Ministry approved TRF at the Construction Phase Bid submission stage.

The Proponent must be a Rated Contractor in accordance with the Ministry's Qualification Procedures for Contractors and must have the Necessary Financial Rating and Necessary Maximum Workload Rating as per the RFP Schedule.

Failure to obtain an approved TRF will result in the Proponent's RFP proposal being returned unopened, without any consideration by the Ministry, for failing to comply with the Instructions to Proponents.

LEAD DESIGN FIRM QUALIFICATION REQUIREMENTS

The Lead Design Firm shall be approved in the Ministry's Registry, Appraisal and Qualification System for Engineering Service Providers (RAQS/ESP) in the Prime Specialty **insert the Prime Specialty**. Only proposals from a Proponent team with a Lead Design Firm registered for the Prime Specialty will be considered. In addition, the Lead Design Firm must also meet or exceed the minimum Corporate Performance Rating (CPR) score required to bid (posted on https://www.raqs.merx.com/public/main/whatsNew.jsf), and who are not a U.S Business as declared on the Declaration for Bidders Interested in Doing Business with the Government of Ontario form. In addition, the Lead Design Firm must have prior registration in RAQS/ESP of their Core Plan and the corresponding Generic Category Plan. A reference document "Qualification Procedures for Engineering Service Providers" is available on Ministry of Transportation Technical Publications site.

RFP DOCUMENTS

The RFP Documents include:

Part A: Proposal Phase

Includes the **proposal** process, format, required content, and Proposal Phase terms and conditions.

Part B: Design Phase

Includes Design Phase **project** requirements for this Assignment, including details and requirements for deliverables, schedules, and related details.

Part C: Construction Phase

Includes Construction Phase Specifications requirements

Part D: Appendices

Includes Agreements, Forms and Tables, Technical Standards and Specifications

Part E: Design Phase Legal Terms and Conditions

Part F: Attached Construction Phase Specifications

Addenda / Clarifications prior to the Proposal Submission closing dates

The RFP Documents and the successful Service Provider's proposal will form the Legal Agreement for this Design Phase Assignment.

MINISTRY SUPPLIED INFORMATION

The following information will be provided to all Proponents as part of this RFP through RAQS:

Document #	Document File Name/ Description
ATMS	
Electrical	
Environmental	
Highway	
Innovations, Risk & Constructability	
Pavement	
Structural	
Traffic	
Utilities	

The following information will be provided to Proponents as part of this RFP through secure messaging platform (SCM).

The below documents are available upon request **via bid enquiry** process on RAQS/MERX website at: www.raqs.merx.com during Phase I. The bid enquiry request shall include a contact person (designated individual's name, title, telephone number, and email address).

Document File Name/ Description
Highway Engineering

The following information can be found by Proponents through the following links:

Document File Name/ Description
Environmental
Documents available at: •
Foundations
Foundation Library: http://www.mto.gov.on.ca/FoundationLibrary/index.shtml •

The following information will be provided to Shortlisted Proponents through email.

The below documents are available upon request **via bid enquiry** process on RAQS/MERX website at: www.raqs.merx.com during Phase II. The bid enquiry request shall include a contact person (designated individual's name, title, telephone number, and email address).

Document #	Document File Name/ Description
Environmental	

The following information will be provided to the Successful Service Provider:

Document #	Document File Name/Document Description
Drainage	
Environmental	
Highway	
Indigenous Consultation	
Innovations, Risk & Constructability	

Pavement	
Property Corridor	
Structural	
Surveying	
Traffic	
Construction	

The Proponent shall be solely responsible for obtaining and downloading all information made available through the links provided by the Ministry, and for ensuring that it has received and reviewed all Proposal Phase Ministry-Supplied Information distributed through RAQS and SCM. The Ministry supplied information listed in this Section is provided solely for information purposes. The Ministry warrants that information provided can be relied upon for accuracy at the time and location that it was obtained but does not warrant any omissions, interpretations of data, opinions, or recommendations in the information provided. Proponents shall inform the Ministry of any inaccurate information identified.

Any “reference concepts” or “preliminary designs” included are for information purposes only. It is the Service Provider’s responsibility to generate alternatives and develop the design for the preferred alternative. The Service Provider shall be responsible for all aspects of the design for the preferred alternative. The Service Provider shall also be responsible for all aspects of construction of the preferred alternative upon execution of a Construction Phase Agreement.

This RFP may not contain all the information that Proponents might need to submit a Proposal. Proponents shall be responsible for obtaining any additional information that may be required. Each Proponent must satisfy itself as to the sufficiency of the information presented and obtain any updated or additional information, and perform any studies, analysis or investigations the Proponent deems necessary to deliver the requirements of this Assignment.

All requirements, designs, documentation, plans and information viewed or obtained by the Proponent in connection with this RFP are the property of the Ministry and shall be treated as confidential and not used for any purpose other than replying to this RFP and the fulfillment of any resulting Contract. Upon request of the Ministry, all such designs, documents, plans and information shall be returned to the Ministry.

DEFINITIONS

Agreement, Legal Agreement, or **Contract:** means the formal written contract that will be entered into at the end of the procurement process which includes the RFP documents, including any addenda; the Service Provider's Proposal Submission; and any amendments executed in accordance with the terms of the Agreement.

Agreement Administrator: refers to the Ministry's representative responsible for administering the Agreement, including, but not limited to, the Project Manager; Head; or Area Manager as specified in this RFP.

Confidential Information: means confidential information of the Crown (other than confidential information which is disclosed to proponents in the normal course of this RFP); the Confidential Information is relevant to the Work required by the RFP, the pricing of the Work or the RFP evaluation process; and the disclosure of which could result in prejudice to the Crown or any unfair advantage to the Service Provider.

Contractor: means the person, partnership, or corporation undertaking the Progressive Design-Build for Highways Services as identified in the Agreement, also identified as the Service Provider. The Contractor holds overall contractual responsibility for project outcomes, including design and construction. The Contractor shall be a Rated Contractor.

Contract Tender Form (CTF): means the Ministry approved form detailing the contract tender information for an advertised contract.

Contractor Performance Rating (CPR): means the formal performance score assigned by the Ministry to a Rated Contractor upon completion of a contract, in accordance with the Ministry's Qualification Procedures for Contractors. The CPR evaluates a Contractor's performance against Ministry standards in key areas such as quality of work, safety, project management, adherence to schedule, cooperation, and compliance with contract requirements. The CPR is used by the Ministry to determine a Contractor's eligibility, standing, and rating for future procurements and may influence available workload rating or qualification to bid on subsequent Ministry contracts. The Service Provider (Rated Contractor or all Rated Contractors in a Joint Venture/Joint Bid) shall be evaluated through the Design Phase, with a final CPR assigned at the end of the Design Phase or Construction Phase (if the construction contract is awarded to the Service Provider).

Contractor Registration Form (CRF): means the Ministry approved form supplied by the Ministry and completed by the Proponent to submit information in support of a Contractor's basic financial rating.

Construction Phase: The phase of the Progressive Design-Build for Highways model during which the Service Provider acts as the Progressive Design-Builder responsible for delivering the constructed Works following the Ministry's acceptance of the Construction Phase Bid.

Construction Phase Bid: as defined in RFP Section 5.5, Construction Phase Bid.

Construction Risk Register: as defined in RFP Section 6.2, Risk Management Plan.

Design & Construction Risk Register: as defined in RFP Section 6.2, Risk Management Plan.

Design Phase: The Phase of the Progressive Design-Build for Highways model during which the Service Provider undertakes Detail Design (Detailed Design), risk analysis, constructability assessment, cost and schedule development, and preparation of the Contract Package(s), Design Documentation, and Construction Phase Bid(s) in accordance with the Ministry's requirements in this RFP.

Design Phase Stages: means the structured stages for progressively developing design, pricing, schedule, and risk. Under this procurement, the Design Phase is organized into four sequential stages:

- **Stage 1:** Establishes the foundational design concepts, identifies innovations and alternatives, and supports initial costing, early risk identification, and mitigation. Stage 1 of the Design Phase ends at the **Stage 1 Milestone** date.
- **Stage 2:** Advances design to a more detailed level, enabling refined quantity development, updated costing, and structured risk quantification and allocation. This stage supports the Stage 2 Opinion of Probable Construction Cost (OPCC) process. Stage 2 of the Design Phase ends at the **Stage 2 Milestone** date.
- **Stage 3:** Produces a final design suitable for final estimating, risk treatment, , Design Documentation, and preparation of the Construction Phase Bid (Tender Item Bid or optional Lump Sum Bid). This stage supports the Stage 3 OPCC process. Stage 3 of the Design Phase ends at the **Stage 3 Milestone** date.
- **IFC Stage:** Prepare Contract Package with detail Tender Items, special provisions, quantities and all the final deliverables for Construction-ready Critical Path Schedule, final risk register and Constructability Report. IFC Stage of the Design Phase ends at Contract Tender closing date.

Financial Plan or **Price Proposal:** as defined in RFP Section 1.5.2.2 Financial Plan (Envelope No. 2 – Pricing).

Functional Category or **Category:** refers to the broad disciplines including Advanced Traffic Management Systems, Bridge Engineering, Electrical Engineering, Highway Engineering, Drainage and Hydrology Engineering, Engineering Materials, Environmental, Foundations Engineering, Pavement Engineering, Surveying, Traffic Engineering, Value Engineering, Constructability Review, Transportation (Systems) Planning, Environmental Planning, Highway Planning as listed in the Ministry's Registry, Appraisal and Qualification System (RAQS).

Innovation, Innovative: as defined in RFP Section 6.1, Innovations Plan.

Issued For Construction Package (IFC): means the drawings, quantities, and specifications stamped by an Engineer (or Engineers) as final documents to construct the Work.

Joint Venture or **Joint Bid:** is a collaborative undertaking by two or more firms for which the participant firms are both jointly and individually responsible.

Late Bid Submission: means a Phase I Proposal received by the Ministry's Service Provider after the Tender Closing.

Late Bid Submission Notification: is a statement sent by the Ministry to a Proponent notifying the Proponent that their Phase I Submission is a Late Bid Submission, and will not be considered, and is rejected.

Late Proposal Submission: means a Phase II Technical Proposal and/or Price Proposal received at the Ministry after RFP Closing.

Late Proposal Submission Notification: is a statement sent by the Ministry to a Proponent notifying the Proponent that their Phase II Technical and/or Price Proposal is late, will not be considered and is rejected.

Lead Contractor: refers to the lead Contractor firm in a Joint Venture or Joint Bid, that shall be the Ministry contact for the purposes of the Agreement. The Ministry will deal with the Lead Contractor on the contractual matters. The **Principal** of the Lead Contractor shall serve as the Contact for the Project. The Principal shall have the authority to sign on behalf of the Joint Venture or Joint Bid and make decisions on behalf of the Joint Venture or Joint Bid on contractual matters.

Lead Design Firm: refers to the lead design firm engaged by the Service Provider, as part of the Joint Venture or as a Sub-Service Provider, to lead and coordinate the design work for the Assignment; also identified as the Prime firm under the RAQS Prime Specialty.

Lump Sum Bid: as defined in RFP Section 5.5.1, Lump Sum Bid.

Ministry or **MTO:** means His Majesty the King in Right of the Province of Ontario, represented by the Minister of Transportation for the Province of Ontario, and its permitted successors and assignees.

No Bid Statement: means a 'No Bid' selection on a Bid Submission Form submitted to the Ministry's Service Provider from a Proponent who has an approved Tender Registration Form, but who does not intend on submitting a Bid Submission Form containing a summary Bid prior to the Tender Closing, or intends to withdraw a summary Bid submitted on a Bid Submission Form submitted to the Ministry prior to Tender Opening.

Non-Conformance: means an occurrence of work not meeting the requirements of the Agreement.

Non-Resident Contractor: means any Contractor residing outside of the Province of Ontario and with respect to a corporate Contractor, not being incorporated pursuant to the laws of Ontario and who has not maintained a permanent place of business in Ontario continuously for twelve months prior to RFP Closing.

Opinion of Probable Construction Cost (OPCC): as defined in RFP Section 5.3.1, Opinion of Probably Construction Cost Process.

PDBH Services, Progressive Design-Build for Highways Services, or **Services:** means, without duplication, collectively, those functions, duties and services to be performed by the Service Provider provided for in this RFP and Agreement, including but not limited to the Detailed Design Services, estimating, scheduling, risk management, constructability; the Tender Services if applicable, together with all Deliverables provided in accordance with this Agreement, and such deletions or additions made thereto from time to time pursuant to the terms of this Agreement.

Preferred Proponent: is the entity that is selected by the Ministry to enter into the executed Agreement.

Principal: is an individual in a firm who possesses the legal responsibility for its management (owner, partner, officer, administrator, etc.).

Project or **Assignment:** means the objectives and Work described in this RFP.

Proponent: refers to the entity (Contractor or Joint Venture or Joint Bid), comprised of firms that meet the RFP Qualification Requirements, that submits, or intends to submit, a proposal in response to this RFP prior to the specified submission closing dates; also identified as the Bidder.

Proposal: refers to documents Proponents submit in response to this RFP.

Project Key Staff: is an individual that will perform the key requirements, provide direction, assigns work and carry out the project management functions within the Specialty(ies) and / or for this Assignment on the overall. The Project Key Staff may/ may not be Key Personnel registered in the Ministry's RAQS.

Proposal Due Date, or **RFP Closing Date:** can be used interchangeably and means the last date and time that the Ministry will receive Proposals for the respective Phase of the procurement.

Qualification Procedures for Contractors: means the administrative routine established by the Ministry to determine that Contractors have the financial, managerial, and technical capability to perform the work in accordance with the Contract.

Qualified Contract: means a contract that is tendered in accordance with the Ministry's Qualification Procedures for Contractors, that requires the Bidder to be a Rated Contractor.

RAQS/MERX: means the Ministry's Registry Appraisal and Qualification System.

RAQS/ESP: refers to the Ministry's Registry, Appraisal and Qualification System for Engineering Services Providers electronic tendering application hosted by MERX.

Rated Contractor: means a Contractor who has been granted a basic financial rating or maximum workload rating in accordance with the Ministry's Qualification Procedures for Contractors.

Request for Proposal (RFP): means the process and RFP documents described in the Section RFP Documents.

Right-of-Way, ROW: means 1) Allocation of right of movement to a road user, with preference over other road users or 2) The width of the road allowance from the property line on one side to the property line on the opposite side of a roadway

Service Provider: refers to the successful Proponent firm, or Joint Venture/Joint Bid, under Agreement to provide Progressive Design-Build for Highways Services for this Assignment, also identified as the **Progressive Design-Builder**.

Sub-Service Provider: refers to a firm or individual that has been hired by the Service Provider to perform specific tasks of this Assignment.

Specialty: refers to a Work Type under a Category in RAQS/ESP. Firms are registered under specific specialties in RAQS/ESP.

Specialization: refers to primary technological capability of a Project Key Staff. The academic degree, professional registration, certification and / or extensive experience in a particular field of practice normally reflect an individual's primary technical expertise or the specialization in that area.

Tender Item Bid: as defined in RFP Section 5.5.2, Tender Item Bid.

Tender Registration Form (TRF): means the Ministry approved form supplied by the Ministry used by Contractors to pre-qualify for qualified contracts and designated contracts in accordance with the procedures set out in the Qualification Procedures for Contractors. Failing to obtain the TRF will result in the rejection of any Bid submitted without any consideration by the Ministry.

Work Orders and Work Quotes: as defined in RFP Section 3.5.2 Work Orders and Work Quotes.

PART A: PROPOSAL PHASE

SECTION 1: PROPOSAL SUBMISSION PROCESS AND FORMAT

1.1 RFP Schedule

The following RFP schedule is tentative and is subject to change without penalty to the Ministry:

Description	Date / Deadline / Information
RFP Title and Agreement Number	Title of this RFP: **<Project Title>, Progressive Design-Build for Highways Project** The Agreement Number is: **2XXX-E-XXXX** Use this title and number on all correspondence to the Ministry.
Rating and Work Classification	Necessary available financial rating is: **$ #,###,### in <Category>** Necessary available maximum workload rating is: **$ #,###,###**
Distribution of RFP Documents (Posting Date)	**<Month day, year>**
RFP Information Session (Virtual Teams Webinar)	**<Month day, year>** **X:XX:XX AM/PM Local Toronto Time** Registration Link: **<LINK>**
Phase I: Deadline for Submitting Enquiries	All RFP Phase I enquiries shall be submitted by: **<Month day, year>** **3:00:00 PM Local (Toronto) Time** using the bid enquiry function in RAQS/MERX website: www.raqs.merx.com.
Declaration for Bidders Interested in Doing Business with the Government of Ontario form Submission Deadline	The Declaration for Bidders Interested in Doing Business with the Government of Ontario form shall be submitted by: **< Month day, year >** **12:00:00 PM Local (Toronto) Time**

Submission of Phase I Proposal (Closing Date)	The Phase I Closing Date and time is: **< Month day, year > #:##:## PM Local (Toronto) Time** Proponents shall submit their Phase I Proposals, by electronic submission only using the bid enquiry function on the RAQS/MERX website: www.raqs.merx.com.
Notification of Shortlisted Proponents	Within <insert appropriate timeframe; xxx weeks or xx Days> of Phase I Closing.
Deadline for Submitting Proponent Presentation Meeting Materials <NTD: Delete row if only proceeding with Proponent Scored Interviews>	**< Month day, year > 1:30:00 PM Local (Toronto) Time** Proponents shall submit a list of all attendees and presentation materials to: ContractTendering@ontario.ca.
Proponent Presentation Meeting <NTD: Delete row if only proceeding with Proponent Scored Interviews>	**< Month day, year > X:XX:XX PM Local (Toronto) Time** Meeting/Interview location to be determined.
Deadline for Submitting Proponent Scored Interview Materials <NTD: Delete row if only proceeding with Proponent Presentation Meeting>	**< Month day, year > 1:30:00 PM Local (Toronto) Time** Proponents shall submit a list of all attendees and presentation materials to: ContractTendering@ontario.ca.
Proponent Scored Interview <NTD: Delete row if only proceeding with Proponent Presentation Meeting>	**< Month day, year > X:XX:XX PM Local (Toronto) Time** Meeting/Interview location to be determined.
Phase II: Deadline for Submitting Enquiries	All RFP Phase II enquiries shall be submitted by: **< Month day, year > 3:00:00 PM Local (Toronto) Time** using the bid enquiry function in RAQS/MERX website: www.raqs.merx.com.
Tender Registration Form Submission Deadline	**< Month day, year > 12:00:00 Noon Local (Toronto) Time**

Submission Deadline of Phase II Proposals (by shortlisted Proponents) (Closing Date) Phase II Proposal includes: • Technical Proposal • Price Proposal (Financial Plan)	The Phase II Closing Date and time is: **< Month day, year > #:##:## PM Local (Toronto) Time** Proponents shall submit their Technical Proposal & Price Proposal (Financial Plan) in accordance with RFP Section 1.3 Proposal Submission and Award Process. Proponents shall submit their price proposal by electronic submission only to: www.raqs.merx.com. Proponents shall submit their electronic version (.XER file format) of the Proposal Phase schedules to contracttendering@ontario.ca.
Preferred Proponent Notification (Anticipated Award Date)	Within 90 Days after Phase II RFP Closing.
Phase III Submission (by Preferred Proponent ONLY)	**< Month day, year >** The Preferred Proponent shall submit their Phase III Submission to: ContractTendering@ontario.ca.
Anticipated Start Date (After signed and executed agreement)	**< Month day, year >**
Estimated Design Phase Completion Date	**< Month day, year >**
Estimated Construction Phase Completion Date	**< Month day, year >**

1.2 Enquiries

Each Proponent shall review all the RFP documents and shall promptly report and request clarification of any discrepancy, deficiency, ambiguity, error, inconsistency, or omission contained therein. Enquiries are to be submitted electronically through the RAQS/MERX website. All public enquiries and responses to enquiries will be posted through the RAQS/MERX website at www.raqs.merx.com.

Proponents are strongly encouraged to submit enquiries as early as possible to allow sufficient time for the Ministry to review and respond to the enquiries.

Unless addressed through an addendum to the RFP issued by the Ministry, all responses to bid enquiries shall not be incorporated as part of the Contract or in any way change the Contract.

All enquiries must be submitted to the Ministry no later than the date and time specified in the RFP Schedule.

Proponents shall not make verbal enquiries of the Ministry staff or their agents. Information given verbally by the Ministry staff will not be binding on the Ministry, nor will it be construed as a factor in the evaluation of the Proposals. Any attempt on the part of any Proponent or any of its employees, agents, contractors or representatives to contact any member of the Ontario Public Service with respect to this RFP other than as described above in this section may lead to disqualification.

1.3 Proposal Submission and Award Process

Each Proponent shall examine all instructions, terms and conditions, forms and information in the RFP documents, Addenda, and the responses to Enquiries; and in a clear, concise and legible manner, complete and submit all documentation and information required by this RFP. Incomplete submissions may result in disqualification.

Technical assistance with proposal submissions can be obtained by contacting:
contracttendering@ontario.ca.

The Ministry shall use a three-phase procurement process to select a Service Provider to deliver the Project.

Proposals are to be submitted in three phases:

Phase I (EOI): Project Team and Organization Proposal

Phase I (EOI) is the initial phase in which the Ministry solicits information from Proponents regarding their proposed Project Team, organizational structure, and overall capacity to successfully deliver the Project. The Ministry will evaluate all Phase I submissions to identify the Proponents most qualified to proceed. Following this assessment, Proponents will be notified if they have been shortlisted and are eligible to advance to Phase II (RFP).

The Ministry will complete its Phase I evaluation of Proposals, as outlined in Section 1.6, and will shortlist up to three (3) firms.

Phase I responses shall be received by the Ministry in advance of the Phase I Closing identified in the RFP Schedule. Phase I responses not received in advance of the Phase I Closing shall be automatically disqualified.

Proponents shall submit their Phase I response electronically as an attachment using the Bid Enquiry function as detailed in Section 1.2 Enquiries.

Upon receipt, the Proponent shall receive confirmation that their Phase I response has been received.

Proponents may submit a revised Phase I response up to Phase I Closing. The Ministry shall consider only the last Phase I response received by the Ministry prior to Phase I Closing.

Phase II (RFP): Technical and Financial Proposal

Only the shortlisted Proponents determined from Phase I shall be eligible to submit Phase II proposals. Tender Registration Forms (TRF) submitted by Proponents who were not notified that they were on the shortlist shall not be approved.

Proposals in response to Phase II of this RFP shall contain two separate parts and shall be submitted according to the instructions in this Section.

- **Part 1**: Technical Proposal (see RFP Section 1.5.2.1 Technical Proposal (Envelope No. 1 – Identity & Proposal))
- **Part 2**: Price Proposal (see RFP Section1.5.2.2 Financial Plan (Envelope No. 2 – Pricing)

The Proponent's Technical Proposal and Financial Proposal shall be received by the Ministry in accordance with the RFP Schedule. Proposals that are not received in advance of the Phase II RFP Closing Date identified in the RFP Schedule, shall result in the automatic disqualification of the Proponent.

Each Proponent shall submit an electronic bid by completing an on-line Electronic Bid Form through the RAQS/MERX website (www.raqs.merx.com). Only a Proponent with an approved Tender Registration Form (TRF) shall be permitted to complete and submit an Electronic Bid Form to the Ministry. The Proponent's Technical Proposal and Price Proposal shall be submitted as an attachment to the Proponent's Electronic Bid Form.

Proponents may submit a revised Technical Proposal and Price Proposal up to the RFP Closing. The Ministry shall consider only the last Technical Proposal and Price Proposal Submission Form received by the Ministry prior to the RFP Closing.

Upon successful submission of a Technical Proposal and Price Proposal, Proponents shall receive an on-line notification from RAQS/MERX confirming the date and time the submission was received, for information purposes only. The Ministry cannot access or return late submissions.

Based on the Phase II selection process, as outlined in Section 1.6, the Ministry will select a Proponent who will be the Preferred Proponent.

No bid prices shall be published until after completion of the award process. Following award, the Ministry shall post on the RAQS/MERX website the Preferred Proponent's Bid Price and the names of the other Proponents with compliant proposals, listed in order of their ranking in the evaluation.

Phase III: Award

Only the Preferred Proponent will submit the Phase III requirements.

1.4 Proposal Submission Format Phase I and Phase II

All pages of the Proposal (excluding staff resumes) shall have a header clearly indicating the Proponent's name and Assignment number.

All Proposal documents, where signature required, must include an electronic signature (secure/digital or scanned) of a Principal of the Proponent firm with the authority to sign a binding legal agreement on behalf of the Service Provider. The Ministry, without evaluation, will reject any Proposal with unsigned documents.

The Ministry may, if deemed necessary, verify any information provided in any Submission.

Phase I Proposals shall be submitted as one document in a "read only" Adobe (PDF) format, less than 75MB file size, and shall not exceed **{insert page limit, 30 recommended}** pages**.** Standard letter (8.5"x11") size paper, using 1" margins and a minimum 12-point Arial font shall be

used. Proponents may include up to **{insert page limit, 3-5 recommended}** pages (size 11”x17”) for their Organization Chart(s), which will not be included within the page limit. The page limit excludes staff resumes, promotional material, Transmittal letter, and Conflict of Interest Certification**.**

Phase II Technical Proposals shall be submitted as one document in a “read only” Adobe (PDF) format, less than 75MB file size, and shall not exceed **{insert page limit, 60-80 recommended}** pages. Standard letter (8.5”x11”) size paper, using 1” margins and a minimum 12-point Arial font shall be used. Proponents may include up to **{insert page limit, up to 15 recommended}** pages (size 11”x17”) for their Integrated Project Schedule and Preliminary Integrated Critical Path Schedule, which will not be included within the page limit.

One (1) copy of the file(s) used to prepare the technical proposal in the original file format (e.g. MS Word/Excel, AutoCAD drawing files, scheduling files, etc.) shall be provided to the Ministry upon request. File names for electronic documents shall also include the assignment number, Proponent’s name, and title of document.

Example: “PDBH ####-E-#### - <Proponent Name> - <Document Title>”
Failure by the Proponent to conform to the submission requirements specified in section 1.4 of this RFP may result in disqualification.

1.5 Proposal Documents to be Submitted Phase I, Phase II and Phase III

Refer to Part B, Sections 3 - 8 for a description of the Services required under this Assignment. **Proponents are encouraged to focus on providing information beyond the requirements detailed within this RFP.**

1.5.1 Phase I (EOI) – Project Team and Organization Plan (Envelope No. 1)

The following must be uploaded to Envelope No.1 for the Phase I (EOI) submission:

- Transmittal Letter
- Project Team and Organization Plan
- Design Phase Schedule and Cost Control
- Conflict of Interest Declaration Forms
- Additional Information

Sections 1.5.1.1 to 1.5.1.5 detail the requirements of each submission component.

1.5.1.1 Transmittal Letter

The Transmittal Letter shall not exceed two (2) pages and indicate the Proponent’s intention to submit a proposal to provide Services for the project with the name, title, address and telephone number of the Principal who will serve as the single point of contact on behalf of the Proponent firm for the project. The letter must be signed by a Principal of the Proponent firm with the authority to sign a binding legal agreement on behalf of the Service Provider.

In addition to above, the letter shall include the following:

- Legal Name of Business and Business Type (e.g., corporation, partnership, joint venture),
- Owner(s); Partner(s); Corporate Officer(s)/Title,
- Business Address, Telephone Number, Facsimile Number and Email Address.
- Joint Venture / Joint Bid participant firm(s) details
- Lead Design Firm details

1.5.1.2 Project Team and Organization Plan

The information required by this Section shall be used in the assessment of the Proponent's organizational structure and project team member expertise in the delivery of transportation and infrastructure projects with similar size, scope and complexity, timely completion, within budget, integrating design and construction, working as a team with partners and project team member experience and capabilities.

The Project Team and Organization Plan shall contain the following sections:

(i) Project Team Experience & Collaboration
(ii) Key Individuals
(iii) Project Management Approach
(iv) Organizational Chart

The requirements of each of these sections are detailed below.

(i) Project Team Experience & Collaboration

Describe at least one (1) but a maximum of three (3) Design-Build (DB), Construction Manager General Contractor (CMGC), Progressive Design-Build (PDB), Design-Build Finance (DBF), Integrated Project Delivery (IPD), Alliance, or conventional Design-Bid-Build (DBB) major highway projects that the Proponent or one of the major participant firms has managed, designed, and/or constructed. For the projects in which several of the proposed major participant firms were involved, the Proponent may provide a single project description. Highlight experience relevant to the Project that the Proponent/major participant firms have gained in the last ten (10) years. Highlight where possible, projects with levels of scope comparable to that anticipated for the Project. Describe the experiences that could apply to the Project. In particular, for each project example provided, describe the experience in each of the following areas:

1. Experience with integrating design and construction activities using traditional and alternative delivery methods, including working with integrated team of designers, contractors, subcontractors and suppliers.
2. Experience with cost estimating and participating in structured estimating checkpoints (e.g., Opinion of Probable Construction Cost Process, Targeted Open-Book Review, Variance Review Meetings, etc.).

3. Experience with progressive risk register development, tracking and mitigation measures.
4. Design & Construction experience in solving similar challenges as expected on this Project (i.e., subsurface conditions, coordinating complex utility relocations, complex traffic control and staging plans on high-speed, high-volume roadways and intersection/interchange projects, using innovative designs, methods, and materials, managing complex consultation with Indigenous communities, stakeholders including public, municipalities and railway authority, managing competing priorities, and construction in and near environmentally sensitive areas).
5. Experience with implementing design and construction quality systems.
6. Experience working collaboratively with public sector partners on infrastructure projects of similar scope and complexity.
7. Experience of Proponent's team member firms working together collaboratively.

[Note to Draft: Modify / add to list with experience criteria that is appropriate for the Project**]**

Each project description shall also include the following information:

1. A narrative describing the project.
2. Name of the project, the owner's active contact information (project manager name, phone number, e-mail address), and project number. If the owner project manager is no longer with the owner, provide an alternative contact at the agency/organization that is familiar with the project. The alternative contact shall have played a leadership role for the owner during the project.
3. Clear description of engineering fieldwork investigation period, detail design period, construction duration and warranty periods.
4. Detailed description of the work or services provided and percentage of the overall project actually performed by the Proponent/major participant.
5. Detail description of scheduled completion deadlines and actual completion dates. Describe reasons for completing the project in advance of or later than the completion deadline. Proponents are encouraged to provide detail rational demonstrating how their proposal advanced design and/or construction schedule.
6. For the past projects other than MTO projects, the available performance records should be provided, or in their absence, the owner contact name, address and telephone number are to be provided. Performance records will not be included in the page limit.

The Ministry may elect to use the information provided to conduct reference checks and validate the information provided by Proponents.

(ii) Key Individuals

Identify the Key Individuals responsible for the Services required under this Assignment. All costs associated with the Key Individuals shall be covered within the Design Phase Lump Sum Price.

Proponents shall demonstrate that Key Individuals have suitable qualifications, knowledge, and experience to undertake their respective key position on this Project. Only one person shall be identified for each key position. For each Key Individual, Proponents shall provide in narrative form, an explanation of the following:

- Describe the relevant qualifications, experience, and certifications of each Key Individual (see Table 1: Mandatory Qualification Requirements for Key Individuals).
- Explain how the expertise of each Key Individual aligns with the role and responsibilities of the key position.
- Explain how the expertise of each Key Individual aligns with the project's complexity and scope.
- Confirm the authority of the Key Individual for the Assignment, PDBH Services, and with respect to the Service Provider team.
- Describe how each Key Individual will support the Ministry's goals for project-wide coordination, risk management, cost and schedule certainty, through design and construction.
- An outline of up to three (3) recent or current projects on which the Key Individual had / has roles and responsibilities that are related to the key position, including a brief description of the Key Individual's specific role(s) and responsibilities on the cited project, and the total time spent on each role. Responses for each key position shall include at minimum the proposed individual's relevant design and construction experience.
- Confirm the availability of each Key Individual for the duration of the assignment.
- Describe how continuity will be maintained for the duration of the assignment and how transitions will be managed if needed.

Proponents shall also include a resume for each Key Individual in an Appendix outside the page limit specified in RFP **Section 1.4** The resume should demonstrate the qualifications through relative experience and past performance on projects of similar scope and size and if applicable, larger more complex, and more recent projects.

For all referenced projects, the Proponent shall include:

- Brief project description
- The Key Individual's role and responsibilities
- Project Owner
- Active reference contact name, e-mail address, and phone number for Ministry verification.
- For past projects other than MTO projects, the available performance records should be provided. Performance Records will not be included in the page limit.

Proponents shall also provide reference details for all current and upcoming projects to which each Key Individual is supporting/committed, including:

- Project name
- The Key Individual's role & responsibilities
- Project Owner
- Reference contact name, e-mail address, and phone number for Ministry verification.
- Transition Plan (in alignment with the RFP requirements)

Proponents shall also identify any corporate/firm level roles and responsibilities of proposed Key Individuals and how those will be managed for the duration of the Assignment, with consideration for the Assignment role and responsibilities.

Finally, Proponents shall confirm how the Key Individual will manage the responsibilities of this Assignment with consideration of the existing and upcoming commitments.

List of Key Individuals (see Table 1: Mandatory Qualification Requirements for Key Individuals):

- Project Manager
- Construction Manager
- Scheduling Lead
- Cost Estimating Lead
- Risk Lead
- Design Manager
- Lead Design Engineer
- Design and Integration Lead
- Quality Manager
- Structural Manager
- Environmental Lead
- Fisheries Assessment Specialist
- Species at Risk Specialist

[Note to Draft: This list of Key Individuals shall be customized for individual projects**]**

Proponents may identify up to a maximum of two (2) **Additional Key Individuals** (e.g., from a specialised firm, value-added project support, etc.) that the Proponent believes would provide value to the Ministry, this Assignment, and the overall Project. All costs associated with Additional Key Individuals shall be covered within the Design Phase Lump Sum price. Proponents shall provide narratives, resumes, and references for Additional Key Individuals with the added value to the Ministry and Assignment clearly illustrated in the relevant sections of the Phase I & II submissions.

Due to the high-profile nature of this project, the Key Individuals must be available to respond immediately to the Ministry's inquiries, information requests, and meeting requests. Some of the inquiries may require responses within hours or the same day. In the proposal, the

Proponent shall describe how enhanced communication will be provided during the assignment.

Non-Mandatory Technical Team Member Identification (Value-Added Submission)

The Service Provider may identify the Technical Team Member listed below as part of its Phase I submission. Identification of the Technical Team Member during Phase I is optional and will be considered a value-added component of the evaluation. Identification of the Technical Team Member shall be mandatory as part of the Phase III submission.

- [Note to Draft: List important Technical Team Members that may be considered value-added information during Phase I. If not applicable, delete above paragraph and heading "Non-Mandatory Technical Team Member Identification (Value-Added Submission)"]

Note 1: Throughout the duration of the assignment, the Service Provider shall utilize the staff identified in their Proposal. No substitutions of staff shall be made without the express knowledge and written approval of the Ministry. The qualifications and experience of the staff proposed for replacement must be equivalent or better than the staff identified in the Service Provider's Phase I Proposal submission. The Service Provider shall, upon the request of the Ministry, remove any representative of the Service Provider who, in the opinion of the Ministry acting reasonably, is performing improperly, or is not performing in an acceptable manner and shall replace the representative in accordance with the provisions of Sections 4.7 and 4.8 of the Legal Terms and Conditions.

Note 2: The Ministry must be notified in writing of any changes to the availability of staff included in the Proponent's Phase I Proposal no later than five (5) business days after Proponents receive notification that they have been shortlisted. The Ministry reserves the right to terminate any further participation by the Proponent in the selection process if in the Ministry's opinion, acting reasonably:

- The changes in the submission affect the ability of the Proponent to meet the Ministry's requirements; and/or
- The proposed change is not equivalent to or better than the Phase I Proposal.

Note 3: For any proposed Key Individual who is based outside of the **Greater Golden Horseshoe (Southern Ontario) [NTD:** Update location based on geographic region of assignment**]**, the Proponent shall provide a clear and detailed plan describing how the key individual's availability, presence, and accessibility will be ensured to effectively support the Assignment. The plan shall address, at a minimum, anticipated in person meeting attendance, in-office integrated team coordination management, on-site presence, response times, travel/relocation arrangements, and communication protocols to meet the Ministry's requirements for timely decision-making and ongoing support.

Restriction: Where specified in Table 1, the Key Individuals proposed for this Assignment shall be committed on a "fulltime" basis for the duration of the Assignment. These Key Individuals shall not be concurrently committed to MTO priority Assignments. **These Key**

Individuals may be restricted from future MTO priority Assignments. This restriction will not be applied for any procurements overlapping with this procurement.

[NTD: Consider applicability of above restriction, maintain or delete as required. Consult with CIO as required.**]**

The Ministry may elect to use the information provided to conduct reference checks and validate the information provided by Proponents.

(iii) Project Management Approach

Provide a thorough and detailed description of the project management approach for this Assignment including:

Project Governance and Administration

- Effective administration of the Project across both the Design and Construction Phases
- Tailored management approaches for project-specific challenges
- Describe how the Firms within a Joint Venture will collaboratively deliver the Assignment, including decision-making authority, issue resolution processes, and mechanisms to ensure integrated and cohesive delivery of the Assignment
- Demonstrate access to sufficient pool of resources for this Assignment, including backup specialists and surge capacity as multiple packages proceed concurrently and workload increases during both the Design and Construction Phases.

Design and Construction Integration

- Integrated collaboration between Contractor and Designer Teams from early environmental and engineering fieldwork investigations to detail design and through construction
- Coordination and management of all functional categories supporting ongoing design activities
- Managing design development and changes during construction while maintaining design intent
- Design and construction quality management systems supporting coordinated execution

Approach to Estimating & Bid

- Methodology for developing the Tender Item Estimate following each Design Phase Milestone
- Process for ensuring estimate accuracy and traceability, while maintaining cost transparency with the Ministry
- Approach to identifying, validating, and incorporating risk into the Tender Item Bid, and optional Lump Sum Bid
- Strategies to mitigate cost escalation within the PDBH pricing framework and related

processes
- Process for preparing a defendable and competitive Bid for the Construction Phase and Advanced Contract(s)

Risk, Innovation & Change Management

- Approach to identification, assessment, and mitigation of major project risks
- Effective management of unforeseen or changed conditions with responsive mitigation strategies
- Incorporation of innovation in methods, materials, and delivery approaches to improve outcomes

Technical & Environmental Management

- Management of geotechnical and subsurface conditions affecting design, staging, and construction
- Protection of environmentally sensitive areas and implementation of appropriate mitigation measures
- Coordination of complex utility relocations and third-party requirements

Construction Scheduling, Phasing, Staging & Traffic Management

- Approach to developing, updating, and maintaining the Construction Critical Path Schedule
- Development and implementation of complex staging and traffic control strategies for constrained or high-volume facilities
- Coordination of construction phasing to maintain mobility and minimize disruption
- Alignment with concurrent nearby projects to avoid conflicts and support broader network outcomes
- Minimizing impacts to businesses, residents and the traveling public

Stakeholder, Agency & Public Coordination

- Effective engagement with the Ministry, permitting agencies, municipalities, and regulatory authorities
- Proactive coordination with local businesses, residents, and road users to minimize impacts
- Extensive coordination with Indigenous communities and municipal consultation management
- Development and implementation of public information and communication plans

Staff Succession Management & Training Approach

- Staff Succession Management & Training Plan, including how staffing continuity and institutional knowledge of the Program will be developed and maintained for the duration of the assignment and how transitions will be managed if needed.
    - Continuity means continuous availability of qualified staff proposed without

interruptions, extended leaves of absence, staff substitutions and demands of working on concurrent project packages.

- Continuity of Key Individuals and Technical Team members throughout the Project lifecycle

The description should demonstrate exceptional thinking and possibility of adding value to the project and should include the Proponent's role and understanding.

(iv) Organization Chart

The Organization Chart shall show the key lead staff/sub-Proponents and the specialty staff that will carry out the work in their appropriate reporting relationships.

The Organization Chart shall clearly show:

- All the required Key Individuals between design and construction teams
- All Technical Team Member Roles
- All the required specialties.
- Assignment of responsibility/accountability of all project staff (including Sub-Proponents).
- The reporting relationships within each and between all Categories.
- The proposed structure and reporting relationships (including reporting relationships with the Ministry) for all project activities inclusive of the following activities:
  a. All components of the Assignment;
  b. Quality Control and Quality Assurance of the Services;
  c. Constructability Review; and
  d. Engineering Materials Testing and Evaluation

(v) Insurance Claims History

[NTD: Consult with Contract Innovations Office and Insurance & Claims Services Branch on applicability of an Owner Controlled Insurance Program (MTO Insurance Program), which will inform the need to require proponents to submit Insurance Claims History.**]**

In an attachment outside of the page count, the Proponent shall provide a summary of its claims experience during the previous five (5) years for:

- Construction Liability insurance; and
- Course of Construction (Builder's Risk) insurance.

The submission shall include all entities comprising the Proponent, including each Joint Venture/Bid member, where applicable.

The Proponent shall also disclose the number of, and provide a brief description of, all Professional Liability (Errors and Omissions) claims exceeding $500,000 during the previous five (5) years involving the Proponent, each Joint Venture/Bid member, and the Lead Design Firm.

For each claim, the Proponent shall identify the nature of the claim, the amount claimed, and the current status or final resolution.

The Ministry reserves the right to request clarification and additional information from any Proponent, at any time during the Proposal Phase, related to this submission. Misleading or inaccurate Insurance Claims History submissions may result in disqualification of the Proponent.

Table 1: Mandatory Qualification Requirements for Key Individuals:

Table 1 defines mandatory qualifications for Key Individuals. Failure to meet the minimum qualification requirements for Key Individuals may result in disqualification of the proposal.

[Note To Draft: The Qualification Requirements listed below are generic and are included for illustration purposes. Project teams shall consider the scope of the project when determining the Key Individuals required and the qualification requirements necessary for the team to successfully deliver the Project.**]**

Table 1: Mandatory Qualification Requirements for Key Individuals
Project Manager
The Project Manager shall be fully dedicated to the Assignment on a fulltime basis for the entire duration of the Assignment. The Project Manager shall not undertake any other assignment, whether internal or external, that compromises their fulltime availability or performance on this Assignment. <u>Minimum Qualifications:</u> • Be an employee of the Lead Contractor Firm or one of the Service Provider Firms in a Joint Venture. • Must be a licensed Professional Engineer in good standing in Canada and either licensed in Ontario, or eligible for Ontario licensure OR be a Certified Engineering Technologist (C.E.T.) OR be a Certified Construction Manager (CCM) within twenty (20) Business Days of the Assignment award • 15+ years of progressive experience in project leadership on high-complexity highway, bridge, or corridor projects, including multi-phase freeway or corridor assignments. • Have successfully managed a minimum of three (3) or more high complexity Construction projects for MTO or other similar jurisdictions. • In-depth knowledge of MTO policies, OPS standards, construction practices, and constructability during design development. • Proven ability to lead multidisciplinary teams, manage multiple concurrent projects, and deliver projects on schedule and within budget. • Strong capability in integrated project delivery, including alignment of design, schedule, risk, and cost with design firms and construction companies. • Extensive experience in critical path scheduling, risk analysis, multi-package sequencing, and progressive cost review processes (e.g., OPCC, targeted open-book reviews).

- Experience validating quantities, construction methods, and productivity assumptions.
- Experience with collaborative procurement models (e.g., CMGC, DB, PDB) and environmental legislation (Environmental Assessment Act (EA), Canadian Environmental Assessment Act (CEAA)). Demonstrated strength in stakeholder engagement, partnering, issue escalation, and clear communication.
- Authorized to act on behalf of the Prime Firm and/or Joint Venture and capable of rapid response to Ministry requests.

Construction Manager

The Construction Manager shall be fully dedicated to the Assignment on a fulltime basis for the entire duration of the Assignment. The Construction Manager shall not undertake any other assignment, whether internal or external, that compromises their fulltime availability or performance on this Assignment.

Minimum Qualifications:

- Be an employee of the Lead Contractor Firm or one of the Service Provider Firms in a Joint Venture.
- 15+ years of progressive experience in construction project leadership on high-complexity highway, bridge, or corridor projects, including multi-phase freeway or corridor assignments.
- Experience as an Assistant Project Manager, Construction Superintendent or equivalent on at least two (2) high-complexity highway infrastructure projects for MTO or other similar jurisdictions.
- Strong Construction Phase expertise on major highway projects, including staging, traffic management, temporary works, and multi-package sequencing.
- Demonstrated ability to provide constructability input during design development and contribute production-based assumptions supporting estimating activities.
- Experience identifying Advanced Works opportunities that improve sequencing and schedule.
- Familiarity with MTO project delivery processes, OPS standards, design manuals, construction specifications, and typical highway construction methods.
- Ability to interpret engineering drawings, critical path schedules, risk register, and technical reports, and validate key inputs with design and estimating leads (e.g., quantities, methods, productivity assumptions).
- Demonstrated ability to collaborate and communicate effectively with multidisciplinary teams, stakeholders, municipalities, utilities, and government agencies, including structured issue escalation and extensive experience leading and presenting in meetings to numerous stakeholders to acquire consensus.
- Proven skills in project coordination, including scheduling, document control, meeting support, and progress tracking, with proficiency in in construction management software (MS Project, Primavera P6) and document management platforms.

Scheduling Lead

The Scheduling Lead's availability and level of engagement shall be commensurate with the responsibilities and demands of their role throughout the duration of the Assignment. The

Scheduling Lead shall prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

Minimum Qualifications:

- Be an employee of the Lead Contractor Firm or one of the Service Provider Firms in a Joint Venture.
- 10+ years' experience as a Schedule Lead on design and construction projects for high-complexity highway, bridge, or corridor projects, including multi-phase freeway or corridor assignments.
- Demonstrated construction scheduling experience on major transportation infrastructure projects, including at least three (3) high-complexity highway and/or infrastructure development projects (e.g., multi-year, multi-stage freeway projects with construction value ≥ $50M).
- Educational background in Construction Management, Civil Technology/Technician, or equivalent.
- Proven experience managing schedules across the full project lifecycle, from construction start through completion.
- Extensive expertise developing and maintaining critical path schedules for complex highway projects, integrating design activities, utilities, environmental approvals, Advance Works, and construction sequencing.
- Demonstrated experience preparing schedules for alternative delivery projects (e.g. DB, CMGC, PDB).
- Strong capability managing Design Phase milestones and decision gates (e.g., OPCC checkpoints and optional lump-sum conversion points).
- Demonstrated ability to review, challenge, and validate contractor schedules, identify critical and near-critical paths, and recommend mitigation or recovery strategies.
- Proficient in schedule analysis techniques, including time impact analysis, scenario ("what-if") analysis, and schedule compression methods (e.g., fast-tracking, crashing).
- Experience preparing schedule analyses for claims or disputes, with clear, defensible documentation.
- Strong capability producing clear schedule reporting for technical and non-technical audiences, including dashboards, summaries, and progress metrics.
- Thorough understanding of construction methodologies, sequencing, contract requirements, and schedule compliance considerations.
- Demonstrated problem-solving ability, attention to detail, and strong communication and collaboration skills with designers, contractors, agencies, utilities, and Ministry stakeholders.
- Advanced proficiency with industry-standard scheduling software (e.g., Primavera P6, Microsoft Project, Asta Powerproject) and resource-loaded schedules with demonstrated experience performing schedule risk assessments, schedule contingency analysis, and Monte Carlo schedule simulations.

Preferred Qualifications (non-Mandatory):

- Project Schedule Professional (PMI-SP) is considered an asset.

Cost Estimating Lead

The Cost Estimating Lead's availability and level of engagement shall be commensurate with the responsibilities and demands of their role throughout the duration of the Assignment. The Cost Estimating Lead is expected to prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

Minimum Qualifications:

- Be an employee of the Lead Contractor Firm or one of the Service Provider Firms in a Joint Venture.
- 10+ years of estimating experience, including at least five (5) years leading complete estimates for major highway or bridge construction projects of comparable scope and complexity.
- Extensive experience developing production-based estimates using MTO Tender Item structures, and Class 1 estimates in accordance with Association for Advancement of Cost Engineering (AACE) guidelines.
- Demonstrated capability in preparing contractor-style bottom-up estimates, including detailed quantity take-offs, unit pricing, contingencies, assumptions, and Basis of Estimate documentation aligned with design maturity.
- Experience delivering estimates for alternative delivery projects (e.g., DB, CMGC, PDB).
- Proven ability to manage multi-discipline estimating inputs, reconcile design assumptions, risk allocations, market conditions, and quantities, and participate in variance reviews (e.g., OPCC, targeted open-book reviews).
- Proficiency with industry-accepted estimating and pre-construction software, including parametric analysis tools.

Preferred Qualifications (non-Mandatory):

- Certificate in Professional Quantity Surveyor (PQS) is an asset.
- Experience with highway and bridge construction in Ontario is an asset, including understanding of site logistics, staging, crew assemblies, and productivity assumptions.

Risk Lead

The Risk Lead availability and level of engagement shall be commensurate with the responsibilities and demands of their role throughout the duration of the Assignment. The Risk Lead shall prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

Minimum Qualifications:

- Be an employee of the Lead Contractor Firm or the Lead Design Firm or one of the Service Provider Firms in a Joint Venture.
- Certified Canadian Risk Management (CRM), Risk Management Professional (RMP), or equivalent risk management designation.
- 10+ years of experience developing and implementing risk management practices on

large construction or infrastructure projects, including risk identification, assessment, mitigation, and strategic planning.

- Proven experience managing design and construction risks on major infrastructure projects, including use of risk registers, mitigation planning, risk workshops, and qualitative and quantitative risk analysis.
- Demonstrated capability leading and maturing project risk registers through all stages (identification, quantification, allocation, and treatment), with integration into estimating assumptions (e.g., OPCC reconciliation, targeted open-book reviews), and risk-related contract provisions.

Design Manager

The Design Manager shall be fully dedicated to the Assignment on a fulltime basis for the entire duration of the Assignment. The Design Manager shall not undertake any other assignment, whether internal or external, that compromises their full-time availability or performance on this Assignment.

Minimum Qualifications:

- Be an employee of the Lead Design Firm.
- Must be a licensed Professional Engineer in good standing in Canada and either licensed in Ontario, or eligible for Ontario licensure within twenty (20) Business Days of the Assignment award.
- 15+ years' experience in project leadership on high-complexity highway, bridge, or corridor projects, including multi-phase freeway or corridor assignments.
- Have successfully managed a minimum of five (5) or more high complexity projects for MTO or other similar jurisdictions.
- Demonstrated extensive experience managing the integrated planning, coordination and delivery of large, complex infrastructure projects through effective coordination of multidisciplinary teams, ensuring design development, field investigations, property access, utility relocations, environmental commitments, and construction requirements to support timely execution.
- Demonstrated experience working on alternative delivery projects (e.g. DB, CMGC, PDB).
- Extensive experience overseeing multi-disciplinary highway design, including corridor-wide integration of structures, foundations, drainage, traffic, environmental, and geotechnical disciplines.
- Proven ability to manage design development through structured milestones, decision gates, and review processes, including change control, constructability input, and quality assurance.
- Demonstrated capability coordinating design submissions, managing technical assumptions, interfaces, and cross-discipline risks, and progressive cost review processes (e.g., OPCC, targeted open-book reviews).
- Strong track record leading multi-disciplinary teams, managing multiple concurrent projects, and maintaining delivery momentum under tight timelines.

- Thorough knowledge of MTO policies, standards, practices, and delivery models.
- Proven ability to respond effectively to owner comments, resolve issues promptly, and maintain alignment with project objectives.
- Demonstrated success collaborating with stakeholders, including municipalities, utilities, agencies, the public, and Indigenous partners, supported by strong negotiation and consensus-building skills.
- Strong leadership, communication, and representation skills, with the authority to act on behalf of the design team and facilitate collaboration throughout design and construction.

Lead Design Engineer

The Lead Design Engineer shall be fully dedicated to the Assignment on a fulltime basis for the entire duration of the Assignment. The Lead Design Engineer shall not undertake any other assignment, whether internal or external, that compromises their full-time availability or performance on this Assignment.

Minimum Qualifications:

- Be an employee of the Lead Design Firm.
- Must be a licensed Professional Engineer in good standing in Canada and either licensed in Ontario, or eligible for Ontario licensure within twenty (20) Business Days of the Assignment award.
- 10+ years' highway design experience on high-complexity projects for MTO or other similar jurisdictions.
- Extensive experience in highway geometric design, including grading and drainage, on large or multi-segment projects, with demonstrated involvement in complex staging.
- Demonstrated detail and/or preliminary design experience on at least one (1) MTO projects within the past ten (10) years, including preparation of MTO contract packages for highway widening/ reconstruction or bridge widening/ major rehabilitation/ new construction projects.
- Proven ability to evaluate design alternatives, quantify impacts, and support development of quantities, assumptions, and production-based inputs used for estimating.
- Experience integrating innovation and constructability considerations during design development and providing technical support during key milestones (e.g., OPCC).
- Strong capability coordinating multi-disciplinary design teams and ensuring design quality, consistency, and integration across all design packages.

Design and Integration Lead

The Design & Integration Lead shall be fully dedicated to the Assignment on a fulltime basis for the entire duration of the Assignment. The Design & Integration Lead shall not undertake any other assignment, whether internal or external, that compromises their full-time availability or performance on this Assignment.

The Design & Integration Lead shall be responsible for the design integration, technical advisory, coordination between all disciplines to ensure seamless delivery of all services and

deliverables, and design consistency across all contracts of this Project.

Minimum Qualifications:

- Be an employee of the Lead Design Firm.
- Bachelor's degree in Civil Engineering or a related discipline.
- Licensed Professional Engineer in good standing in Canada and either licensed in Ontario, or eligible for Ontario licensure within twenty (20) business days of the Assignment award.
- 10+ years of experience in highway infrastructure design, including at least five (5) years in a senior leadership role overseeing multi-disciplinary design teams
- Extensive experience in environmental and engineering fieldwork investigation coordination, utility relocation coordination, detail design report deliverables, influence accelerated delivery of advance and main contracts
- Demonstrated experience on how they will function as an integrated unit with clear communication protocols and shared accountability for all aspects of design and integration management.
- Demonstrated experience supporting or advising MTO or other similar jurisdictions on highway infrastructure projects.
- Demonstrated experience with, and knowledge of MTO design standards, manuals, and processes.
- Demonstrated experience managing or integrating the design of multi-package or corridor-wide transportation projects, preferably involving adjacent or overlapping contract packages.
- Experience coordinating across multiple design consultants or contract packages to ensure technical consistency, schedule alignment, and constructability

Quality Manager

The Quality Manager shall be fully dedicated to the Assignment on a fulltime basis for the entire duration of the Assignment. The Quality Manager shall not undertake any other assignment, whether internal or external, that compromises their full-time availability or performance on this Assignment.

Minimum Qualifications:

- Be an employee of the Lead Contractor Firm or one of the Service Provider Firms in a Joint Venture.
- Must have certification in ISO 9001 Lead Auditor, ISO 9001 Lead Implementer, or Certified Quality Auditor (CQA), Certified Manager of Quality/Organizational Excellence (CMQ/OE)
- 10+ years experience in design and construction quality management, quality assurance, or quality control on medium to high-complexity transportation or infrastructure projects.
- Demonstrated experience developing and administering project-specific Quality Control Plans for design and construction, including on alternative delivery projects (e.g., PDB, DB, CMGC).

- Proven experience managing multidisciplinary quality systems, including design quality, construction quality, testing, inspection, and documentation.
- Demonstrated knowledge of MTO quality requirements, including RAQS Consultant QC Plans (Core, Generic Category, and Supplementary Specialty Plans) and Milestone Quality Reporting.
- Experience identifying, documenting, and managing quality non-conformances, including corrective and preventive actions.
- Proven ability to coordinate and oversee independent checking and quality audits, ensuring staff do not check their own work.
- Experience preparing and certifying Milestone Quality Reports and responding to Ministry quality reviews and comments.
- Strong coordination and communication skills, with the ability to interface effectively with the Ministry, Lead Design Firm, Sub-Service Providers, and third parties.
- Authorized to act on behalf of the Lead Contractor for quality-related matters and available to respond promptly to Ministry inquiries.

Structural Manager

The Structural Manager shall be fully dedicated to the Assignment on a fulltime basis for the entire duration of the Assignment. The Structural Manager shall not undertake any other assignment, whether internal or external, that compromises their full-time availability or performance on this Assignment.

Minimum Qualifications:

- Be qualified under Design & Evaluation – Complex Structures (multi-span) Speciality in MTO Prequalified Engineering Service Providers list.
- Ten (10) years of transportation structures, including bridge engineering, experience (as a P. Eng.) on projects of high complexity scope and size (at minimum one (1) MTO project).
- Demonstrated successful experience planning, analyzing, evaluating and designing two and multi-span bridges.
- Demonstrated successful experience planning, analyzing, evaluating, rehabilitating and designing single-span bridges and culverts.
- Extensive and demonstrated knowledge of the Canadian Highway Bridge Design Code as well as current ministry policies, procedures, standards, specifications and manuals
- Successful experience in the following areas:
- Preparing contract drawings including specifications, special provisions, non-standard special provisions and applicable standard drawings to be used for the contract bidding process and construction of the structures.
- Reviewing condition survey reports and making recommendations to ascertain the needs and develop strategies for rehabilitation.
- Practicing engineering to evaluate, modify or improve the existing condition of bridges.
- Preparing full contract requirements for coating of the entire steel superstructure including environmental constraints.
- Reviewing the inspection reports and making recommendations to ascertain the needs and developing strategies for cathodic protection of the existing bridge structure rehabilitations.

Lead Environmental Planner

The Environmental Lead shall be fully dedicated to the Assignment on a fulltime basis for the entire duration of the Assignment. The Lead Environmental Planner shall not undertake any other assignment, whether internal or external, that compromises their full-time availability or performance on this Assignment.

Minimum Qualifications:

- Be an employee of a qualified firm under Class Environmental Assessment Process Speciality in MTO Prequalified Engineering Service Providers list.
- 10+ years of experience leading environmental assessments, approvals, and permitting on MTO, transit or municipal projects of medium to high complexity transportation infrastructure projects, including experience in successfully managing projects involving Class EA, regulations made under the Environmental Assessment Act, other provincial assessment of environmental impact legislation, and/or Individual Environmental Assessments; experience with the preparation, submission and successful clearance of Individual Environmental Assessment Reports, or equivalent. This experience shall include at least one (1) MTO project.
- Have broad based knowledge of a wide variety of environmental disciplines; and the technical aspects of these and current environmental issues, a working knowledge of federal and provincial planning and environmental policy/legislation in general, and specific knowledge of MTO policy and legislation including the requirements of the MTO Class Environmental Assessment for Provincial Transportation Facilities (2024).
- Experience with the following:
    - Preparation, submission and successful clearance of Environmental Study Reports, Transportation Environmental Study Reports and Addendum, Environmental Screening Documents, Environmental Project Reports, Environmental Impact Assessment Reports.
    - Preparation and co-ordination of public consultation programs.
    - Good understanding of the interests and mandates of environmental ministries and agencies.
    - Development of mitigation measures and contract documentation to address mitigation needs.
    - Demonstrated successful experience delivering products within tight timelines.
- Experience developing mitigation measures; supporting Construction Phase monitoring and reporting; and integrating environmental requirements into contract documentation and construction execution.
- Demonstrated capability identifying, assessing, and managing environmental risks, including integration into the Design & Construction Risk Register and transition of environmental commitments into construction.
- Experience integrating environmental constraints, sequencing, and schedules into Design Phase planning to reduce downstream delivery risk.
- Strong track record delivering complex environmental approvals and documentation within compressed timelines.

Fisheries Assessment Specialist

The Fisheries Assessment Specialist availability and level of engagement shall be commensurate with the responsibilities and demands of their role throughout the duration of the Assignment. The Fisheries Assessment Specialist shall prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

Minimum Qualifications:

- Be registered in RAQS for this specialty
- A minimum of five (5) years of demonstrated experience with projects in Ontario of a similar scope and complexity to this Project
- Knowledge of, and experience with assessing impacts to and developing mitigation for aquatic species at risk, specifically Redside Dace
- Proven ability to liaise with other specialty consultants, contractors, and Governmental Authorities, and
- Proven experience in the negotiation and development of fisheries offsetting plans that have received an authorization under paragraphs 34.4(2) (b) and 35(2)(b) of the Fisheries Act.

Species at Risk Specialist

The Species at Risk Specialist availability and level of engagement shall be commensurate with the responsibilities and demands of their role throughout the duration of the Assignment. The Species at Risk Specialist shall prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

Minimum Qualifications:

- A degree or diploma from a recognized university or college with specialization in biology, ecology, or another related discipline.
- Demonstrated successful experience on a minimum of three (3) recent (within past 5 years) medium or high complexity projects of similar scope and size (at minimum one (1) of those three (3) projects shall be MTO projects).
- Demonstrated experience with projects of a similar scope and complexity, which include experience with:
    - Species at Risk (SAR) species and habitat identification, concepts of biological rarity, and ecosystems, habitats and populations assessment techniques.
    - Conducting field identification of provincially and federally listed SAR.
    - Conducting habitat characterization and identification studies for target species that are federally or provincially listed as SAR.
    - Federal and provincial (Ontario) permitting processes.
- Demonstrated knowledge of:
    - Current biological and ecological science theories and principles to conduct biological/ecology research and analysis and provide expertise to support the protection of SAR.

- Provincial and federal listed Ontario species at risk and their habitats to provide information, expertise and advice to conduct SAR scientific research and analysis.
- Demonstrated ability to liaise with other MTO service providers and regulatory agencies.
- The experience shall be species-specific if identified in the Terms of Reference (e.g. mussels, fish, turtles, amphibians).

1.5.1.3 Integrated Project Schedule and Cost Control

Provide a description of the Proponent's approach, governance structure, and control mechanisms for managing Assignment schedule, cost, resources, risks, and Work Orders throughout the Assignment.

- Describe how the Proponent will work collaboratively with the Ministry to plan, scope, develop, prioritize, negotiate, and administer Work Orders, Work Quotes, and Assignment Proposals in accordance with Section 3.5.2, including processes for responding to emerging project needs and changing priorities.
- Describe how the Proponent will support the Ministry in identifying, forecasting, and allocating resources across all PDBH Services to ensure the appropriate level of expertise is available to support project development, field investigations, design advancement, permitting activities, project controls, and implementation planning.
- Describe the methodology for developing and maintaining an Integrated Project Schedule for the Design and Construction Phases that aligns all technical disciplines, field investigations, environmental approvals, property requirements, utility coordination, stakeholder engagement activities, Indigenous consultation activities, Design Phase Milestones, design package development, and construction readiness activities.
- Describe how the Service Provider’s Project Manager will work collaboratively with the Ministry’s Project Team to negotiate and finalize all Work Orders and Work Quotes.
- Describe what action will be taken so that the Integrated Project Schedule will be maintained and what will be done to restore the schedule if problems develop.
- Describe how the Proponent will identify, monitor, and manage schedule-critical activities and interfaces, including dependencies that may impact project schedule.
- Describe how the Proponent will support development of phased implementation strategies, early works opportunities, advance contract packages, and other schedule optimization initiatives to accelerate project delivery.
- Describe how the schedule requirements in Section 3, Section 5 and Section 7 will be achieved.
- Describe how scope changes will be handled to minimize delays and describe how the Proponent’s schedule will meet the Ministry’s requirements for this Assignment.
- Describe how the Proponent will integrate schedule, cost, risk, and resource management practices to support efficient delivery of the Assignment and achievement of Ministry objectives.

1.5.1.4 Conflict of Interest Declaration Forms

Complete and submit the **LIST OF SERVICE PROVIDER STAFF WHO PARTICIPATED IN PREPARATION OF THE RFP SUBMISSION** form, provided in Appendix A: Phase I Forms. Include the names, addresses, and telephone numbers of the persons who participated in the preparation of the Phase I proposal.

Also provide a list of the name(s) of any former employees of the Ontario Public Service, their job classifications and the particular ministries where these individuals were working immediately prior to their leaving the Crown that the Service Provider has either appointed to its Board of Directors or employed since April 23, 1997.

The Phase I submission must also include a statement regarding conflict of interest. Complete and submit either:

(i) The **CERTIFICATION – NO CONFLICT OF INTEREST** form, provided in Appendix A: Phase I Forms, signed by a Principal of the proponent firm with the authority to sign a binding legal agreement on behalf of the Service Provider to declare no current or future conflict of interest (actual, perceived or potential) in submitting a Proposal, or, if selected, with the contractual obligations of the Service Provider under the Agreement and that the Proponent neither has, nor has access to, any Confidential Information as defined below.

Or,

(ii) The **CERTIFICATION –CONFLICT OF INTEREST** form, provided in Appendix A: Phase I Forms, signed by a Principal of the proponent firm with the authority to sign a binding legal agreement on behalf of the Service Provider to declare any(all) situation(s) that may be a conflict of interest in submitting a Proposal or, if selected, with the contractual obligations of the Service under the Agreement.

"**Confidential Information**" refers to confidential information of the Crown (other than confidential information which is disclosed to the Service Provider in the normal course of the RFP process); the Confidential Information is relevant to the Services required by the RFP, their pricing or the RFP evaluation process; and the disclosure of which could result in prejudice to the Crown or an unfair advantage to the Service Provider.

The submission of any Proponent may be disqualified where the Proponent fails to provide confirmation or makes misrepresentations regarding any of the above. Further, the Minister shall have the right to rescind any Agreement with the successful Service Provider in the event that the Minister at his/her discretion determines that the successful Service Provider has made misrepresentation regarding any of the above, in addition to or in lieu of any other remedies that the Minister has in law or in equity.

1.5.1.5 Additional Information

Provide additional information or description of resources supporting your firm's qualifications for the proposed project.

Engineering and Materials Testing:

When a Company owns or operates more than one laboratory, or uses a Sub-Contractor, the laboratory(s) that the Company intends to use for this specific contract shall be listed separately. The requirements provided under submissions and qualifications of professional shall be fulfilled for each laboratory.

The following must be submitted as part of the Phase I Proposal in an Appendix *outside* the page limit specified in Section 1.4.2:

- A statement to confirm which testing and evaluation categories each laboratory is capable of.
- A copy of all the required accreditation or certification documents for each laboratory or Sub-Contractor laboratory as per LS-102.
- A copy of the individual test and laboratory ratings reports from the Ministry's proficiency sample testing programs for the past two (2) years (where applicable). In addition, when required, letters or memoranda describing the investigation and resolution of low ratings shall also be attached.
- A copy of the description of the quality management/audit process that the Service Provider has in place so that any testing done by others is satisfactory; submitted in Phase III.
- A statement and demonstration that the Service Provider or his/her Sub-Contractor is qualified (e.g., on MTO Qualified Laboratories lists if applicable) and has qualified engineers, geologists, and chemists to perform the required work.
- A statement that qualified/certified technicians, when required, will conduct the work and a copy of the appropriate certificates.
- In the case of aggregate resources prospecting and evaluation, a statement of experience and two references.
- A list of previous works, within each sub-category, carried out directly or indirectly for the Ministry in the past three (3) years. List contract number (if applicable), area, type of work performed, and completion date.

1.5.2 Phase II (RFP) – Technical and Financial Proposal (Envelopes No.1 & 2)

A Transmittal Letter, not exceeding two (2) pages, shall be included in Phase II submission, which shall indicate the Proponent's intention to submit a Phase II proposal to provide Services for the project with the name, title, address, and telephone number of the Principal who will serve as the single point of contact for the project. The letter must be signed by a principal of the Proponent firm with the authority to sign a binding legal agreement on behalf of the Service Provider.

In addition to above, the letter shall include the following:

- Legal Name of Business and Business Type (e.g., corporation, partnership, joint venture),
- Owner(s); Partner(s); Corporate Officer(s)/Title,
- Business Address, Telephone Number, Facsimile Number, and Email Address.
- Joint Venture / Joint Bid participant firm(s) details
- Lead Design Firm details
- Proponent Contact Information for provision of Stipend, if applicable, in accordance with RFP **Section 2.24 Stipend**

1.5.2.1 Technical Proposal (Envelope No. 1 – Identity & Proposal)

The following must be uploaded to Envelope No.1 for the Phase II (RFP) submission.

Technical Proposals are to be prepared in as concise a manner as possible; however, they should provide sufficient information and detail to adequately address the various issues associated with the project.

The Technical Proposal shall include a **Project Overview,** including an Integrated Project Schedule, **Proposal Phase Plans,** and **Functional Work Plans** (described below) that:

- Confirm that the Proponent will complete all the necessary tasks to successfully perform the work;
- The Proposal should make reference to Sections of the RFP and other documents to confirm they will adhere to established Ministry processes and procedures. Repeating the narratives, that are well documented in the RFP, Ministry manuals, and other readily available sources, is not required.
- Demonstrate to the Ministry that the Proponent is competent in terms of knowledge, capability, commitment, and expertise to deliver a quality product that is cost effective and innovative.
- The Proposal should identify, as they relate to each Functional Work Plan, how cost effectiveness, innovation, and constructability considerations will be applied. The processes, procedures, and methodologies must be well described in the Scope / Work Plan section of a Functional Plan.

(a) Project Overview

The Project Overview must include the following sections:

(i) Understanding of the Project

Provide a narrative to demonstrate understanding of the requirements of the Project including key issues, constraints, and ideas/plans to meet the challenges of the Project.

This section shall include a statement confirming that the proponent will comply with the requirements for Project Administration, Quality Control, and Performance and the General Terms of Reference.

(ii) Project Approach

Provide a narrative to demonstrate understanding of how to undertake the Assignment, including a concurrent and sequential application of disciplines involved and their integration to deliver the end project. The discussion may include but is not limited to the following:

- Approach to project management and design development, including governance, coordination between disciplines and across Contract packages.
- Approach to quality management, at a high level, describing how quality objectives will be achieved and maintained across design and construction.

- Approach to collaboration and partnering on the Project with MTO, including stakeholder coordination, communication protocols, and coordination with adjacent work and third parties.
- Disciplines/Specialties required to successfully complete this Assignment (this does not require an organization chart).
- Design process overview specific to this project identifying the proposed work plan to address the multi-disciplinary requirements and demonstrating how the integration of the disciplines will occur in the project.

(b) Proposal Phase Plans

Proponents shall submit the following Proposal Phase Plans outlining the Proponent's general technical approach and resources in support of delivering the required scope of work in accordance with the Terms of Reference.

(i) Schedule Management Plan

Proponents shall provide a draft Schedule Management Plan describing its approach to developing, monitoring, and controlling the **Integrated Project Schedule** and **Integrated Critical Path Schedule**, reflecting the Design and Construction Phases. The Schedule Management Plan shall be aligned with key milestones and targeted completion of the Design and Construction Phases, including Ministry identified Advance Contract(s). The Proponent shall also describe how schedule risks, design changes, and performance will be managed to maintain alignment with Project requirements and ensure timely and efficient delivery. The Plan shall address the detailed requirements set out in Section 5.1, Design and Construction Scheduling – Proposal Phase Requirements.

The electronic version (.XER file format) of the Proposal Phase schedules **shall be** submitted to contracttendering@ontario.ca by the deadlines in **Section 1.1 - RFP Schedule**.

Refer to Section 3 for items which must be scheduled in the Phase II Proposal, as well as Sections 4-7 for additional critical activities.

The mandatory milestone dates provided in Section 3 shall be met and if a Proposal does not meet these dates, the Proposal will be rejected.

Note: No work by the Proponent/Preferred Proponent/Service Provider shall be planned to start before the Agreement has been fully executed.

(ii) Basis of Estimate Plan

Proponents shall provide a draft Basis of Estimate Plan describing their overall approach to developing, refining, and validating cost estimates. The Plan shall address the detailed requirements set out in Section 5.2.2, Basis of Estimate Plan.

(iii) Innovations Plan

Proponents shall provide a draft Innovations Plan describing their overall approach to identifying, evaluating, and integrating innovation opportunities. The Plan shall address the detailed requirements set out in Section 6.1, Innovations Plan.

As part of the Innovations Plan, the Proponent shall provide details on up to [**NTD:** Insert # of Proposal Phase Innovation Proposals. Consider 3 to 5.] of Innovation Proposals. Each Innovation Proposal shall address the detailed requirements set out in Section 6.1.1.1, Proposal Phase Requirements. Proponents shall also reflect relevant Project Goals from the RFP Overview as part of the Innovation Proposals.

(iv) Risk Management Plan

Proponents shall provide a draft Risk Management Plan describing their overall approach to identifying, assessing, and managing project risks. The Plan shall address the detailed requirements set out in Section 6.2, Risk Management Plan. Proponents shall update the Proposal Phase Design & Construction Risk Register (DCRR) based on their understanding of the Project. The Proposal Phase DCRR shall form part of the Proposal Phase Risk Management Plan.

(v) Constructability Plan

Proponents shall provide a draft Constructability Plan describing their overall approach to incorporating constructability considerations into design development. The Plan shall address the detailed requirements set out in Section 6.3, Constructability Plan.

(vi) Communication and Consultation Plan

The Service Provider shall submit a comprehensive and robust draft Communication Plan. The Plan shall outline the proposed consultation strategies, stakeholder engagement approach, and contingency measures to address potential challenges, delays, or obstacles arising from a lack of cooperation or agreement from the external stakeholders. The Plan shall address the detailed requirements set out in Section 4.2, Technical Services Required – Communication and Consultation Plan.

(vii) Design Integration and Interface Plan [NTD: Remove if not applicable]

The Service Provider shall submit a comprehensive and robust draft Integration and Interface Plan. The Plan shall outline the proposed approach for integrating this assignment with adjacent MTO infrastructure/projects and with municipal and regional projects that may impact or interface with this design assignment. The Plan shall address the detailed requirements set out in Section 4.2, Technical Services Required – Design Integration and Interface Plan.

(c) Functional Category Plans – Technical Team and Work Plan Requirements

Proponents shall submit a separate Functional Category Plan for each Functional Category identified in Section 7 of this RFP. Each Functional Category Plan shall clearly demonstrate the Proponent's technical approach, resources, and ability to deliver the required scope of work in accordance with the Terms of Reference.

Some Functional Categories in Section 7 include "Proposal Phase Requirements" section before the Project Scope to highlight requirements that shall be included in the Proponent's proposal.

(i) Functional Category Plan – Content Requirements

Each Functional Category Plan shall address the category-specific requirements outlined in Section 7 of this RFP and shall focus on the Proponent's technical execution of the work, including:

- Technical Team;
- Technical Scope;
- Proposed Methodology;
- Discipline-specific Risks and Challenges; and
- Functional Deliverables.

Functional Category Plan(s) shall be of sufficient detail to clearly illustrate to the Ministry all of the required tasks and deliverables to complete the proposed scope of work. A Proponent may be asked for clarification(s) regarding the Functional Category Plans submitted. An incomplete or ambiguous submission may result in disqualification at the Ministry's discretion, acting reasonably.

(ii) Functional Category Plan Format

Each Functional Category Plan shall be structured as follows:

7.X Functional Category Name (e.g. Foundations Engineering). Where *"X" corresponds to the Functional Category number in Section 7.*

7.X.1 Technical Team (by Functional Category)

For each Functional Category, Proponents shall identify and describe the role of each Technical Team Member proposed to deliver the Functional Category requirements. In selecting and describing the proposed Technical Teams and roles, Proponents shall ensure compliance with Table 2: Mandatory Qualification Requirements for Technical Team Members, as set out under Phase III of this RFP.

This section shall focus solely on the Functional Category Lead(s) and Technical Team Member roles responsible for executing the technical work for the Functional Category.

The Technical Team description shall include:

- Identification of the Functional Category Lead and assigned Technical Team Member roles responsible for the Functional Category;
- A description of the assigned technical staff, including:
    - Their technical roles, responsibilities, and duties specific to the Functional Category;
    - Clear identification of who is responsible for performing specific technical tasks associated with the Functional Category; and
    - A description of reporting relationships within the Functional Category team, including how the Functional Category Lead interfaces with the Key Individuals identified in the Phase I Project Team and Organization Plan.

This section shall demonstrate that the Technical Team structure is appropriate for the scope, complexity, and technical requirements of the Functional Category work.

7.X.2 Scope / Work Plan

Outline the approach, methodology, and work proposed to respond to the requirements outlined in the Terms of Reference.

The Work Plan shall include a statement to clearly confirm that the Proponent will carry out all the necessary tasks to perform the work.

The Work Plan shall demonstrate that the methodology proposed is well suited for this specific work, the level of understanding of the issues and key challenges related to each Discipline, and problem solving that will be used. Where applicable, outline investigative techniques that will be used to identify and evaluate new technologies

The work plan shall identify any external project teams (i.e.: media, emergency services, public, etc.) to be utilized.

Note: Discussion specific to Site Investigation and Field Testing and Materials Testing requirements must be in parts 7.X.4 and 7.X.5 respectively.

7.X.3 Deliverables

This section shall include a statement confirming that all the deliverables identified in the Terms of Reference for the specific functional work plan will be provided. It is not required to reiterate the details provided in Sections 3 – 7. Proponents may identify any additions or modifications to the deliverables they may deem necessary to complete the work and provide the rationale.

7.X.4 Site Investigation and Field Testing

Focus on the investigation and testing requirements related to the specific Functional Work Plan only. General Site Investigation and Field Testing requirements and compliance to General Requirements should be covered in the Project Overview as described above.

7.X.5 Engineering Materials Testing and Evaluation

Focus on material testing requirements related only to the specific Functional Work Plan.

(iii) Functional Categories that do not require submission of a Plan:

The following Functional Categories will not receive a technical score in the evaluation of the Phase II submission. The following Functional Categories Plans only require a written statement confirming that the Terms for this functional category will be adhered to for this Assignment: **[NTD: I**nsert functional categories not scored or delete paragraph if not applicable] Engineering Materials Testing and Evaluation Services. The submission shall be as per Section1.5.1.5 and the evaluation will be met (✓) or not met (x) the requirements.

A Proponent may include any additional engineering work category as a supporting specialty (with a corresponding work plan) they deem necessary to complete the Assignment.

(d) Conflict of Interest Declaration Forms

If there are changes to the Proponent's Conflict of Interest Certification between the submission of the Phases I and II Proposals, Proponents shall include in their Phase II Proposal a resubmission of the Certification forms. If there are no changes in the status of the Proponent's Conflict of Interest Certification, no resubmission of the Certification forms is required within their

Phase II Proposal. However, the Phase II Proposal must still include a statement confirming the Proponent's conflict of interest status.

1.5.2.2 Financial Plan (Envelope No. 2 – Pricing)

The following must be uploaded to Envelope No.2 for the Phase II (RFP) submission:

(a) Completed and signed Offer and Acceptance Form (Appendix B: Phase II Forms).

The Design Phase Total Contract Price (inclusive of the Lump Sum Price, Total Competitive Cost Price, and Innovation Budget) shown in the Offer and Acceptance Form shall be full compensation for all services, deliverables, equipment, materials, and testing required to provide the services detailed in the RFP documents and the Proponent's proposal. The Design Phase Total Contract Price includes, but is not limited to salary, benefits, overhead (office, computer, cell phones, etc.), payroll burden and profits.

Proponents shall provide their billing office/address with their Financial Plan.

(b) Completed Proposed Design Phase Fee Schedules and Bid Price Summary Form(s) as applicable for this Assignment (Appendix B: Phase II Forms).

The Design Phase Fee Schedules and Bid Price Summary Forms (**Appendix B.2**) shall be full compensation for all services, deliverables, equipment, materials, and testing required to provide the Services. The Lump Sum Price & Fixed Unit Rates includes, but is not limited to salary, benefits, overhead (office, computer, cell phones, etc.), travel, equipment, tools, materials, payroll burden, and profits.

The Fee Schedules will be reviewed for completeness – rates for all identified roles and activities shall be provided. Incomplete Fee Schedule(s) may result in disqualification of the Proposal, and the Service Provider advised accordingly.

The Ministry will review the individual Lump Sum Price items and Fixed Unit Rates proposed in the Fee Schedules. If any proposed rates are found to be unreasonable or unbalanced as compared to current industry standard, the Ministry reserves the right to disqualify the Proposal.

(c) Total Project Prices Summary Tables and Competitive Cost Forms

Proponents must submit completed Total Project Prices Summary Tables (**Appendix B.3**) and Competitive Cost Forms (**Appendix B.4**).

The Hourly/Unit Rates in the Competitive Cost Forms shall match the Hourly/Unit Rates proposed in corresponding Fee Schedule. The Estimated Hours/Quantity provided by MTO must **NOT** be altered. The Estimated Hours/Quantity provided are for Proposal purposes only. The actual allotment of Hours/Quantities will vary and will be formalized through Work Orders (see RFP Section 3.5.2 Work Orders & Quotes).

Any incomplete Financial Plan shall be disqualified, and the Service Provider advised accordingly.

1.5.2.3 Proponent Presentation Meeting and Proponent Scored Interview

[NTD: MTO Project Team discretion to include the Proponent Presentation Meeting (PPM) and/or the Proponent Sored Interview (PSI). At least one must be included, with the PSI recommended for high complexity projects, however both may be included if appropriate. Revise 1.5.2.3 heading to reflect decision. Consult with CIO as needed.**]**

The shortlisted Proponents are required to complete both the Proponent Presentation Meeting and Scored Interview on the same day at a Ministry Office in Toronto which will be shared with the shortlisted Proponents. The duration of the meeting will be approximately 4 hours.

(a) Proponent Presentation Meeting

The procurement process includes a mandatory Proponent Presentation Meeting (PPM) by shortlisted Proponents. The purpose of the Proponent Presentation Meeting is to:

- Allow the Proponent to present elements of its technical submission to the Ministry, as it is being developed, and demonstrate an understanding of the compliance of the submission to RFP requirements.
- Assist the Ministry in understanding any underlying issues and rationale behind matters presented by the Proponent with respect to the development of its proposal submission.
- Allow the Proponent to raise questions related to topics addressed in the RFP which are pertinent to the development of its proposal submission.
- Allow the Proponent to identify and seek clarification on competing requirements of the RFP which is pertinent to the development of its proposal submission.

Proponent Presentation Meeting Overview

- Proponent Presentation Meetings are held between the Ministry and individual Proponents.
- All information shared between the Ministry and Proponents shall be held in confidence and will not be shared with other Proponents.
- The duration of the Proponent Presentation Meeting shall not be longer than 1.5 hours.
- The Proponent Presentation Meeting will be held in-person in virtually / in-person **[NTD: Select PPM location]**.

Proponent Presentation Meeting Conditions

Each Proponent shall ensure that their attendees are familiar with and abide by the meeting conditions as listed below:

a. During the Proponent Presentation Meeting, the Ministry may provide oral compliance feedback on the contents of the Proponent's presentation, however this shall not be relied upon by the Proponent in any manner as determinative of an evaluation outcome.
b. No part of the Proponent Presentation will be evaluated as part of the Proposal Evaluation.
c. Proponents may be asked to submit a formal bid enquiry to questions or issues raised during the Proponent Presentation Meeting.

d. The Proponent Presentation Meeting will be attended and presided over by a Ministry fairness monitor. The fairness monitor's role will be to ensure that all parties follow the process as described within this RFP document.
e. Should the Proponent fail to comply with the requirements applicable to the Proponent Presentation Meeting, then, without limiting any other right of the Ministry under the RFP, the Ministry may, in their sole discretion reschedule or cancel the Proponent Presentation Meeting.

Proponent Presentation Meeting Agenda

Proponents shall prepare a meeting agenda that at a minimum shall include:

a. Ministry Overview and Comments
b. The following required topics shall be addressed by the Proponent in the Proponent Presentation Meeting:
    i. Proponent Organizational Structure
    ii. Understanding of Project & Approach
    iii. Project Management Approach
    iv. Schedule Management Plan
    v. Basis of Estimate Plan
    vi. Innovations Plan
    vii. Risk Management Plan
    viii. Constructability Plan
    ix. Response to Environmental Management
    x. Response to Indigenous Consultation
    xi. Response to Geotechnical/Foundation Design
    xii. Response to Structural Design
    xiii. Response to Traffic Management

[NTD: Add or remove topics as required, based on projects-specific needs.**]**

Proponent Presentation Meeting Submittal Requirements

a. Prior to the date identified in Section 1.1 RFP Schedule, the Proponent shall submit to the Ministry, an electronic copy of:
    i. Agenda
    ii. A list of attendees (up to ten (10) participants) that will attend the Proposal Presentation Meeting, and
    iii. The Proponent Presentation Meeting submittals for the Proponent Presentation Meeting in accordance with this Section 1.5.2.3.
b. The Proponent's Presentation Meeting submittals must outline the Proponent's understanding of, and commitment to, comply with the Technical Proposal Requirements, and the requirements of this RFP.
c. Proponents shall submit Proponent Presentation Meeting submissions electronically in "read only" Adobe (PDF) format to ContractTendering@ontario.ca, according to Section 1.1 RFP Schedule.

d. The format of the Proponent Presentation Meeting submittals shall consider the maximum duration of the meeting noted in this section above, with five (5) minutes allocated for Introduction. Time for questions and clarifications is not included in the 1.5 hours.

(b) Proponent Scored Interviews

The procurement process includes a mandatory in-person Proponent Scored Interview (PSI) for shortlisted Proponents, with the Technical Evaluation Team (TET). The purpose of the interview is to:

- Demonstrate how the Proponent can address questions by building on and applying the information provided in their proposal.
- Demonstrate the Proponent's willingness and ability to collaborate within their own team, with the Ministry, subcontractors, and stakeholders.

Proponent Scored Interview Overview

- Proponent Scored Interviews are held between the Ministry and individual shortlisted Proponents.
- All information shared between the Ministry and Proponents shall be held in confidence and will not be shared with other Proponents.
- The duration of the Proponent Scored Interview will be 2 hours **[NTD:** Adjust PSI duration based on project specific questions**]**
- The Proponent Scored Interview will be held in-person at a Ministry Office location which will be shared with shortlisted Proponents.

Proponent Scored Interview Conditions

Proponents shall ensure that attendees are familiar with the following interview conditions:

a. During the Proponent Scored Interview, the Ministry may provide oral compliance feedback on the contents of the Proponent's responses to interview questions, however this shall not be relied upon by the Proponent in any manner as determinative of an evaluation outcome.
b. Proponents may be asked to submit a formal bid enquiry to questions or issues raised during the Proponent Scored Interview.
c. The Proponent Scored Interview will be attended and presided over by a Ministry fairness monitor. The fairness monitor's role will be to ensure that all parties follow the process as described within this RFP document.

Proponent Scored Interview Components

The Proponent Scored Interview will include a combination of questions provided in advance as well as questions not shared beforehand. All Proponents will be asked the same set of questions.

1) **Standard Questions:**

5 to 10 Standard Questions will be shared with Proponents **{5-10 recommended}** days before the scheduled Proponent Scored Interview. Proponents may choose any method to

answer the questions, are encouraged to share the task of responding to questions between team members and should reference example projects to support the responses.

2) **Collaborative Exercise Questions:**

In addition to the Standard Questions that are provided in advance, the interview will include live questions and collaborative scenarios that will not be shared ahead of time, as they are designed to assess the Proponent's real-time teamwork, communication, and problem-solving.

Two (2) Ad Hoc questions will be asked on the day of the PSI that will focus on: Team-Based Scenario Questions/Interactive Collaboration Scenarios/Dynamic Assessment Questions/Live Collaboration Exercises **[NTD: Consult with CIO on project specific approach for the Collaborative Exercise Questions]**

3) **Proponent Highlight:**

The interview will include an allotted portion of time for the Proponent to present information of their choosing that they believe is relevant to the successful delivery of the project. The subject matter of this section will not be specified by the Ministry and is at the sole discretion of the Proponent.

[NTD: Include or remove at PM discretion. The allotted time and any associated evaluation criteria must be updated if included.]

Proponent Scored Interview Participants

A maximum of **{insert participant limit, recommend 6 to 10}** participants may attend the Proponent Scored Interview. The Proponent Team must have the following Key Individuals present:

- Project Manager
- Construction Manager
- Design Manager
- Lead Design Engineer

[NTD: The limit of permitted participants should reflect the complexity of the project and is at the discretion of the PM.**]**

The remaining six **[XX]** participants may be selected at the Proponent's discretion. The Proponent should carefully consider these selections, ensuring that the additional participants are Key Individuals whose roles and expertise are aligned with, and reflective of, the priorities and scope of the project.

All individuals in attendance at the interview are expected to actively participate.

The Proponent Scored Interview Agenda

1. Introductions
2. Standard Questions & Proponent Highlight Presentation **[NTD:** PM discretion to include Proponent Highlight**]**

3. Collaborative Exercise Questions

Allocation in Minutes	Agenda
5	Introductions
60	Standard Question Response **{& Proponent Highlight}** Presentation
5	Follow Up Discussion
15	Collaborative Exercise Questions
5	Proponent Questions for MTO & Wrap Up

[NTD: Adjust allocation to match total interview duration if adjusted above.**]**

Proponent Scored Interview Scoring

The TET will evaluate and score each Proponent's responses to the interview questions in accordance with the criteria set out in this section. In addition to assessing the content and completeness of the responses, the TET will also evaluate the overall cohesiveness of the team and the extent to which participation is appropriately shared among attendees.

Scoring will consider, without limitation, clarity of communication, demonstrating understanding of project requirements, quality and feasibility of proposed approaches, ability to respond effectively to follow-up questions, and the degree of collaboration demonstrated among team members during the interview. The interview consists of both pre-disclosed questions and questions not shared in advance. Proponents will be evaluated on both their prepared responses and their ability to think critically and respond in real time to scenario-based and follow-up questions. The weighted scoring breakdown for the Proponent Scored Interview is as follows:

Weighted Scoring	Item
50%	Standard Questions Response **{**& Proponent Highlight**}** Presentation
25%	Response to Follow Up Questions & Collaborative Exercise Questions
25%	Team Planning, Involvement, and Cohesiveness

All Proponents will be asked the same set of questions to ensure fairness and consistency in evaluation.

Proponents shall not share any information (including, but not limited to, Standard Questions, Collaborative Exercise Questions, and follow-up questions) related to the Proponent Scored Interviews, outside of the Proponents team and Key Individuals.

Proponent Scored Interview Submittal Requirements

a. Prior to the date identified in Section 1.1 RFP Schedule, the Proponent shall submit to the Ministry, an electronic copy of:
    iv. Agenda
    v. A list of attendees for the Proponent Scored Interview
    vi. Advance material for the Proponent Scored Interview, if available, electronically in "read only" Adobe (PDF) format to contracttendering@ontario.ca.
b. The format of the Proponent Scored Interview submittals shall consider the maximum duration of the meeting noted in this section above, with sufficient time allocated for questions and clarifications.

1.5.3 Phase III – Preferred Proponent Only

The Preferred Proponent shall have at least ten (10) business days from receiving notification, or such longer time period as specified in the written notice, to submit the Phase III and related submissions, as set out below, to contracttendering@ontario.ca.

Failure to comply with the Phase III requirements within the timeframe and requirements specified may result in disqualification of the Preferred Proponent.

1.5.3.1 Service Provider Address and Contact

Provide the Service Provider address and Service Provider single point of contact for all notices, documents, deliveries and Approvals required or permitted by this Agreement.

1.5.3.2 Quality Management and Audit Processes

The Preferred Proponent shall submit documentation describing the quality management and audit processes in place to ensure that any testing performed by the Service Provider or third parties meets applicable standards, specifications, and contractual requirements.

1.5.3.3 Technical Team Members Identification & Resume Information

The Preferred Proponent shall identify and submit resumes for all Technical Team members specified in Table 2: Mandatory Qualification Requirements for Technical Team Members, and the Technical Team members proposed under the Functional Category Plans in Phase II. *(excluding Key Individuals already addressed in the Phase I submission)*.

Resumes shall include:

- Technical experience and qualification requirements for each Technical Team member, as set out in Table 2: Mandatory Qualification Requirements for Technical Team Members, including relevant past duties performed
- Demonstration of the qualifications through relative experience and past performance on up to three (3) projects of similar scope and size, and if applicable, larger more complex, and more recent projects.
- For past non-MTO projects the Preferred Proponent shall provide:

- Available performance records; or
- The owner's contact name, address, and telephone number where performance records are not available.

Resumes shall be organized:

- By Functional Category; and
- Alphabetically by last name within each Functional Category.

Technical Team members will be assessed for compliance with the requirements set out in Table 2: Mandatory Qualification Requirements for Technical Team Members. Only those Technical Team members that satisfy the minimum mandatory requirements will be endorsed by the Ministry. The Ministry reserves the right to reject any Technical Team Member who, in the Ministry's sole discretion, does not meet the minimum mandatory requirements set out in Table 2: Mandatory Qualification Requirements for Technical Team Members. Upon notice of a rejected Technical Team Member(s), the Service Provider shall, within three (3) Business Days, provide a suitable replacement(s) that meets or exceeds the requirements of this RFP, to be assessed by the Ministry for compliance with the RFP requirements.

Staff Commitment and Substitution

The following requirements apply to Technical Team members specified in Table 2: Mandatory Qualification Requirements for Technical Team Members, and the Technical Team members proposed under the Functional Category Plans in Phase II. Following acceptance of the Phase III submission, the Service Provider shall utilize only those Technical Team members endorsed by the Ministry.

- The Service Provider shall utilize the Technical Team members identified in its Proposal, unless substitutions are approved by the Ministry in writing;
- Any replacement Technical Team member shall have qualifications and experience equivalent to or better than those proposed; and
- The Ministry reserves the right, acting reasonably, to require the removal and replacement of any Technical Team member who is not performing in an acceptable manner, in accordance with Sections 4.7 and 4.8 of the Legal Terms and Conditions.

Note: Notification requirements related to changes in Key Individuals following shortlisting are governed by the Phase I requirements under the Project Team and Organization Plan, Section 1.5.1.2

Table 2: Mandatory Qualification Requirements for Technical Team Members

[Note To Draft: The Qualification Requirements listed below are generic and are included for illustration purposes. Project teams shall consider the scope of the project when determining the Technical Team Members required and the qualification requirements necessary for the team to successfully deliver the Project.**]**

Table 2: Mandatory Qualification Requirements for Technical Team members
Document Controls Lead
The Document Controls Lead availability and level of engagement shall be commensurate with the responsibilities and demands of their role throughout the duration of the Assignment. The Document Controls Lead is expected to prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment. Minimum Qualifications: • Be an employee of the Lead Contractor Firm or one of the Service Provider Firms in a Joint Venture or the Lead Design Firm • 5+ years of experience in document control, project controls, or project administration on medium to high-complexity infrastructure or transportation projects. • Demonstrated extensive experience managing deliverable registers, submission logs, and milestone tracking across multi-disciplinary project teams and external stakeholders. • Proven experience coordinating RFP, design, and contract documentation submissions, including compliance with prescribed formats, deadlines, and approval workflows. • Experience maintaining document version control, revision history, distribution records, and approval status using formal document management systems. • Familiarity with common document management and collaboration platforms used on large infrastructure projects (e.g., SharePoint, ProjectWise, Aconex, CMS or equivalent). • Demonstrated ability to coordinate closely with Project Key Individuals, Technical Team Members, and Sub-Service Providers to confirm deliverable readiness and submission status. • Strong organizational, time-management, and attention-to-detail skills, with a proven ability to manage multiple concurrent deadlines. • Ability to prepare clear status reports identifying upcoming submissions, overdue items, risks to milestone achievement, and mitigation actions. • Strong written and verbal communication skills, with the ability to respond promptly to Ministry or Project Team inquiries related to documentation and submissions.
Communications Lead
The Communications Lead availability and level of engagement shall be commensurate with the responsibilities and demands of their role throughout the duration of the Assignment. The Communications Lead is expected to prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment. Minimum Qualifications: • Minimum eight (8) years of experience in communications and stakeholder relations, including at least two (2) years supporting a project leadership team as Communications Lead.

- Demonstrated experience delivering communications, stakeholder engagement, and issues management for large, high-profile, multi-stakeholder infrastructure projects.
- Strong capability producing clear, effective written and digital communications, including stakeholder materials, consultation plans, key messages, public notices, media content, and responses to inquiries.
- Proven experience preparing and implementing internal and external communications plans, aligned with design progress, staging, innovations, and community impacts.
- Demonstrated knowledge of communications and consultation standards, web content and social media standards, Accessibility for Ontarians with Disabilities Act, Freedom of Information and Protection of Privacy Act, and the Canadian Press Style Guide.
- Strong communication, collaboration, and issue-management skills, with the ability to provide rapid updates and respond promptly to Ministry requests, including same-day or within-hours responses; the Proposal shall describe the approach to enhanced communication throughout the assignment.

Preferred Qualifications (non-Mandatory):

- Accredited in Public Relations (APR) or Accredited Business Communicator (ABC) designation and bilingual proficiency (French/English) are considered assets.
- Proficiency with Microsoft 365, online engagement tools (e.g., Teams, Zoom, SurveyMonkey), web platforms (WordPress preferred), and Adobe Creative Cloud for graphics and templates; basic video and photography experience, including coordination of external vendors, is an asset.
- Full bilingual proficiency in French and English (oral and written), supported by education, professional experience, or certified language assessment.

Structural Construction Specialist

Structural Construction Specialist is expected to prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

Minimum Qualifications:

- 10+ years of experience in construction of new bridges and major structural rehabilitation and widening pavement reconstruction in major transportation projects.
- Demonstrated extensive experience with bridge evaluation, inspection and contract supervision.
- Demonstrated working experience in reviewing bridge construction methodologies and staging, structural component fabrication and erection, temporary works, formwork and falsework, and assessing structural deficiencies and recommending corrective actions.
- Strong working knowledge of structural steel, reinforced/prestressed concrete bridges and pre-cast concrete bridge elements.

- Strong understanding of Canadian Highway Bridge Design Code, MTO standards, specifications, contract requirements, construction practices, and highway project delivery processes.

Preferred Qualifications (non-Mandatory):

- Have bridge inspection training (OSIM-related experience).
- Knowledge of construction quality assurance/quality control.

Electrical Construction Specialist

Electrical Construction Specialist is expected to prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

Minimum Qualifications:

- Have a valid Electrician – Construction and Maintenance (309A License)
- 15+ years of construction experience in the delivery of electrical infrastructure associated with major highway, transportation, municipal, utility or large infrastructure projects.
- Have a minimum of five (5) years of experience supervising or inspecting the installation of transportation electrical systems.
- Demonstrated experience on a minimum of five (5) major transportation or highway construction projects completed within the last fifteen (15) years, involving the installation, commissioning, and energization of electrical infrastructure.
- Demonstrated experience working within a Design-Build, Progressive Design-Build, Alliance, or similar integrated project delivery model, coordinating electrical design development, procurement, construction, commissioning, and utility interfaces.
- Demonstrated experience identifying schedule-critical electrical works and developing mitigation, acceleration, and recovery strategies to maintain project milestones and commissioning dates.
- Demonstrated experience coordinating with Hydro One, Local Distribution Companies (LDCs), municipalities, Electrical Safety Authority (ESA), utility companies, contractors, subcontractors, and equipment suppliers.
- Demonstrated experience managing long-lead electrical procurement items, including utility services, transformers, switchgear, generators, traffic signal equipment, lighting systems, electrical distribution equipment, communications equipment, and related infrastructure.
- Demonstrated experience in construction staging, sequencing, traffic management constraints, utility relocations, commissioning, energization planning, and project implementation.
- Demonstrated experience interpreting and administering electrical contract specifications, standards, drawings, and construction quality requirements for transportation infrastructure projects.
- Demonstrated experience with the installation, testing, commissioning, and integration of Intelligent Transportation Systems (ITS), traffic management systems, highway lighting, and traffic signal infrastructure.

- Demonstrated experience identifying, evaluating, and mitigating electrical construction, procurement, utility, schedule, and commissioning risks on large infrastructure projects.

Foundation Construction Specialist

Foundation Construction Specialist is expected to prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

Minimum Qualifications:

- Minimum 10+ years experience in field supervision and oversight experience for foundation and related earthwork activities, including but not limited to driven piles, drilled shafts, excavation and shoring, and other specialized foundation systems.
- Have successfully managed at least two (2) heavy civil transportation projects involving deep or complex foundation systems over minimum two (2) construction seasons each as field supervisor and provided oversight of foundation works including driven piles, drilled shafts and other specialized foundation system.
- Demonstrate strong working knowledge of construction in complex subsurface conditions and demonstrated experience coordinating with geotechnical and structural design teams.
- Proven experience supporting constructability reviews and the development and implementation of foundation installation methodologies.
- Experience managing foundation construction under staged construction sequencing and within live traffic environments.
- A demonstrated record of ensuring compliance with quality control requirements, environmental obligations, and safe execution of foundation-related activities.
- Demonstrate extensive experience in coordination of foundation engineering fieldwork and construction requirements across multidisciplinary teams, including environmental, engineering, archaeological, property, utility, and construction specialists.

Paving Specialist

The Pavement Specialist shall be responsible for providing expert advice on pavement constructability, construction planning, staging, sequencing, traffic management, and pavement delivery throughout the Development Phase and subsequent design advancement.

Paving Specialist is expected to prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

Minimum Qualifications:

- 10+ years of experience in construction of new pavement or pavement reconstruction in major transportation infrastructure projects for high complexity projects.
- Have successfully managed a minimum of five (5) contracts of medium or high complexity, including freeway, interchange, bridge, corridor expansion, or major highway infrastructure in the last ten (10) years.

- Demonstrated experience working for a Contractor, Design-Builder, Alliance Team, Progressive Design-Build Team, or similar integrated project delivery model.
- Extensive experience in construction means and methods, staging development, traffic management, temporary works, and construction sequencing for major highway projects.
- Demonstrated experience providing constructability reviews and construction input during design development, including evaluation of schedule constraints, procurement requirements, long-lead materials, equipment utilization, work packaging strategies, and construction phasing.
- Strong understanding of MTO standards, specifications, contract requirements, construction practices, and highway project delivery processes.
- Excellent communication and stakeholder management skills with the ability to work collaboratively with the Ministry, Contractor, Design Team, Utility Companies, Third Parties, and Construction Personnel.
- Proven experience identifying and mitigating construction risks when reviewing detail design and recommending practical, cost-effective, and innovative construction solutions.
- Experience reviewing and providing input on grading strategies, earthworks design, pavement design, temporary works requirements, and construction access requirements.
- Demonstrated experience participating in multidisciplinary design development and providing constructability reviews throughout all stages of design.
- Experience reviewing and providing input to geotechnical investigations, pavement investigations, structural investigations, utility investigations, drainage investigations, environmental investigations, and survey activities to ensure the investigations adequately support construction planning and execution.
- Excellent communication, coordination, and stakeholder management skills, with demonstrated ability to work collaboratively with the Ministry, Contractor, Designer, Utility Companies, Municipalities, Third Parties, and Construction Personnel.

<u>Preferred Qualifications (non-Mandatory)</u>

- Proven experience supporting value engineering workshops, risk workshops, constructability reviews, partnering meetings, and interdisciplinary design coordination meetings.
- Experience in accelerated pavement construction techniques, innovative pavement materials, digital construction planning, and staged implementation strategies for complex transportation infrastructure projects.
- Experience providing construction advisory services for projects involving significant utility relocations, environmental constraints, property constraints, or major traffic staging requirements.

Traffic Construction Specialist

Construction Traffic Specialist is expected to prioritize this Assignment and must not undertake any other internal or external commitments that could impair their ability to fulfill their duties effectively or compromise the timely delivery of services required under this Assignment.

- 10+ years of experience in freeway and work zone traffic operations.
- Experience monitoring traffic performance during construction of major highway projects.
- Demonstrated knowledge of OTM Book 7 and MTO Traffic Management Guidelines.
- Experience preparing staging, detour, and lane closure strategies for major freeway projects.
- Extensive experience in arterial and freeway traffic management plan development, traffic staging implementation, construction staging review
- Experience evaluating traffic impacts and mitigation measures.
- Experience with queue management, incident management, traffic performance monitoring, and implementation of mitigation measures.
- Experience coordinating with MTO Traffic Office, OPP, municipalities, and contractors.

Advanced Traffic Management Systems Technical Team Members

Please see minimum qualification requirements in Section 7.1.2.1, for:

- Senior ITS/ATMS Engineer/Senior Project Manager (dedicated to the Assignment on a fulltime basis)
- ITS/ATMS Engineer/Project Manager
- ITS Specialist
- QA/QC Auditor
- Support Staff (CAD)
- ATMS Inspector

Bridge Engineering Technical Team Members

Please see minimum qualification requirements in Section 7.2.2.1, for:

- Lead Structural Engineer (dedicated to the Assignment on a fulltime basis)
- Structural Engineer
- Aesthetic Lead

Drainage and Hydrology Engineering Technical Team Members

Please see minimum qualification requirements in Section 7.3.2.1, for:

- Drainage Lead (dedicated to the Assignment on a fulltime basis)
- Senior Drainage Engineer
- Drainage Engineer
- Drainage Designer
- Drainage Field Technician
- CAD Technician

Electrical Engineering Technical Team Members

Please see minimum qualification requirements in Section 7.4.2.1, for:

- Senior Electrical Engineer / Senior Project Manager (dedicated to the Assignment on a fulltime basis)
- Electrical Engineer
- High Mast Pole Inspection
- Licensed Electrician
- Electrical Technician/ Designer

Engineering Materials Investigation Technical Team Members

Please see minimum qualification requirements in Section 7.5.2.1, for:

- N/A

Engineering Materials Testing and Evaluation Technical Team Members

Please see minimum qualification requirements in Section 7.6.2.1, for:

- N/A

Environmental Technical Team Members

Please see minimum qualification requirements in Section 7.7.2.1, for:

- Environmental Planner
- Acoustics and Vibration Specialist
- Air Quality Specialist
- Archaeologist
  - Project Manager
  - Field Director
  - Technical Staff
- Contaminated Property and Waste Specialist (P.Eng or P.Geo)
  - Project Manager
  - Excess Soils Qualified Person
  - Field Technical Staff
- Cultural Heritage Specialist
  - Project Manager
  - Specialist
  - Technician
- Cumulative Effects Assessment Specialist
- Erosion and Sediment Control Specialist
- Fisheries Assessment Field Staff
- Fluvial Geomorphologist
- Groundwater Specialist/ Hydrogeologist
- Land Use Factor Specialist
- Landscape Specialist
- Snowdrift Specialist
- Socio-economic and Human Health Specialist
- Terrestrial Biologist/ Ecologist

Indigenous Consultation and Duty to Consult Technical Team Members

Please see minimum qualification requirements in Section 7.8.2.1, for: • Indigenous Consultation Specialist (dedicated to the Assignment on a fulltime basis) • Indigenous Consultation Support
Foundations Engineering Technical Team Members
Please see minimum qualification requirements in Section 7.9.2.1, for: • Project Manager • Lead Foundation Engineer/ Lead Hydrogeological Engineer (dedicated to the Assignment on a fulltime basis) • Senior Foundation Engineer • Senior Hydrogeological Engineer • Junior Foundation Engineer • Foundation Technician
Highway Engineering Technical Team Members
Please see minimum qualification requirements in Section 7.10.2.1, for: • Lead (Supervisor) Highway Engineer (dedicated to the Assignment on a fulltime basis) • Highway Design Engineer • Senior CAD/ GIS Technician • Erosion and Sediment Control Designer
Pavement Engineering Technical Team Members
Please see minimum qualification requirements in Section 7.11.2.1, for: • Team Lead (dedicated to the Assignment on a fulltime basis) • Lead/ Senior Pavement Engineer (dedicated to the Assignment on a fulltime basis) • Senior Pavement Engineer • Pavement Engineer • Pavement Engineer Assistant • Soils & Materials Testing Lead • Field Investigation Manager • Pavement Technologist • Senior Quality Control Engineer (Pavement)
Property / Corridor Management Technical Team Members
Please see minimum qualification requirements in Section 7.12.2.1, for: • Property and Corridor Management Lead
Surveying and Plan Preparation Technical Team Members
Please see minimum qualification requirements in Section 7.14.2.1, for: • Supervisor / Project Manager – Engineering Surveys • Party Chief (Field Supervisor – Engineering Surveys) • Senior Field Technician – Engineering Surveys • Senior CAD Technician – Engineering Surveys

Traffic Engineering Technical Team Members
Please see minimum qualification requirements in Section 7.15.2.1, for: • Traffic Engineering Project Manager (dedicated to the Assignment on a fulltime basis) • Traffic Data Collection Staff • Traffic Data Processing/ Analysis Staff • Traffic Impact Analysis Staff • Traffic Operations Studies Staff • Traffic Event Planning/ Traffic Management Staff • Traffic Signals Staff • Traffic Signing Policies/ Traffic Control Devices Staff
Utilities Technical Team Members
Please see minimum qualification requirements in Section 7.16.2.1, for: • Utility Lead • Utility Coordinator • Dedicated Locator

1.5.3.4 Occupational Health and Safety Plan and OHSA Declaration Form

The Service Provider is to adhere to the requirements of **Article 4.12** of the Legal Terms and Conditions regarding Occupational Health and Safety.

The proposed Occupational Health and Safety Plan shall outline the Service Provider's general approach to Occupational Health and Safety.

As a minimum, in the Phase III submission, the Service Provider's Plan shall include:

(i) Signed Occupational Health and Safety Statutory Declaration Form certifying that the signatory fully understands and intends to fulfill its obligations as "employer" as prescribed in the OHSA and its regulations (Appendix C: Phase III Forms).
(ii) Valid corporate Health and Safety Policy as prescribed in the OHSA.
(iii) Description of the hazards inherent to the work of this Agreement and a description of how these hazards will be managed in compliance with the OHSA and all applicable Regulations.
(iv) Description of what provisions it has put (or will put) in place for providing an adequate number of supervisors and that they all satisfy the definition of "competent" as prescribed in the OHSA.
(v) Indication of whether a Preventative Maintenance Program for equipment is available (if required).
(vi) Description of traffic control provisions, specific to the Agreement, which demonstrate that the Service Provider is aware of relevant traffic standards and their obligations and responsibilities under the OHSA to provide for public and employee safety for this Assignment.

(vii) Description of what information and instructions shall be provided to employees so that all employees are informed of the hazards inherent in the Work and understand the procedures for minimizing the risk of injury or illness.

(viii) Procedures for (i) responding to OHS issues identified by MTO; (ii) managing orders from Ministry of Labour, Immigration, Training and Skills Development (MLITSD); (iii) fulfilling MLITSD notification for critical injuries and fatalities; and (iv) notifying MTO of critical injuries/fatalities and MLITSD orders.

(ix) List of MLITSD orders that have been issued to the Service Provider within the past five (5) years and any conviction for OHSA violations if applicable.

1.5.3.5 Insurance Certificates and Certificate of Insurance Form

The Preferred Proponent, including each firm of a Joint Venture or Joint Bid, shall submit to MTO proof of insurance required under the Design Phase Legal Terms and Conditions – Article 15, along with a signed Certificate of Insurance Form provided in Appendix C: Phase III Forms.

1.5.3.6 Design Phase Progressive Design-Build Guarantee (if applicable)

Where the Preferred Proponent is a Joint Venture or Joint Bid that has formed a corporation to undertake the Work, the Preferred Proponent shall, as a condition of award of the Design Phase Agreement:

a) comply with all applicable requirements set out in **Section 2.18** of this RFP; and

b) submit a completed and duly executed **Design Phase Progressive Design-Build Guarantee**, in the form provided in **Appendix C: Phase III Forms**, signed by all Joint Venture or Joint Bid companies identified on the Tender Registration Form.

The Design Phase Progressive Design-Build Guarantee shall provide that the guarantors are jointly and severally liable for the performance of all obligations of the Service Provider under the Design Phase Agreement.

1.5.3.7 Additional Forms and Tables

The Preferred Proponent shall complete and submit the Itemized Price Breakdown Forms provided in Appendix C: Phase III Forms, to the MTO Project Manager:

- Form C.3.1 – Project Management
- Form C.3.2 – ATMS
- Form C.3.3 – Bridge Engineering
- Form C.3.4 – Drainage and Hydrology Engineering
- Form C.3.5 – Electrical Engineering
- Form C.3.6 – Environmental
- Form C.3.7 – Indigenous Consultation and Duty to Consult
- Form C.3.8 – Foundation Engineering

- Form C.3.9 – Highway Engineering
- Form C.3.10 – Pavement Engineering
- Form C.3.11 – Property and Corridor Management
- Form C.3.12 – Traffic Engineering
- Form C.3.13 – Utilities
- Form C.3.14 – Additional Biddable Work 7.17.5 – Traffic Modelling
- Nine (9) tables for the works listed under Additional Biddable Work Section 7.17.3 (one (1) table), Section 7.17.4 (three (3) tables) and Section 7.17.6 (five (5) tables) using Form C.3.8

The Itemized Price Breakdown Form tables shall be considered as a baseline for determination/negotiation of compensation for Work Order or scope changes (extra work or deleted work). The sum of total costs of this table shall be consistent with the total cost of the Category services provided in the Financial Plan submitted in Phase II (Envelope No. 2). The Service Provider may add or modify the itemized list of major activities in the Itemized Price Breakdown Form table(s) to reflect project specific activities.

1.5.3.7 Conflict of Interest Declaration Forms

If there are changes to the Proponent's Conflict of Interest Certification between the submission of the Phases I and II Proposals, Proponents shall include in their Phase II Proposal a resubmission of the Certification forms. If there are no changes in the status of the Proponent's Conflict of Interest Certification, no resubmission of the Certification forms is required within their Phase II Proposal. However, the Phase II Proposal must still include a statement confirming the Proponent's conflict of interest status.

1.6 Proposal Evaluation and Award

1.6.1 Phase I (EOI) – Project Team and Organization Plan

The Ministry will examine a Proponent's Phase I submission to determine if it meets the mandatory requirements prescribed in this document. A determination of non-compliance (omitted or unacceptable items, evidence of misleading or false information) may result in disqualification of the submission from further consideration.

Proposals meeting the RFP requirements will be scored in accordance with the table below. A Proponent's Phase I Proposal score will be based solely on the content of the Proposal and the result of reference checks should the Ministry chose to do them.

Mandatory Submission Requirements	Submitted
Transmittal Letter	(yes/no)

Conflict of Interest Declaration Forms	(yes/no)	
Rated Requirements	**Maximum Score**	**Minimum Score***
Project Team Experience & Collaboration	**###**	-
Project Management Approach	**###**	-
Organization Chart	**###**	-
Insurance Claims History	✓	✓
Integrated Project Schedule and Cost Control	**###**	-
Key Individuals	**####**	-
Project Manager	###	-
Construction Manager	###	-
Scheduling Lead	###	-
Cost Estimating Lead	###	-
Risk Lead	###	-
Design Manager	###	-
Lead Design Engineer	###	-
Design & Integration Lead	###	-
Quality Manager	###	-
Structural Manager	###	-
Environmental Group • Lead Environmental Planner • Fisheries Assessment Specialist • Species at Risk Specialist	###	-
Additional Information		
Engineering and Materials Testing	✓	✓
TOTAL SCORE	**####**	-

**Where a minimum score is included, any Proponent that scores below the minimum score for any "Project Team and Organization Plan" Schedule/Plan, may be disqualified.*

Each Schedule/Plan will be evaluated on a set of predetermined individual components. The individual components within each Schedule/Plan will be scored on a scale from 0 to 10, using whole numbers.

The Proponent can include multiple qualified staff for the same role in the Organizational Chart to strengthen the Project Team; however, the Ministry will evaluate only one (1) Key Individual per role, and the Key Individual must be identified as the "Lead" of that role in the Organizational Chart. If the Proponent does not identify the "Lead" of each role when including multiple qualified staff in the Organizational Chart, the Ministry will select the first person of that role in the chart to evaluate. **Qualified Proposals will be ranked according to their overall score. The overall score is calculated using a weight of 100% for the Project Team and Organization Plan Proposal Score (table above). The Proposal Score is rationalized out of 100 points to the highest scored submission and summed to provide an overall score for each Proponent.**

The Ministry will then shortlist up to three (3) firms based on the overall ranking to submit Proposals for Phase II of the RFP process. At the sole discretion of the Ministry, if fewer than four (4) Phase I Proposals are received, following a mandatory requirements compliance check, the Ministry will shortlist all compliant firms to begin preparing Phase II Proposals while the Ministry's Technical Evaluation Team completes the Phase I Proposal evaluations.

Scores for the Proponents' Phase I Proposal will be carried forward into the evaluation of Phase II. Staffing substitutions prior to MTO completing the evaluation of Phase II will require the ministry re -evaluating and may result in re-scoring the Proponent's Phase I Proposals or disqualification of the Proponent's Phase II Proposal at the discretion of the Ministry. Substitutions after the award of the Agreement that do not comply with the terms may result in the termination of the Agreement with the Service Provider.

1.6.2 Phase II (RFP) – Technical and Financial Proposal

The Phase II Proposal is to be submitted in two (2) envelopes as described in Section 1.5.2 of this RFP. Envelope #1 will contain the Technical Proposal and Envelope #2 will contain the Financial Proposal. The Financial Proposal will remain sealed until the Technical Proposal (Phase II) evaluations are completed.

The Ministry will examine the Technical Proposal to determine if it meets the mandatory requirements prescribed in this document. A determination of non-compliance (omitted or unacceptable items, evidence of misleading or false information) may result in disqualification of the submission.

A Proponent's Phase II proposal will be scored in accordance with the table below and added to the Phase I score. The total of the maximum allowable points from Phase I and II will be added together.

Mandatory Submission Requirements	Submitted

Transmittal Letter	(yes/no)	
Conflict of Interest Declaration Forms	(yes/no)	
Rated Requirements	**Maximum Score**	**Minimum* Score**
Total Score from Phase I to be carried forward	Phase I Total Maximum Score	Phase I Total Minimum Score
Proponent Scored Interview	**###**	-
Project Overview	**###**	-
Understanding of the Project	###	##
Project Approach	###	###
Proposal Phase Plans	**####**	-
Schedule Management Plan	###	###
Basis of Estimate Plan	###	###
Innovations Plan	###	-
Risk Management Plan	###	###
Constructability Plan	###	###
Communication & Consultation Plan	###	-
Design Integration & Interface Plan	###	-
Functional Category Plans	**####**	-
Advanced Traffic Management Systems	##	-
Bridge Engineering	##	##
Drainage and Hydrology Engineering	##	-
Electrical Engineering	##	-
Engineering Materials	-	-
Environmental	##	##
Indigenous Consultation and Duty to Consult	##	##
Foundations Engineering	##	##
Highway Engineering	##	##

Pavement Engineering	##	-
Property and Corridor Management	##	-
Surveying	##	-
Traffic Engineering	##	##
Utilities	##	-
TOTAL SCORE	**####**	**####**

**Where a minimum score is included, any Proponent that scores below the minimum score for any "Technical Proposal (Envelope 1)" Schedule/Plan, will be disqualified and the Financial Proposal (Envelope #2) will be returned unopened.*

Each Schedule/Plan will be evaluated on a set of predetermined individual components. The individual components within each Schedule/Plan will be scored on a scale of 0 to 10 using whole numbers.

The Financial Envelopes pertaining to acceptable Technical Proposal submissions will be examined to confirm that the mandatory requirements prescribed in this document have been met. A determination of non-compliance may result in the disqualification of the submission from further consideration.

[**NTD:** In consultation with Contract Innovations Office, identify appropriate evaluation mechanism based on Project scope, complexity, risk profile, and clarity of PDBH Services required.]

Upon identification of the Preferred Proponent and following the Phase III submission by the Preferred Proponent in compliance with the requirements set out in RFP **Section 1.5.3**, the Ministry may enter negotiations with the Preferred Proponent. The Ministry may negotiate the following, but not limited to, key terms:

- Key Individuals
- Technical Team Members
- [**NTD:** In consultation with Contract Innovations Office, identify additional areas of opportunity for negotiation prior to Award. Contractual Terms and Financial Proposals shall NOT be the subject of negotiations.]

If an agreement with the Preferred Proponent cannot be reached, or the Preferred Proponent fails to comply with the Phase III requirements set out in RFP **Section 1.5.3**, the Ministry reserves the right to terminate negotiations, thereby disqualifying the Preferred Proponent, and proceed with negotiations with the next highest-ranking proponent, as the new Preferred Proponent, until an agreement is reached or the process is terminated.

Prior to signing the Agreement, any additional clarifications required of the Proposal will be resolved with the Preferred Proponent.

1.6.3 Phase III and Award

Once notified by the Ministry, the Preferred Proponent will have up to ten (10) Business Days, or such longer time period as specified in the written notice, to complete and submit the Phase III requirements. Failure to provide the Phase III requirements as prescribed and within the timeframe specified may result in disqualification of the Preferred Proponent.

1.6.4 Debriefing Process

All unsuccessful Proponents who participated in the Procurement will be offered an opportunity for a debriefing. Proponents have a right to a debriefing only after the executed Agreement between the Preferred Proponent and the Ministry has been signed.

Once the Agreement has been executed, the Ministry, when requested, will debrief each Proponent at the Ministry's date and time of preference, relative to each Proponent's Proposal evaluation results for Phases I, II and III. Phase I Proponents not shortlisted for Phase II will only be debriefed for Phase I.

Proponents may request a confidential debriefing in writing by email to contracttendering@ontario.ca. All requests must be submitted within ten (10) Business Days of the award notification being published on RAQS/MERX. Requests received after the 10-Day period will not be considered.

1.6.5 Payment for Services

As part of the Financial Proposal, the Proponent shall have submitted the appropriate Fee Schedules & Bid Price Summary Forms (**Appendix B**: Phase II Forms).

Upon award of this Assignment, the submitted Fee Schedules, Bid Price Summary Forms, Article 13 of the Design Phase Legal Terms and Conditions, and Section 3.5 of this RFP will become the Payment Schedule (**Schedule 10**) of the Service Provider and shall become part of the executed Agreement.

Detailed Price Breakdown Forms must be completed by the Service Provider upon request by the Ministry's Project Manager.

SECTION 2: PROPOSAL PHASE TERMS AND CONDITIONS

2.1 Information Obtained by Proponents

All requirements, designs, documentation, plans and information viewed or provided to Proponents in connection with this RFP are the property of the Ministry and must be treated as confidential and not used for any purpose other than replying to this RFP and the fulfilment of any subsequent Agreement. Upon request of the Ministry, all such designs, documents, plans, and information shall be returned to the Ministry.

Notwithstanding the above, if the requirements, designs, documentation, plans and information obtained by the Proponent in connection with this RFP are obtained from the Ministry's publisher or similar agent, then these documents shall not be treated as confidential, and this provision shall not apply.

2.2 Changes to the RFP by the Ministry

The Ministry reserves the right to revise or amend the RFP at any time up to the RFP Closing. All revisions will be issued as an Addendum and posted on the Ministry's RAQS/MERX website under the contract number for this Project. All plan takers will be notified electronically whenever an Addendum or change is posted.

The Ministry may also change the RFP Closing Date if, in its opinion, additional time is required for Proponents to prepare or revise their proposals. Any such change will be communicated through an Addendum.

Only Addenda issued by the Ministry shall amend or supplement the RFP Documents. No other oral or written statement made by the Ministry will alter the RFP requirements.

The Ministry reserves the right to modify the RFP schedule, or cancel this RFP for any reason, without incurring any liability for costs, losses or damages incurred by any company invited to participate in the Proposal phase.

2.3 Irrevocable Proposal after Closing

No alteration or modification to the Proposal will be accepted after the specified closing date/time for submitting the Proposal.

A Phase I Proposal received on time by the Ministry open for acceptance by the Ministry for a period of six (6) months after the Phase I Proposal Submission due date. Where the short-listing is not completed within the above timeline, the Phase I competition may be cancelled unless all Proponents explicitly agree to extend their quotation(s) for a longer period.

A Phase II Proposal received on time by the Ministry is irrevocable by the Proponent and will remain in effect and open for acceptance by the Ministry for a period of ninety (90) calendar days after the Phase II Proposal Submission Deadline unless all Proponents explicitly agree to extend their quotation(s) for a longer period, subject to a modification of the assignment schedule (i.e., initiation of project).

2.4 Confidentiality of Proposal

The Ministry will consider all Proposals as confidential, subject to the provisions of and the disclosure requirements of the *Freedom of Information and Protection of Privacy Act, R.S.O. 1990, c.F.31*. The Ministry will, however, have the right to make copies of all Proposals received for its internal review and evaluation process.

By submitting Proposals, Proponents authorize the Ministry to conduct reference checks.

2.5 Clarifications

As part of the evaluation process, the Ministry may, at its sole discretion, request written clarifications and or related supplementary information from any Proponents Phase I or Phase II Proposal or Phase III Submission (by Preferred Proponent) after the respective Proposal Due Date in accordance with Schedule 1.1 RFP Schedule.

Unless otherwise specified in the Ministry's written request, Proponents shall provide the requested clarification within three (3) Business Days, delivered electronically by e-mail in "read-only" Adobe (PDF) format to contracttendering@ontario.ca.

The Ministry may request clarification where any Proponent's intent is unclear and may waive or request amendment where, in the opinion of the Ministry, there is a MINOR irregularity or omission in the information that has been submitted in a required document.

The Ministry, acting reasonably, reserves the right to accept or reject any written clarification(s) submitted by Proponents. The purpose of the clarification(s) is not to alter the content of the original submission and/or Competitive Cost/Lump Sum/Total Contract Price. The response received by the Ministry from a Proponent shall, if accepted by the Ministry, form an integral part of that Service Provider's proposal.

In the event that the Ministry receives information at any stage of the evaluation process which results in earlier information provided by the Proponent (including the Preferred Proponent) being deemed by the Ministry, acting reasonably, to be inaccurate, incomplete, or misleading, the Ministry reserves the right to revisit the Proponent's compliance with the Mandatory Requirements and/or adjust the evaluation or scoring of the Phases I and/or Phase II Proposals.

The Ministry reserves the right to interview any or all Proponents to obtain information about or clarification of their proposals.

2.6 Right to Accept or Reject

The Ministry, acting reasonably, reserves the right to accept or reject any and all Proposals, whether or not completed properly and whether or not it contains all required information.

In the event that any Proposal is not accepted, the Ministry will not be liable for any costs or damages incurred by any Proponent including, without limitation, any expenses incurred in the preparation and submission of the Proposal.

2.7 Misleading Information

The Proponent understands and agrees that the Ministry may, if deemed necessary, verify any information provided in any submission. If there is any evidence of misleading or false information having been given, the Ministry acting reasonably may, in its sole discretion, reject the submission.

2.8 Award to be in Writing

The award of an Assignment to the Preferred Proponent is subject to Phase III evaluations and the required Ministry approvals.

The acceptance of the submission and the award of this Agreement will be made in writing and only in writing.

2.9 Execution of Agreement

The Legal Terms and Conditions attached to this RFP is substantially of the form in which the Ministry expects it to be executed. Only those changes which are necessary to reflect the options or variables set out in this RFP will be made to the Agreement

The successful Service Provider(s) will be required to comply with the fully executed RFP including the Legal Terms and Conditions, the Service Provider's Proposal, and the RFP documents, which shall form the legal agreement with the Ministry after acceptance by the Ministry. Any subsequent changes to the legal agreement will be made only in writing.

The acceptance of a Proposal and the award of this assignment or any part thereof will be made in writing by the Ministry signing the acceptance portion of the submitted Offer and Acceptance Form (Appendix B: Phase II Forms).

2.10 Failure to Execute Agreement

In the event that a Preferred Proponent fails to enter into and duly execute the written Agreement within the prescribed time, the Ministry reserves the right, at its sole discretion, exercising reasonably, to award this Assignment to another Proponent, not to accept any Proposal, or to call for a new Proposal, and the defaulting Preferred Proponent shall be liable for all losses, damages, costs, and expenses (including direct consequential losses and damages, and legal fees on a solicitor and client basis) suffered or incurred by the Ministry as a direct result thereof, including but not limited to any increase in the price of performance over the price submitted by the defaulting Preferred Proponent in its Proposal.

2.11 No Liability for Expenses

All Proposals shall be prepared and submitted at the sole cost and expense of the Proponent. Each Proponent shall be responsible for all costs and expenses incurred in connection with the preparation, submission, and provision of any additional information required for the evaluation of its Proposal. The Ministry shall not be liable for any loss, cost, or damage of any kind suffered or incurred by any Proponent, including, without limitation, any expenses related to the preparation and submission of a Proposal.

2.12 Non-Collusion

No Proponent shall discuss or communicate with any other Proponent or prime team member of any other Proponent (or any employee, representative or agent thereof) about the preparation of the Phase I or Phase II or Phase III proposal. Each Proponent's Phase I or Phase II or Phase III proposal shall be submitted without any connection, knowledge, comparison of information, or arrangement with any other Proponent or prime team member of any other Proponent (or any employee, representative or agent thereof) and each Proponent shall be responsible to ensure that its participation in this RFP process is conducted fairly and without collusion or fraud.

2.13 Occupational Health and safety

By submitting a Proposal, the Proponent attests that it is knowledgeable in the applicable Occupational Health and Safety Statutes and Regulations and that it will conform to all such Statutes and Regulations including, but not limited to:

(a) *Occupational Health and Safety Act*;

(b) Workplace Hazardous Materials Information System;

(c) *Transportation of Dangerous Goods Act*; and

(d) *Workplace Safety and Insurance Act*.

2.14 Accessibility

The Proponent's delivery of the Deliverables shall comply with all applicable requirements, specifications and standards for accessibility established in accordance with the Ontario *Human Rights Code (HRC) R.S.O. 1990, CHAPTER H.19,* the *Ontarians with Disabilities Act, S.O. 2001, CHAPTER 32,* and the *Accessibility for Ontarians with Disabilities Act (AODA), 2005, S.O. 2005, c. 11 (Integrated Accessibility Standards),* any regulations made thereto and any direction from the Ministry. The Proponent must meet the Government of Ontario's requirements on the Government of Ontario's schedule under the Integrated Accessibility Standards Regulation as directed by the Ministry.

2.15 Insurance Requirements

This assignment includes insurance requirements as described in **Article 15 of** the Legal Terms and Conditions. A successful Service Provider, including each firm of a Joint Venture, will be required to provide proof of insurance to the Ministry within five (5) Business Days, or such longer time period as specified in the written notice, of receiving the written notice from the Ministry that the Agreement is ready for execution.

A successful Service Provider shall provide evidence of the extension of such insurance to the Ministry prior to the expiration of any current policy.

Delivery to and examination by the Ministry of any policy of Insurance or Certificate thereof or other evidence of insurance shall in no way relieve the Preferred Proponent or Service Provider of any of its obligations pursuant to the provisions of **Article 15** of the Legal Terms and Conditions and shall in no way operate as a waiver by the Ministry of any of its rights.

2.16 Quality Control Requirements

The Service Provider shall meet all quality management requirements as part of MTO's Contractor registration and pre-qualification, and other quality requirements specified elsewhere in the RFP. The Lead Design Firm must have, as a minimum, a prior registration in the Ministry's RAQS of the Core Plan and the Generic Category Plan for the category in which the Prime Specialty identified is located. The Proponents who do not meet this requirement shall not be considered

The successful Service Provider shall have a Quality Control Plan in compliance with the requirements in Section 3.3. The Service Provider undertakes to be fully responsible for the quality and timeliness of deliverables and the Quality Control of all aspects of the assignment including the work of the Lead Design Firm and Sub-Service Providers. The firm undertakes to provide the timely submission of the Quality Control Plans required and the Quality Audit reports to the Ministry's Project Manager.

2.17 Subcontracting Services by the Service Provider

In submitting a Proposal, the Service Provider may not subcontract the following services, which must be provided by the Service Provider:

- Overall Project Management & Design Coordination for this Assignment
- Quality Control for this Assignment

Subcontracting by the Service Provider shall not be construed to relieve the Service Provider from any obligation under this Assignment or impose any liability upon the Ministry. Nothing contained in the assignment documents between the Service Provider and its Lead Design Firm / Sub-Service Provider, shall create a contractual relationship between a Lead Design Firm / Sub-Service Provider and the Ministry.

A Sub-Service Provider can become a Sub-Service Provider to another Prime firm or to a Joint Venture during the Phase I Proposal process. The Lead Design Firm shall not become a Lead Design Firm to another Prime firm or to a Joint Venture during Phase I Proposal process.

2.18 Requirements from the Joint Venture / Joint Bid

"Joint Venture" is a collaborative undertaking by two or more firms for which the participant firms are both jointly and individually responsible. A Joint Venture is limited to one (1) Phase I Proposal. A firm in a Joint Venture may form a Joint Venture with another firm and can provide a Proposal under that Joint Venture.

Rated Contractors are permitted to submit a Proposal as a Joint Venture/Joint Bid. All participants in the Joint Venture/Joint Bid shall, on a joint and several basis, absolutely, unconditionally and irrevocably be responsible for all obligations described in this RFP.

Rated Contractors shall notify the Ministry of their intent to form a Joint Venture or submit a Joint Bid in accordance with the Ministry's Qualification Procedures for Contractors. Upon approval by the Ministry, the Lead Contractor must submit the TRF on behalf of the Joint Venture or Joint Bid.

For a Joint Venture/Joint Bid, the following information must be provided with the Phase I Proposal:

- Declaration that the firms in a Joint Venture/Joint Bid will be working as partners for the purposes of this Assignment.
- Specialties / areas of work that each individual firm will be responsible for.
- Identify the Lead Contractor to be the Ministry contact for the purposes of this Assignment. The Ministry will deal with the Lead Contractor on the contractual matters.
- Name, title, and telephone number of the Principal of the Lead Contractor who will serve as the Contact for the project. The Principal shall have the authority to sign on behalf of the Joint Venture/Joint Bid and make decisions on behalf of the Joint Venture/Joint Bid on contractual matters.
- Identify the Lead Design Firm (either part of the Joint Venture or a Sub-Service Provider) approved in RAQS in the Prime Specialty with their Quality Control Core Plan approved in RAQS. The same firm shall have an approved Quality Control Generic Category Plan in RAQS for the Category where the Prime Specialty for this Assignment is located.
- Each firm in a Joint Venture/Joint Bid is responsible for the delivery and quality of work for the purposes of this Assignment.
- The Lead Contractor is responsible to administer the accepted Quality Control Plan, including the Plans for all Categories. The Lead Contractor is responsible for timely submission of all Plans required and the Milestone Quality Reports (Quality Audit) to the Ministry's Project Manager.
- At the award of an Assignment, the Agreement Offer shall be signed by and shall be binding on all firms in a Joint Venture. All provisions and obligations of the Agreement shall apply equally to all Joint Venture firms. All Rated Contractors in a Joint Venture/Joint Bid shall receive the same Contractor Performance Rating. In case of a breach of the Agreement, all the Rated Contractors may receive an infraction and related sanction.
- All firms in a Joint Venture/Joint Bid are responsible for a completed and signed Declaration for No Conflict of Interest.
- In a Joint Venture/Joint Bid, the Project Manager is to be an employee of the designated Lead Contractor.
- Each Rated Contractor in a Joint Venture/Joint Bid will receive a Contractor Performance Rating for this Assignment.

Joint venture and joint bid proponents, whether or not they form a corporation for the purpose of submitting a Phase I response, shall comply with all of the requirements described within this RFP including pre-qualification requirements, and further shall comply with the following:

a) **Joint and Several Liability/ Progressive Design-Build Guarantee:** If the joint venture or joint bid companies have not formed a corporation to undertake the Work, all of the joint venture or joint bid companies, as the case may be, shall sign the Agreement upon execution if selected as the Preferred Proponent at the completion of the RFP procurement process. The Progressive Design-Build Guarantee shall specify that all of the joint venture or joint bid companies are jointly and severally liable for all obligations under the Progressive Design-Build for Highways Contracts.

In the case where the joint venture or joint bid companies have formed a corporation to undertake the Work, the joint venture or joint bid companies identified on the Tender Registration Form shall sign the Design Phase Progressive Design-Build Guarantee, a copy of which is provided in **Appendix C: Phase III Forms**, upon execution of the Design Phase Agreement as a condition of award; and shall further sign the Progressive Design-Build Guarantee, a copy of which is provided in **Appendix E: Construction Phase Forms**, upon execution of each construction Contract as a condition of award. The Progressive Design-Build Guarantee requires the guarantors to absolutely, unconditionally and irrevocably guarantee, on a joint and several basis, as a direct obligation, and as principal obligor and not as a surety, the full and prompt performance and observance by the Progressive Design-Builder of each and every covenant, agreement, undertaking and obligation of the Progressive Design-Builder contained in the Contracts. The Progressive Design-Build Guarantee includes the guarantee of any additional obligations of the Preferred Proponent negotiated subsequently between the parties according to the Contracts.

b) **Authority.** The Ministry shall not deal separately with the individual joint venture or joint bid companies. The joint venture or joint bid proponent shall be able to demonstrate to the Ministry's satisfaction that the joint venture or joint bid shall operate cohesively. The Ministry shall deem all of management and supervisory staff as having the authority to bind the joint venture or joint bid, regardless of which company actually employs such employee.

c) **Internal Dispute Resolution.** The joint venture or joint bid Progressive Design-Builder shall be able to demonstrate to the Ministry that decisions which bind the joint venture or joint bid shall be made in the appropriate length of time, recognizing that the obligations under the Contracts shall still be met. In order to ensure that internal disputes among the joint venture or joint bid companies do not jeopardize the Work, the joint venture or joint bid Progressive Design-Builder shall, upon the Ministry's request which may be made at any time, provide the Contract Administrator with a copy of its internal dispute resolution procedure, duly signed by all of the joint venture or joint bid companies.

2.19 Restricted Parties

Any firm currently under direct contract with the Ministry for this Project is not eligible to advise any Proponent, directly or indirectly, or participate in any way as an employee, advisor, consultant, member, or otherwise in connection with any Proponent in relation to the Project. The Ministry may, in its sole discretion, disqualify a Proponent or impose such conditions on its continued participation in any phase of the procurement process as the Ministry may, in its sole discretion, consider to be in the public interest, consider to be required to satisfy itself that any actual or potential conflict or the impact of any existing relationship has been appropriately managed, mitigated and minimized, or consider otherwise appropriate.

The following parties are restricted:

<Insert>

[**Note To Draft:** List any parties that are currently under direct contract with the Ministry for this Project at the time of procurement (e.g., Owner's Engineer (OE), Technical Advisor (TA), Project

Management Consultant (PMC), Contract Administrator (CA)), etc., or indicate "Not applicable." Firms holding such assignments are restricted from participating as part of a Progressive Design-Build for Highways team where they would also be working directly for the Ministry on the same contract.]

In addition, any Sub-Service Providers under direct contract with the Progressive Design-Builder for Highways for this Project is restricted from providing Contract Administration and Quality Assurance Material Testing services for this Project through the Design and Construction Phases, including but not limited to Advance Contract Works.

2.20 Procurement Communication Restrictions

During the RFP Process, Proponents and Sub-Service Providers are prohibited from making direct or indirect contact with the following parties regarding this RFP, its documents, or proposals:

a) Any member of the Evaluation Committee;
b) Any Ministry of Transportation employees or representatives;
c) Any advisor to MTO or the Evaluation Committee;
d) Any employee or representative of:
    i. Any other Ministry; or
    ii. The Premier of Ontario's Office or the Ontario Cabinet Office;
e) Any Member of the Provincial Parliament (including the Premier) or their staff.

Any such contact by Proponents or their Sub-Service Providers may result in disqualification of the Proponent from this procurement process. All communication should follow the requirements set out in Section 1.2 Enquiries.

2.21 Unbalanced Price Proposal and Discrepancies

Proponents that submit a Financial Proposal that contains prices that appear to represent an unbalanced price proposal may be referred to the Ministry's Qualification Committee and any price proposals that are so unbalanced that they may adversely affect the interests of the Ministry may be rejected.

The Ministry shall not allow any Proponents to adjust the Lump Sum Price and Fixed Unit Rates provided in their Financial Proposal after Phase II Closing Date.

In the event of a mathematical error or discrepancy in the Itemized Bid and Evaluation Form, the Ministry may request the Proponent to resubmit the Itemized Bid and Evaluation Form without changing the Lump Sum price.

2.22 Computer System Failure

The Ministry shall only accept proposals submitted electronically on the RAQS/MERX website. Any proposal received through any other format shall not be considered and is deemed rejected without further consideration.

The Ministry accepts no responsibility for any reason whatsoever, including computer system failures of either the Proponent or the Ministry Service Provider, if the Proponent is unable to

submit its proposal before the RFP Closing Date. The Proponent agrees that the Ministry shall have no liability, for delays caused by internet/network traffic, degraded operation or failure of any computer system element, including, but not limited to: any computer system, power supply, telephone or data connection or system or software or browser of any type whatsoever.

It is the sole responsibility of the Proponent to ensure that it can access and exchange data with computer systems electronically and that it allows sufficient time to successfully access and share data with computer systems, having regard to the possibility of delays caused by internet/network traffic. Proponents are solely responsible to ensure that they plan their access to computer/servers so that the Proponents can reach the computers/servers before the RFP Closing Date.

2.23 Maximum Number of Shortlisted Proponents and Reserve Proponents

The Ministry shall shortlist, at a maximum, the number of Proponents set out in RFP Section 1.3 Proposal Submission and Award Process. At anytime during the RFP process, the Ministry may, in its sole discretion, replace a shortlisted Proponent that:

a) Has been disqualified by the Ministry;
b) Has informed the Ministry that it does not intend to continue participation in the RFP process; or
c) Otherwise becomes no longer qualified to participate in the RFP process,

by inviting other Proponents, based on their ranking in Phase I, provided such Proponents have achieved the minimum score required by Section 1.6.1 to be added to the list of shortlisted Proponents, even if those Proponents were not shortlisted in the first instance.

At any time during the RFP process, the Ministry may, in its sole discretion, invite one or more Reserve Proponents to participate in the RFP Process. Prior to such invitation and identification of a Reserve Proponent as a shortlisted Proponent, the Ministry may, without limiting the applicability of any other provision of these RFP Documents, require such Reserve Proponent to confirm in writing, in a form satisfactory to the Ministry, that it will continue participation in the RFP process.

2.24 Stipend (N/A)

[**Note To Draft**: Contact CIO to determine applicability of a stipend and the appropriate stipend value. If a Stipend is NOT applicable to the Project, replace this section with "Not Applicable".]

The Service Provider shall, subject to the terms of this RFP, pay a stipend of **#####** Thousand Dollars ($**#####**) to each Proponent that, in the sole opinion of the Ministry, meets the following conditions:

a) Shortlisted Proponent submits a proposal that, at the sole discretion of the Ministry, substantially complies with this RFP, including meeting the minimum scores required in the evaluation of the technical proposal as identified in Section 1.6 Proposal Evaluation & Award;
b) Shortlisted Proponent is not selected as the Service Provider.
c) Shortlisted Proponent has not withdrawn from the RFP process prior to the notice of the Preferred Proponent.

d) Shortlisted Proponent has not been disqualified by the Ministry.

The Proponent shall include a total stipend value for two unsuccessful Proponents in 'Appendix B.2.1 Design Phase Fee Schedule - Lump Sum Price'.

The Ministry anticipates a maximum of three (3) Proponents for Phase II. In the event that one or both of the unsuccessful Proponents either don't submit a proposal or submit a proposal that is determined to be non-compliant with the RFP requirements, the Ministry shall reduce the Lump Sum payable to the Service Provider by the amount of the stipend(s) that are not being paid.

The Service Provider shall provide satisfactory evidence, in a form acceptable to the Ministry, that the Stipend has been paid in full to the eligible unsuccessful Proponent(s) prior to the Ministry making any corresponding payment to the Service Provider for such Stipend amount(s).

2.25 Use of Information in Proposals (N/A)

[**Note To Draft**: The Ministry will be allowed to use information in proposals (from Phases I, II, & III) of shortlisted proponents where a Stipend is provided. If a Stipend is NOT applicable to the Project, replace this section with "Not Applicable".]

This Section 2.25 shall apply only where a Stipend is provided in accordance with Section 2.24.

The Proponent, including all firms in a Joint Venture or Joint Bid, by their participation in the RFP process, hereby grants to the Ministry a non-exclusive, perpetual, irrevocable, worldwide, royalty free licence to use, reproduce, modify, adapt, disclose, and incorporate into the Project any information contained in, forming part of, or otherwise disclosed through the Proponent's Phase I Proposal, Phase II Proposal, Proponent Presentation Meeting materials, Proponent Scored Interview materials, Phase III Submission, and any clarifications provided during the RFP process (collectively, the "Proposal Information").

For the purposes of this Section 2.25, "Proposal Information" includes any ideas, innovations, approaches, concepts, alternatives, methodologies, processes, designs, plans, recommendations, schedules, constructability solutions, risk mitigation strategies, cost saving measures, or other information developed by or through the Proponent and disclosed to the Ministry during the RFP process.

The Ministry's rights to use Proposal Information shall arise:

- for unsuccessful Proponents, upon payment of the Stipend; and
- for the Preferred Proponent, upon execution of the Agreement.

Proponents shall not include within their Proposals any intellectual property, proprietary concept, patented process, copyrighted material, trademarked product, or other third-party intellectual property unless the Proponent has secured, or will secure without cost to the Ministry, all rights necessary for the Ministry to exercise the rights granted under this Section 2.25.

Nothing in this Section 2.25 shall transfer ownership of a Proponent's intellectual property to the Ministry. However, to the extent necessary to permit the Ministry to exercise the rights granted under this Section 2.25, each Proponent shall ensure that all intellectual property rights

associated with the Proposal Information provide for and do not restrict the Ministry's right to use, modify, adapt, disclose, and implement the Proposal Information for the Project or for any subsequent procurement related to the Project.

The Proponent acknowledges and agrees that the Ministry may use Proposal Information in connection with the Project, the Design Phase, the Construction Phase, any Advance Contract, any Early Procurement activity, or any subsequent procurement process relating to the Project. The Ministry shall not be liable to the Proponent for any claim, compensation, royalty, or payment arising from such use other than the Stipend, where applicable.

PART B: DESIGN PHASE

SECTION 3: PROJECT ADMINISTRATION, QUALITY CONTROL AND PERFORMANCE

3.1 Project Schedule

3.1.1 Services Required

The Service Provider shall manage the project to adhere to the mandatory milestone dates, submission of deliverables dates, meetings, and presentations dates specified below and as depicted in the Schedule Management Plan submitted in their Proposal. Any changes to the project schedule are subject to the approval of the Ministry.

The Integrated Project Schedule and the Integrated Critical Path Schedule shall include the following:

(a) Mandatory Milestone Dates

The Service Provider shall meet the following milestone dates:

Advance Contract #1

Submissions & Presentations	Date
Submission of Stage 1 Milestone package	**[Insert Date]**
Submission of Stage 2 Milestone package	**[Insert Date]**
Submission of Stage 3 Milestone package	**[Insert Date]**
Submission of Utility Relocation Plans	**[Insert Date]**
Submission of Property Request Plans	**[Insert Date]**
Executive Presentation(s) (at Stage 1, 2 & 3)	**[Insert Date]**
Design Completion Presentation	**[Insert Date]**
Submission to Contract Tendering Section	**[Insert Date]**

Main Contract #1:

Submissions & Presentations	Date

Submission of Stage 1 Milestone package	**[Insert Date]**
Submission of Stage 2 Milestone package	**[Insert Date]**
Submission of Stage 3 Milestone package	**[Insert Date]**
Submission of Utility Relocation Plans	**[Insert Date]**
Submission of Property Request Plans	**[Insert Date]**
Executive Presentation(s) (at Stage 1, 2 & 3)	**[Insert Date]**
Design Completion Presentation	**[Insert Date]**
Submission to Contract Tendering Section	**[Insert Date]**

The dates above are critical to the delivery of the project and shall be met. The dates provided by the Service Provider shall meet the overall project delivery timelines.

The contract is to be available for an anticipated Start Date in the [Spring, Summer, Fall, Winter of Insert Year – Duplicate depending on number of contracts.].

[**Note to Draft:** If multiple contracts are required and approved by Senior Management, milestone dates for each contract shall be listed here and the (assumed) number of contracts shall be mentioned in Advance Contract and/or Early Procurement under RFP Section 4.2 Technical Services Required

If multiple contracts are an option but not approved, the requirements can be included under RFP Section 7.16 Additional Biddable Work**]**

(b) Dates for Submission of Deliverables

- Engineering Survey Deliverables
- Stage 2 Archaeology Assessment Report (draft and final)
- General Arrangement Drawings (draft and final)
- Geotechnical/ Pavement Design Report (draft and final)
- Foundation Investigation Report (FIR) (draft and final)
- Foundation Investigation and Design Report (FIDR) (draft and final)
- Culvert Recommendations and Design Report(s)
- Drainage and Hydrology Report (draft and final)
- Structural Design Report (draft and final)
- Electrical Report including all lighting calculations, traffic signal requirements (draft and final)
- Specialist Environmental Reports (if required)

- Federal/Provincial Approvals/Authorizations
- Earth Management Plan
- Erosion and Sediment Strategy Summary Report
- Environmental Synopsis with Summary of Environmental Concerns and Commitments Table
- Environmental Impact Assessment Report or Transportation Environmental Study Report addendum if applicable
- Consultation Plan as per Environmental Reference for Highway Design and Construction Report (Class EA Group A and B)
- Environmental Impact Assessment Report Addendum if applicable
- Detail Design Environmental Summary (DDES)
- Environmental Clearance – Construction Start
- Targeted Public Information Centre(s)
- Operational Performance Review
- Safety Analyst Review
- Submission for Executive Presentations
- Property Clearance Date
- Subsurface Utility Investigations Report(s) (if applicable)
- Utility Composite Plan(s)
- Utility Clearance Date

(c) Meetings and Presentations Dates

Meetings will be held virtually, in person or hybrid, as determined by the Ministry Project Manager during the project.

Minimum meeting requirements to be included in the schedule are:

- Start-up Meeting with the Ministry
- Integrated Project Schedule Meeting
- Project Leadership Team (PLT) Meetings (Monthly/Bi-monthly)
- Project Management Team (PMT) - Progress Meetings (Monthly/Bi-monthly)
- Project Team Meetings (Monthly with each team)
    - Design & Construction Team (DCT)
    - Risk, Schedule, and Estimate Management Team (RSEMT)
    - Environmental and Communications Team (ECT)
- Contractor Performance Rating Review (include in Start-up Meeting, Monthly Project Team Meetings and as required)
- Site Visit Meetings
- **X** full days for Innovation, Design Optimization and Constructability Workshop(s) **[NTD:** Insert minimum 1 in-person workshops per stage for each main contract. Minimum 3-5 business days are required per Innovation workshop**]**
- Traffic Management Meetings

- Technical Review Meetings, including Foundation and Structural Meeting(s)
- Structural Engineering Design Presentation Meeting
- Pavement Engineering Design Presentation Meeting
- Electrical Design Presentation Meeting(s)
- Utility Coordination Meetings (Monthly)
- Risk and Approach to Work Meetings (Monthly)
- External Stakeholder Meeting(s)
- Opinion of Probable Construction Cost (OPCC) Review Meeting(s), as required
- Design Team Review Meeting(s) (at each Design Phase Stage)
- Design Complete Presentation Meeting
- Executive Presentations (at each Design Phase Stage)
- Design Turnover Meeting to Construction
- Project Team meeting and decision on a limited number of reasonable alternatives
- Presentation to Senior Management/ Director, as required
- Final Presentation to Senior Staff (if required) – no later than sixty (60) days following the later of:
    - The end date for Term of Agreement; or
    - The date of submission of the final estimate package

(d) Ministry Acceptance / Approvals

In addition to requirements outlined elsewhere in this Agreement, the Service Provider must secure specific approvals and acceptance of the Ministry. The anticipated turnaround time, upon submission of all required documentation, to the satisfaction of the Ministry in it's sole discretion, is **fifteen (15)** Business Days.

3.1.2 Deliverables

Project Schedule Reporting

Within ten (10) Business Days of Assignment award, the Service Provider shall schedule the Integrated Project Schedule Meeting to discuss about the initial Design and Construction Phases Integrated Project Schedule and Preliminary Integrated Critical Path Schedule to confirm a schedule in conformance with the contract requirements has been submitted.

The Service Provider shall submit an updated Integrated Project Schedule and Preliminary Integrated Critical Path Schedule within two (2) weeks after the Integrated Project Schedule Meeting. The schedules shall be updated monthly according to Section 5.1 and submitted to the Ministry no less than three (3) Business Days prior to all regularly scheduled progress meetings.

3.2 Documentation and Participants for Meetings

3.2.1 Services Required

Meetings during the Design Phase may be held at a Ministry Office in **[NTD: Insert Ministry Office Location]** (or virtually as approved by the Ministry), with the exception of on-site meetings. Office hours are between 9:00 a.m. and 5:00 p.m. All meetings shall be scheduled such that all issues are adequately covered and discussed within these hours.

All meetings shall be arranged with each individual team member and chaired by the Service Provider. Meeting dates are to be such that required team members are available. The Service Provider Project Manager and Design Manager shall be present at all meetings including meetings with Sub-Service Providers and External Stakeholders.

The following Service Provider (Contractor and Lead Design Firm) Key Individuals shall attend the Start-up meeting, monthly Project Team meetings, Design Team Review meetings, Executive meetings and additional meetings as required (in person or hybrid)

- Project Manager
- Construction Manager
- Scheduling Lead
- Risk Lead
- Design Manager
- Design and Integration Lead
- Lead Design Engineer
- Quality Manager
- Structural Manager
- Lead Environmental Planner.

Failure to meet the meeting attendance, participation, documentation, or distribution requirements may be considered a deficiency in the delivery of the Services.

[Note to Draft: Modify the list as required, based on project specific needs.**]**

3.2.2 Deliverables

An agenda and a copy of the documents and plans to be discussed shall be supplied to each member of the Ministry's Project Team, a minimum of five (5) Business Days prior to the meeting. The Service Provider shall provide sufficient staff at all meetings so that the proceedings are not unduly delayed for the purposes of taking minutes. Minutes shall be prepared for all meetings within five (5) Business Days and distributed in hard copy or e-mail as agreed to by the Ministry to all attendees, all team members and any invited persons that could not attend, and as necessary, make the appropriate changes, additions and deletions.

All distributions and documents for meetings shall be submitted to the Ministry through CMS unless otherwise directed by the Ministry Project Manager. Distributions and documents for meetings with the external stakeholders shall be submitted to the external stakeholders by email or registered mail as directed by the Ministry Project Manager.

Where applicable and as directed by the Ministry, hard copies distributions for meetings mailed to the Ministry by the Service Provider shall:

1) Allow a minimum of two (2) Business Days for any Ministry's internal distribution, in addition to minimum timelines set forth in this RFP, for document distribution.
2) Be clearly marked on the outside of the box/package with the Ministry's Project Manager's name and with "**FOR DISTRIBUTION**".
3) Each package shall be bound and have a transmittal letter attached as a cover indicating the project/meeting details and contain a distribution list of everyone who is receiving a package.
4) For each package the recipient's name shall be highlighted in the distribution list so Ministry staff can distribute accordingly.
5) Documents intended for MTO Construction Management staff shall be mailed in a **separate** package and sent directly to that office at the following address: **[NTD: Insert Address]**

The following are the mandatory requirements for specific meetings:

Stage 1 Design Team Review Meeting

The Service Provider shall act to deliver the following for the Stage 1 Team Review Meeting five (5) business days prior to the scheduled meeting:

1. Meeting Agenda with time & location details
2. Draft Design Criteria
3. Draft Reports (as applicable to project)
    - Archaeology Summary and Findings
4. Draft Traffic Staging Design/ Contract Drawings
5. Property Request(s)
6. Stage 1 Schedule Management Plan
    - Integrated Project Schedule
    - Integrated Critical Path Schedule
7. Stage 1 Scope and Cost Report
8. Stage 1 Basis of Estimate Plan with Level 3 Cost Estimate
9. Stage 1 Innovations Plan
    - Innovation, Design Optimization and Constructability Workshop Report (if applicable)
    - Innovation Register
10. Stage 1 Risk Management Plan
    - Design and Construction Risk Register
11. Stage 1 Constructability Plan
12. Quality Auditor Memo* and Project Manager Memo**, ***

13. Other documents applicable to project

* Written confirmation from the Service Provider's Quality Auditor confirming that an internal review of the submission has been completed and that all necessary revisions have been incorporated prior to the meeting

** Written confirmation from the Project Manager for every design selection at each milestone submission to confirm that the design was reviewed for cost, schedule, constructability, quality and construction practices

*** Written confirmation from the Project Manger that Foundations Engineering designs, recommendations, and review comments have been satisfactorily incorporated and addressed in the overall design (at each milestone submission) and Contract Package (at Design Complete Presentation submission), and that the design has been reviewed for cost, schedule, constructability, quality, and construction practices at each milestone submission. The confirmation shall also verify that the appropriate Foundation Investigation Report(s), specifications, and Foundation Drawings, including 'Borehole Location and Soil Strata' drawings have been incorporated into the Contract Package.

Stage 1 Executive Presentation Meeting

The Service Provider shall provide a copy of the Executive Presentation Package to all appropriate offices no less than five (5) Business Days prior to the Stage 1 Executive Presentation Meeting. The Service Provider shall submit all documents and materials in accordance with Section 3 of this RFP.

At the Stage 1 Executive Presentation Meeting, the Service Provider shall provide:

1. Draft Design Criteria
2. Stage 1 Traffic Staging Design/Contract Drawings (endorsed by the Project Team)
3. Anticipated Property Impacts and Mitigations
4. Anticipated Utility Impacts and Mitigations
5. Anticipated Environmental Impacts and Mitigations including Archaeology Study Summary and Findings
6. Stage 1 Design and Construction Risk Register
7. Stage 1 Executive Presentation

Stage 2 Design Team Review Meeting

The Service Provider shall act to deliver the following for the Stage 2 Team Review Meeting five (5) business days prior to the scheduled meeting:

1. Meeting Agenda with time and location details
2. Final Design Criteria
3. Draft Contract Drawings
4. Draft Reports

- Draft Environmental Report(s)
- Draft Foundation Report(s)
- Draft Structural Design Report(s)
- Draft Drainage and Hydrology Report(s)
- Draft material and other draft report(s) as applicable to project

5. Final Design/ Documentation (as applicable to project)
   - Final Highway Alignments
   - Final Traffic Staging Design
   - Final Property Request(s)
   - Final Utility Relocations Plan
6. Stage 2 Schedule Management Plan
   - Integrated Project Schedule
   - Integrated Critical Path Schedule
   - Stage 2 Construction Critical Path Schedule
7. Stage 2 Scope and Cost Report
8. Stage 2 Basis of Estimate Plan
9. Stage 2 Innovations Plan
   - Innovation, Design Optimization and Constructability Workshop Report (if applicable)
   - Innovation Register
10. Stage 2 Risk Management Plan
    - Design and Construction Risk Register
    - Quantitative Risk Analysis Documentation
11. Stage 2 Constructability Plan
12. Quality Auditor Memo and Project Manager Memo
13. Other documents applicable to project

Stage 2 Executive Presentation Meeting

The Service Provider shall provide a copy of the Executive Presentation Package to all appropriate offices no less than five (5) Business Days prior to the Stage 2 Executive Presentation Meeting. The Service Provider shall submit all documents and materials in accordance with Section 3 of this RFP.

At the Stage 2 Executive Presentation Meeting, the Service Provider shall provide:

1. Stage 1 Executive Meeting Minutes
2. Summary of responses to the questions at the Stage 1 Executive Presentation Meeting
3. Final Approved Design Criteria
4. Final Traffic Staging Design
5. Final Property Request(s)

6. Final Utility Relocations Plan (from the Utility Companies)
7. Stage 2 Design and Construction Risk Register
8. Stage 2 Executive Presentation

Stage 3 Design Team Review Meeting

The Service Provider shall act to deliver the following for the Stage 3 Design Team Review Meeting five (5) business days prior to the scheduled meeting:

1. Meeting Agenda with time and location details
2. Final Reports (applicable to project)
3. Final Approved Traffic Staging Design
4. Final Contract Drawings
5. Final Schedule Management Plan
    - Integrated Project Schedule
    - Integrated Critical Path Schedule
    - Stage 3 Construction Critical Path Schedule with Working Day Estimate
6. Final Scope and Cost Report
7. Final Basis of Estimate Plan
8. Final Innovations Plan with Innovation Register
9. Final Risk Management Plan
    - Design and Construction Risk Register
    - Quantitative Risk Analysis Documentation
    - Risk Allocation Summary
10. Final Constructability Plan
11. Constructability Report
12. Quality Auditor Memo and Project Manager Memo

Stage 3 Executive Presentation Meeting

The Service Provider shall provide a copy of the Executive Presentation Package to all appropriate offices no less than five (5) Business Days prior to the Stage 3 Executive Presentation Meeting. The Service Provider shall submit all documents and materials in accordance with Section 3 of this RFP.

At the Stage 3 Executive Presentation Meeting, the Service Provider shall provide:

1. Stage 2 Executive Meeting Minutes
2. Summary of responses to the questions at the Stage 1 Executive Presentation Meeting
3. Final Contract Drawings
4. Final Schedule Management Plan
5. Property clearance memo/letter (if required)
6. Utility Relocation Update

7. Final Scope and Cost Report (to Project Manager only)
8. Estimate assumptions, risk mitigation, etc.

Design Complete Presentation Meeting

The Service Provider shall provide copies of the Design Complete Presentation package to all appropriate offices no less **than ten (10) Business Days** prior to the meeting. The Ministry will provide a distribution list of the appropriate offices.

For the Design Complete Presentation, the project is required to be totally complete, and all drawings, documentation, and special provisions completed in final form.

1. A complete design package, ready for review by the Ministry Functional Offices
   i) All Constructability Reviews completed, and recommendations incorporated in design
   ii) Signoff and tracking of Constructability Review completed
   iii) All final revisions from the Traffic Management Plan and all Technical Reports are incorporated into the contract package
   iv) All endorsed non-standard special provisions and items, modified standard special provisions, and modified standard drawings to address project specific requirements shall be according to the Contract Design Estimation Documentation (CDED) manual
   v) Fully completed design and related deliverables, with fully completed independent check of drawings, details, specifications, and all related items.
2. A digital copy (AutoCAD, PDF or another Ministry approved format) of the final OpenRoads Designer cross-sections for the entire project shall be provided to the Ministry's Project Manager at the time the Design Complete Presentation package is submitted.
3. Internal Quality Review Meeting Notes
4. Quality Auditor Memo and Project Manager Memo

Note: At this stage of the design the Service Provider shall have all recommendations from any reports and direction from MTO functional offices incorporated into the Contract Package. There should be nothing in the contract package or accompanying documents that is left blank. It is the responsibility of the Service Provider to obtain any and all information in a timely manner in order to submit a complete contract package. Only very minor changes may be required following the Design Completion Presentation Meeting.

The individual who was directly responsible for and completed the OpenRoads Designer work shall attend the Design Complete Presentation Meeting.

The Service Provider's Project Staff responsible for the Estimating, Risk Management, Scheduling, Constructability, ATMS, Bridge Engineering, Drainage and Hydrology Engineering, Electrical Engineering, Environmental, Foundations Engineering, Highway Engineering, Pavement Engineering, Property and Corridor Management, Surveying and Plan Preparation, Traffic Engineering, Rock Engineering, Engineering Materials Testing and Evaluation, and Utilities shall attend the Design Complete Presentation Meeting.

Executive / Director Information Session

The Executive / Director Information Session (EDIS) submission shall include all revisions resulting from the Design Completion Presentation and property purchase agreements. The EDIS submission shall be updated to conform to current specifications and standards at the time of the submission. The Ministry's Project Manager will schedule the EDIS meeting and inform the Service Provider of the date.

Within five (5) Business Days after the Design Complete Presentation Meeting, the Service Provider shall submit to the Ministry's Project Manager a list of all the required changes or updates as discussed in the meeting and a draft Design Synopsis. The Service Provider shall confirm, in writing, all changes or updates have been completed. The Service Provider shall produce any additional material required for the EDIS Meeting as required by the Ministry's Project Manager.

A copy of the final Tender Package(s), with all associated updates as discussed from the Design Complete Presentation Meeting and the below documents, shall be delivered to all appropriate offices **ten (10) Business Days** prior to the EDIS Meeting. The Ministry will provide a distribution list of the appropriate offices.

1. The 100% fully completed final contract package and IFC deliverables
2. All drawings, specifications, and quantity sheets
3. Final tender item cost estimate
4. Design Synopsis
5. Utility clearances and completion dates memo/letter (if required)
6. Final Environmental Clearance Approvals / Documents with an Environmental clearance memo/letter
7. Any other critical clearances required for construction
8. Consultation Engagement Update (First Nations)
9. Construction-Ready Critical Path Schedule

The Service Provider shall provide a written Design Synopsis and make a brief presentation about the project noting the following issues:

a) Brief description of the project
b) Project construction cost assumptions
c) Award schedule
d) Brief overview of unique design issues
e) Contentious issues that arose during design
f) Engineering evaluations
g) Pavement design alternatives and/or requirements
h) Staging options
i) Dewatering assumptions and/or requirements
j) Key environmental concerns / constraints
k) Policy issues that may arise from the project

l) Contentious issues that may surface during construction
m) Incentive / disincentive clauses (when included in the construction contract)
n) Provisions for traffic management
o) At the end of the Design Synopsis, responses to the following six (6) questions shall be included, in plain language (not technical):
    i. Why is the work being performed?
    ii. What is the impact on traffic during construction? If there is an impact, provide an indication of how great the impact is: i.e. none, minor, major, severe).
    iii. What are the benefits of the completed work?
    iv. What are the main environmental protection and/or improvement features of this project?
    v. How does this project contribute to reducing the impact of climate change?
    vi. How does this project contribute to a sustainable environment?

Issued For Construction (IFC)

The Service Provider shall submit the IFC package to the Ministry Project Manager with all amendments to the final Technical Reports at least five (5) business days prior to the Submission to Contract Tendering Section date.

Contract Preparation Software (CPS) Updates During Design and Contract Tender Submission

The Contract Preparation System (CPS) is a ministry program that provides guidance and assists Designers in building a standard ministry construction package. This includes Contract Design, Estimating and Documentation (CDED) Manuals that provides standard methods to document items and quantities, a database of master item lists, ministry approved specifications, and drawings, etc. The Service Provider shall use CPS to develop the Contract Documents.

If the Service Provider does not currently have access to CPS, the Service Provider shall submit a request for access to the Ministry within ten (10) Business Days after the Assignment is awarded. The Service Provider is advised that it may take up to three (3) months to provide a new user access to CPS. The Service Provider shall be responsible for any impacts, including schedule, related to securing CPS access for this Project.

The Service Provider is expected to be responsible (unless otherwise informed by the Ministry's Project Manager) for any CPS updates during the Design Phase and during the contract tender submission phase (prior to the specified advertising date). This shall include any required deletions, revisions, modifications, or otherwise stated in the CPS update memo issued by Head Office periodically. This updating shall not be considered additional work and shall be completed by the Service Provider at the bid price for this Assignment. The Ministry will not accept any requests or change orders for extra work/payment for this task of CPS updates unless otherwise agreed to by the Ministry and Service Provider in accordance with the Change Order Process (as detailed in **Article 12** of the Legal Terms and Conditions).

Contract drawings and engineering reports must be signed/dated and sealed by Professional Engineer(s) licensed in the province of Ontario at the contract tender submission phase.

The Service Provider shall provide a digital copy of the Contract Package, and all required accompanying deliverables to the Contract Review Office a minimum of four (4) weeks prior to Contract Tender Advertising. Submissions should be submitted **by 10:30AM** on the day of submission.

Contract Tender Advertising

The Lead Design Firm is expected to be responsible (unless otherwise informed by the Ministry's Project Manager) to answer all Bid Enquiries during the contract tendering advertising phase and Addendums as required. The Service Provider shall include this requirement in the contract/ agreement with the Lead Design Firm.

3.3 Quality Control

3.3.1 Services Required

The Service Provider's Quality Manager shall develop, implement, and maintain a project-specific **Quality Control Plan** to manage its own processes and those of the Sub-Service Provider(s) for the purposes of performing the Progressive Design Build for Highways Services, in accordance with the requirements of this Agreement.

The Service Provider's Quality Control Plan shall document the processes and activities that the Service Provider shall follow during the life of the Agreement to:

a. Ensure design and construction integration and continuity during all stages and phases of the Project
b. Manage design and any changes to the design
c. Document conformances and non-conformances with the requirements in the Agreement
d. Address Quality Control (QC) non-conformances; including communication to the ministry, proposing remedial action prior to implementation, and improving processes to prevent future occurrences
e. Address quality related checking, verifications, validations, inspections, and testing activities to be conducted during all stages and phases of the Project.

In addition, the Service Provider shall develop and implement all necessary Supplementary Specialty Plans prior to initiating any design activities.

The Service Provider's Quality Control (QC) Plan shall become part of the executed Agreement.

The Service Provider / Sub-Service Provider shall provide a Quality Audit team including the Quality Manager and at least one senior level staff (Auditor) from the Contractor and one senior level staff (Auditor) from the Lead Design Firm to be responsible to oversee the process of checking to resolve all problems / issues, and that all provisions of the QC Plans have been

adhered to and provide an audit report to the Ministry Project Manager. The Ministry requires that Service Provider / Sub-Service Provider staff, directly involved with this Assignment, are not to be checking work for the purposes of Quality Control. The check / audit of quality control for all Specialties including the work of Sub-Service Provider(s) shall be conducted by the Quality Audit team, led by the Service Provider's Quality Manager.

The Service Provider is fully responsible for the quality control of all services in accordance with the Quality Control Plans that have been approved by the Ministry. The Service Provider shall be responsible for the Quality Control Plans of all Specialties including the Plans of Sub-Service Provider(s) and take the appropriate corrective measures in order to maintain the quality of services. The Service Provider shall be solely and fully accountable for the quality of the deliverables, including grammar, wording and presentation. The Ministry reserves the right to recover costs which may result from errors, omissions, or other actions or inaction of the Service Provider.

The performance of the Service Provider will include the adherence to the accepted Quality Control Plan, the timely delivery of Milestone Reports, the accuracy of check / audit reporting, and any follow up clarification(s) or additional information requested by the Ministry Project Manager. The areas of conformance / non-conformance will be documented by the Service Provider. It is the responsibility of the Service Provider to correct the areas of non-conformance.

The Ministry may inform the Service Provider in writing to correct any major non-conformance / violation of the Quality Control Plans. If after written notice, the major non-conformance or violation is not corrected, the Ministry may at its own discretion issue an Infraction Report / financial consequences and / or stoppage of work, until the conformance is demonstrated or appropriate revisions to the plans are approved, such that any additional work to obtain conformance shall not constitute a scope change.

Upon request, the Ministry shall be given access immediately to all records produced in the performance of the Services including inspection records, test results and testing facilities, and to conduct sampling, direct observation of testing as necessary to enable the Ministry to monitor adherence to the Quality Control Plans for Services, and other requirements of the Legal Terms and Conditions.

3.3.2 Deliverables

Quality Control Plan and Reports

The Quality Control Plan includes the following three components:

1. Quality Control Plan from the Service Provider (project specific)
2. Core Plan from the Lead Design Firm
3. Generic Category Plan from the Lead Design Firm
4. Supplementary Specialty Plan (project specific)

As a requirement of prequalification in the prime specialty, an approved Core Plan and Generic Category Plan from the Lead Design Firm must have been submitted through the e-tendering

portal. The quality control measures included in these plans must be adhered to throughout this assignment.

A Supplementary Specialty Plan is project specific and must be submitted by the successful Service Provider in a timely manner following notification of award by the Ministry.

The detailed requirements, templates and the submission procedures in RAQS for Core, Generic Category Plan(s), Supplementary Specialty Plan, and the Milestone Quality Report are listed in the following Document: Consultant QC Plan Process - Procedures Guide, Contract Management Office, MTO (the latest version). This document is available at the RAQS website.

Within **ten (10) Business Days** following notification of award by the Ministry, the Service Provider shall submit the Quality Control Plan including a completed Supplementary Specialty Plan and Templates for each of the Specialties identified in their proposal to the Ministry Project Manager.

Supplementary Specialty Plan

The Supplementary Specialty Plan is to outline how the Service Provider / Sub-Service Provider shall provide for quality control for the individual Phases/ Tasks for Specialties included in this Agreement. The Supplementary Specialty Plan is to identify dates for submission of the Milestone Quality Report(s) throughout the assignment.

The submitted Supplementary Specialty Plan will be reviewed for acceptance by the Ministry Project Manager. The Ministry Project Manager will provide comments on the Supplementary Plan submitted and request any clarification(s) or additional information as warranted.

Failure to deliver an accepted Supplementary Specialty Plan within thirty (30) Business Days, may result in the cancellation of the award process for that Service Provider.

Milestone Quality Report(s)

During this Agreement, at the dates agreed upon in the Supplementary Specialty Plan and at project completion, the Service Provider's Quality Audit team, led by the Quality Manager, shall certify that the Quality Control Plan Process has been duly executed and shall submit reports on Milestone Quality Report(s) to the Ministry Project Manager. The Milestone Quality Reports are subject to acceptance by the Ministry Project Manager. The Ministry Project Manager may request clarification or additional information as deemed necessary.

The Service Provider shall be fully responsible for all aspects of Quality Control including the Quality Control of work by Sub-Service Provider(s). The Service Provider shall be responsible for the timely submission of the Milestone Quality Report(s) including those of Sub-Service Provider(s), the accuracy of check / audit reporting and any clarification(s) or additional information requested by the Ministry's Project Manager.

Special Requirements for Engineering Work

All final engineering products, including contract drawings and engineering reports, must be signed/dated and stamped by Professional Engineer(s) licensed in the province of Ontario. Two (2) PEO stamps are required for technical reports, including the foundation drawing and

foundation report. For foundation work, one of the two (2) PEO stamps shall be the firm's Approved Key Personnel registered in the relevant RAQS design specialties.

Additional Requirements for this Assignment

[NTD: insert other project specific requirements]

3.4 Performance of the Service Provider

3.4.1 Services Required

The Ministry will monitor the timeliness and quality of the services / deliverables over the course of this Assignment. The monitoring may involve items such as adherence to technical standards, value for money, adherence to the quality control of the Services.

Pursuant to **Article 10** of the Legal Terms and Conditions, the Ministry, or its delegate, reserves the right to visit the office(s) of the Service Provider or Sub-Service Provider, including laboratory-testing facilities, to conduct an independent audit of the work currently completed. The Service Provider shall maintain Assignment records and make these available for review at the time of such audits. Any audits performed will be used in the assessment of the Service Provider's Performance through the Contractor Performance Rating.

Performance Appraisals

The Service Provider will receive performance feedback and Performance Appraisals for this Assignment to be included in the Service Provider's Contractor Performance Rating (CPR).

Annual and Final Appraisals will be issued.

CPR is the formal performance score assigned by the Ministry to a Rated Contractor upon completion of a contract, in accordance with the Ministry's Qualification Procedures for Contractors. The CPR evaluates a Contractor's performance against Ministry standards in key areas such as quality of work, safety, project management, adherence to schedule, cooperation, and compliance with contract requirements. The CPR is used by the Ministry to determine a Contractor's eligibility, standing, and rating for future procurements and may influence available workload rating or qualification to bid on subsequent Ministry contracts. The Service Provider (Rated Contractor or all Rated Contractors in a Joint Venture/Joint Bid) shall be evaluated through the Design Phase, with a final CPR assigned at the end of the Design Phase or Construction Phase (if the construction contract is awarded to the Service Provider). The same final CPR shall be assigned to all Rated Contractors in a Joint Venture/Joint Bid.

3.5 Payment Schedule

3.5.1 Services Required

The Lump Sum Price shown in the Service Provider's Offer and Acceptance Form shall be full compensation for all services, deliverables, equipment, materials and testing required to provide

the services detailed in the RFP documents and the Proponent's proposal. The Lump Sum Price includes, but is not limited to salary, benefits, overhead (office, computer, cell phones, etc.), payroll burden and profits.

The payments will be made on a monthly basis over the duration of the assignment. The payment on an invoice shall be made on the approval by the Ministry (Legal Terms and Conditions **Article 13**). The final invoice shall not be approved for payment until all services are complete and deliverables are received in a form acceptable to the Ministry.

The Service Provider shall invoice and collect HST from the Ministry for the Deliverables in accordance with the provisions of the Excise Tax Act, R.S.C. 1985, c.E-15, as amended or replaced from time to time.

The Service Provider shall also provide a Total Competitive Cost Price which includes Fixed Unit Rate Prices for the roles and services identified in the **Appendix B.2** Fee Schedules. These rates shall include all labour, travel, equipment, material, preparation, testing, and reporting required to do the Work. These staff and services will be engaged on an as-needed basis through Work Orders.

[NTD: Consult with Contract Innovations Office on the inclusion of the Total Competitive Cost Price.**]**

The Total Competitive Cost Price shall be the total ceiling price for the cumulative total of Work Orders. The Fixed Unit Rates provided by the Service Provider in the Fee Schedules shall remain in effect until the end of the Construction Phase.

[NTD: Consult with Contract Innovations Office on the inclusion of the Innovation Budget and appropriate percentage.**]**

In addition to the Lump Sum Price and the Total Competitive Cost Price, the Service Provider shall include an Innovation Budget equal to **XXXX** percent (**#**%) of the Lump Sum Price. The Innovation Budget is intended to support and advance Ministry endorsed Innovation Proposals during the Design Phase. This budget will be used to compensate the Service Provider for demonstrated additional design, analysis, and due diligence efforts required to further develop these Innovation Proposals beyond the baseline Design Phase scope. All work funded through the Innovation Budget shall be authorized through negotiated Work Orders and compensated using the applicable Fixed Unit Rate Prices contained within the Fee Schedules. The Innovation Budget provides dedicated resources to refine, validate, and implement cost-effective, value-added, or performance-enhancing innovations that align with Ministry objectives identified in RFP Section 6.1 Innovations Plan.

The Lump Sum Price, the Total Competitive Cost Price, and the Innovation Budget shall collectively constitute the Total Contract Price shown in the Service Provider's Offer and Acceptance Form. These three components together represent the complete financial basis of the Service Provider's offer for the Design Phase under the Agreement.

Change Order Process

Any changes in the scope of work (e.g. additional work or reduction in work, Agreement suspension or termination) shall be provided by written notice to the Service Provider in compliance with and are subject to the Ministry's Change Order process as detailed in **Article 12** of the Legal Terms and Conditions. In the event that the assignment timeframe is shortened and/or the staffing complement required is less than anticipated for whatever reason, the Ministry reserves the right to claim cost savings through negotiations with the Service Provider.

The Payment for any "Approved" additional work is subject to the Ministry's invoicing and payment procedures. The invoices for extra/additional work shall be clearly marked as "Additional".

The Ministry's prior approval is required for replacing any staff, equipment, deliverables or rates of payment listed in the Service Provider's Proposal.

3.5.2 Work Orders and Work Quotes

Work Orders shall be used for any extra work and in compliance with the Ministry's Work Order process as detailed in **Article 12** of the Legal Terms and Conditions. All costs associated with the preparation and negotiation of Work Orders, Work Quotes and Assignment Proposals, including project management fees, shall be covered by the Lump Sum Price.

Work Quotes shall be based on the Fixed Unit Rates from the Service Provider's Design Phase Fee Schedules (**Appendix B.2.2, B.2.3, B.2.4, B.2.5, & B.2.6**). Payment shall be based on the actual units utilized in the preceding payment period, with satisfactory substantiation. Upon mutual agreement and clear documentation in the corresponding Work Quote, a Work Order Total may be administered as a Work Order Lump Sum and paid based on percentages of work completed, milestones, and/or deliverables.

The Service Provider shall prepare and submit a Work Order Form (**Appendix E.1**) within five (5) Business Days of receiving the request from any MTO staff. The Service Provider shall schedule a meeting with MTO Project Manager immediately after the submission to discuss the Work Order. The Service Provider shall not proceed with the proposed work before receiving a MTO approval.

For each Work Order, the Service Provider shall also prepare and submit a Work Quote Form (**Appendix E.2)** and an Assignment Proposal.

Each Assignment Proposal shall include:

1. Detailed Scope of Services and Deliverables

[*Provide a comprehensive description of all Services and Deliverables (e.g., reports, memos, support for reviews, negotiation input, technical evaluations, Construction Contract Administration).]*

2. Schedule and Milestones

[Outline the expected schedule, including start and end dates, and all major milestones related to the Services and Deliverables.]

3. Resourcing Strategy and Identification of Personnel

[Describe how the Services will be resourced, including identification of Technical Team Members, resource levels, roles and responsibilities, and any use of subconsultants or subcontractors.]

4. Resource Hours and Cost Breakdown

[*Based on Fee Schedules in* ***Appendix B.2.2, B.2.3, B.2.4****. Service Provider to propose Quantities, Rates, and Total to provide the required Services and Deliverables*]

5. Proposed Staff List and Hours Allocation

List all personnel proposed for this Work Order, including their roles and estimated hours.

Name	Role	Estimated Hours	Previously Approved? (Y/N)

6. Qualifications of New Personnel

Provide qualifications, including resumes and references, for any personnel not previously approved for work under this Agreement.

3.5.3 Deliverables

3.5.3.1 Monthly Invoicing and Progress Reporting Requirements

The Service Provider shall submit an Invoice to the Ministry on a monthly basis throughout the term of the Assignment. Each Invoice shall be based on the actual work completed during the preceding month and must be submitted with a comprehensive Monthly Progress Report. The invoice and comprehensive Monthly Progress Report shall be submitted within 3 – 10 days prior to the scheduled Project Team Meetings with the Design & Construction Team. The contents of each Invoice shall, at a minimum, include the following:

- Monthly Progress Report
  - A narrative summary describing the status of the work performed during the month.
  - The percentage of overall work completed to date.
  - Identification of any key milestones achieved, or delays encountered.
- Lump Sum Price Work
  - The percentage of Lump Sum Price work completed during the preceding month, as well as cumulative totals to date.
  - A detailed breakdown of the Lump Sum Price work completed, including specific tasks or deliverables.

- Allocation of all related expenses by sections within each Project.

- Approved Work Orders
  - An itemized list of all approved Work Orders.
  - For each Work Order:
    - The percentage of work completed during the preceding month and cumulative totals.
    - A breakdown of the specific Work Items completed during the month.
    - Allocation of expenses by sections within each Project.
- Supporting Documentation
  - All Invoices must be accompanied by supporting evidence to the satisfaction of the Ministry. This may include, but is not limited to, timesheets, receipts, Sub-Service Provider invoices, and other documentation verifying the work performed.
  - The Ministry reserves the right to request additional information or clarification regarding any invoice or supporting documentation submitted.

Within ten (10) Business Days of Assignment award, the Successful Service Provider shall provide a draft form of Invoice for review and comment to the MTO Project Manager. The Service Provider shall work with the MTO Project Manager to address and satisfy all Ministry needs for invoicing and documentation for this Assignment. The Service Provider shall accommodate any changes and updates to Ministry invoicing and documentation requirements, as required, for the duration of the assignment.

3.5.3.2 Financial Forecasting and Reporting Requirements

The Service Provider shall prepare and submit monthly financial forecasts detailing anticipated expenditures for the following time periods:

- The upcoming month
- The remainder of the current calendar year
- All remaining years of the Project.

These forecasts shall be comprehensive, accurate, and based on the most current information available. The format, structure, and content of the forecasts shall be developed in consultation with the MTO Project Manager to ensure consistency with Program reporting requirements and financial oversight needs. The Service Provider shall update and refine these forecasts on a monthly basis, or as otherwise directed by the Ministry Project Manager.

3.6 Occupational Health and Safety

3.6.1 Services Required

The Service Provider is to adhere to the requirements of **Article 4.12** of the Legal Terms and Conditions regarding Occupational Health and Safety.

The Ministry of Labour, Immigration, Training and Skills Development (MLITSD) has indicated that in some cases, certain engineering work may constitute "construction" work for the purposes of the OHSA. Proponents are advised that they shall be required to review their work activities to achieve compliance with the OHSA and applicable regulations. The Service Provider shall execute the terms of the Agreement in strict compliance with the OHSA and the applicable regulations there under.

3.6.2 Deliverables

The Service Provider shall be required to review its work activities to achieve compliance with the OHSA and applicable regulations with respect to traffic hazards and to reference the Ontario Traffic Manual Book 7 - Temporary Conditions, Office Edition for further direction on traffic control.

The Service Provider shall provide advance notice of the proposed starting date and time, estimated duration, and location of work to:

(a) The Ministry Contract Services Administrator,
(b) The Ministry Area Manager, Construction,
(c) The Ministry Project Manager, and
(d) The Ministry Maintenance Contracts, Supervisor

3.7 List of Designated Substances in Ministry Workplaces

3.7.1 Services Required

In accordance with the OHSA, a list of Designated Substances present in Ministry workplaces is provided in this section.

Ontario Regulation 490/09 lists the following eleven Designated Substances: Acrylonitrile, Arsenic, Asbestos, Benzene, Coke Oven emissions, Ethylene Oxide, Isocyanates, Lead, Mercury, Silica, and Vinyl Chloride.

Of the above, MTO is aware that **Silica, Lead, Asbestos, and Arsenic** were widely used in highway and bridge construction in the past and may be present within the project limits. In addition, there is a possibility that **Benzene** may be present in certain coating materials (such as coal tar epoxy) or as a result from a spill or from contamination from an adjacent property.

The remaining Designated Substances are not likely to be encountered in typical construction or maintenance activities of MTO infrastructure. Acrylonitrile and Vinyl Chloride are in Acrylonitrile Butadiene Styrene (ABS) and Polyvinyl Chloride (PVC) materials but are not considered Designated Substances once they have been polymerized and therefore do not need to be identified.

In accordance with the *Occupational Health and Safety Act, R.S.O. 1990, c. O.1*, Proponents are advised of the presence of the Designated Substances presented in Table 2-1 to which the

Service Provider may be exposed when working at the specified locations or while the specified work activities are being undertaken.

Table 2-1 Designated Substances In Ministry Workplaces

Designated Substance	Location or Work Activity
Silica	Handling sand or gravel. Handling road sweeping materials. Silica will be present on all projects. Present throughout the working area including, but not limited to, asphalt, concrete, and granular materials.
Lead	Lead is assumed to be present in the epoxy coating on the reinforcing steel within the concrete deck and the work shall be performed as though lead is present.
Asbestos on Construction Projects and in Buildings and Repair Operations (O. Reg. 278/05)	Patrol yard building materials (i.e., pipe insulation, ceiling/beam insulation, ceiling tiles, acoustic wallboards, floor tiles, ducts in bridges, etc.). Located on the X Bridge in the Bearings identified as Transite Board. Material is non-friable. Reference report “Asbestos Analysis for the X Bridge” dated May 2013 and included elsewhere in the Contract Documents. The conduit in the sidewalk of the bridge is assumed to contain asbestos and is assumed to be non-friable; however it shall be re-assessed when the material is exposed. Asbestos may be found in some pavements, bridges, culverts, buildings, and electrical works: - Asbestos may be found in conduits/ducts, bearings as well as in coatings found on structures and culverts. - Asphalt Coated Asbestos Protected Corrugated Steel Culverts have been used in some projects. - Asbestos may also be present as insulation and in numerous other building materials in existing buildings. Examples include: caulking, drywall joint compound, tiles, etc. - Asbestos was used as a hot mix additive in some trials. - Asbestos cement pipes may also have been used.

Designated Substance	Location or Work Activity
Mercury	Manometers, thermometers or other pressure or temperature sensing devices may contain mercury. Steel Structure coatings may contain small concentrations of mercury. Mercury is not likely to be encountered as mercury vapour lamps have been replaced with high pressure sodium and LED for illumination. However mercury may be present in some electrical equipment and mercury vapour is present in fluorescent light tubes and other types of light fixtures in buildings.
Arsenic	Steel Structure coatings may contain small concentrations of arsenic. May be found in pressure treated lumber (e.g. sign supports and some guiderail posts) and some steel structure coatings.
Benzene	Benzene may be present in certain coating materials such as coal tar epoxy. Benzene may also be encountered in or adjacent to abandoned fuel storage facilities.
Vinyl Chloride, Coke Oven Emissions, Ethylene Oxide, Acrylonitrile and Isocyanates	Vinyl Chloride, Coke Oven Emissions, Ethylene Oxide, Acrylonitrile and Isocyanates are not normally present on MTO construction projects.

SECTION 4: TERMS OF REFERENCE – GENERAL

4.1 Project Scope

This Assignment involves Detail Design, Cost Estimation, Construction Scheduling, Risk Management, Constructability Review, Innovation and Contract Preparation for the following *highway/bridge project.*

the Detail Design of Highway XXX from XXX for XXX km. Also included in this Assignment is the replacement of XXX structures. **[Note to Draft:** Fill in the project scope**]**

The scope of work includes all work necessary to deliver this Assignment as described in the RFP Documents. When providing services under this Agreement, the Service Provider shall comply with all applicable legislation, regulatory standards, industry best management practices, and other guidelines and procedures relevant to conduct the work. The Service Provider shall also consult any existing applicable MTO guidance documents as appropriate.

This Assignment includes work that is in a French Language Services designated area. The Service Provider must comply with all provisions of the *French Language Services Act*, including but not limited to *Third Party Regulation 284/11*. **[Note to Draft:** include this text for work in a designated area. Delete if not in a designated area. Click designated areas or contact MTO French Language Services office to identify the designated areas**]**

The ***Detail Design*** work includes engineering services in the following functional categories:

- Highway Planning
- Environmental Planning
- Transportation (Systems) Planning
- Advanced Traffic Management Systems
- Bridge Engineering
- Drainage and Hydrology Engineering
- Electrical Engineering
- Engineering Materials Testing and Evaluation
- Environmental (Preliminary Design and/or Detail Design)
- Indigenous Consultation
- Foundation Engineering
- Highway Engineering
- Pavement Engineering
- Property/ Corridor Management
- Surveying
- Rock Engineering
- Traffic Engineering
- Utilities

In addition, the following services are required:

- Additional biddable work

The key components in this Assignment include:

- [**NTD**: List key components in this assignment]
- Integrated multidisciplinary engineering and specialty services required to support detail design development and future construction delivery.

Ministry Work and Reimbursable Services

The Service Provider may request Ministry Technical Services in conformance with the Legal Terms and Conditions based on the following rates subject to negotiation:

b) Management and Professional Staff per diem rate = $1,500
c) Technical Staff per diem rate = $1,200

The Ministry will provide the following services during Design and Construction, if applicable:

a) General guidance and direction of a Ministry Representative who will be making periodic visits to the Working Area and other design, estimating, materials, or other Ministry specialists who may be available on a limited basis when circumstances warrant.

b) Testing services for the following specialized materials:
   - Asphalt mix design verification and acceptance for Open Friction Course and Electrically Conductive Mix only
   - Portland cement, slag and fly ash
   - Latex modifier quality
   - Quality testing for bridge deck waterproofing material properties
   - Quality testing of pavement marking materials, paint and reflectorized beads – material properties
   - Anti-stripping additive quality
   - Special quality testing of aggregates for physical properties
   - Post tension cables
   - Shotcrete cores
   - Protection board quality
   - Membrane reinforcement
   - Expansion joint seals
   - Elastomeric and rotational Bearings
   - Structural steel coating quality
   - Metal wire galvanizing
   - Geotextile quality testing
   - Quality Assurance Laboratory Testing services (during Construction only)
   - Ministry or Private Sector Referee Testing services (during Construction only).

Test results provided by the Ministry will be emailed to the Service Provider or Contractor directly or issued on CMS.

If the Service Provider requires any other services of the Ministry, these will be negotiated as required.

4.2 Technical Services Required

The technical services requirements specific to each functional category are described in **Sections 5 to 7**. The following general terms apply to all categories and shall be adhered to.

The Service Provider shall:

- Carry out the required planning of the physical project requirements, including all field reviews, relevant tests, inspections, and studies, with due regard for environmental, traffic accommodation and safety concerns, capital cost, and operating efficiency, all in accordance with Technical Standards and Specifications (**Appendix F**).
- Perform all field tests, surveys, and studies, such as environmental, geotechnical and foundation investigations and testing, including associated laboratory work, and any other site investigations and field testing required to support the planning of the project.
- Provide the project maps/sketches in both **Shapefile (.shp)** and **PDF** formats illustrating the property acquisition status, utilities relocation process, environmental and engineering features for the project team. A map will be required for each feature as well as overlay maps to support project review, coordination, and decision-making by providing a clear representation of the constraints and engineering design features
- Keep the appropriate Ministry staff informed of project progress on a monthly basis, and as required.
- Respond to any Ministry inquiries within five (5) Business Days including written response to all questions and concerns raised at Milestone meetings
- Label all correspondence to the Ministry with the GWP number, Assignment number, and any other appropriate Ministry File name and description of contents.
- Correspond with governmental ministries, agencies, and other public authorities for planning information.
- Attend and prepare the minutes of all meetings with Ministry staff and external agencies as detailed in **Section 3**. The Service Provider is responsible for making arrangements with appropriate Ministry staff for attendance at all meetings.
- Negotiate on behalf of the Ministry with external agencies and stakeholders relative to the Progressive Design Build for Highways project, prepare draft agreements, and secure all required clearances for commencement of any Design and Construction Phases works.
- Obtain Municipal council resolution where required.
- Assist the Ministry in the development of construction contract package(s) (i.e., Tender Item Bid or LS Bid, fill-ins, SPs, etc.)
- Assist the Ministry with the preparation of the Construction Administration and Inspection Specifications (CAIS) to be included in the Contract Administration contract for non-standard items and/or non-standard special provisions.

In the performance of site investigation and field testing (including surveys), the Service Provider

shall:

- Provide for the safety of both the public and the staff involved in site investigations.
- The Service Provider shall comply with the Ontario Traffic Manual Book 7 – Temporary Conditions (Office Edition) and all signing shall be in accordance with Ontario Traffic Manuals. Specific site conditions may warrant additional safety measures. All vehicles of the Service Provider must be equipped with a vehicle-mounted 360-degree amber light.
- Protect utilities and property from damage.
- Document the site before and after the field investigation including but not limited to photographs, video and detail notes
- Restore the site as near to original conditions as practical.
- Submit property damage reports to the Ministry for unrestored damages.
- Adhere to the work constraints.
- Every effort shall be taken by the Service Provider to not have equipment, vehicles, and staff on the shoulders when seasonal maintenance operations such as snow ploughing, grading, etc. are expected.
- Obtain permission to enter.

The Service Provider shall adhere to the following work constraints:

- Field investigation shall be carried out in such a manner as to minimize disruptions to highway operations and private property owners.
- Field investigation shall consider and address potential environmental impacts (e.g., heritage buildings, archaeological sites, species at risk and their protected habitat, etc.).
- Co-ordinate field work with other or separate construction contracts, highway maintenance activities, e.g. Contractor Directed Maintenance Contracts (CDMCs) and/or any other engineering assignment(s) which may be ongoing adjacent to this project or within the limits of this project.
- Maintain a minimum of 500 m separation between separate operations at all times while undertaking field work or delimit work zones by a physical barrier or fence as permitted under OHSA.
- Field investigation operations adversely affecting public traffic (e.g. lane restrictions) and the loading or unloading of materials and equipment onto and from the travelled portion of the highway and the shoulders shall not be carried out during the following periods:

  i)Friday or a Day Proceeding a Holiday: noon to midnight
  ii)Saturdays and Sundays: all day
  iii)Canadian Statutory Holidays and Civic Holiday: all day
  iv)From ___ hour before sunset to ___ hour after sunrise
  v)Any period of inclement weather (i.e., heavy fog, heavy rains, snow, ice)

The Service Provider shall notify, in writing, the Ministry Project Manager, Manager of Construction, and Manager of Operations or an appointed staff member (e.g. Area Manager,

Construction or Maintenance Superintendent) of the details of upcoming field work. This would include the extent and type of work, the work site location, and the anticipated duration of the work. For example: Highway 400, from Teston Road to King Road, two (2) survey crews working across the R.O.W. for the next three (3) days, December 1 - December 4. The Service Provider must continue to inform the Construction Office Representative throughout the life of the Assignment. The Ministry's Project Manager shall be copied on all notifications.

The MTO Right-of-Way (ROW) Form shall be submitted for all fieldwork.

If the Service Provider fails to comply with any of the above conditions, environmental legislation and regulations, or the *Occupational Health and Safety Act, R.S.O. 1990, c. O.1* or its regulations and poses an **immediate danger** to the health or safety of a worker or the public, the Ministry will order the Service Provider to immediately cease all operations. The Service Provider shall then remove itself and any traffic control devices from the highway.

The Service Provider will not be allowed to gain access to the corridor until the Service Provider demonstrates that it is able to conform to the requirements of this section and provides written notification to the Ministry outlining how the situation has been rectified. The Service Provider will require the Ministry's permission to recommence work.

Immediate danger is defined as a violation of the *Occupational Health and Safety Act, R.S.O. 1990, c. O.1* or its regulations where the violation poses a danger and any delay in stopping the work may result in a serious injury to a worker or the public. A situation of insufficient traffic control may pose an immediate danger.

Program Management Consultant [NTD: Remove if not applicable]

The Ministry has retained a Program Management Consultant (PMC) to provide program-level management, integration, technical coordination and review, schedule and risk oversight, stakeholder coordination, reporting, and interface management across the entire Program. The Service Provider shall work collaboratively with the Ministry and the PMC throughout the Design and Construction Phases.

Communication and Consultation Plan

The Service Provider shall submit a comprehensive and robust Communication and Consultation Plan as part of the Phase II – Technical Proposal. The Communication and Consultation Plan shall address, at a minimum, the following requirements:

- Consultation and Stakeholder Engagement
    - Consultation strategies and stakeholder engagement approach.
    - Contingency measures to address potential challenges, delays, or obstacles arising from a lack of cooperation, timely responses, or agreement from external stakeholders.
- Communication Framework

- Roles and responsibilities of the Service Provider in communications with the Ministry project team, the Program Management Consultant (PMC), other Ministry Service Providers, municipalities, utilities, and other key stakeholders.
- Communication protocols, reporting mechanisms, escalation procedures, and decision-making processes.
- Meeting structure, frequency, documentation requirements, and stakeholder coordination processes.

During the Design Phase, the Communication and Consultation Plan shall be reviewed and updated monthly, or more frequently as required, to reflect consultation progress, identify emerging issues, and incorporate revised strategies to address stakeholder concerns and facilitate project advancement.

The PMC will be responsible for the implementation and maintenance of the Program Website. The PMC will develop a subsite for the Project on the Program website and mange the website format, branding, and layout consistent with the broader Program. The Service Provider shall prepare materials to be included on the Project website and coordinate with the PMC to publish any updates related to this project. Materials may include project details and status updates, maps, images, videos, reports, and fact sheets and other relevant materials or information as required.

The PMC will also be responsible for managing all incoming and outgoing public correspondence. The Service Provider will be required to prepare responses for all outgoing public correspondence. The Service Provider shall coordinate all project communications, stakeholder engagement activities, reporting requirements, and project updates with the PMC to ensure consistency with the overall Program objectives and communication strategy.

Design Integration and Interface Plan [NTD: Remove if not applicable]

The Service Provider shall submit a comprehensive and robust Design Integration and Interface Plan as part of the Phase II – Technical Proposal. The Design Integration and Interface Plan shall address, at a minimum, the following requirements:

1. Project Integration Approach
   - Approach for integrating this Assignment with the MTO infrastructure interfaces
   - Approach for integrating this Assignment with municipal and regional projects that may impact or interface with this design assignment.
   - Approach for integrating the design between contracts in this Assignment.

2. Coordination with Program Management Consultant (PMC)
   - Recognition that the PMC, procured under a separate assignment, will oversee integration of the entire Program.
   - Processes and procedures for ongoing coordination with the PMC and other Service Providers throughout the Design and Construction Phases.

- Timely provision of information, deliverables, schedules, risk updates, technical input, and other supporting documentation to the PMC to facilitate Program-wide integration, interface coordination, and decision-making.

3. Interface Management
    - Identification, tracking, and management of project interfaces, dependencies, risks, and constraints.
    - Procedures for information sharing, issue resolution, schedule alignment, design coordination, and change management among all relevant parties.

During the Design Phase, the Design Integration and Interface Plan shall be reviewed and updated monthly, or more frequently as required, to identify emerging interface issues, reflect coordination outcomes, and incorporate revised strategies to support project integration and advancement.

Municipal and Regional Coordination

The Service Provider shall acquire the information related to Official Plans and their amendments, Transportation Master Plans, secondary plans, existing and approved/ proposed developments within the project limits from the local municipalities and regions.

The Service Provider shall coordinate with the municipalities and regions to ensure integration with the existing and planned projects, including land developments, utility servicing, and infrastructure improvements. The Service Provider is responsible for identifying potential conflicts or opportunities for collaboration and maintaining ongoing communication with municipal and regional representatives throughout the design process.

The Service Provider shall support the Ministry in the development of legal and/or cost sharing agreements with the municipalities and regions, including preparing cost estimates, documentation to be appended to the agreement, and participating in discussions.

The Service Provider shall prioritize the investigation, review and design of the Project at the overlap areas between this Project and the below municipal projects that are currently in the "Detailed Design & Construction" phases. The Service Provider shall also review municipal design and/or contract packages in details at the overlap areas to identify potential conflict with the Project. The objective is to resolve the design conflicts, minimize the duplicate work and avoid abandonment or reconstruction of newly built infrastructure. The successful Service Provider will be provided with the latest detail design packages for these projects as available.

- **[NTD:** Include list of overlapping Municipal projects]

The Service Provider is required to coordinate with additional municipal and/or private development projects during the Design Phase.

Visualization [NTD: Remove if not applicable]

During the procurement, the Ministry will provide the Service Provider with baseline drone flyover video footage showing project limits and highway alignments. During the Design Phase, the Service Provider shall update the drone flyover of the entire project limits at three (3) month

intervals. For areas under construction including utility relocation, the Service Provider shall provide updated drone flyover footage on a monthly basis until construction is completed.

The Service Provider shall provide renderings in three-dimensional (3D) of the existing conditions and the proposed highway configuration including the mainline, interchanges, ramps, bridges and other significant features of the project such as key cross-sections, environmental protection measures and CCTV locations. The drone flyover footage must include but not limited to the following within the video files:

- Proposed preliminary design or multiple levels of detail design highway alignment
- Proposed highway right of way limits
- Alignment stationing
- Bridge and structural culvert identification by IDs

The Service Provider shall provide renderings in three-dimensional (3D) of the proposed highway configuration including the mainline, interchanges, ramps, bridges and other significant features of the project such as key cross-sections, structural components, environmental mitigation measures and CCTV locations. The Service Provider shall submit the renderings of the proposed highway configuration to the Ministry's Project Manager at least two (2) weeks prior to the Stage 2 Design Team Review Meeting. The renderings shall be utilized to present the design to the project team at the Stage 2 Design Team Review Meeting. The renderings of the proposed highway configuration shall be updated when there is a significant change to the design and at milestones.

The Service Provider shall also prepare digital visualizations of the detail design using appropriate technologies, such as three-dimensional (3D) visualizations, animations, videos, or other comparable digital media, to support public outreach, stakeholder engagement, and consultation activities. Where applicable, all digital visualizations shall comply with the Accessibility for Ontarians with Disabilities Act (AODA) including the provision of closed captions for video content and other applicable accessibility features.

Changes to the Design Submission during Design Phase

Changes to any submissions from the Service Provider during the Design Phase shall require the Service Provider to follow the process outlined below.

The Service Provider shall immediately notify, in writing (e-mail), the Ministry Project Manager of the following for review.

- Identify and describe the change
- Provide justification on why the original design cannot be completed
- Provide a plan and schedule for developing a revised design to resolve the issue

Following the initial review, upon significant changes as determined by the Ministry Project Manager, the Service Provider shall submit a technical memorandum within two (2) business days detailing the following:

- Description of the change
- Why the change is required

- Why this was not captured in the original submission and what countermeasures will be implemented to prevent future occurrences
- Impact to the Class EA Process
- Impacts to schedule
- Impacts to other components of the Project

The Technical Memorandum shall be signed and sealed by Professional Engineer(s).

The Service Provider shall submit an addendum to all affected technical reports and drawings within three (3) business days of submitting the technical memorandum. These submissions shall be subject to the requirements detailed elsewhere in this Agreement including being signed and sealed by Professional Engineer(s).

At the discretion of the Ministry, a hybrid meeting may be held to have the Service Provider explain the items described above. At this meeting, the Engineer(s) who stamped the original design, the Design Manager, and the Service Provider Project Manager shall be present in person. The meeting shall be held at the Ministry's office. Other supporting staff from the Service Provider may attend the meeting virtually.

The Service Provider shall be responsible for all aspects of the change, including all associated costs.

The Contract Start Date shall remain as indicated in Section 3.1.

Advance Contract(s) and/or Early Procurement(s)

- Advance contracts and/or early procurement may be required for this Assignment where clear benefits or substantial cost saving to the Project can be demonstrated. Such early work may only proceed with appropriate environmental approvals, permits, exemptions and internal Ministry approvals.
- The Service Provider shall not rely on early procurement or advance contracts in the development of their Proposals, unless explicitly required by the Ministry for the Assignment in this RFP.
- The Service Provider may be asked to procure long-lead-time materials that may be in short supply or require longer than desired lead-times from purchase to delivery or to advance construction by preparing a design build ready package. The Ministry may choose to exercise this option if the early procurement and/ or advance contract saves significant construction time, cost, or avoids potentially significant delays once the project begins, etc.
- Early Procurement or Advance Contracts must be independent and severable from the final Construction Phase Works.
- Construction shall not begin until all required approvals, as determined by the Ministry, are obtained.

The Service Provider shall evaluate opportunities to advance specific work packages ahead of the main contract(s) and procure long lead time materials where it is practical and beneficial to the overall project. This may include activities such as electrical and structural components

ordering, utility relocations, environmental mitigation measures or early construction tasks that could optimize the schedule, reduce project risks, or minimize throwaway work. The Service Provider is expected to identify potential advance packages during the design process, assess their feasibility, and provide recommendations to the Ministry for review and approval. Any proposed advance packages shall include justification, scope definition, and anticipated benefits to the project.

If the Ministry elects to proceed with Early Procurement or an Advance Contract, the process is as follows:

- If procuring advance construction work, the Ministry and the Service Provider shall agree upon a scope of work to be accomplished in this phase of the construction work. The agreement may take the form of a set of plans, or it may consist of something less formal such as sketches, drawings or written descriptions, depending on the nature of the work. Both parties must agree that the scope of work is clear and unambiguous.
- The Service Provider shall prepare a Tender Item Bid to perform the agreed to scope of work. The Service Provider may prepare a Lump Sum Bid for the scope of work if both parties agree to this pricing approach.
- If the Ministry, in its sole discretion, determines that Service Provider's price is acceptable, the Ministry may recommend award of the procurement/construction.
- The Ministry reserves the right, at its sole discretion, to procure the item(s) later as part of the Construction Phase Bid, or by some other method.
- If the Service Provider's Tender Item Bid for Advance Contract(s) is not accepted by the Ministry, a tender package(s) may be required for the procurement of the necessary Advance Work at the request of the Ministry. The Service Provider shall prepare the tender package(s) including, but not limited to, preparation of scope of work, quantities, cost estimates and tender documents, and providing support during tendering process.
- The Service Provider will not be prohibited from participating in, or submitting a bid in response to, any open, public, or otherwise competitive tender on any Advance Contract.

Contract Packages

Minimum of **XXX (#)** separate contract packages are required for the project: XXX (**#**) advance contracts and XXX (**#**) main contracts as collaboratively determined by the Ministry and the Service Provider during the Design Phase. For bidding purpose, the Service Provider shall include the fee for the following contract preparations in the lump sum:

- One (1) Advance Contract includes, but not limited to, …
- One (1) Main Contract includes, but not limited to, …

These packages are provided for planning and pricing purposes only. The Ministry reserves the right to adjust the scope or sequencing of these packages, as required. The Service Provider shall determine the contract sequencing, number of contracts, contract limits, staging and schedule according to Indigenous consultation, environmental approvals, structural priorities,

staging requirements, property clearances, corridor constraints and utility impacts. If additional contract package is required, a Work Order will be issued for the contract preparation work.

The Service Provider shall evaluate alternative contract packaging options and provide recommendations considering:

- Schedule optimization.
- Utility readiness.
- Property acquisition timelines.
- Environmental approvals.
- Market capacity.
- Competition.
- Long-lead material procurement.
- Construction staging.

The Service Provider shall prepare and maintain a Long Lead Procurement Plan identifying:

- Structural steel
- Prestressed girders
- Bearings
- Expansion joints
- High mast poles
- Conventional lighting
- Traffic signal cabinets/ equipment
- ITS equipment
- Sign structures
- Specialized construction equipment
- Specialized utility materials

The plan shall identify procurement timing, critical path impacts, and opportunities for advance procurement.

The Service Provider shall include Advance Contracts and Main Contracts in the monthly update of the **Communication and Consultation Plan**.

The Service Provider is required to incorporate data, reports, and/or design completed by the other Ministry's Service Provider(s), such as PMC, retainer(s) and the Ministry in-house design team during the Design Phase into the final design(s) and contract package(s). These deliverables will be provided as per the timeline required in the Integrated Project Schedule agreed by the Ministry and the Service Provider at the start of the Design Phase. For bidding purposes, it shall be assumed that the design for [**NTD**: Insert design components to be provided to Service Provider, if applicable] will be provided to the Service Provider to incorporate into the contract packages.

4.3 Deliverables

All notices, documents, deliveries and approvals required or permitted by this Agreement shall be in writing and delivered to the Ministry at:

[NTD: enter the Ministry address

Attention: *Ministry contact*
Email
Phone]

Contract Management System

The Contract Management System (CMS) is a solution that provides a digital means to record, collect, transmit, and store contract data.

CMS shall be used to administer the Design Phase and the Construction Phase and manage the services and deliverables. Prescribed services and deliverables shall only be accepted through CMS unless otherwise specified by the Ministry contact.

The Ministry will provide the Service Provider with up to **X [NTD: typical 5 subscriptions]** unique annual CMS subscriptions at no cost. The Owner will provide subscription information and instructions to the successful Service Provider following Assignment Award.

Subscriptions will be provided continuously until the Service Provider achieves Contract Completion.

The Service Provider shall agree to the CMS terms of service at the time of confirming the subscriptions and abide by the terms and conditions for the duration of the Assignment's term.

The deliverables for each functional category are described in Section(s) 5, 6 and 7. In addition, the following Documentation is to be delivered to the Ministry.

Detail Design Documentation

The Ministry requires documentation summarizing the design details completed by the Service Provider during the Detail Design phase. Required reports and documentation are detailed in the functional category sections. The Service Provider shall also provide the Ministry a master list of all MTO assets to be built within the project limits including but not limited to bridges, structural culverts, non-structural culverts, overhead signs, retaining walls, signages, lighting, CCTV, RWIS, VMS, Traffic count stations, carpool lots…

The following documents shall be submitted in a format acceptable to the Ministry:

Contract Package and Design Documentation shall generally consist of the following:

- All drawings in AutoCAD (Ministry approved version) format adhering to the Ministry's "AutoCAD Standards Guide."
- All digital file names conforming to Ministry file naming conventions and layering standards.
- All Contract Tender Documents in Word (2003 xml) format using the following layout as identified in Chapter E of the CDED Manual.

The following documents shall be provided:

a) Letter of Transmittal to the Ministry's Contract Award Section, Contract Management Office, Standards and Contracts Branch, St Catharines.

b) Calculation of Liquidated Damages (based on the Memorandum "HOC#2006-05 Calculation of Liquidated Damages", August 22, 2006);
c) Design Synopsis; At the end of the Design Synopsis responses to the following questions should be included, in plain language (not highly detailed):
    i) Why is the work being performed?
    ii) What is the impact on traffic during construction? If there is an Impact, provide some indicator of how great the impact is (i.e. minor, major, and severe. If there will be no impact, note it).
    iii) What are the benefits of the completed work?
    iv) What are the main environmental protection and/or improvement features of this project?
    v) How does this project contribute to reducing the impact of climate change?
    vi) How does this project contribute to a sustainable environment?
e) Constructability Reports
f) Minutes of the Progress Meetings, Milestone Meetings, and Design Complete Presentation;
g) Minutes of the Executive / Design Complete Presentation.
h) Permissions to Enter (to Construct);
i) Federal approvals and permits
j) Correspondence with government agencies and other stakeholders;
k) CASL/ASDL.
l) Contract Tender Package Review Checklist.
m) Quality Assurance Report
n) Revised Reports:
    - Revisions to the Preliminary Design Report, as required;
    - Revisions to the Structural Design Report, as required;
    - Revisions to the Design Criteria, as required;
    - Revisions to the Property Request, as required

Design Documentation for Construction Phase

Three (3) hard copies and *one (1)* digital copy of the following Reports:

- Top of Granular A;
- Top of Granular B;
- Top of Subgrade;
- Muskeg Excavation;
- Stripping Fill;
- Clearing Templates;
- Ditching Templates;
- Slope Flattening Templates;

One (1) hard copy and one (1) digital copy of the following Reports:

- Area and Volume Reports;
- Corrected Volumes Report.

One (1) hard copy of Final Design Cross Sections (end areas omitted); and

One (1) digital copy containing all AutoCAD data files for all drawings;

One (1) digital copy containing all OpenRoads Designer (ORD) data and files used in the preparation of the cross-section drawings, quantities, and reports. Project data should be identical to the contents presented in the contract book. MTO ORD configuration is posted on the File Transfer Application Download (Xfer) Site.

The Service Provider is to make the following documents available to the Ministry's Project Manager for provision to the successful construction contractor and/or Construction Contract Administrator:

- Pavement Marking Drawings
- Utility Work Orders
- Original Structure Drawings
- Overhead and Ground-Mount Message Sign Layouts
- Horizontal and Vertical Control Sheets
- Environmental Synopsis with Summary of Environmental Concerns and Commitments table
- Environmental Impact Assessment Report or Transportation Environmental Study Report Addendum if applicable
- Consultation Plan as per Environmental Reference for Highway Design and Construction Report (Class EA Group A and B)
- Environmental Impact Assessment Report Addendum if applicable
- Detail Design Environmental Summary (DDES)
- Environmental permits, approvals, and authorizations including draft Permits to Take Water obtained by the Ministry that the construction contractor must apply to the Ministry of the Environment and Climate Change to have issued in the construction contractor's name
- Design Reports
- Foundation Investigation Reports
- Geotechnical Reports
- Original Cross Sections (highways, side roads, entrances, culverts and sewers) (hardcopy)
- Original Plots (sub grade reports, template sheets, granular base reports (top of "B"), profile elevations (Top of "A") (digital files)
- Additional copies of tender documents and contract drawings
- Any other digital files (Detailed Calculation Sheets – reports)
- Traffic Signal Legal Drawing (PHM-125)
- Property Mark-up Plan
- MTO Project Engineer/Manager contact phone number and backup phone number
- Engineering Service Provider contact phone number(s)
- Copies of applicable applications / permits related to construction
- Cost Share Agreements if applicable

Working Days

The Service Provider shall be responsible for calculating the working time necessary to construct the project. The working time shall be calculated from the start of mobilization to final completion, including time for cleanup and demobilization.

Working time shall be based on what an average contractor can accomplish using average production and shall be adjusted accordingly for design criteria such as optimum award date, interim dates, incentives/disincentives, and desired completion date.

In calculating working time, the Service Provider is to take into consideration factors such as, but not limited to: temperature dependant operations and material, shift work, contract constraints, staging, and traffic considerations.

The Service Provider shall update the working day calculation when there is a major increase/decrease in quantity or major change in the staging or character of the project, as well as those included with contract addenda.

Working time shall be calculated in working days and if appropriate for the type of project, be converted to calendar days or a completion date. The conversion calculation shall be documented, and a hard copy included with the contract package.

The Service Provider is responsible for justifying interim and final working time values by providing a detailed summary of the calculation in a bar chart format with accompanying calculations or details shown on the diagram, including major item quantities and production rates used.

The final version of the working time document shall be submitted to the Ministry with the Final Schedule Management Plan in a Critical Path Schedule format.

Scope and Cost Report

[**NTD**: **The Ministry's SCR shall NOT be shared with the Service Provider.** The Service Provider will use the template on Tech Pub to start the Project SCR and submit the document to the Ministry Project Manager to finalize.]

The Service Provider shall be responsible for downloading a blank Scope & Cost Report (SCR) template from the Ministry's Tech Pub site and developing SCR as per the Scope and Cost Report Guideline and Section 5 and 6 of this RFP including, but not limited to, mandatory milestones and Addenda/Status Reports requirements.

For bidding purposes, the following SCR documents are included in the RFP:

1. Scope and Cost Report Guideline (current version)
2. Scope and Cost Report Template (current Regional master)

The Scope and Cost Report guiding documentation may be found on the Ministry Technical Publications website.

The Service Provider shall develop and identify the project cost/schedule risk, risk mitigation, probability of risk occurrence and associated risk costs that are required for the cost estimate, in consultation with the Ministry's Project Manager, the Service Provider's and the Ministry's Project Team members.

The development and maintenance of the project scope, project schedule (including design, tendering, construction), risk register, costs and strategy is to be a standing item at project meetings.

Contract Package:

The Contract Package consisting of:

- Tender Documents,
- Contract Drawings,
- Construction Schedule and
- Other Documents.

are described below, shall be submitted to the Ministry.

[NTD: Include the below paragraphs if merging of Contract Packages / Work Done By Others is required:

The Service Provider shall take the steps necessary to incorporate work designed by others into the final contract package(s). If not specified in the Terms of Reference found elsewhere in this agreement, this work shall be considered extra work and work order will be issued to the Assignment unless otherwise agreed to by the Ministry and Service Provider.

The Service Provider shall be responsible for the completeness, quality, accuracy and compatibility (e.g. specifications, page numbers, approvals, PTTW) of the final contract package to be submitted to the Ministry, including merging other Assignment's contract details. It is the responsibility of the Service Provider for this Assignment to contact, correspond, and coordinate with other Service Provider(s) throughout this Assignment.

The Service Provider for this Assignment is not responsible to update contract documents outside this Assignment, or for stamping any contract documents submitted from other Service Providers.]

i) Tender Documents

Tender Documents shall be submitted, in both hard copy and digital, in CPS.net format, and shall contain:

- Addenda, as required
- Foundation Investigation Report
- Tender Cover Page
- Instructions to Bidders
- Contractor Declaration of Offer to Tender
- Tender Item List
- Form of Tender (e.g. Proposed Work, Sundry Estimates, Force Accounts, Materials Supplied, Schedule of Materials, Extra Work)
- Price Preference for Canadian Content including variations for A+B bidding where applicable
- Schedule of Provisions, Plans, Standard Drawings, Specifications, and General Conditions (with appropriate fill-ins) including Signed Statement by Bidder
- Supplemental General Conditions of Contract
- Part A: Special Provisions (as per warrants), placed in the following order:
  - Notices to Contractor

  - Instructions to Contractor
  - Operational Constraints
  - Standard Special Provisions;
  - Interim Special Provisions (e.g. Task Force Special Provisions)
  - General Special Provisions
  - Item Standard Special Provisions and
  - Item Non Standard Special Provisions
- Part B: Fair Wage Program Special Provision (pink);
- Part C: Liquidated Damages Special Provision with appropriate fill-ins (pink);
- Special attachments (white) as required, e.g. CPM Information to Tenderers, Bell Canada Specifications, project specific Modified Standard Drawings
- Contract Drawings.

ii) Contract Drawings

The Contract Drawings shall be submitted in hard copy with one (1) set of half size (27.94 cm x 43.18 cm) and for Structural Drawings, one (1) set of full size (55.88 cm x 86.36 cm) on high quality bond paper.

All Contract Drawings shall be provided in electronic file format, “to scale” in PDF format (1 PDF File per book of drawings, each file not to exceed 20 MB, not password protected stored on a USB flash drive and submitted with the hard copy.

The drawings will generally include:
- Cover Sheet;
- Key Plan;
- Index (containing both Drawing & Q-Sheet References);
- Grading Drawings including:
  - Horizontal & Vertical Control Sheets in areas of revised horizontal alignments;
  - Removals;
  - Study Plans;
  - New Construction;
  - Staging and Detours (including traffic control measures);
  - Pavement Markings Drawings;
  - Signage Plans;
  - Overhead Sign Layout Drawings;
  - Soils and Pavement Data;
  - Modified OPSD’s, MTOD’s and non-standard drawings;
  - Typical Sections and details;
  - Drainage Profiles;
  - Quantity Sheets;
  - Landscape Drawings;
  - Landscape Quantity Sheets;
  - Erosion and Sediment Control Plan Drawings; and
  - Etc. as required.
- Electrical Drawings including:
  - Electrical Layout;
  - Electrical Quantity Sheets;

  - Wiring Diagrams;
  - Electrical Details;
  - Temporary Electrical Work;
  - Removals; and
  - Etc. as required.
- Structural Drawings including:
  - General Arrangement;
  - Details;
  - Structural Quantity Sheets;
  - Overhead Sign Support Structure Drawings and
  - Etc. as required.
- ATMS Drawings including:
  - Supplementary Legend;
  - ATMS Layout;
  - Communications Schematics;
  - Wiring Diagrams;
  - Trunk Cable Designation Charts;
  - ATMS Details;
  - Removals;
  - ATMS Quantity Sheets; and
  - Etc. as required.
- Foundation Drawings including:
  - Borehole Location Plan and Soil Strata drawing(s)
- Architectural Drawings
- Q-Sheets (indicating Book # on cover sheet)
- Back Cover

Note: The Service Provider shall verify the suitability, completeness and compatibility of drawings and other documentation prepared by others that are to be included in their contract submissions and final contract deliverables.

iii) Construction Schedule

- A Construction-Ready Critical Path Schedule with Working Day Estimate

A summary sheet containing conversion calculations from working days to calendar days or completion date *(if applicable)*.

iv) Other Documents

One (1) hard copy and one (1) digital copy in Adobe PDF format stored in CMS (1 PDF File per report, each file not to exceed 20 MB, not password protected) of the following are required:

- Construction Risk Register (CRR)
- Foundation Design Reports (not required for tendering purposes)
- Foundation Investigation Reports (required for tendering purposes)
- Aggregate Sources List
- Pavement Design Reports
- Design Synopsis

- Tender Submission Form
- Tender Submission Checklist
- PTTW (Draft), EASR documentation
- Environmental Synopsis, with Summary of Environmental Concerns and Commitments table provided in an editable Microsoft Word format
- Earth Management Plan
- Copies of permits, etc.

Reproduction Services

The Service Provider shall provide the following:

Hard Copy (Sets)	Digital Copy	Item
0	1	Operational Performance Review
0	1	Pavement Design Report
0	1	Utility Relocation Plan
0	1	Tender Package and half sized Contract Drawings for the Design Complete Team Review Meeting submission
0	1	Tender Package and half sized Contract Drawings for the Design Complete Presentation
1		Cross-section Rolls
	1	Cross-section Rolls in AutoCAD format for the entire project to be submitted with the Contract Drawings for the Design Complete Presentation;
0	1	Tender Package and half sized Contract Drawings for Executive Presentation
0	1	Tender Package and full-sized set Contract Drawings for structural drawings only for Executive Presentation
0	1	Final Cross-Section Rolls and digital storage at the Contract Section date, with one copy (hard copy and digital copy) showing quantities;
1		Full size sets of structural drawings at the Contract Tendering Section date
0	1	Charts detailing Rate of Superelevation for all Horizontal Curves
0	1	Final Contract Packages
0	1	Tender Package and half sized Contract Drawings for BDIS
0	1	Commercial entrance drawings
0	1	Templates and Expanded Volumes Reports;
0	1	Draft Foundation Investigation and Design Report (FIDR) and/or Technical Memorandum
0	1	Final Foundation Investigation and Design Report (FIDR) and/or Technical Memorandum (Digital shall include PDF, AutoCAD, gINT (.gpj))
0	1	Final Foundation Investigation Report (FIR) (Digital shall include PDF, AutoCAD, gINT (.gpj))
0	1	Each factor-specific Environmental Technical Report as may be

Hard Copy (Sets)	Digital Copy	Item
		specified in Section 5.1/6.6/7.6;
0	1	Summary of Environmental Conditions Reports
0	1	Environmental Synopsis
0	1	Summary of Environmental Concerns and Commitments (one digital copy in PDF and one digital copy in Microsoft Word format)
0	1	Eligible for Environmental Clearance– Construction Start Letter
0	1	(plus one (1) signed original, digital copy in PDF format) Environmental assessment process documentation (one of Transportation Environmental Study Report, Design and Construction Report, Combination Transportation Environmental Study Report Addendum / Design and Construction Report, Environmental Screening Document) as specified in Section 5.1/6.6/7.6;

All drawings/materials required for each team member for meetings, etc.

All materials as stated elsewhere and/or as required for the delivery of the project, such as community workshop brochures and copies of workshop display material.

Note: Where there is a discrepancy in the above numbers and others in the RFP, the higher shall be deemed correct. In case of more than one (1) contract, the above numbers apply to each one of those contracts.

4.4 Reference Documents

This project shall be carried out, designed and constructed in accordance with the project Requirements outlined in this RFP, the Ministry's current directives, accepted standards, specifications, practices, policies and procedures, and memoranda. The Technical Standards and Specifications define the standards to be used in the design and contract administration, and the minimum quality for materials that shall be specified.

A general list of reference documents is provided on the RAQS public website/**Appendix F**. In the event of any conflict or inconsistency between documents, documents with the most recent date shall prevail.

In addition to the general list, the following guidelines, standards and specifications to be referenced include but are not limited to:

[Note to Draft: A general list of reference documents is included in Appendix F. Include in this table documents to be referenced specific to this project. Delete if not applicable**]**

Document	Distributor

Document	Distributor

Additional reference documents specific to a functional category are included in the Terms of Reference, Section(s) 5, 6, and 7.

4.5 Governance Framework

[NTD: Consult with Contract Innovations Office on the inclusion of the Governance Framework.**]**

The purpose of the Governance Framework is to establish a clear, disciplined, and collaborative structure for how the Ministry and the Service Provider will organize and coordinate Design Phase activities. Governance must ensure that communication is clear, decisions are made at the appropriate level, issues are resolved promptly, and all obligations related to design development, constructability, estimating, scheduling, risk management, utilities, environmental planning, and stakeholder engagement are carried out in a coordinated manner.

Project Governance shall operate through a three-tier structure that incorporates senior leadership oversight, day-to-day management integration, and focused project delivery teams. The Service Provider, with input from the Ministry, shall be responsible for implementing and maintaining the Governance Framework throughout the Project duration.

A. **Project Leadership Team (PLT)**

Composition: Senior Managers from the Ministry and Service Provider. The Project Leadership Team (PLT) shall consist of an odd number of members, with the Ministry appointing one more representative than the Service Provider. For this Assignment, the PLT shall be comprised of two (**#**) Service Provider representatives and (**#+1**) Ministry representatives. The Parties shall identify the respective PLT representatives within 30 Days of Award.

Role: The PLT serves as the strategic oversight forum for the Project. The PLT is responsible for:

- Confirming Project objectives, priorities, and success measures;
- Overseeing overall progress of the Design Phase;
- Addressing issues that exceed the authority of the Project Management Team;
- Confirming major directions, including risk allocation approaches and Project-level decisions that influence cost, schedule, or design direction;
- Ensuring that recommendations on major decisions remain aligned with program objectives, project commitments, and Design Phase milestones;
- Making recommendations to the Ministry on direction, decisions, and issues resolution;
- Communicates Ministry decisions and directions to the PLT.

Meeting Frequency: Every two months, or more frequently as required for advancing issues and recommendations.

B. **Project Management Team (PMT)**

Composition: Leads from the Ministry, the Ministry's consultant (at the Ministry's discretion) and the Service Provider, including representatives responsible for design, constructability, estimating, scheduling, risk management, utilities, permitting, traffic/operations, communications, and environmental disciplines.

Representatives from the Program Management Consultant (PMC) may participate in the PMT and Project Team meetings to support program integration, issue resolution, reporting, schedule management, and coordination between Project sections and Contracts.

Role: The PMT is the central integration forum for coordinating and managing Design Phase activities. It is responsible for:

- Integrating design progression across disciplines;
- Coordinating constructability input, staging, and sequencing requirements;
- Overseeing schedule development and monitoring;
- Guiding development of cost estimates and supporting Design Phase deliverables;
- Monitoring design-related risks, mitigation strategies, and decision dependencies;
- Identifying issues requiring PLT attention;
- Coordinating with all Project Teams to ensure alignment and timely delivery of work.

The PMT may make day-to-day decisions related to design progression, integration, schedule management, and work planning. Where an issue exceeds PMT delegation, it is escalated to the PLT.

Meeting Frequency: Monthly, or more frequently during critical design periods

C. **Project Teams**

Project Teams are responsible for direct technical execution of the Design Phase. Each team shall have defined leads from the Ministry (and the Ministry's consultant if required) and the Service Provider. The Project Teams shall meet monthly, or more frequently during critical design periods.

i. Design & Construction Team (DCT)

The DCT will be responsible for the development, coordination, and refinement of all design deliverables, incorporating constructability, staging, safety, traffic management, and utility considerations, among others. The DCT ensures that design development is feasible, safe, and optimized for construction.

ii. Risk, Schedule, & Estimate Management Team (RSEMT)

The RSEMT is responsible for maintaining and updating the Design & Construction Risk Register (DCRR), Construction Critical Path Schedule (CCPS), and Basis of

Estimate Plan; while coordinating requirements for Design Phase Stage Milestones, OPCC, and Risk and Approach to Work meetings. This team ensures that risk, schedule, and cost information remain aligned with design maturity.

iii. Environmental & Communications Team (ECT)

Responsible for environmental requirements, permitting pathways, mitigation measures, supporting Indigenous engagement, public/stakeholder communication, construction impact planning, and ensuring that environmental and communications considerations are embedded within the design and schedule.

Governance shall be structured so that information flows efficiently across team levels.

- Project Teams provide technical inputs, updates, risks, and decisions required to the PMT.
- The PMT synthesizes cross-discipline information and elevates matters requiring PLT support.
- The PLT confirms strategic decisions and direction by the Ministry and communicates back to the PMT and Project Teams.

Each team shall maintain clear records of decisions, assigned actions, and status updates in an issues and decisions log that is accessible to the Ministry.

The key elements of the governance framework include:

- Designer-of-Record accountability, with the engineering consultant retaining professional responsibility for the design and compliance with applicable standards and regulations.
- Clearly defined design acceptance and review processes that allow MTO to monitor design development and verify conformance with project requirements, standards, and performance objectives.
- Structured governance and decision-making forums involving MTO, the contractor, and the designer to resolve technical, schedule, constructability, and risk-related issues collaboratively.
- Formal design quality management and quality assurance requirements to ensure technical excellence is maintained throughout design development.
- Documented escalation and dispute resolution processes where engineering, safety, operational, or standards of compliance concerns cannot be resolved at the project team level.
- Collaborative design workshops and risk reviews that encourage innovation and constructability improvements while ensuring decisions remain consistent with project objectives and MTO requirements

4.6 Partnering & Collaboration Framework

[NTD: Consult with Contract Innovations Office on the inclusion of the Partnering & Collaboration Framework.**]**

The Service Provider & Ministry staff shall foster a collaborative culture throughout the Project and across the parties involved (including the Ministry, Contractor(s), Designer(s), and Ministry Consultant(s)).

The Partnering & Collaboration Framework establishes how the Ministry and the Service Provider will work together during the Design Phase, and subsequent Construction Phase, to support effective decision making, timely issue resolution, and successful delivery of the Project under the Progressive Design-Build for Highways (PDBH) model.

Partnering is a structured project management approach that promotes collaboration, communication, and proactive issue resolution to support successful project delivery. Partnering does not alter contractual obligations, responsibilities, authorities, or risk allocations established under the Contract. Rather, it provides a framework through which participants can work together more effectively to achieve Project Goals and best-for-project outcomes.

The objectives of the Partnering and Collaboration Framework are to:

- Promote open, honest, and constructive communication;
- Establish and maintain effective working relationships;
- Encourage timely decision-making;
- Identify and resolve issues at the earliest opportunity;
- Foster collaboration and mutual accountability;
- Improve project delivery performance;
- Support innovation and continuous improvement;
- Advance best-for-project outcomes while respecting contractual requirements and authorities.

4.6.1 Partnering and Collaboration Principles

The Service Provider shall perform the Work in a manner consistent with the following partnering principles:

- **Understanding Obligations**
  Project participants shall maintain a clear understanding of their respective contractual obligations, responsibilities, and authorities.
- **Open Communication**
  Project participants shall communicate openly, honestly, and respectfully, including timely sharing of information relevant to Project delivery.
- **Collaboration**
  Project participants shall work collaboratively to identify solutions and address challenges in a manner that supports Project Goals.
- **Mutual Respect**
  Team members shall demonstrate professionalism, respect, and constructive engagement in all Project interactions.

- **Best-for-Project Thinking**
  Recommendations and decisions should consider the overall interests of the Project, including safety, quality, cost, schedule, operational performance, and stakeholder outcomes.
- **Accountability**
  Participants shall be accountable for commitments, actions, and deliverables within their area of responsibility.
- **Early Issue Resolution**
  Issues shall be identified, discussed, and addressed as early as practical and at the lowest appropriate level.

4.6.2 Partnering Charter

Within sixty (60) days of Award, the Service Provider shall participate in the development of a Project Partnering Charter. The Charter shall be jointly developed by the Ministry (including Ministry Consultants) and the Service Provider and shall establish:

- Shared Project Goals;
- Desired Project outcomes;
- Team values;
- Behavioural expectations;
- Communication commitments;
- Collaboration principles;
- Issue resolution expectations;
- Commitments to best-for-project decision making.

The Partnering Charter shall not modify the Contract and shall not create contractual rights or obligations beyond those contained in the Contract.

The Charter shall be reviewed and reaffirmed at major Design Phase milestones and other intervals directed by the Ministry.

4.6.3 Partnering & Collaboration Activities

The Service Provider shall actively participate in partnering and collaboration activities for the Project. Activities may include:

- Partnering kickoff sessions;
- Facilitated partnering workshops;
- Project alignment sessions;
- Team-building activities;
- Progress meeting partnering discussions;
- Issue resolution sessions;
- Lessons learned workshops;

- Project milestone reviews;
- Partnering performance measurement;
- Project close-out partnering reviews.
- [**NTD**: Specify project specific partnering activities and anticipated frequency of each activity]

The Ministry reserves the right to determine the scale and frequency of partnering activities appropriate to the Project.

4.6.4 Issue Resolution Process

The Service Provider shall support a structured Issue Resolution Process consistent with the Ministry's partnering approach. Project issues shall:

- Be identified and documented promptly;
- Be addressed at the lowest practical level of authority;
- Be elevated only when resolution cannot be achieved within the prescribed timeframe;
- Follow established Project escalation procedures; and
- Be tracked until resolution.

The Service Provider and the Ministry shall make reasonable efforts to resolve issues collaboratively before invoking formal contractual dispute processes. Nothing in this section shall limit the Ministry's contractual rights or remedies.

4.6.5 Senior Leadership Commitment

The Service Provider and the Ministry shall ensure that senior personnel assigned to the Project actively support and reinforce the Partnering and Collaboration Framework.

Senior representatives shall:

- Demonstrate leadership commitment to partnering and collaboration;
- Promote collaborative behaviours;
- Support timely decision-making;
- Participate in escalation and issue resolution processes when required;
- Reinforce Project Goals and Charter commitments;
- Foster a culture of accountability, trust, and continuous improvement.

Leadership commitment shall be demonstrated throughout the Project lifecycle.

4.7 Incentives

Through the Design and Construction Phases of the Project, the Ministry, in its sole discretion, reserves the right to establish **Incentive Event**'s that may incentivize the achievement of:

- Schedule Milestones;
- Deliverables; or

- Performance Requirements.

For any Incentive Event, the Ministry, in its sole discretion, will establish an **Incentive Event Completion Date**. If for any reason, the Service Provider fails to achieve the **Incentive Event Requirement**'s by the Incentive Event Completion Date, then the Ministry shall have no obligation to the Service Provider for the Incentive Event.

The Service Provider achieving an Incentive Event Completion Date for an Incentive Event shall be at the Service Provider's sole risk and shall be without recourse to the Ministry. Any Incentive Event Completion Date determined by the Ministry, in its sole discretion, is fixed and shall not be extended under any circumstances, including as a result of a Change Order or Work Order. The Service Provider shall have no right or remedy as against the Ministry in the event that the Service Provider fails to achieve an Incentive Event Completion Date for an Incentive Event due to any act of omission of the Ministry or any Ministry Party, including the Ministry committing a breach of any of its obligations under this Agreement.

Incentive Events shall not limit the obligations of the Service Provider under this Agreement including in respect of any defects, deficiencies, or items of outstanding works existing or discovered prior to or after the Incentive Event Completion Date.

SECTION 5: TERMS OF REFERENCE – SCHEDULING, ESTIMATING AND BID

The fundamental principle of the PDBH model is the active involvement of the Service Provider with a unified, integrated and transparent approach to developing the Design and Construction Phases Project Schedules and Construction Phase pricing during the Design Phase. The Transparent Pricing framework integrates design maturity, risk quantification, targeted transparency, adaptive scheduling and iterative cost refinement through the Opinion of Probable Construction Cost (OPCC) process, to arrive at a defensible Construction Phase Bid.

The Service Provider shall comply with the requirements of this Section 5 when developing, reporting, validating, and submitting all schedules, pricing and estimates for the Work, including but not limited to any Advance Contract(s).

Staff to be provided

The Service Provider shall provide sufficient staff to carry out the work as described below. Staff qualification requirements can be found in Table 1: *Mandatory Qualification Requirements for Key Individuals* in Section 1.5.1 and Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3. If there is any delay to the deliverables' submission, the Service Provider shall provide additional staff to carry out the work with no additional cost to the Ministry.

5.1 Design and Construction Scheduling

The Service Provider shall develop and maintain a structured, proactive, and updated **Integrated Project Schedule** and **Integrated Critical Path Schedule (ICPS)** covering the Design and Construction Phases, that evolves with design maturity; and supports transparent, defensible scheduling and Project delivery. All schedules shall be prepared using the latest version of Primavera P6 and provided in .XER format.

The schedules shall serve as the primary project planning, coordination, forecasting, risk management, and decision-making tools for the Project. The Service Provider shall ensure that design development, field investigations, utility coordination, property acquisition support, Indigenous consultation activities, environmental approvals, permit acquisition, procurement activities, advance contracts, early works, construction activities, commissioning, and project closeout activities are fully integrated into the schedules. The MTO reserves the right to limit or increase the number of activities on the schedule(s) so the progress of Work and interdependence of activities is clearly identifiable.

The Service Provider shall develop dedicated schedule components for utility relocations, third-party approvals, railway interfaces, property acquisition support activities, municipal approvals, environmental permitting, and Indigenous consultation activities. Such components clearly demonstrate design dependencies, approval timelines, procurement durations, construction interfaces, and their influence on the overall critical path. The Service Provider shall update these activities throughout the Project lifecycle and identify mitigation measures for any emerging schedule risks.

Construction means and methods, production assumptions, resource allocations, sequencing decisions, milestone logic, procurement durations, and construction durations incorporated within the schedules shall be realistic, supportable, and collaboratively validated by the Service Provider

including design team(s) as design progresses. The Integrated Project Schedule and Integrated Critical Path Schedule shall identify all contractual, regulatory, permit, utility, stakeholder, Indigenous consultation, and Project milestone dates applicable to all Advance Contracts and Main Contracts.

Design and Construction Scheduling under the PDBH framework shall:

- Be developed collaboratively between the Ministry, the Service Provider and design team(s), ensuring constructability, staging, and sequencing considerations are embedded into the design process.
- Develop and submit micro-schedule demonstrating how the Service Provider will meet and exceed the environmental and engineering field investigation requirements for all Advance and Main Contracts including but not limited to fieldwork planning, acquiring permits/ endorsement from municipalities, reviewing agencies and MTO functional offices and executing the field investigations. The micro-schedule shall also demonstrate Service Provider's timeline for all draft and final archaeology assessment, environmental, geotechnical and foundation report submissions.
- Incorporate Indigenous community review and consultation activities into the Project Schedule, including a minimum forty-five (45) day review period for applicable reports and additional time where multiple reports are issued concurrently. Responses to Indigenous community comments shall be provided to MTO within thirty (30) days of receipt.
- Identify, prioritize, and advance schedule-critical design packages, including but not limited to fisheries permitting, Species at Risk (SAR) permitting, utility relocations, major structure foundations, geotechnical investigations, contaminated sites assessments, property requirements, and other schedule-sensitive project elements. The Service Provider shall demonstrate through the schedule how these activities are being advanced to facilitate timely approvals, reduce uncertainty, support construction readiness, and mitigate potential schedule impacts.
- Incorporate contractor-led input on construction logic, resource planning, productivity rates, means and methods, and sequencing strategies.
- Ensure that design deliverables and timelines are met and informed by construction needs, including property acquisition, utility relocation, access requirements, staging, procurement durations, and risk mitigation strategies.
- Align design progression with construction phasing opportunities, including Advance Contract(s), Early Procurement(s), and overlapping design and construction activities where appropriate.

The Integrated Critical Path Schedule (ICPS) shall function as a core risk management tool, proactively identifying constraints, uncertainties, and interface risks (e.g., Indigenous consultation, properties, utilities, third parties, environmental constraints, and design evolution). The schedule shall incorporate mitigation strategies, contingencies, and phasing approaches to minimize disruption, reduce rework, and maintain schedule integrity. The Integrated Project Schedule and ICPS shall explicitly incorporate MTO-provided risks in the Design and Construction Risk Register as well as any additional risks that reasonably should have been identified by the Service Provider with realistic activity duration, sequencing, resources and float.

Further requirements related to risk integration are provided in Section 6 – Risk Management.

All the schedules required in Section 5.1 shall include the following minimum requirements:

- Project information and format are included as per the requirements in GC7.01.07.03 of OPSS.PROV 100 MTO General Conditions of Contract, inclusive of any amendments.
- A Work Breakdown Structure (WBS) for the Project and assign each activity to the appropriate WBS name and level. The WBS shall align with the execution plan for the Work, including areas, phases, sections, and disciplines, as required, and shall extend it to at least level 5 (L5) WBS.
- Shall be a fully resource-loaded schedule showing the resources necessary for the proper completion and handover of such activities.
- Activities shall not exceed forty-five (45) working days in duration unless otherwise approved by MTO.
- Shall not contain any open-ended activities, including activities with any open start or open finish activities. Positive lag between activities shall be used only if specifically driven by a waiting duration associated with the predecessor activity.
- Shall use unconstrained sequencing logic and shall not use imposed date constraints in place of or to limit sequencing logic for any activity or milestone, except where required by contractual obligation or any external constraints if applicable. All milestones, operational constraints, seasonal shutdown, lead time for procurement of materials, and interim completion dates shall be identified and shall be in conformance with the requirements of this RFP, Ministry standards, and regulations.

5.1.1 Design and Construction Scheduling Requirements

Design and Construction Scheduling should minimize the duration of design and construction in the most cost-effective manner and target a Construction Completion Date of no later than **[NTD:** PM to Fill-In anticipated Construction Completion Date].

If the Construction Completion Date specified above is not sufficient to permit completion of the Work by the Service Provider working a normal number of hours each Day or week on a single daylight/night shift basis, it is expected that additional and/or augmented daylight and night shifts shall be required throughout the life of the Construction Phase to the extent deemed necessary by the Service Provider to ensure that the Work shall be completed within the time limit specified. Any additional costs resulting from compliance with these provisions shall be considered to be included in the prices bid for the various items of work in the Construction Phase Bid, and no additional compensation shall be allowed.

5.1.1.1 Proposal Phase Requirements

During the Proposal Phase, the Proponent shall submit a Schedule Management Plan that establishes the baseline planning logic for the Project. Schedules shall include the dates for key activities, milestones, meetings, presentations and deliverables; and shall depict the entire project, showing the major milestones in the process, from Assignment award through to submission of the Design Phase deliverables, and critical path activities during the Construction Phase.

The electronic version (.XER file format) of the Proposal Phase schedules shall be submitted to contracttendering@ontario.ca by the deadlines in **Section 1.1 - RFP Schedule**.

Refer to Section 3 for items which must be scheduled in the Proposal Phase Plans, as well as Sections 4 – 7 for additional critical activities. **The mandatory milestone dates provided in Section 3 shall be met and if a Proposal does not meet these dates, the Proposal will be disqualified.**

The Service Provider shall identify schedule risks and constraints that may impact the achievement of major milestones and Construction Completion. Schedule risks shall be assessed, monitored, and incorporated into schedule mitigation planning throughout the Design Phase.

The Schedule Management Plan shall include:

1) Integrated Project Schedule (using the latest release of Primavera P6 and provided in .XER and table format), identifying:
   - Key Design Phase milestones (e.g. environmental/geotechnical/ foundation fieldwork completion, submission of various engineering reports, acquiring necessary clearance from 3rd party/ MTO, production of construction drawings, etc.)
   - Construction Phase milestones (e.g., mobilization, major traffic shifts, seasonal shutdown, lead time for procurement of materials, testing and commissioning and substantial completion)
   - Approval and decision gates
   - Utility, property, permitting, and stakeholder constraints
   - Any prescribed or external schedule restrictions

2) Preliminary Integrated Critical Path Schedule (ICPS) (using Critical Path Method and the latest release of Primavera P6):
   - Identifying key activities, durations, and logic for fieldwork, design, and construction
   - Including the targeted Design and Construction Completion Dates
   - Identifying the timing for Notice to Proceed (NTP) for construction based on anticipated acceptance of the Construction Phase Bid
   - Non-working periods (if any) and appropriate allowances for Inclement Weather
   - Including Ministry identified Advance Contract(s)

3) Integrated Design and Construction Approach:
   - Description of how the Service Provider will actively collaborate with the designer to develop both the design schedule and construction schedule
   - Explanation of how construction sequencing, access, and staging requirements will inform design packaging and deliverables
   - Identification of opportunities for additional Advance Contract(s) or phased construction starts
   - Identify Early Procurement opportunities with consideration of the Off Ramp provisions
   - Provide a narrative demonstrating that sufficient design and construction resources have been allocated to support the proposed schedule and milestone dates

4) Fieldwork and Design Plan:

- Detailed outline of required investigations and design activities
- Sequencing and dependencies between fieldwork, design progression, and construction readiness
- Construction Sequencing Strategy:
- High-level staging and sequencing addressing known and potential constraints
- Consideration of traffic management, utilities, environmental restrictions, and third-party interfaces
- Consideration of various material and labour procurement strategies

5) Change and Schedule Impact Process:
   - Methodology for identifying, assessing, and managing schedule impacts resulting from design evolution
   - Integration with change management and risk processes

In order to eliminate the possibility of the Ministry being designated as "Constructor" as defined in the Occupational Health and Safety Act, R.S.O. 1990, c. O.1, two (2) contractors (including utility companies and the Service Provider) cannot have work progressing in the same area. The Schedule Management Plan must address how the situation of the Ministry being designated "Constructor" will be avoided during the Assignment.

5.1.1.2 Design Phase Requirements

Within ten (10) Business Days of Assignment award, the Service Provider shall schedule the Integrated Project Schedule Meeting to discuss about the initial Design and Construction Phases Integrated Project Schedule and Preliminary Integrated Critical Path Schedule to confirm a schedule in conformance with the contract requirements has been submitted.

Throughout the Design Phase, the Service Provider shall update the Schedule Management Plan prior to each Design Team Review Meeting.

During the Design Phase, the Service Provider shall update the Integrated Project Schedule and Integrated Critical Path Schedule monthly at the minimum, or more frequently if required, to:

- Reflect emerging risks and evolving design decisions
- Validate sequencing and duration assumptions
- Confirm alignment between design development, permitting, procurement, and construction execution
- Demonstrate recovery strategies where deviations occur

Each schedule update shall identify:

- Current progress against baseline
- Physical percent progress for each activity
- Actual start and finish for each activity
- Changes to the critical path
- Activities with negative float or forecast delays
- Schedule variances from the previous submission
- Recovery or mitigation measures for any forecast delay

- Updated forecast dates for major milestones and Construction Completion
- Any increase or decrease in resources required to complete the Works on time

In addition, the Service Provider shall develop and maintain the Construction Critical Path Schedule (CCPS), based on the requirements of OPSS.PROV 100 MTO General Conditions of Contract and its amendments, and shall apply the Critical Path method. The Service Provider shall submit the initial CCPS at the Stage 2 Design Phase Milestone and provide an updated CCPS at the Stage 3 Design Phase Milestone.

The CCPS shall:

- Be jointly developed and updated by the Service Provider and design team(s), reflecting ongoing input from both parties
- Ensure that construction considerations directly influence design sequencing, packaging, and delivery timelines
- Align design deliverable schedules with construction priorities, including:
  - Access requirements
  - Utility relocations
  - Traffic staging needs
  - Procurement lead times
- Be provided at the Stage 2 and Stage 3 Design Phase Milestones, incorporating:
  - Refined construction sequencing and durations
  - Updated production rates and resource assumptions
  - Design changes and associated schedule impacts
  - Updated risk register inputs and mitigation strategies
- Demonstrate progressive validation of schedule assumptions, including:
  - Constructability reviews
  - Interface coordination
  - Stakeholder and third-party integration

MTO Signs

The Service Provider shall include sufficient time for MTO sign fabrication in the construction schedule with a minimum lead time of twelve (12) weeks from the time the Service Provider orders the signs through the Ministry's Contract Administrator.

5.1.1.3 Pre-Construction Phase Bid Requirements

Following the Stage 3 Milestone and prior to the submission of the Construction Phase Bid, the Service Provider shall prepare and submit a **Construction-Ready Critical Path Schedule** in .XER format using the latest version of Primavera P6, which shall:

- Confirm all construction logic, durations, float, milestones, and interfaces.
- Integrate the final design package, staging plans, traffic management plans, and utility relocation plans, environmental and permitting requirements
- Supports the evaluation of the Construction Phase Bid, whether submitted as a Tender Item Bid or optional Lump Sum Bid.

If the Construction Phase Bid is accepted, the Construction-Ready Critical Path Schedule will form the basis for the Construction Phase as required by OPSS.PROV 100. If a Construction Phase Lump Sum Bid is accepted at an earlier Stage, the Construction-Ready Critical Path Schedule will form the basis for the Construction Phase as required by OPSS.PROV 100.

5.2 Basis of Estimate

5.2.1 Approach to Estimating

The Service Provider shall develop all Design Phase Tender Item Estimates using a structured, transparent, and collaborative methodology consistent with the principles of the PDBH model. The estimating approach shall reflect the progressive development of design across Stage 1, Stage 2, and Stage 3 Milestones and shall be continuously refined as design, risk understanding and construction planning evolve.

A fundamental requirement of the PDBH model is the active integration of the Service Provider input into the estimating process. The Service Provider shall ensure that:

- The Service Provider, including the Construction Manager and Cost Estimating Lead, leads the development of construction pricing assumptions, including production rates, means and methods, resource allocations, and sequencing strategies.
- Estimating inputs are fully aligned with the construction schedule, staging plans, and constructability considerations.
- The Lead Design Firm and the Service Provider collaboratively inform quantities, construction approaches, and design decisions, ensuring that cost, schedule, and design are fully integrated and mutually reinforcing.

Throughout the Design Phase, all estimating activities shall be characterized by proactive, positive, and collaborative engagement between the parties. Cost development is expected to occur in a cooperative environment, with shared visibility into assumptions, quantities, and risks. The Service Provider shall work closely with MTO, MTO's Consultant, Sub-Service Providers, and Design Firms, to ensure alignment of assumptions and to resolve discrepancies efficiently during scheduled OPCC meetings and any Targeted Open-Book Reviews. This collaborative approach reflects the principles embedded throughout the PDBH model, which positions cost estimating as a joint problem-solving activity.

The Service Provider shall apply a First Principles Approach to estimating in accordance with the estimate class required for each Stage. For Stage 1, the approach should be applied to all the major engineering components with the possibility of the use of parametric estimates for auxiliary components. For Stage 2 and Stage 3, each estimate must be fully developed from the ground up using measured or derived quantities, validated production rates, labour/equipment/material inputs, and market data appropriate to the specific activities anticipated for the Work. The First Principles Approach requires the Service Provider to base its pricing on objective, traceable inputs rather than historical lump sum assumptions or top down price allocations. Specifically, the Service Provider shall not access MTO's Highway Costing System (HiCo) database for this Project, and HiCo data shall not be used for developing estimates for this Project.

Estimates shall incorporate primary and secondary characteristics as contemplated in Table 1 – Cost Estimate Classification Matrix for the Road and Rail Transportation Infrastructure Industries, AACE 98R-18 Cost Estimate Classification System Guideline – As Applied in Engineering, Procurement, and Construction for the Road and Rail Transportation Infrastructure Industries, as follows:

	Primary Characteristic	***Secondary Characteristic***		
ESTIMATE CLASS	**MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES** Expressed as % of complete definition	**END USAGE** Typical purpose of estimate	**METHODOLOGY** Typical estimating method	**EXPECTED ACCURACY RANGE** Typical variation in low and high ranges at an 80% confidence interval
Class 5	0% to 2%	Concept screening	Cost/length factors, parametric models, judgment, or analogy	L: -20% to -50% H: +30% to +100%
Class 4	1% to 15%	Study or feasibility	Cost/length, factored or parametric models	L: -15% to -30% H: +20% to +50%
Class 3	10% to 40%	Budget authorization or control	Semi-detailed unit costs with assembly level line items	L: -10% to -20% H: +10% to +30%
Class 2	30% to 75%	Control or bid/tender	Detailed unit cost with forced detailed take-off	L: -5% to -15% H: +5% to +20%
Class 1	65% to 100%	Check estimate or bid/tender	Detailed unit cost with detailed take-off	L: -3% to -10% H: +3% to +15%

Table 1 – Cost Estimate Classification Matrix for the Road and Rail Transportation Infrastructure Industries

The Service Provider shall provide estimates aligned with, or exceeding, the primary and secondary characteristics for AACE Class 3, 2 and 1 Cost Estimates (Table 1). Specifically, the Service Provider shall provide:

- Class 3 Major Engineering Components Estimate at Stage 1
- Class 2 Tender Item Estimate following Stage 2 by the OPCC Closing Date
- Class 1 Tender Item Estimate following Stage 3 by the OPCC Closing Date

All estimates shall be structured using MTO Standard Tender Items and, where necessary, Non-Standard Tender Items developed during the Design Phase. Estimates shall be consistent with Chapter B – List of Active Standard Tender Items of the MTO Contract Design, Estimating, and Documentation Manual (CDED); and apply measurement units, payment structures, and item definitions consistent with the CDED Manual.

5.2.2 Basis of Estimate Plan

During the Proposal Phase, the Proponent shall prepare and submit a Basis of Estimate Plan describing the methodologies, assumptions, data sources, tools, and processes the Service Provider will use to develop, document, validate, and refine cost estimates for this Project, during the Design Phase. The Basis of Estimate Plan shall be specific to the Project.

The Basis of Estimate Plan shall include, at minimum:

1. Estimating Methodology
2. Estimate Classifications & Deliverables

3. Assumptions & Exclusions
   (Note: See assumption considerations below)
4. Quantities Development Process
5. Cost Risk, Contingency, & Mitigation Methodology
   (Note: Shall be consistent with the PDBH Risk Management process)
6. Innovation and Value Optimization Costing Approach
7. Reconciliation Approach
   (Note: Process for addressing variances identified through OPCC and Targeted Open-Book Review)
8. Strategy for procurement of key construction materials and subcontracts
9. Quality control on estimating
10. Development of Tender Item Bid
11. Approach to optional Lump Sum Bid
12. Process for ensuring accuracy, traceability, transparency, and defensibility of estimates

The Basis of Estimate Plan shall be updated and submitted at each Design Phase Stage Milestone and shall clearly reflect changes in methodologies, assumptions, or data sources.

The Service Provider, through the Design Phase updates to the Basis of Estimate Plan, shall clearly document all assumptions that were used to price the work.

The Basis of Estimate Plan shall include a narrative summarizing the key assumptions, including, but not limited to, the following:

- types of equipment proposed to perform the Work,
- assumed production rates, crew sizes, shifts per day, hours per shift,
- risk assumptions and assignment of risks,
- weather events,
- resource availability, market conditions, and supply chain pressures
- material sources/suppliers,
- haul routes,
- site logistics,
- construction access,
- adjacent projects,
- phasing of work,
- mobilization,
- indirect costs
- etc.

5.2.3 Independent Cost Estimator

The Independent Cost Estimator (ICE) shall be independent of the Service Provider. MTO may procure the services of an external ICE or utilize the in-house MTO Estimating team. Where an in-house MTO Estimating team performs the role of the ICE, MTO will implement protocols to preserve the independence of the MTO-ICE.

The ICE will be responsible for preparing Tender Item Estimates following each Design Phase milestone, participating in variance reconciliation meetings, stress-testing production assumptions, advising on market conditions, among other responsibilities. The ICE and Service Provider shall not exchange information directly. Estimates are not disclosed between the parties; as such, the Service Provider and ICE shall not be privy to each others pricing. MTO will facilitate variance reviews to preserve the independence of the ICE.

5.3 Progressive Cost Review

Progressive Cost Review is a structured, iterative process to confirm the reasonableness, accuracy, and defensibility of the Service Provider's developing Construction Phase pricing.

Under the PDBH model, Progressive Cost Review ensures that MTO, the Service Provider, and the Independent Cost Estimator (ICE) maintain a shared and continuously refined understanding of:

- Scope definition and design development
- Quantities and measurement methodologies
- Contractor-driven production rates and construction assumptions
- Schedule alignment and sequencing logic
- Risk allocation, contingencies, and cost drivers

Progressive Cost Review is intended to proactively identify and resolve cost uncertainties, support alignment between design, construction planning, and estimating, and progressively build confidence in the Construction Phase Bid.

The Service Provider shall:

- Participate fully, transparently, and cooperatively in all Progressive Cost Review activities
- Provide all data, documentation, assumptions, and personnel required to support meaningful review and validation
- Ensure that estimating outputs remain aligned with the Construction Critical Path Schedule (CCPS), Basis of Estimate Plan, and Construction Risk Register

5.3.1 Opinion of Probable Construction Cost Process

The Opinion of Probable Construction Cost (OPCC) Process is a structured, milestone-based component of the PDBH Transparent Pricing framework and Progressive Cost Review. OPCC's are used to progressively align construction cost estimates as design maturity increases through Stage 2 and Stage 3. The OPCC Process integrates estimates prepared independently by the Service Provider and the Independent Cost Estimator (ICE), to identify, analyze, and reconcile variances in assumptions, quantities, production rates, and risk. The OPCC Process is intended to reduce pricing uncertainty, strengthen cost confidence, and support the development of a fair and defensible Construction Phase Bid.

The Service Provider shall participate fully in all OPCC activities, including submission of complete Tender Item Estimates, participation in OPCC meetings, cooperation in variance resolution, and integration of OPCC outcomes into subsequent Design Phase deliverables.

5.3.1.1 OPCC Process Milestones

1. OPCC #1 – Following Stage 2
2. OPCC #2 – Following Stage 3
3. Additional OPCC's may be undertaken due to,
   - Advance Contracts (possible single OPCC following Design Completion)
   - Significant Design Changes (possible targeted OPCC)
   - Significant New Risks (possible targeted OPCC)

5.3.1.2 OPCC Process Steps

1. **Design Phase Stage Milestone Package Submission**

   At the relevant Design Phase Stage Milestone, the Service Provider shall submit to MTO the Stage Milestone Package, including the Detail Design Package, Basis of Estimate Plan, Construction Critical Path Schedule, Construction Risk Register, Tender Item List, and quantities.

2. **Distribution of OPCC Documents**

   MTO Contract Tendering will prepare and distribute the **OPCC Documents** to the Service Provider's Lead Estimator and to the ICE; setting the deadline for submission of the Tender Item Estimate, the '**OPCC Closing Date**'.

3. **Enquiries**
   Enquiries on the OPCC Documents and process are to be submitted by e-mail to the Contract Tendering Unit at contracttendering@ontario.ca with the following e-mail subject line < PDBH ####-E-#### OPCC Enquiry >

4. **Responses to Enquiries**

   Responses to enquires will be sent to the Service Provider by email. It is the responsibility of the Service Provider to ensure all responses are received from the MTO.

5. **Addenda**
   Addenda shall not be issued for the OPCC Documents. All changes required shall be documented and incorporated by the Service Provider into subsequent Stage Milestone Packages.

6. **Communication Restrictions**

   During the period from when the OPCC Documents are issued to the OPCC Closing Date, the Service Provider shall not communicate with Ministry staff regarding the OPCC Documents or process.

7. **Independent Estimates**

   The Service Provider and ICE shall each prepare independent, first principals, bottom-up, production-based Tender Item Estimates using the OPCC Documents.

8. **Estimate Comparison Report**

Along with the Tender Item Estimate, the Service Provider shall provide an Estimate Comparison Report, comparing the current estimate with the previous Milestone estimate, and providing explanations for the variances.

9. **Submission Requirements**

   The Tender Item Estimate must be received by the Ministry before the OPCC Closing Date and time specified in the OPCC Document. Submissions shall be submitted confidentially, by email to:

   Contract Tendering
   Ministry of Transportation
   contracttendering@ontario.ca

   The subject line of the e-mail shall contain < PDBH ####-E-#### YYYY-MM-DD - OPCC Submission >

10. **File Format Requirements**

    The above documents shall be submitted in “read only” Adobe (PDF) format and Microsoft Excel format. In addition, 1 copy of the completed Itemized Bid Submission Form in the Microsoft Excel format and 1 copy of the Tender Item Estimate in the Service Provider’s original file format when requested by the MTO. File names for electronic files should contain the OPCC number and Service Providers name.

11. **Variance Report**

    MTO will compile a Variance Report comparing the independent OPCC Tender Item Estimates. The variance analysis will identify:

    a. Tender Items with significant variances
    b. Items designated as Areas of Concern
    c. Items recommended for Targeted Open-Book Review

5.3.1.3 OPCC Meetings

Following the issuance of the variance report, MTO shall convene an OPCC Meeting (typically 1–3 days). The Service Provider shall attend and actively participate in all OPCC meetings and shall ensure that personnel with appropriate estimating, risk, scheduling, constructability, design, and commercial expertise are available to support discussions.

During the meeting:

- MTO will lead a structured review of Tender Items with significant variances and Areas of Concern.
- The Service Provider and the ICE shall respond to inquiries related to assumptions, production rates, quantities, estimating methodologies, data sources, market conditions, escalation assumptions, subcontractor considerations, and risk allocations

- MTO subject matter experts may participate as required, including representatives from estimating, design, construction, procurement, risk management, scheduling, geotechnical, structures, traffic, and contract administration disciplines.
- Areas where alignment has been achieved, partially achieved, or remains unresolved shall be documented.
- Potential corrective actions, additional analyses, and information requests required to resolve identified variances shall be established
- Following each OPCC Meeting, MTO shall identify the Tender Items and Areas of Concern proposed for Targeted Open-Book Review.

The Service Provider and the ICE shall provide supplemental information, calculations, or documentation requested during or following the meeting within the timelines prescribed by MTO.

The Service Provider shall prepare and submit meeting minutes within five (5) Business Days of the OPCC Meeting, unless otherwise directed by MTO. The meeting minutes shall include:

- Summary of variance discussions;
- Tender Items reviewed;
- Agreed positions and areas of alignment;
- Outstanding issues and unresolved variances;
- Information requests and required follow-up actions;
- Assigned responsibilities;
- Required completion dates; and
- Recommendations for further review, including Targeted Open-Book Review where applicable.

MTO shall review the meeting outcomes and issue the final list of Tender Items and Areas of Concern subject to Targeted Open-Book Review.

5.3.2 Targeted Open-Book Review

The Targeted Open-Book Review is a focused transparency mechanism within the PDBH Transparent Pricing framework. Its purpose is to provide MTO with proportional and item-specific visibility into the Service Provider’s detailed cost build-ups only for those Tender Items or Areas of Concern identified during the Progressive Cost Review, OPCC process or audit findings.

Where the Variance Report or OPCC meeting identifies specific Tender Items or Areas of Concern requiring additional transparency, the Service Provider shall actively participate in a Targeted Open-Book Review.

Upon receiving a request for Targeted Open-Book Review from MTO, the Service Provider shall provide detailed cost backup for the specific Tender Items and Areas of Concern identified. In the event of a Joint Venture or Joint Bid, each member of the Joint Venture or Joint Bid shall be responsible for adhering to the Targeted Open-Book Review requirements within this Section 5. This documentation may include, but is not limited to, where applicable:

- Direct cost build-ups – labour (hours, classifications, wage rates), equipment (rates and utilization), materials (quantities, unit costs, quotes);
- Quantity calculations and quantity take-off documentation;

- Production rates and corresponding assumptions;
- Construction means and methods assumptions;
- Schedule interfaces, staging assumptions, resource loading, and schedule impacts affecting pricing;
- Subcontractor or supplier quotations;
- Market pricing intelligence and benchmarking information where utilized;
- Indirect costs and mark-ups: site overheads, corporate overheads, bond/insurance, profit/fee;
- Escalation assumptions and calculations;
- Design development assumptions influencing quantities and costs;
- Risk allowances, contingency calculations, and contingency allocation rationale;
- Cost reconciliations demonstrating changes since previous estimate submissions;
- Changes since prior OPCC: drivers of movement (+/-) from prior estimate.
- Any other data necessary to understand and resolve the variance.

The Service Provider shall clearly demonstrate the relationship between the disclosed information and the assumptions documented within the Tender Item Estimate, Basis of Estimate Plan, Design & Construction Risk Register, Schedule Management Plan, and applicable design documentation.

The Service Provider shall also explain the relationship between these inputs and the assumptions presented in the corresponding Tender Item Estimate, Basis of Estimate Plan, and Design & Construction Risk Register. Only the Tender Items and Areas of Concern expressly identified by MTO require disclosure; all other items continue to be governed by the standard estimating and review process.

The Service Provider shall provide Targeted Open-Book Review information within the timelines prescribed by MTO. The format of the information shall be clear, traceable, and organized so that MTO can easily review inputs, compare them to underlying assumptions, and reconcile key differences. MTO may request supplementary clarifications or calculations, which the Service Provider shall supply within prescribed timelines. The Service Provider shall also ensure that personnel with the necessary estimating and technical expertise are available to support Targeted Open-Book discussions as required.

Following Targeted Open-Book Review, the Service Provider shall incorporate any required adjustments arising from variance resolution into the next version of the Tender Item Estimate. Where material alignment is achieved, the updated estimate shall reflect the revised assumptions, production logic, or pricing inputs. Where some items remain unresolved, MTO may request further analysis, schedule follow-up sessions, or escalate the issue to the Risk, Schedule, & Estimate Management Team (RSEMT). All outcomes from the Targeted Open-Book Review must be reflected consistently in the Basis of Estimate Plan and the Design & Construction Risk Register to ensure that estimating, design, and risk documentation remain aligned.

The Targeted Open-Book Review shall be limited to the specific Tender Items and Areas of Concern identified by MTO and shall not constitute full estimate open-book disclosure.

5.4 Audit

MTO may initiate an audit at any time during the Design Phase or prior to acceptance of the Construction Phase Bid. Audits may be undertaken by MTO directly or through an external auditor acting on its behalf. Audits may be triggered by persistent or unresolved variances identified through the OPCC process, inconsistencies in quantities or production assumptions, discrepancies between estimating methodologies and the Service Providers Basis of Estimate Plan, concerns related to the application of AACE Recommended Practices, or indications that the Service Provider is not complying with the requirements of the First Principles Approach or CDED Tender Item structure.

Where MTO initiates an audit, the Service Provider shall provide prompt and complete access to the information reasonably required to carry out the audit. This may include supporting calculations, source data, subcontractor quotes, takeoff packages, estimating tools, schedule logic influencing production rates, internal documentation used to prepare the estimate, and any additional information required to verify compliance with this Section 5. The Service Provider shall also make available relevant personnel with sufficient knowledge of the estimate and its development to address audit inquiries and explain assumptions where required.

Following the completion of an audit, MTO will issue a summary of findings to the Service Provider. If the audit identifies errors, omissions, misalignments, or inappropriate application of estimating practices, the Service Provider shall promptly implement corrective actions and incorporate any resulting adjustments into subsequent Tender Item Estimates, the Basis of Estimate Plan, and the Design & Construction Risk Register. Where material issues remain unresolved, MTO may direct further review, require additional estimating support, or consider implications for the continued progression of the Design Phase, including potential use of the Off-Ramp mechanism.

Audits will be conducted in a manner that respects commercial confidentiality while supporting public-sector accountability.

Upon completion of an audit, MTO shall provide a summary of findings to the Service Provider.

Where findings identify errors, omissions, inconsistencies, unsupported assumptions, non-compliance, or deficiencies in estimating practices, the Service Provider shall:

- Prepare a corrective action plan;
- Address identified deficiencies within timelines established by MTO;
- Incorporate resulting adjustments into future Tender Item Estimates;
- Update the Basis of Estimate Plan;
- Update the Design & Construction Risk Register;
- Update any affected schedule assumptions; and
- Demonstrate that corrective actions have been effectively implemented.

The Service Provider shall bear responsibility for correcting identified deficiencies at no additional cost to MTO except where otherwise expressly approved by MTO.

Failure to provide information, records, personnel, or reasonable assistance required to complete an audit, Targeted Open-Book Review, or OPCC review may be considered a material non-compliance with the requirements of this RFP and may result in additional oversight measures,

escalation to senior project governance bodies, suspension of estimate acceptance, or consideration of contractual remedies available to MTO.

5.5 Construction Phase Bid

Following the Design Complete Presentation, the Service Provider shall prepare and submit a Construction Phase Bid.

The Construction Phase Bid shall reflect the final design development, quantities, construction methodologies, project schedule, procurement strategy, risk allocation, and risk mitigation measures progressively developed throughout the Design Phase. The Construction Phase Bid shall be prepared in accordance with the Transparent Pricing Framework established in this Section 5, including Progressive Cost Reviews, Independent Cost Estimating, OPCC Meetings, Variance Resolution, Targeted Open-Book Review activities, and any audit findings.

The Construction Phase Bid shall demonstrate that:

- The proposed pricing is complete, reasonable, and commercially supportable;
- Quantities are based on the latest design information;
- Assumptions are clearly documented and traceable;
- Construction means and methods are appropriate for the Work;
- Project risks have been properly allocated and priced;
- Contingencies are reasonable and supportable;
- Pricing is aligned with the Basis of Estimate Plan;
- Pricing is consistent with the Design & Construction Risk Register;
- Pricing is consistent with the current approved Schedule Management Plan; and
- All outcomes arising from OPCC Reviews, Targeted Open-Book Reviews, and audits have been appropriately incorporated.

The Construction Phase Bid may take the form of either a Tender Item Bid or an Optional Lump Sum Bid, depending on the level of design maturity, alignment of assumptions, and mutual agreement between MTO and the Service Provider. The Tender Item Bid is the standard and default pricing approach, while the Lump Sum Bid may be pursued following Stage 2 or Stage 3 Milestones if conditions permit. In all cases, the Construction Phase Bid must be evidence-based, traceable, and grounded in the validated costing assumptions developed during the Design Phase.

Submission of a Construction Phase Bid shall not constitute acceptance by MTO. Acceptance shall remain at the sole discretion of MTO and shall be subject to completion of all commercial, technical, risk, and governance reviews required by MTO.

5.5.1 Lump Sum Bid

Subject to mutual agreement between MTO and the Service Provider, an optional Lump Sum Bid may be submitted by the Service Provider within 30 Business Days of each OPCC Meeting. The optional Lump Sum Bid is intended to provide flexibility where design maturity, risk clarity, and pricing confidence are sufficiently advanced to support a Lump Sum Bid.

The Lump Sum Bid must be derived from the underlying Tender Item Estimate and shall be broken down according to the MTO Lump Sum Item structure found in RFP Part D, **Appendix E**, Construction Phase Forms, **E.2 Construction Phase Lump Sum Bid Form**.

5.5.1.1 Construction Phase Bid – Lump Sum Bid Process

The process below shall apply to each Construction Phase Contract(s) and Advance Contract(s).

1. **Lump Sum Bid Intent**

   During each OPCC Meeting, the Service Provider shall inform MTO of the Service Provider's Intent to submit a Lump Sum Bid to perform the construction Work.

2. **PDB Special Provision 0004 – Progressive Performance Requirements**
   The Service Provider shall collaboratively develop the Progressive Performance Requirements (PPR) PDB Special Provision 0004, with the ministry, to:
   - Define design and construction parameters that will govern the Lump Sum Bid; including but not limited to scope boundaries, design assumptions, staging and sequencing expectations, environmental or regulatory obligations, and key construction methodologies that influence performance outcomes;
   - Coordinate all required inputs, including technical requirements, risk considerations, and project constraints, and;
   - Submit draft and revised versions as needed until the PPR PDB-SP is finalized.

2. **Distribution of Lump Sum Bidding Documents**

   Following mutual endorsement of the Progressive Performance Requirements PDBSP 0004, MTO will distribute the Lump Sum Bidding Package to the Service Provider's Lead Estimator and to the ICE; setting the deadline for submission, the 'Tender Closing Date'.

3. **Enquiries**
   Enquiries on the Lump Sum Bidding Package and process are to be submitted by e-mail to the Contract Tendering Unit at contracttendering@ontario.ca with the following e-mail subject line < PDBH ####-E-#### Lump Sum Bid Enquiry >

4. **Responses to Enquiries**

   Responses to Enquires will be sent to the Service Provider by email. It is the responsibility of the Service Provider to ensure all responses are received from the MTO.

5. **Addenda**
   Unless addressed through an addendum to the Lump Sum Bidding Documents issued by the Ministry, all responses to Enquiries shall not be incorporated as part of the Contract or in any way change the Contract.

6. **Communication Restrictions**

   The Service Provider shall not make verbal enquiries of Ministry personnel. Information given orally by Ministry personnel shall not be binding on the Ministry, nor shall it be construed as a factor in the Bid evaluation. Any attempt on the part of the Service Provider

or any of its employees, officers, agents, advisers or subcontractors to contact any member of the Ministry with respect to the Tender other than as described above in this section may lead to an Off-Ramp.

7. **Tender Registration Form (TRF)**

   The Service Provider shall obtain a Ministry approved TRF prior to submitting their Construction Phase Bid. Failing to obtain the TRF will result in the rejection of any Construction Phase Bid submitted.
   The Service Provider must be a Rated Contractor in accordance with the Ministry's Qualification Procedures for Contractors and must have the Necessary Available Financial Rating and the Necessary Available Maximum Workload Rating identified in the Tender Package at the time of Tender Registration Form submission for the Construction Phase Bid.
   If the necessary financial ratings are not available the Ministry reserves the right, at its sole discretion, to terminate the Agreement and procure the construction work by some other method including all or part of the collaborative design.

8. **Construction Phase Bid – Lump Sum Bid Preparation**

   The Service Provider and ICE shall each prepare independent, first principals, bottom-up, production-based Lump Sum Bids using the Lump Sum Bidding Package.

9. **Estimate Comparison Report**

   Along with the Lump Sum Bid, the Service Provider shall provide an Estimate Comparison Report, comparing the Lump Sum Bid with the respective Stage Milestone, OPCC Tender Item Estimate, and providing explanations for the variances.

10. **Submission Requirements**

    The Lump Sum Bid shall be received by the Ministry before the Tender Closing Date and time specified in the Lump Sum Bidding Package. Submissions shall be submitted confidentially, by email to:

    Contract Tendering
    Ministry of Transportation
    contracttendering@ontario.ca

    The subject line of the e-mail shall contain < PDBH ####-E-#### YYYY-MM-DD – Lump Sum Bid Submission >

11. **File Format Requirements**

    The above documents shall be submitted in "read only" Adobe (PDF) format and Microsoft Excel format. In addition, 1 copy of the completed Construction Phase Lump Sum Bid Form in the Microsoft Excel format; and 1 copy of the Lump Sum Bid in the Service Provider's original file format when requested by the MTO. File names for electronic files should contain the Contract number and Service Providers name.

Acceptance of a Lump Sum Bid is at MTO's sole discretion. If a Lump Sum Bid is accepted, the Service Provider will transition to the Construction Phase and deliver the Work in accordance with the Lump Sum Bid payment structure and associated contract obligations.

Submission and review of the Lump Sum Bid shall not disrupt the Design Phase. The Service Provider shall continue to advance the Design Phase without interruption. If a Lump Sum Bid is not accepted, the Design Phase shall proceed according to the Schedule Management Plan.

5.5.2 Tender Item Bid

The Tender Item Bid is the baseline and standard Construction Phase pricing structure. The Tender Item Bid shall be prepared using the MTO standard Tender Item List, consisting of the applicable active standard tender items from Chapter B of the MTO Contract Design, Estimating, and Documentation Manual (CDED), supplemented by Non-Standard Tender Items developed during the Design Phase, where required. Each Tender Item shall include clear quantities, units of measure, and itemized unit prices. The Tender Item Bid must be fully aligned with:

- The final Class 1 Estimate;
- The Basis of Estimate Plan;
- The Design & Construction Risk Register;
- The approved Schedule Management Plan;
- Design Complete documentation;
- OPCC 1 and OPCC 2 outcomes and
- All variance resolution activities completed during the Design Phase.

5.5.2.1 Construction Phase Bid – Tender Item Bid Process

The process below shall apply to each Construction Phase Contract(s) and Advance Contract(s).

1. **Distribution of Tender Documents**

   Following the Design Complete Presentation, MTO will distribute the Tender Package to the Service Provider's Lead Estimator and to the ICE; setting the deadline for submission, the 'Tender Closing Date'.

2. **Enquiries**
   Enquiries on the Tender Package and process are to be submitted by e-mail to the Contract Tendering Unit at contracttendering@ontario.ca with the following e-mail subject line < PDBH ####-E-#### Bid Enquiry >

3. **Responses to Enquiries**

   Responses to Enquires will be sent to the Service Provider by email. It is the responsibility of the Service Provider to ensure all responses are received from the MTO.

4. **Addenda**
   Unless addressed through an addendum to the Tender Documents issued by the Ministry, all responses to Enquiries shall not be incorporated as part of the Contract or in any way change the Contract.

5. **Communication Restrictions**

   The Service Provider shall not make verbal enquiries of Ministry personnel. Information given orally by Ministry personnel shall not be binding on the Ministry, nor shall it be construed as a factor in the Bid evaluation. Any attempt on the part of the Service Provider or any of its employees, officers, agents, advisers or subcontractors to contact any member of the Ministry with respect to the Tender other than as described above in this section may lead to an Off-Ramp.

6. **Tender Registration Form (TRF)**

   The Service Provider shall obtain a Ministry approved TRF prior to submitting their Construction Phase Bid. Failing to obtain the TRF will result in the rejection of any Construction Phase Bid submitted.

   The Service Provider must be a Rated Contractor in accordance with the Ministry's Qualification Procedures for Contractors and must have the Necessary Available Financial Rating and the Necessary Available Maximum Workload Rating identified in the Tender Package at the time of Tender Registration Form submission for the Construction Phase Bid.

   If the necessary financial ratings are not available the Ministry reserves the right, at its sole discretion, to terminate the Agreement and procure the construction work by some other method including all or part of the collaborative design.

7. **Construction Phase Bid – Tender Item Bid Preparation**

   The Service Provider and ICE shall each prepare independent, first principals, bottom-up, production-based Construction Phase Bids using the Tender Package.

8. **Estimate Comparison Report**

   Along with the Construction Phase Bid, the Service Provider shall provide an Estimate Comparison Report, comparing the Construction Phase Bid with the Stage 3 Milestone, OPCC #2 Tender Item Estimate, and providing explanations for the variances.

9. **Submission Requirements**

   The Construction Phase Bid shall be received by the Ministry before the Tender Closing Date and time specified in the Tender Package. Submissions shall be submitted confidentially, by email to:

   Contract Tendering
   Ministry of Transportation
   contracttendering@ontario.ca

   The subject line of the e-mail shall contain < PDBH ####-E-#### YYYY-MM-DD – Bid Submission >

10. **File Format Requirements**

The above documents shall be submitted in “read only” Adobe (PDF) format and Microsoft Excel format. In addition, 1 copy of the completed Itemized Bid Submission Form in the Microsoft Excel format and 1 copy of the Tender Item Bid in the Service Provider’s original file format when requested by the MTO. File names for electronic files should contain the Contract number and Service Providers name.

Upon submission of the Construction Phase Bid, MTO will evaluate whether the proposed pricing is reasonable, defensible, and consistent with assumptions validated during the OPCC and Targeted Open-Book processes. MTO may request clarification or additional information from the Service Provider, and the Service Provider shall provide such information promptly. Acceptance of the Construction Phase Bid by MTO, at MTO’s sole discretion, is a prerequisite for transitioning from the Design Phase to the Construction Phase. If MTO determines that the Construction Phase Bid is not acceptable, at MTO’s sole discretion, due to material cost misalignment or unresolved discrepancies, MTO may exercise the contractual Off-Ramp. Under the Off-Ramp, MTO retains the right to competitively tender the completed design as a Design-Bid-Build contract, or by other means, with the Service Provider remaining eligible to participate in the subsequent procurement.

Where appropriate, MTO and the Service Provider may also agree to proceed with Advance Contracts ahead of full Construction Phase award. Any Advance Contract and Early Procurement packages shall be severable to preserve the Off-Ramp and must not impede MTO’s ability to competitively procure the remaining Work in the event the Construction Phase Bid is not accepted.

5.6 Deliverables

The Service Provider shall submit the following documents as per the Section 3.1, Section 3.2.2 and Section 5.

- Schedule Management Plan
  - Integrated Project Schedule
  - Integrated Critical Path Schedule
  - Construction Critical Path Schedule [Stages 2 & 3]
  - Construction-Ready Critical Path Schedule [Stage IFC]
- Basis of Estimate Plan
- Level 3 Cost Estimate [Stage 1]
- OPCC(s)
- Lump Sum Bid(s) (if applicable)
- Tender Item Bid(s) (if applicable)

All schedules shall be submitted electronically in the .XER file type and in table format.

SECTION 6: TERMS OF REFERENCE – INNOVATIONS, RISK & CONSTRUCTABILITY

Section 6 establishes the foundational expectations for how the Service Provider will collaboratively lead Innovation Development, Risk Management, and Constructability Review throughout the Design Phase. These three (3) components are mandatory, interdependent pillars of the Progressive Design-Build for Highways (PDBH) approach and must be implemented in a manner that is structured, transparent, and aligned with the principles of early contractor involvement that underpin PDBH. Each mechanism serves a distinct function: Innovation drives improved outcomes and value creation; Risk Management provides clarity, predictability, and informed decision-making; and Constructability ensures the design is practical, efficient, and optimized for successful delivery. Together they form a unified framework for integrated design development and construction.

During the Design Phase, the Service Provider shall apply a disciplined, iterative, and evidence-based approach to Innovations, Risk, and Constructability; ensuring that insights from construction experience, engineering analysis, and cost/schedule analysis are captured early and refined continuously. The Service Provider shall maintain full traceability of decisions, evaluations, analyses, and MTO directions within each of the three Plans (Innovations, Risk Management, and Constructability).

Staff to be provided:

The Service Provider shall provide sufficient staff to carry out the work as described below. Staff qualification requirements can be found in Table 1: *Mandatory Qualification Requirements for Key Individuals* in Section 1.5.1 and Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3. If there is any delay to the Work, the Service Provider shall provide additional staff to carry out the Work with no additional cost to the Ministry.

Innovation, Design Optimization & Constructability Workshops

For bidding purposes, the Service Provider shall include in the Design Phase lump sum price for the key Service Provider representatives to attend and actively participate in the Innovation, Design Optimization & Constructability Workshops. XXXX (**#**) in-person Innovation, Design Optimization & Constructability Workshop are required for each Main Contract, and one (**#**) in-person Innovation, Design Optimization & Constructability Workshop is required for each Advance Contract. The timelines for Main Contracts' workshop are specified in the Innovations Plan and Constructability Plan section. The timeline for Advance Contracts' workshop will be collaboratively determined by the Ministry and the Service Provider. The total number of days of the workshops are specified in the RFP Part B Section 3. The number of days allocated for each workshop will be determined during the Design Phase.

The workshop attendees shall include key Service Provider representatives from the Design Team (from the Lead and Sub-Service Providers), Construction Specialists (such as Construction Manager, Structural Construction Specialist, Foundation Construction Specialist and Paving Specialist), cost estimating, risk management, schedule and subject matter experts as appropriate. The required attendees for each workshop will be determined during the Design Phase.

The Service Provider shall provide the workshop venue, lunch and refreshments for up to 40 participants. The venue location shall be within 25 km of 159 Sir William Hearst Avenue, North York unless otherwise approved by the Ministry's Project Manager.

6.1 Innovations Plan

The Progressive Design-Build for Highways (PDBH) model creates a structured, transparent and collaborative environment that enables the Service Provider to bring forward innovative tools, means, methods, and optimization strategies that meaningfully improve project outcomes.

The Service Provider shall establish measurable performance targets for each endorsed Innovation Proposal. At a minimum, the Service Provider shall quantify expected benefits including reductions in cost, schedule, risk exposure, traffic impacts, lifecycle costs, environmental impacts, and construction duration. Actual performance outcomes shall be tracked throughout the Design Phase and reported to MTO.

Innovations are expected to advance one or more of the following objectives: design and/or construction schedule acceleration, improved quality, cost reduction, risk reduction, support for broader Provincial priorities and Project Goals. The Service Provider's Innovation Plan will harness the expertise of the Service Provider through a formalized, measurable and reviewable process for innovation identification and development, both during the Proposal Phase and throughout the Design Phase.

The Innovation Plan shall outline the Proponent's overall methodology for identifying, evaluating, refining, and integrating innovations. The Innovation Plan shall clearly describe the methodology that the Service Provider will use to develop Innovation Proposals and describe how that methodology will assess benefits in areas such as schedule acceleration, quality improvement, cost reduction, risk mitigation, and address broader Provincial priorities and Project Goals. The Innovation Plan shall also consider feasibility of innovations based on design readiness, constructability considerations, and potential Off-Ramp implications. The Innovation Plan shall also clearly describe the process for advancing shortlisted innovations and new ideas toward the Stage 1 Milestone, including the preparation required for the **Innovation, Design Optimization & Constructability Workshop**, where innovations are collaboratively reviewed with MTO, endorsed, and directed for further exploration.

The Innovation Plan shall also address how endorsed innovations will be integrated into progressive design development, estimating, scheduling, and risk management. This includes establishing procedures for documenting innovation related design changes, quantifying their cost and schedule impacts, and ensuring alignment with the Basis of Estimate and subsequent OPCC Processes. The Plan must commit to maintaining full traceability of innovation decisions, analyses, and MTO directions, ensuring that innovation development remains transparent and evidence based.

The Ministry encourages innovation in areas that address key project delivery challenges including accelerated project delivery, utility relocations, traffic management, freeway-to-freeway connections, major structure construction, environmental mitigation, stakeholder coordination, digital delivery, cost certainty, safety performance, workforce productivity, and construction staging.

For the purposes of this RFP, an **Innovation** is defined as any proposed approach, solution, methodology, technology, process, or improvement related to

- Design alternatives,
- Traffic management,
- Digital delivery,
- Construction means and methodologies
- Labour optimization and construction productivity improvement
- Materials,
- Environmental permitting and approvals,
- Stakeholder and Indigenous engagement
- Construction sequencing and staging strategies,
- Utility coordination, and
- Operations and maintenance efficiency

To be considered an Innovation, the proposed solution must demonstrate measurable improvements in one or more of the following areas:

- Schedule,
- Quality,
- Cost,
- Risk mitigation,
- Health and safety,
- Sustainability,
- Asset lifecycle,
- Stakeholder impact, and
- Community benefit.

Innovations may also include solutions that support Provincial commitments such as

1. Accelerated project delivery,
2. Local economic benefits,
3. Environmental stewardship, and
4. Indigenous participation.

The benefits of any innovation will be weighed against any constraints, including proprietary or restrictive concepts that impede competitive tendering if an Off-Ramp is exercised.

Design Optimization is a key component of the PDBH approach and shall be undertaken in parallel with Innovation Development. Design Optimization refers to the systematic evaluation of alternative technical solutions to maximize overall project value while satisfying all Project requirements. Design optimization may include, but is not limited to, geometric refinements, structure configurations, staging concepts, utility coordination strategies, standardization opportunities, footprint reductions, lifecycle performance improvements, and maintainability enhancements.

6.1.1 Innovations Development Requirements

6.1.1.1 Proposal Phase Requirements

During the Proposal Phase, Proponents shall submit the draft Innovations Plan. As part of the Innovations Plan, Proponents shall submit a defined number of Innovation Proposals, as specified in PDBH RFP Section 1.5.2.1 (b) Innovations Plan. Each Innovation Proposal shall include:

- A clear description of the innovation,
- Its intended application,
- Prior experience or utilization on comparable projects,
- Expected benefits,
- Evaluation of value-for-money considering implementation costs, lifecycle costs, operational impacts, and long-term asset performance,
- Detail anticipated impacts on schedule, cost, constructability, or risk,
- Description of additional field investigations/analyses required for implementation,
- Description of deviations from RFP requirements or operational constraints,
- Proposals must also identify any potential limitations the innovation may impose on MTO, including MTO's ability to exercise an Off-Ramp.

Prior to submission, the Proponent shall evaluate each Innovation Proposal for technical feasibility, implementation complexity, environmental impacts, property impacts, utility impacts, stakeholder implications, constructability considerations, lifecycle impacts, and potential Off-Ramp implications. MTO will evaluate innovations based on alignment with Project Goals, objectives and suitability for deeper exploration during the Design Phase.

This Project requires an accelerated design and construction schedule that will be collaboratively finalized by the Ministry and the Service Provider at the beginning of the Project. The number and limits of Advanced Contracts and Main Contracts set out in the RFP are provided for bidding purposes. The Service Provider shall submit **an Innovation Proposal demonstrating how the Project Schedule will be optimized to accelerate the delivery of the Design and Construction Phases and support the achievement of the Project Goals**. It shall include the following mandatory requirements:

- Advance Contract #1 to be awarded in **Year**
- Main Contract #1 to be awarded in **Year**
- All construction Contract(s) to be awarded by end of **Year** (the timeline shall not be later than the dates stipulated in Section 3.1 Project Schedule, even if the Service Provider proposes to combine Main Contracts or extend the project limits of Main Contracts), or sooner.
- Construction Phase Completion by **Month, Year**.

6.1.1.2 Design Phase Requirements

Innovation Development up to the Stage 1 Milestone

As part of the Innovations Plan the Service Provider shall establish and maintain a live Innovation Register throughout the Project.

At a minimum, the Innovation Register shall include innovation identification, innovation category, maturity level, anticipated benefits, timeline details, estimated implementation costs, lifecycle

implications, cost impacts, schedule impacts, risk implications, Off-Ramp implications, stakeholder impacts, MTO review comments, action items, and final decisions.

The Innovation Register shall serve as the official record for innovation traceability throughout the Project.

The Service Provider shall establish measurable performance indicators for each endorsed Innovation Proposal and shall quantify expected improvements to cost, schedule, risk exposure, safety, quality, constructability, lifecycle performance, and stakeholder outcomes, as applicable.

The MTO will shortlist the proposed innovations based on alignment with the Project Goals and the degree to which the innovations address key project challenges. During the early Design Phase and prior to reaching the Stage 1 Milestone, the Service Provider shall advance shortlisted innovations and may propose additional innovations based on evolving design maturity. At least one (1) **[NTD: Specify any additional workshops for bidding purposes]** in-person Innovation, Design Optimization & Constructability Workshop shall be held by the Service Provider during this period. In this workshop, the Service Provider shall present both shortlisted and newly developed Innovation Proposals to MTO for review, discussion, and endorsement.

The Service Provider shall prepare detailed materials including clear descriptions of the innovations, schematic drawings where appropriate, its intended application, prior experience or utilization on comparable projects, expected benefits, and anticipated impacts on schedule, cost, constructability, and risk. The Service Provider shall document workshop outcomes, including endorsement decisions and required next steps in the **Innovation, Design Optimization and Constructability Workshop Report** and **Innovation Register**. This workshop is intended to ensure transparent evaluation, shared understanding, and early alignment on innovations that may materially influence design direction or project delivery.

Following endorsement, the Service Provider must quantify whether any additional design effort, due diligence, engineering, or analysis is required to fully explore and integrate the innovation. The Service Provider shall clearly document the additional effort and cost, above and beyond the base Design Phase scope. MTO will provide direction regarding which innovations shall proceed into further exploration and design integration. Additional scope and cost related to endorsed Innovation Proposals will be administered through negotiated Work Orders drawing on the Innovation Budget (see RFP Section 3.5 Payment Schedule).

Innovation Development following Stage 1

Following the Stage 1 Milestone, the Service Provider may continue to submit additional Innovation Proposals for consideration. These proposals must be submitted in writing and include a detailed explanation of the concept, the specific problem or value opportunity it addresses, the anticipated benefits to the project, and the estimated cost, schedule, and risk implications. MTO will review each Innovation Proposal to validate feasibility and alignment with Project Goals and will issue direction regarding whether each Innovation Proposal is endorsed to be further developed and integrated into the design. This process ensures that innovation remains an open and continuous opportunity throughout the Design Phase and not be limited solely to initial proposals. The Service Provider shall quantify whether any additional design effort, due diligence, engineering, or analysis is required, beyond the base Design Phase scope, to fully explore and integrate the innovation. Additional scope and cost related to endorsed Innovation Proposals will

be administered through negotiated Work Orders drawing on the Innovation Budget (see RFP Section 3.5 Payment Schedule).

Evaluation and Acceptance of Innovations

MTO will evaluate all innovations based on:

- The quality and depth of supporting evidence and analysis.
- The degree to which the innovation addresses key project challenges.
- The feasibility and certainty of the implementation of the innovation.
- The degree to which the innovation supports Project Goals.
- The degree to which the innovation improves lifecycle performance, maintainability, operational efficiency, and long-term asset value.

Only innovations formally endorsed by MTO may be advanced. The Service Provider shall incorporate endorsed innovations into the design in a manner that ensures consistency across design development, cost estimating, scheduling, and risk management. The Service Provider shall quantify all innovation-related cost and schedule implications and incorporate them into the Design Packages, Basis of Estimate, Risk Register and subsequent OPCC processes. Where additional engineering or due diligence is required to implement the innovation, these costs shall be transparently presented in a manner consistent with RFP Section 3.5 Payment Schedule. MTO retains authority to request additional analysis or to direct modifications to the innovation if downstream impacts are identified during design development. The Service Provider shall maintain full traceability of all Innovation Proposals from initial proposal through acceptance, implementation, or rejection.

6.1.1.3 Construction Phase Requirements

During the Construction Phase, the Service Provider may submit Change Proposals (see MTO General Conditions, OPSS.PROV 100, as amended by the Construction Phase Agreement) that present additional innovation opportunities identified in the field through experience or emergent conditions. These proposals shall follow established Change Proposal processes and shall demonstrate project value, feasibility, and alignment with approved design intent. Ongoing collaboration between MTO and the Service Provider shall continue throughout construction, ensuring that innovation remains a core element of the Project.

6.2 Risk Management Plan

The Progressive Design-Build for Highways (PDBH) model requires a structured, transparent, and collaborative approach to Risk Management that evolves with design maturity, informs estimating and scheduling, and supports successful project outcomes and Project Goals.

Risk management activities shall focus on proactive risk avoidance and mitigation before relying on risk transfer mechanisms.

The Service Provider shall implement a fully integrated Risk Management Plan anchored by the **Design & Construction Risk Register** (**DCRR**). The Risk Management Plan shall be built around the DCRR during the Design Phase and transition to a **Construction Risk Register** (**CRR**) upon award of the Construction Phase. Risk identification, mitigation, quantification,

allocation, and treatment shall be collaboratively developed and routinely updated through the Design Phase.

The Risk Management Plan shall also integrate fully with the Transparent Pricing and Progressive Cost Review structure that governs PDBH estimating. This includes the Opinion of Probable Construction Cost (OPCC) processes following the Stage 2 and Stage 3 milestones, the Variance Review process, Targeted Open-Book requirements, and the alignment of risk treatments to Tender Item and optional Lump Sum estimating/bidding structures.

All changes to the DCRR must be maintained with version control and full traceability to decisions made during workshops, meetings, or OPCC sessions. This integrated, auditable approach is fundamental to the PDBH model and a mandatory requirement.

The Service Provider shall coordinate all responsibilities, deliverables, and meeting requirements within this 'Section 6.2 Risk Management Plan', and project risks and risk mitigation measures with the PMC to ensure alignment with the Program Risk Register and program-level risk management objectives.

6.2.1 Risk Management Requirements

[**NTD:** Consider applicability of a Risk Management Application such as ARM, or if the PDBH Excel Design & Construction Risk Register will be used for Project Risk Management. Update section below accordingly. Consult with CIO as needed.]

The Service Provider shall establish, implement, and maintain a structured and proactive risk management process for its full scope of services throughout procurement, design, construction, commissioning, handover, and closeout. The process shall align with the Project requirements, Program Risk Management Plan and MTO directions. The Service Provider shall maintain a complete and current risk register in the Program's designated instance of Active Risk Manager (ARM). ARM shall be the controlling source for risk data; dashboards, reports, meeting materials, and exports shall be derived from and reconciled to the live ARM record.

The Service Provider shall identify and manage both threats and opportunities. Opportunities that may improve schedule, reduce costs, enhance quality, improve safety, reduce stakeholder impacts, or advance Project Goals shall be documented and tracked within the DCRR or a dedicated Opportunity Register.

Risk Management Requirements

- Apply a continuous process to identify, assess, quantify, treat, monitor, communicate, escalate, and close threats, opportunities, assumptions, uncertainties, and materialized issues affecting scope, cost, schedule, quality, safety, environment, approvals, property, utilities, stakeholders, commercial obligations, interfaces, and delivery objectives.
- Appoint a qualified Risk Lead as the primary point of contact to the Ministry Risk Manager and assign one accountable Risk Owner and, where applicable, one Action Owner for each risk and treatment action.
- Maintain risk information at a level of detail appropriate to the Service Provider's scope while clearly identifying risks that affect other contracts, sections, Service Providers, MTO, Project milestones, or shared interfaces.

- Integrate risk management with design development, construction planning, scheduling, cost forecasting, change management, issue management, quality, safety, environmental management, stakeholder commitments, and decision-making.
- Provide timely access, information, and support required by MTO and its consultant for Program-level oversight, assurance, reporting, quantitative analysis, and escalation.

ARM Risk Register and Data Requirements

Risks shall be entered promptly in ARM and kept accurate, complete, and current. Records shall include, as applicable, a clear cause–event–effect statement, category and scope, exposure period, owner, status, current and target assessment, cost and schedule impacts, treatment actions, action owners, due dates, residual exposure, and escalation status. Approved updates shall be reflected in ARM within the Ministry's reporting cycle; uncontrolled parallel registers shall not replace ARM.

Assessment, Quantification, and Treatment

- During design, risks shall be assessed qualitatively using the Program-approved probability and consequence criteria to support consistent prioritization and treatment.
- During cost estimate development, the Service Provider shall provide formal cost details, ranges, assumptions, and supporting schedule information required for quantified risk assessments, including Quantitative Cost Risk Analysis (QCRA) and Quantitative Schedule Risk Analysis (QSRA) where requested by the Ministry.
- Treatment actions shall be proportionate, assigned, time-bound, and updated regularly. Materialized risks shall be promptly reported and transferred to the applicable issue, change, cost, or schedule control process.

Governance, Reviews, and Reporting

- Review risks at least monthly, or more frequently as directed, and complete ARM updates before the Program's reporting cycle.
- Attend risk and related coordination meetings when requested and report material changes, emerging risks, overdue actions, quantitative impacts, and required decisions.
- Immediately escalate risks or issues that may materially affect safety, compliance, milestones, critical path, cost, contingency, public commitments, or another party's work.

Interface with the Ministry and its consultant

The Service Provider remains accountable for risks within its scope and for the quality and timeliness of its ARM data. The Ministry will administer the Program framework, review and consolidate submissions, coordinate Program-level analysis, identify cross-Section and interface risks, and manage internal reporting. For risks involving multiple parties, the Service Provider shall identify dependencies, actions, and proposed ownership and shall cooperate in developing a coordinated response. MTO review does not transfer the Service Provider's contractual responsibility.

System Access, Data Quality, and Assurance

The Service Provider shall follow Program requirements for ARM access, data structure, security, confidentiality, and records management, and shall maintain trained authorized users. Data-quality or process issues identified by the Mnistry shall be corrected within the directed timeframe.

Risk Closeout and Records

Risk closure shall be supported by a recorded rationale, final status, impacts, disposition of actions, and relevant lessons learned. Before completion, the Service Provider shall reconcile its ARM records and identify all residual or transferred risks.

6.2.1.1 Proposal Phase Requirements

The Proponent shall develop a draft Risk Management Plan, which shall include the Proposal Phase Design & Construction Risk Register provided to Proponents.

As part of the Ministry's commitment to the Progressive Design-Build Highway model, the Ministry provides a Proposal Phase Design and Construction Risk Register including **a draft Design and Construction Risk Register and an Issues List in a non-quantitative format**. These documents are provided for information only and are not intended to represent a complete or exhaustive identification of Project risks, constraints or opportunities.

Proponents are expected to undertake their own assessment of the Project, review all available background information and reference materials, and demonstrate their understanding of the Project by identifying additional risks, issues, dependencies and opportunities that may affect Project delivery. Proponents shall further develop the risk management approach by proposing meaningful mitigation measures, ownership strategies and response actions that align with the Project Goals, support accelerated delivery, and improve Project outcomes related to schedule, cost, quality, safety and risk management.

The Ministry encourages Proponents to demonstrate innovation, critical thinking and a comprehensive understanding of the Project through the maturity, completeness and practicality of their proposed risk identification and mitigation strategies.

The Risk Management Plan shall outline the Proponents approach to Risk Management for this project, reflecting the requirements as specified through this RFP. The Proponent shall:

- Provide a structure using established methodology for identifying risks, assessing risk impacts and probability of impacts to schedule and cost, and managing/mitigating risks on the project.
- Provide a risk assessment for the project, including identification of risks for the project that would increase costs or negatively impact the project schedule for design and construction, as well as related mitigation strategies.
- Explain how, as the Service Provider, you will support and contribute to managing risks during the Design and Construction Phases to achieve the Project Goals.
- Explain the coordination between the Risk Management Plan, and the Basis of Estimate Plan, Innovations Plan, Constructability Plan, and Schedule Management Plan.
- Identify the Key Individuals and project team members responsible for the development, implementation, and oversight of the Risk Management Plan.
- Further develop the Design and Construction Risk Register provided for the project by identifying additional Project risks and proposing early mitigation measures.

6.2.1.2 Design Phase Requirements

Stage 1 – Risk Identification & Early Mitigation

During Stage 1, the Service Provider shall focus on thorough identification of potential risks across the project, including but not limited to environmental, geotechnical and foundation fieldwork investigations, archaeological investigations, indigenous consultation activities, utility relocations, property acquisition process, environmental constraints, municipal approvals, stakeholder commitments, highway and structures design and construction optimization, constructability challenges. For each identified risk, the DCRR must capture the risk description, cause, impact, likelihood, urgency, initial mitigation strategies, owners, timelines and likely mitigation outcomes. Stage 1 is intended to build a comprehensive understanding of potential project challenges and develop actions to obtain fulsome information to help make decisions on risks that can be avoided or further quantified before design progresses into Stage 2 design.

Stage 2 – Risk Quantification and Allocation

During Stage 2, the Service Provider shall quantify the cost and schedule implications associated with each substantive risk. Specific expectations include completing initial risk actions as appropriate (i.e. gathering all relevant information to provide certainty), estimating expected cost impacts, defining expected schedule delays, and working with MTO on the allocation of each risk.

Each risk shall be assigned a responsible owner accountable for monitoring, reporting, mitigation implementation, and timely escalation. Risk ownership shall be reviewed and confirmed at each milestone.

The Service Provider shall establish risk-adjusted cost and schedule forecasts and identify confidence levels associated with each forecast. Cost and schedule contingency values shall be traceable to the DCRR and supported by quantitative analysis.

Following the OPCC Process, the DCRR shall be updated to reflect agreed-upon adjustments, risk allocations, and refined cost and schedule quantifications of risks.

Stage 3 – Risk Management and Treatment

During Stage 3, the Service Provider shall work with MTO to identify risk treatments appropriate for the Construction Phase. Risk treatments include bid contingency (built into Tender Items or Lump Sum Estimate/Bid), payment adjustment mechanisms, identifying change order triggers, or the development of project-specific Special Provisions to manage substantive unresolved risks.

Mutually agreed upon assignment of risk sharing often requires changes to an item(s) payment clauses and/or revisions to, or creation of, Special Provisions, to adequately define the scope of risk, and ensure the risk is addressed in the Construction Phase Contract package. The Service Provider shall create and update a list of standard Tender Items pertinent to the project to assist in the identification of risks. The Service Provider and MTO shall collaboratively determine where non-standard Tender Items and non-standard Special Provisions are required to address risk to better meet Project Goals.

The Service Provider shall include in the Final Risk Management Plan submitted at the Stage 3 Milestone, a Risk Allocation Summary identifying:

- Risks retained by MTO;
- Risks transferred to the Construction Phase Contract;
- Risks addressed through Tender Items / Lump Sum Items;
- Risks addressed through Special Provisions;
- Risks addressed through payment adjustment mechanisms; and
- Residual risks remaining at the completion of design.

Upon completion of this stage, the DCRR must document all mutually agreed upon risk treatments and reflect complete alignment with Class 1 estimating and bid assumptions.

6.2.1.3 Construction Phase Requirements

As part of the final Contract Documents, the DCRR shall be converted into the Construction Risk Register (CRR). The CRR shall preserve all identification, allocation, mitigation, and treatment decisions made during the Design Phase. During construction, the Service Provider shall maintain the CRR as a live tool, updating risk status, exposure, and treatment outcomes throughout the project lifecycle. Monthly reporting shall summarize all active and closed risks, changes in probability or impact, mitigation progress, and any emerging risks requiring joint attention. This ongoing management ensures continuity from design to construction and preserves the collaborative nature of the PDBH delivery model. The CRR shall be reviewed at each monthly construction progress meeting for any updates or changes.

6.2.1.4 Quantitative Risk Analysis

The Service Provider shall perform Quantitative Risk Analysis (QRA) to support development of the OPCC, project schedule, and project contingency requirements.

At a minimum:

- QRA shall be completed prior to OPCC #1 and OPCC #2;
- Risks with material cost or schedule implications shall be quantified using probability-based methods;
- Cost and schedule contingency recommendations shall be supported through quantitative analysis;
- Assumptions, modelling techniques, confidence levels, and outputs shall be documented;
- The Service Provider shall perform Schedule Risk Analysis to assess the probability of achieving key Project milestones, substantial completion dates, utility relocation milestones, environmental commitments, and other critical schedule objectives.
- Documentation shall be provided to MTO as part of the Stage 2 and Stage 3 Risk Management Plan milestone submissions.

The Service Provider shall clearly demonstrate the relationship between identified risks, contingency development, and estimate assumptions.

6.2.2 Risk Management Meeting Requirements

6.2.2.1 Risk & Approach to Work (RAW) Meetings

The Service Provider shall schedule and attend monthly RAW Meetings. These meetings will be used to discuss risks, actions underway to help mitigate or understand risks and approach to work for specific design and construction elements. Risks should be discussed in terms of priority (high and urgent risks), with a goal to understand where further action or escalation is needed and when to allocate associated risk appropriately through the use of contract provisions. The RAW meetings and outcomes shall align with the iterative development of the DCRR through the Design Phase Stages.

The Risk Management Plan shall establish thresholds and escalation procedures for High and Critical risks. Risks exceeding agreed cost, schedule, safety, stakeholder, or operational impact thresholds shall be escalated to the Project Leadership Team immediately after the discussion with the Project Management Team and Project Team - Risk, Schedule, & Estimate Management Team.

In order to preserve the integrity of the Independent Cost Estimator's (ICE) estimate, and the integrity of the Service Provider's development of a Construction Phase Bid for the Project – **IF the ICE is in attendance at the RAW meeting, there cannot be explicit discussion about dollars in these meetings.** However, it is appropriate to have discussions about relative cost increases or decreases associated with approaches or alternatives considered, as well as resource and material requirements to construct the Work.

Following each RAW meeting, the Service Provider shall prepare and distribute an updated DCRR and meeting minutes to all parties.

RAW meeting participants shall include representatives from:

- MTO and MTO's Consultant;
- Service Provider's Design Team;
- Service Provider's Construction Team;
- Service Provider's Cost Estimating Team;
- Utility Representatives (as appropriate);
- Environmental Specialists;
- Property Specialists (as appropriate); and
- Other stakeholders (as appropriate).

6.3 Constructability Plan

The Progressive Design-Build for Highways (PDBH) model is a collaborative, construction informed approach to design development that ensures decisions made during the Design Phase reflect feasible, safe, efficient, and optimized Construction Phase delivery strategies that meet the Project Goals. Constructability is a core pillar of PDBH with the Service Provider's expertise applied early and continuously, reducing project risk, improving cost and schedule certainty, minimizing rework, enhancing worker and public safety, improving traffic and staging planning, and supporting a seamless transition into the Construction Phase. Under this model, the Service Provider shall take a leadership role during the Design Phase, working collaboratively with the Lead Design Firm and MTO to integrate practical construction considerations across all design disciplines and project segments.

The Service Provider shall implement a fully integrated Constructability Plan, describing in detail how the Service Provider will organize, resource, and execute its constructability responsibilities throughout the Design Phase. The Constructability Plan shall outline how the Service Provider will:

- Provide early and ongoing construction insights to support design, cost, risk, and schedule development.
- Evaluate design options for constructability, safety, sequencing, access, and staging feasibility.
- Identify opportunities for schedule acceleration, cost efficiency, and risk reduction.
- Identify opportunities for Advance Contracts and Early Procurement.
- Ensure alignment with the PDBH Basis of Estimate, Progressive Cost Review, Construction Scheduling, and Risk Management processes.
- Mobilize to deliver the Work for the Construction Phase.

The Constructability Plan shall be maintained as a living document, with updates submitted at each Design Phase Milestone.

6.3.1 Constructability Requirements

Throughout the Design Phase, the Service Provider shall lead a structured, iterative, and well documented process to assess and improve constructability.

The Service Provider shall establish and maintain a Constructability Register documenting constructability reviews, findings, recommendations, decisions, responsible parties, implementation status, and resolution dates.

This includes reviewing design progression for feasibility of construction means and methods, environmental compliance, staging impacts, utility coordination, traffic management requirements, and accessibility to the work sites (including temporary works and detours). The Service Provider shall proactively identify constructability risks, constraints, opportunities, and interdependencies, ensuring that such considerations are addressed early enough to influence design decisions rather than reactively during construction.

The Service Provider shall also evaluate interfaces between major project components, including but not limited to, structures, drainage, grading, utilities, traffic staging, environmental works; and provide technical direction regarding optimal sequencing, access, resource requirements, equipment selection, and supply chain considerations. This evaluation includes assessing material availability, fabrication lead times, staging limitations, seasonal/weather restrictions, geotechnical constraints, right-of-way access, and stakeholder coordination needs. These insights must be incorporated directly into design refinement, project phasing plans, the DCRR, Basis of Estimate, and Construction Scheduling.

Constructability review shall also include close coordination with Innovations development (Section 6.1) and Risk Management (Section 6.2), as many innovations stem directly from construction means-and-methods insight, and early constructability analysis often reveals or mitigates Project risk. Accordingly, constructability findings shall be explicitly documented and tied

to both endorsed Innovation Proposals and DCRR entries to ensure integrated treatment of design, cost, schedule, and risk.

6.3.1.1 Proposal Phase Requirements

The Proponent shall prepare and submit a Draft Constructability Plan as specified in Section 1.5.2.1 (b) Constructability Plan, following the requirements set out in Section 6.3 Constructability Plan.

6.3.1.2 Design Phase Requirements

Beginning of Stage 1 – Constructability Baseline

Within 30 Business Days of Assignment Award, the Service Provider shall submit an updated Constructability Plan. Using the plan, the Service Provider shall identify and assess major constructability challenges, staging constraints, potential efficiencies, and construction-driven alternatives; and incorporate the resulting risks and potential mitigations into the DCRR. The Service Provider shall also evaluate preliminary Right-of-Way (ROW) requirements, access needs, temporary works, excess soils management, haul routes, and early utility conflicts and provide related constructability input into the design. This early review supports the Stage 1 Innovations, Design Optimization & Constructability Workshop by informing the selection of innovations and identifying areas where constructability input is required to guide design direction.

The Constructability Plan shall be updated and submitted at the end of Stage 1 (Stage 1 Design Team Review Submission).

Beginning of Stage 2 – Detailed Constructability Review and Integration

Within 20 Business Days following the Stage 1 Milestone, the Service Provider shall carry out a second in-person Innovation, Design Optimization & Constructability Workshop focusing on Design Optimization and Constructability Review and detailed evaluation including, but not limited to:

- Construction sequencing and phasing
- Traffic staging and detour strategies
- Utility relocation strategies and feasibility
- Earthworks balancing and haul routes
- Foundation constructability (including geotechnical considerations)
- Bridge and structural staging
- Fabrication and supply chain constraints
- Environmental permitting-related construction windows
- Opportunities for Advanced Works
- Other Project specific considerations

This Stage 2 constructability review shall follow the Constructability Plan and shall be informed by production assumptions, anticipated durations, access limitations, constructability risks, and required construction means and methods.

The Constructability Plan shall be updated following the Stage 2 constructability review and submitted at the end of Stage 2.

Beginning of Stage 3 – Constructability Workshop

Within fifteen (15) Business Days of OPCC Meeting #1, the Service Provider shall carry out a third in-person Innovation, Design Optimization & Constructability Workshop and detailed evaluation including, but not limited to:

- Construction sequencing and phasing
- Traffic staging and detour strategies
- Utility relocation strategies and feasibility
- Earthworks balancing and haul routes
- Foundation constructability (including geotechnical considerations)
- Bridge and structural staging
- Fabrication and supply chain constraints
- Environmental permitting-related construction windows
- Opportunities for Advanced Works and Early Procurements
- Other Project specific considerations

This Stage 3 constructability review shall follow the Constructability Plan and shall be informed by production assumptions, anticipated durations, access limitations, constructability risks, and required construction means and methods.

The Constructability Plan shall be updated following the Stage 3 constructability review and submitted at the end of Stage 3.

End of Stage 3 – Constructability Confirmation & Pre-Construction Readiness

For the Stage 3 Milestone (Stage 3 Design Team Review Submission), the Service Provider shall produce a Constructability Report to confirm that the design is fully constructable, coordinated, safe, and efficiently staged. The Service Provider shall verify that all constructability considerations have been integrated into the development of the Stage 3 Milestone Design Package, Tender Item Quantities, Basis of Estimate, and Construction-Ready Critical Path Schedule. The Constructability Report shall also highlight any remaining constructability risks and proposed mitigation measures.

The Service Provider shall undertake formal Construction Readiness Reviews to verify that all critical constructability considerations have been incorporated and that the design package can be efficiently delivered during the Construction Phase.

The Innovation, Design Optimization & Constructability Workshop participants are required to review the proposed design, construction sequencing, temporary works, structures, foundation, drainage, electrical design, environmental constraints and other elements to identify construction risk, optimize constructability, and provide timely recommendations. The Service Provider shall respond to and resolve all comments arising from Constructability Reviews and support the development of practical, cost-effective, and constructible design solutions that meet the Project requirements.

6.3.1.3 Construction Phase Requirements

Upon entering the Construction Phase, the Contractor shall continue to validate and refine constructability considerations. The Contractor shall also update and maintain a Construction Phase Constructability Log documenting issues encountered, lessons learned, and opportunities for optimization. Constructability related Innovations that meet the criteria for Change Proposals (see RFP Section 6.1.1.3 Innovations Development Requirements, Construction Phase Requirements) may be submitted where they offer additional value, schedule improvements, or cost efficiencies, to be considered at the sole discretion of MTO.

6.4 Deliverables

The Service Provider shall submit the following documents as per Section 3.1, Section 3.2.2 and Section 6.

- Innovations Plan
  - Innovation Register
- Risk Management Plan
  - Design & Construction Risk Register (DCRR)
  - Quantitative Risk Analysis Documentation [Stage 2 & Stage 3]
  - Risk Allocation Summary [Stage 3]
- Constructability Register
- Executive Risk Dashboards for High and Critical Risks.
- Constructability Plan
- Constructability Report(s)
- Innovation, Design Optimization and Constructability Workshop Report(s)

Deliverables shall be submitted at each Design Phase milestone and otherwise as requested by MTO.

6.5 Reference Documents

The following documents will be provided:

- Proposal Phase Design and Construction Risk Register
- Innovation, Design Optimization and Constructability Workshop template/ agenda (successful Service Provider only)

SECTION 7: TERMS OF REFERENCE – FUNCTIONAL CATEGORIES – DETAIL DESIGN PHASE PLAN

7.1 Advanced Traffic Management Systems

7.1.1 Project Scope

This project includes the detail design for the expansion of new Advanced Traffic Management System (ATMS), and the protection and relocation of the existing ATMS plant **[NTD: select appropriate scope]**. The ATMS portion of this project covers the Highway **XXX** between **XXX** and **XXX.**

The Service Provider shall be responsible for the detailed design of the following ATMS subsystems: **[NTD: Modify the list as required]**

- Communications network with fibre-optic cables and/or wireless equipment
- Power Sub-system
- Vehicle Detection Station (VDS) sub-system including Non-intrusive Traffic Sensors (NITS)
- Variable Message Signs (VMS) sub-system
- Ramp Metering Station (RMS) sub-system
- Closed-Circuit Television Cameras (CCTV) sub-system
- Queue Warning Signs (QWS) sub-system and,
- Travel Time Subsystem

The Service Provider shall also provide the following designs as part of this assignment: **[NTD: Modify the list as required]**

- Retention of ATMS operations to the fullest extent possible during various construction stages. All proposed operational interruptions will be reviewed and approved by the Advanced Traffic Management Section before finalizing the design
- Relocation of all existing COMPASS plant impacted by the proposed rehabilitation works and protect all other existing COMPASS plant elsewhere in order to minimize their operational downtime
- Replacement of the impacted ATMS vehicle detector loops and install permanent /temporary NITS for construction, and
- Expansion of the COMPASS system between XX and XX as a result of the expansion work

7.1.2 Technical Services Required

7.1.2.1 Staff to be provided

Key personnel in Table 1: *Mandatory Qualification Requirements for Key Individuals* in Section 1.5.1 shall meet the qualification requirements as described below.

[Include a job title and a description of staffing expectations (e.g. experience, technical expertise) for scoring in phase I (EOI). Any staffing requirement(s) that would result in disqualification of the proposal if not part of the proponent's submission must also be

included in Table 1 Section 1.5.1. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 1.]

Requirements for additional staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

The firm providing ATMS design services must be registered on the government RAQS registry under the Advanced Traffic Management Systems category of "Electronic Subsystem Design, Construction Contract Administration, and Specialized Inspection Services". The ATMS design team may be part of the Service Provider or may part of a sub-Service Provider meeting the requirements of the aforementioned RAQS qualification requirements.

The ATMS design team must have demonstrated experience and expertise in design, implementation, maintenance and construction of ATMS electronic subsystems and the following key ATMS staff must be licensed to practice Professional Engineering in Ontario (P.Eng).

Senior ITS/ATMS Engineer/Senior Project Manager shall have

- A minimum of ten (10) years of ITS/ATMS experience as a P. Eng.
- Demonstrated successful experience on a minimum of five (5) ITS/ATMS projects, that were completed within the last 10 years of medium or high complexity scope and size. At least three (3) of those five (5) projects shall be MTO projects.

ITS/ATMS Engineer/Project Manager shall have

- A minimum of seven (7) years of ITS/ATMS experience (as a P. Eng.)
- Demonstrated successful experience on a minimum of three (3) ITS/ATMS projects, that were completed within the last ten (10) years of medium or high complexity scope and size. At least two (2) of those three (3) projects shall be MTO projects.

The additional technical staff for this assignment shall include the following:

- **ITS Specialist** shall have
  - A minimum of seven (7) years of ITS/ATMS experience, including knowledge and practical experience in ITS communications.
  - Demonstrated successful experience on a minimum of three (3) ITS/ATMS projects, that were completed within the last ten (10) years of medium or high complexity scope and size. At least two (2) of those three (3) projects shall be MTO projects.

- **QA/QC Auditor** shall have
  - Experience and be familiar with the MTO project delivery process and enforce the QA/QC plan to comply with the MTO's QA/QC objectives and requirements
  - A minimum of ten (10) years of ITS/ATMS experience as a P. Eng.
  - Demonstrated successful experience on a minimum of five (5) ITS/ATMS projects, that were completed within the last 10 years of medium or high complexity scope and size. At least two (2) of those five (5) projects shall be MTO projects.

- **Support Staff (CAD)** shall have
  - Minimum of three (3) years of experience providing support on ITS/ATMS projects
  - Knowledge of AutoCAD, provincial standard specifications and drawings (OPSS, OPSD), Contract Preparation System (CPS) and Ministry's CAITTM Manual+, etc.

- **ATMS Inspector** shall
  - Be in MTO Vendor's List in RAQS – ATMS: Electronic Subsystem Design, Construction Contract Administration, and Specialized Inspection Services.
  - Have conducted all ATMS inspections and ATMS tasks identified in the latest publication of the "MTO Construction Administration and Inspection Task Manual".
  - Have membership in the Ontario Association of Certified Technician and Technologist (OACETT) with one of the following OACETT designations: Contract Administrator (RCCA), or Senior Inspector (RCSI)
  - Have five (5) years qualifying experience and thorough knowledge of broadband fibre optics, co-axial and wireless communications design, implementation, maintenance and construction.
  - Have one (1) of the following licences:
    - Master Electrician Licence, or
    - Construction and Maintenance 309D Electrician Licence, or
    - Construction and Maintenance 309A Electrician Licence.

7.1.2.2 Project Specific Requirements via Lump Sum Price

[NTD: Modify requirements as needed]

The Service Provider shall

- Identify and assess all potential impacts to the existing ATMS facilities resulting from the implementation of various alternatives
- Develop an analysis and recommendations for avoiding and/or mitigating the impacts to these facilities wherever possible
- Identify any new civil and electrical provisions based on the ATMS Provisions Guidelines. The recommendations must consider the different construction staging scenarios identified

by the Highway designer. The detail design recommendations shall also include cost estimates and schedules referencing to the construction staging scenarios.

The detail design for ATMS installations shall include all relevant removal, installation, relocation and protection of existing equipment as well as adding new ATMS provisions with the following minimum activities:

- Conduct field investigations to review field equipment, equipment access, barrier protection, slope/drainage concerns and trench location as to verify impacts of proposed rehabilitation work elsewhere in RFP
- Protection of trunk/spur communications cables/equipment and power within the project limits
- Protection of all enclosures (e.g. cabinets, pedestals, etc.) and associated electronics within the project limits
- Verify impacts to existing conditions as to identify equipment relocations and possible locations for new ATMS equipment as required, and
- Identify and resolve potential conflict of the new ATMS equipment with other utilities.

VDS/ NITS

The Service Provider shall design the VDS subsystem within the project limits. The Service Provider shall design locations as well as the associated civil and electrical provisions of the new VDS/NITS and Loops sites. The new VDS design guidelines should be applied to the design.

VMS

The Service Provider shall design locations as well as the associated civil and electrical provisions of the new VMS site(s) based on the latest MTO standards. The exact locations of the VMS shall be confirmed and approved by the Ministry staff.

For signs that will be displaying travel time to strategic destinations, the destinations and their design should be coordinated with MTO ITS and the latest Travel Time Service Contract.

CCTV

[NTD: Insert requirements]

Travel Time

The Service Provider shall design locations as well as the associated civil and electrical provisions of the new Bluetooth Reader sites based on the Travel Time Design Guideline. The Service Provider shall conduct a field survey to identify the optimal location for the new Bluetooth Reader site(s) if needed.

Communications

[NTD: Insert requirements]

Power

The Service Provider shall design new locations as well as the associated civil and electrical provisions of the power conduits including the conduits layout and Under-pavement crossings based on the latest MTO design standards and policies.

The Service Provider shall design the appropriate power facilities to ensure the ATMS equipment can operate at optimal efficiency. Proper measures will have to be taken to ensure full operability in the event of power fluctuations.

COMPASS Operations

During construction, should the level of COMPASS operations be lower than normal, benefit/cost analysis must be conducted with the COMPASS stakeholders to determine what level of compromise is acceptable.

This work shall be undertaken in consultation with representatives from the Ministry's ITS Office and documented in the Design Report.

CRCTMC

The Service Provider shall be responsible for the introduction of new ATMS equipment at CRCTMC if required as a result of installing temporary and permanent COMPASS plant.

7.1.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[NTD: Insert tasks if known]

7.1.3 Deliverables

ATMS deliverables shall be submitted according to the project milestones, and the required documentations should include the following list: **[NTD: Modify the list as required]**

- Site investigation report including photos, field logs, drawing mark-ups, etc.
- ATMS placement memorandums including VMS, CCTV, Pole-mount signs, Bluetooth Readers
- Structure certification report on the existing mounting structures
- Aerial survey report for CCTV sites
- Wireless Interference Clearance report if wireless equipment is adopted in the design
- Wireless modem coverage report if wireless modems are adopted in the design
- Each Stage of the Design Phase submissions and other required documents for milestone reviews
- Final contract package and AutoCAD DWG file
- Meeting minutes

7.1.4 Reference Documents

[NTD: Insert requirements]

7.2 Bridge Engineering

Proposal Phase Requirements

The Service Provider shall provide a proposed workload for all Bridge Engineering team members to the Ministry as part of the proposal. The Aesthetic Lead and any aesthetics support staff shall be identified in the Service Provider's Organizational Chart.

7.2.1 Project Scope

7.2.1.1 General

This assignment includes detail design services for the following structures:

GWP	WP	Structure Name	Site No.	Hwy	Location
####-##-##	**####-##-##**	**Example Bridge Name**	**###-####**	**###**	**x.x km North of Hwy xx**

7.2.1.2 Site-Specific Scope

[NTD: Insert site-specific requirements for each bridge as follows:

Structure Name, Site No.

Provide a written summary of the bridge here, including at a minimum: structure type, span length(s) and arrangement, overall bridge width, travelled width, general articulation, year of construction, year(s) of rehabilitation, a general description of each rehabilitation, and an overall comment on the condition of the bridge.

If the structure has been pre-screened and does not have provincial heritage, include the following:

This structure has been determined not to have Provincial Heritage Significance. The Service Provider will proceed with no further requirements under the Ontario Heritage Bridge Guidelines.

For the purposes of bidding, the anticipated scope of work is as follows:

- Note the major work type here (rehabilitation, replacement, etc.)
  - List any specific assumptions to the work type here, such as assumed new structure type, semi-integral conversion, major items as part of rehabilitation (i.e. bearing replacement, overlay, etc.)
- Note the anticipated staging methodology here (full closure, single lane w/ signals, offset alignment, etc.)
- Add any other relevant assumptions for bidding purposes as required.**]**

7.2.2 Technical Services Required

7.2.2.1 Staff to be provided

Requirements for staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for technical staff that will be reviewed for compliance in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

The Service Provider's structural staff shall have structural design expertise that is adequate for this project's scope and complexity and shall have proven knowledge and experience in bridge design using the current edition of the Canadian Bridge Design Code (CHBDC) and current ministry design standards, specifications, policies and practices, including the preparation of contract documents and drawings for highway bridge projects in accordance with the Ministry standards.

Structural Manager's qualification requirements are in Table 1: *Mandatory Qualification Requirements for Key Individuals* in Section 1.5.1.

Structural Manager is responsible for the overall management, coordination, and delivery of all bridge engineering services, including liaison with the Ministry, stakeholders, field investigation team(s), structural design team(s), foundation design team and the Structural Construction Specialist.

Requirements for technical staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

Service Providers shall be capable of providing the services listed below with a Professional Engineer(s) that satisfies RAQS pre-qualification experience requirements.

1. Design & Evaluation – Complex Structures (multi-span)
2. Design & Evaluation – Sing Span
3. Rehabilitation General
4. Biennial Inspection
5. Condition Surveys

Lead Structural Engineer shall have

- Demonstrated successful experience planning, analyzing, evaluating and designing two and multi-span bridges.
- Demonstrated successful experience planning, analyzing, evaluating, rehabilitating and designing single-span bridges and culverts.
- Ten (10) years of transportation structures, including bridge engineering, experience (as a P. Eng.) on projects of medium or high complexity scope and size (at minimum 1 project shall be an MTO project).
- Extensive and demonstrated knowledge of the Canadian Highway Bridge Design Code as well as current ministry policies, procedures, standards, specifications and manuals
- Successful experience in the following areas:

- Preparing contract drawings including specifications, special provisions, non-standard special provisions and applicable standard drawings to be used for the contract bidding process and construction of the structures.
- Reviewing condition survey reports and making recommendations to ascertain the needs and develop strategies for rehabilitation.
- Practicing engineering to evaluate, modify or improve the existing condition of bridges.
- Preparing full contract requirements for coating of the entire steel superstructure including environmental constraints.
- Reviewing the inspection reports and making recommendations to ascertain the needs and developing strategies for cathodic protection of the existing bridge structure rehabilitations.

The Lead Structural Engineer shall provide overall technical leadership for structural engineering works, including field investigations, the development of design solutions, review of technical recommendations, guidance to the bridge engineering team, and coordination of all structural related technical activities to ensure the design meets standards, project requirements and performance objectives.

Structural Engineer shall have

- P. Eng. with PEO with a minimum of one (1) year of demonstrated suitable qualifications, knowledge and experience on projects of similar size and complexity. Must work under the supervision of the Lead Structural Engineer
- Demonstrated successful structural experience on one (1) project of medium or high complexity scope and size that was completed within the last ten (10) years, in Ontario or other similar jurisdictions, where the drawings were signed and sealed by the applicant.

Professional Advice on Bridge Aesthetics Requirements

Ther Service Provider shall

- Investigate and consider the aesthetic requirements of the following structures and their compatibility to the surroundings environment adjacent structures, overall corridor context and the fundamental principles of bridge planning as well as site specific conditions and local user expectation
- Retain the services of an Aesthetic Lead (AL) to provide professional advice on bridge aesthetics and to support the implement the aesthetic recommendations during the bridge design process according to MTO guidelines “Aesthetic Guidelines for Bridges”, dated September 2004.

The AL shall be either an architect, landscape architect or professional engineer, and shall meet the following requirements

- If the AL is an architect or landscape architect, they must have the necessary professional seal and a valid Certificate of Practice (or temporary licence) from the Ontario Association of Architects and/or Ontario Association of Landscape Architects.
- If the AL is a landscape architect, they must be approved in RAQS.

- If the AL is a professional engineer, they must meet the Professional Engineers of Ontario requirements for working in Ontario.

The AL is required to have a minimum of **five (5) years** of verifiable experience in bridge aesthetic design. The Service Provider shall submit at least **two (2) project examples** demonstrating the AL's experience as the lead individual responsible for bridge aesthetics design. The AL shall not be the same individual(s) responsible for the structural design.

The additional technical staff for this assignment shall include the following:

- Structural Engineering Technician
- CAD Technician

7.2.2.2 Project Specific Requirements via Lump Sum Price

7.2.2.2.1 General

1. The Service Provider shall complete all structural work in accordance with the latest version of following documents:
    a. Canadian Highway Bridge Design Code (CHBDC) CSA-S6.
    b. All applicable MTO manuals, reports, memos, guidelines, standards, and relevant publications.
2. The requirements of any other applicable manual and any exceptions to any applicable MTO manual, report, memo, or guideline shall be clearly justified, documented, and approved as appropriate.
3. All electronic drawings shall be prepared in AutoCAD 2021 DWG format using the latest version of the IES (Integrated Engineering System) layering standards. Drawing prototypes, layering structure, symbols, pen sizes, etc., shall be used as described in the latest version of DGS (Design Graphics System).

The technical services above apply to the following sites, along with additional site-specific requirements as listed below:

- **ALL SITES**
    - No additional requirements.

7.2.2.2.2 Detail Design

1. Structural design shall be in accordance with all area-specific requirements in addition to the general requirements. Area-specific requirements shall take precedence in the event of a conflict.
2. The Service Provider shall prepare and submit a complete contract package, including all drawings, specifications, special provisions and non-standard special provisions, necessary to supplement the specifications of the Ministry. The contract package shall be prepared using the Ministry's Contract Preparation System (CPS).

3. Corrections and revisions to the Drawings and Documents, as is typical for assignments of this nature, resulting from Ministry reviews shall be made by the Service Provider at no additional cost to the Ministry prior to the submission of final documents.
4. The Service Provider shall coordinate with all relevant MTO functional offices as required to support the design.
5. The Structural Engineer responsible for the design shall visit the site(s) to review and familiarize themselves with the site conditions and identify any potential conflicts with the proposed work.
6. The Service Provider shall provide investigative services to confirm topographical features and local conditions for each site and shall incorporate this information into the design for each structure.
7. The Service Provider shall liaise with local Municipalities, Counties, Townships, Conservation Authorities, other provincial Ministries, and all other stakeholders as required to support the design.
8. The Service Provider shall provide investigative services to locate and confirm the location of any/all utilities for each site and identify conflicts with the proposed work.
9. The latest version of all Ministry specifications and standard drawings shall be used for all final drawings at the time of submission.
10. The need for existing or proposed bridge deck drains shall be evaluated as necessary. Removal or modification of bridge deck drains for rehabilitation projects shall be considered in the design.
11. Any deviations from standard design practices shall be clearly noted in the project's Design Synopsis.
12. The Service Provider shall include any necessary design provisions and obtain all necessary approvals from Transport Canada under the Canadian Navigable Waters Act.
13. The Service Provider shall investigate and consider the aesthetic appearance of the bridge structure and its appurtenances, and their compatibility to the surroundings and context. The fundamental principles of bridge aesthetics for the bridge layout, detailing of superstructure and substructure and finishes shall be considered.
14. The Service Provider shall prepare an estimate of working days required to do the work.

The technical services above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**
  - List additional site-specific requirements here

7.2.2.2.3 Detailed Bridge Condition Survey [NTD: Delete the content of this section if

not applicable and insert N/A to next to the heading. DO NOT DELETE the heading]

1. The Service Provider shall conduct a detailed bridge condition survey for the structures listed at the end of this subsection in accordance with the latest version of the MTO Structure Rehabilitation Manual.

2. The number of concrete cores, sawn asphalt sample and concrete tests required for bridge decks shall be as specified in the Structure Rehabilitation Manual for a *First Time Survey*. Additional concrete cores and sawn samples may be required based on the area of High Corrosion Potential concrete found during the corrosion potential survey, which shall be determined in the field.

3. The minimum number and location of concrete cores for elements other than bridge decks shall be as follows:
    - Abutments: # from each
    - Wingwalls: # from each
    - Culvert Soffit: #
    - Culvert Walls: # from each
    - The above are examples only; modify elements and number of cores as required.
4. All cores shall be 100 mm diameter. Testing of cores for elements other than bridge decks shall be as follows:
    - Compressive Strength: # from abutments, # from wingwalls, etc.…
    - Chloride content: # from abutments, # from wingwalls, etc.…
    - Air entrainment: # from abutments, # from wingwalls, etc.…
    - The above are examples only; modify elements and number of cores for each test as required.
5. A minimum of *3* samples of reinforcing steel shall be extracted and tested for yield and ultimate tensile strengths from each of the following locations:
    - **[NTD: List the locations which the minimum number of rebar samples are to be extracted and tested. Delete this requirement if necessary.]**
6. A minimum of *3* samples of structural steel shall be extracted and tested for yield and ultimate tensile strengths from each of the following locations:
    - **[NTD: List the locations which the minimum number of structural steel samples are to be extracted and tested. Delete this requirement if necessary.]**
7. The Service Provider shall include the following as part of the Detailed Condition Survey:
    - Surface Deterioration Survey of the wearing surface
    - Delamination and Surface Deterioration Survey of all exposed concrete surfaces
    - Concrete Cover Survey of the interior face of the barrier wall, curbs, sidewalks, and at all asphalt sawn samples
    - Corrosion Potential Survey of the following elements:
        - Element 1
        - Element 2
        - Etc.…
    - Expansion Joint Survey

- Concrete coring and testing of the deck, abutments, wingwalls, and other elements as listed.
- Sawn asphalt samples
- Detailed visual inspection of entire structure, and
- Digital photographs of all components surveyed
    - A Surface Deterioration Survey shall include an up-close visual inspection, measurement, and recording of observed visual defects.
    - A Delamination Survey shall include hammer sounding, measurement, and recording of associated defects.
    - Surfaces shall include, but are not limited to barrier walls, wingwalls, abutments, piers, pier caps, footings, soffit, fascia, girders, and expansion joint end dams.
    - Modified procedure for epoxy coated reinforcing steel where present, in accordance with the Structure Rehabilitation Manual.

8. The Service provider shall be responsible for providing adequate access equipment to perform the detailed condition surveys as required.

9. Traffic control for all condition survey activities shall be in accordance with the Ontario Traffic Manual Book 7 and shall be the sole responsibility of the Service Provider.

The technical services above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**
    - List additional site-specific requirements here

7.2.2.2.4 Structural Steel Fatigue Inspection & Analysis [NTD: Delete the content of this section if not applicable and insert N/A to next to the heading. DO NOT DELETE the heading]

1. The Service Provider shall conduct a structural steel fatigue inspection for the structures listed at the end of this subsection.

2. The Service Provider shall identify all fracture critical members, fatigue prone details and fatigue prone connections based on original drawings (if available), site inspection, and field measurements as required.

3. The Service Provider shall develop a Visual Inspection and Non-destructive Testing (NDT) Plan, which shall be submitted for information a minimum of one week prior to starting the work. The Visual Inspection and Non-Destructive Testing Plan shall include at a minimum:
    a. The general procedure the inspector will follow during inspections
    b. Types of details that will be identified for inspection under the categories of fracture critical members, fatigue prone details and fatigue prone connections
    c. Specific locations, including any damaged areas and areas of significant corrosion that the engineer/inspector will inspect during the visual inspection

d. Locations where NDT is required
e. Type of NDT required
f. Proposed inspection schedule.

4. The Service provider shall be responsible for providing adequate access equipment to perform the Structural Steel Fatigue Inspections as required.

5. The Service Provider shall prepare a traffic control plan for each structure in accordance with the Ontario Traffic Manual Book 7. All traffic control measures shall be the sole responsibility of the Service Provider.

6. Visual inspection and NDT testing requirements shall be as follows:
   a. Visual inspection of any damaged areas, areas of significant corrosion and all category D and above (i.e. D, E, E1, ...) details, including fracture critical members, fatigue prone details and fatigue prone connections. The Visual Inspector shall be certified by CWB for inspection of welds in accordance with CSA W178.2, Certification of Welding Inspectors. Certification shall be to either CWB level 2 or CWB level 3
   b. Survey areas of significant corrosion to determine the thickness (section loss) of the steel member. Measurements are required in all areas of significant corrosion as required to quantify the locations and extent of section loss (minimum of 5 ultrasonic measurements of the steel thickness required on each surface, at each test location).
   c. Damaged areas and all suspicious details shall be tested by NDT.
   d. 15% of inspected details to be tested by Magnetic Particle (MP Test) NDT. Ultrasonic NDT shall be used to detect subsurface cracking and other defects where appropriate (e.g. pins, riveted connections, questionable welds, and weld repairs). At least 20% of details susceptible to distortion induced fatigue (internal cross bracing member connection plates not connected to girder flanges) shall be tested by MP test. Bridges that have previously experienced distortion induced fatigue; box girder bridges; and bridges with staggered cross frames and a skew greater than 20 degrees shall have 50% of connection details tested by MP test. (i.e., NDT is required on alternate cross bracing members).
   e. Any welded plate girders with stiffeners that are not welded or bolted to the tension flange and have a diaphragm connected are critical and must be inspected for fatigue cracks.
   f. Hair line cracks detected by either visual inspection or MP Test shall be traced to their extent using a Liquid Dye Penetration Test.
   g. Liquid Dye Penetration Tests shall be performed where required to determine the location of the fatigue crack tips.
   h. Non-destructive tests shall be performed by an inspector certified under CAN/CGSB48.9712, Non-destructive Testing – Qualification and Certification of NDT Personnel, to either CGSB level 2 or CGSB level 3 for the method used, under the supervision of the engineer.

7. Area Structural Section is to be advised immediately of any significant fatigue related defects identified on the structures being inspected and be given access to the site within 48 hours.

8. Minimum of one photograph is required for every inspected Category E and more severe detail. Photographs showing the extent of damaged areas, areas of a significant corrosion and other noted defects are required. The photographs shall be dated, and location clearly identified.

9. The Service Provider shall analyse the remaining fatigue life of each bridge inspected in accordance with the CHBDC. The engineer shall verify that the remaining fatigue life is realistically represented by the evaluation results. The Service provider shall obtain traffic volume data for the bridges from the area Traffic Section.

The technical services above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**
  - List additional site-specific requirements here

7.2.2.2.5 Structural Evaluation [NTD: Delete the content of this section if not applicable and insert N/A to next to the heading. DO NOT DELETE the heading]

1. The Service Provider shall perform a structural evaluation in accordance with the CHBDC (CSA-S6).

2. The evaluation shall identify the current load carrying capacity of the bridge, as well as the capacity under rehabilitated conditions if necessary.

3. The evaluation shall support the proposed scope of rehabilitation to confirm feasibility if necessary, including the effects of any increased loads on the structure and foundations and consider the current observed condition of the structure.
   a. The evaluation shall consider load effects due to any load changes as a result of bridge rehabilitation, as well as changes to traffic and construction staging as required.

4. The analysis shall identify any structurally deficient members and provide feasible options to bring them up to adequate capacity.

5. The method of analysis shall be in accordance with the requirements of the CHBDC. The Simplified Method of Analysis shall be used for bridges which meets the conditions for use. An Approved Refined Method of Analysis shall be performed for bridges not meeting the requirements of the Simplified Method of Analysis.

The technical services above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**

- List additional site-specific requirements here

7.2.2.2.6 Additional Technical Services Required [NTD: Delete this section if not applicable]

1. List the requirements of any additional technical services required here (i.e. cultural heritage, underwater inspections, etc.). Duplicate this section for each additional technical service required.

The technical services above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**
  - List additional site-specific requirements here

7.2.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[NTD: Insert tasks if known]

7.2.3 Deliverables

7.2.3.1 General

1. A digital copy of all drawings in AutoCAD DWG format at the time of the final submission.
2. A detailed breakdown of quantity calculations for all items, including a copy of any marked-up drawings showing any areas used in the calculations, in the final submissions.
   a. The computation of all quantities shall clearly show all assumptions, calculations, conversions used, etc.
   b. A detailed cost breakdown for all Lump Sum items shall also be provided.
3. Submission of one (1) digital copy of each draft and final deliverable.

The deliverables above apply to the following sites, along with additional site-specific requirements as listed below:

- **ALL SITES**
  - No additional requirements

7.2.3.2 Structural Design Calculations

1. The Service Provider shall submit a copy of all final structural design calculations performed that are relative to the design for information purposes only.
2. The calculations should be provided in a report format, including a title page and an executive summary of the design methodology preceding the calculations. The executive

summary shall clearly indicate any commercial or proprietary software used, including version number.

3. A copy of the input data and a sketch or screenshot of the computer model shall be included.

4. Only one final submission of the structural design calculations is necessary. The calculations shall be stamped by the designer as well as the checker.

The deliverables above apply to the following sites, along with additional site-specific requirements as listed below:

- **ALL SITES**
  - No additional requirements

7.2.3.3 Structural Design Report

1. The Service Provider shall provide a Structural Design Report (SDR) for each bridge being newly constructed or rehabilitated.

2. The SDRs shall follow the Structural Planning Guidelines and have the Group WP, Sub-WP, Site Number, and date on the title page.

3. The SDRs shall include, but are not limited to, discussions on the following:
   a. Existing conditions
   b. Proposed work
   c. Alignments and cross-sections
   d. Evaluation and ranking of feasible alternatives (including results of Life Cycle Cost Analysis) **[NTD: Keep bullet #6 below and insert LCCA requirements if LCCA is required.]**
   e. Traffic data and management during construction (including detour staging or detour structure)
   f. Environmental concerns and proposed mitigation measures
   g. Temporary water management measures during construction
   h. Construction limitations, constructability and other issues (utilities, property, etc.)
   i. Estimated working days and construction costs to do the work

4. The Service Provider shall include a Preliminary General Arrangement drawing for the structures and detour structures (if applicable) in each SDR.

5. The Service Provider shall summarize and document the findings of the structural evaluation, condition survey(s), inspections, investigations, and all other pertinent findings in the SDR.

6. [**NTD: Delete if not applicable** A Life Cycle Cost Analysis shall be performed for all feasible options considered. The Service provider shall present the results of this analysis to the Ministry for review, discussion and a decision on the preferred option.

a. A minimum of three feasible and realistic rehabilitation/replacement options shall be considered in the analysis. The proposed options shall be submitted to the Ministry for review and comment prior to performing the analysis.
b. A sensitivity analysis shall be carried out by varying the discount rate in the analysis. The rates to be used for this purpose shall be 4%, 5%, and 6%.
c. A 50-year time period shall be used for calculating residual values when required, or as directed by the area structural section.**]**

[NTD: Insert LCCA requirements]

[NTD: Insert the following if necessary:

The Service Provider shall consider the following alternatives as a minimum:

- **Structure Name, Site No.**
  - List minimum alternatives to be considered here

The deliverables above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**
  - List additional site-specific requirements here**]**

7.2.3.4 Detailed Bridge Condition Survey Report [NTD: Delete the content of this section if not applicable and insert N/A to next to the heading. DO NOT DELETE the heading]

1. The Service Provider shall document the findings of the detailed bridge condition survey and testing in a Condition Survey Report.
2. The content and format of the Condition Survey Report shall be in accordance with the latest version of the MTO Structure Rehabilitation Manual.

The deliverables above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**
  - List additional site-specific requirements here

7.2.3.5 Structural Steel Inspection and Fatigue Analysis Report [NTD: Delete the content of this section if not applicable and insert N/A to next to the heading. DO NOT DELETE the heading]

The Service Provider shall prepare a Structural Steel Inspection and Fatigue Analysis Report" for each inspected structure, which shall include, but is not limited to:

1. Cover page (should include: an elevation view photo of the bridge, bridge description, site number, GWP, and Area)

2. Table of contents
3. Executive Summary
4. Site Summary Sheet containing site number, structure name, year constructed, highway number, date of inspection, report reference, summary of significant findings and remaining fatigue life of the bridge
5. Key Plan
6. Introduction
7. Inspection Methodology
8. Summary of the visual inspection and NDT plan
9. Inspection photographs
10. Bridge drawings showing the location of areas inspected and location of defects
11. Interpretation of NDT results
12. Summary of significant findings/summary of the visual inspection and NDT plan
13. Fatigue analysis of structure - description of details identified for structural analysis under the categories of fracture critical members, fatigue prone details and fatigue prone connections
14. General description of structural analysis procedure followed
15. Description of computer software used for the structural fatigue analysis
16. Maximum and minimum stress ranges of fatigue prone details
17. Remaining fatigue life of the bridges
18. Proposed corrective measures and recommendations for repairs as needed, including cost estimates.
19. Summary of recommended actions:
    a. Immediate to 1-year needs
    b. 1-to-3-year needs
    c. 3-to-5-year needs
    d. Other needs
20. Fatigue inspection needs
21. Appendices (drawings, photographs, final inspection form, non-destructive testing attestation, remaining fatigue life calculations, fatigue retrofit cost estimates)

The deliverables above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**
  - List additional site-specific requirements here

7.2.3.6 Structural Evaluation Report [NTD: Delete the content of this section if not applicable and insert N/A to next to the heading. DO NOT DELETE the heading]

1. The Service Provider shall document the findings of the structural evaluation in a Structural Evaluation Report.
2. The reports shall include the following at minimum:
    a. Level of inspection performed

b. A summary of the observed overall condition of the bridge, as well as the specific condition of critical elements
c. A description of the evaluation procedure, including:
    i. Summary of material properties used
    ii. Description and rationale of the structural analysis methodology used
    iii. A note on which commercial or proprietary software was used to perform the analysis
d. A summary and discussion of the significant findings of the evaluation
e. Any assumptions made and deviations from standard practices
f. Overall recommendations, including if load posting is required as a result of the evaluation and the associated load posting value(s) if necessary.
g. Site photographs as an appendix
h. All calculation notes supporting the evaluation findings as an appendix

The deliverables above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**
    - List additional site-specific requirements here

7.2.3.7 Additional Technical Services Required **[NTD: Delete this section if not applicable**

1. List the deliverable requirement for any additional technical services required here if needed.**]**

7.2.4 Reference Documents

- Latest OSIM inspection report, dated [**insert date**]
- Previous OSIM inspection reports (upon request after award of assignment, and if available)
- Original design drawings (Contract **xxxx-xxxx**), dated [insert date] (if available)
- Rehabilitation design drawings (Contract **xxxx-xxxx**), dated [insert date] (if available and/or applicable)
- **[NTD: List any other relevant reference documents to be made available to bidders here.]**

7.3 Drainage and Hydrology Engineering

7.3.1 Project Scope

The Service Provider shall be responsible for completing drainage and hydrology engineering services for the **[**insert Project Title**]**. The scope includes review and assessment of existing drainage infrastructure, hydrologic and hydraulic analysis of storm sewer systems, and

watercourse crossings, bridge structures, stormwater management facilities, and the development of drainage and stormwater management design to support the proposed highway and interchange improvements and associated infrastructure.

The Service Provider shall prepare Drainage and Hydrology Report(s), Stormwater Management Report(s), Culvert Inspection/Assessment Report(s), other drainage-related technical documentation **[NTD: Modify the list of documents]** as required for the assignment. The number and organization of reports shall be based on the project scope, complexity, and amount of supporting information. Where appropriate, separate reports may be prepared for non-structural culvert locations, structural culvert locations and bridge structures over waterways. Drainage assessments for non-structural culverts, storm sewer systems, roadway drainage systems, ditches/swales, stormwater management facilities, other highway drainage components may be combined into a single comprehensive drainage inspection report, provided that each drainage component is clearly identified, assessed, and documented.

The Service Provider shall also be responsible for identifying drainage deficiencies, confirming compliance with MTO Highway Drainage Design Standards, Conservation Authority requirements, and applicable environmental policies, and developing recommended rehabilitation, replacement, or mitigation measures as required.

Details regarding the proposed highway works, drainage features, watercourse crossings, and study area limits are provided elsewhere in this document.

7.3.2 Technical Services Required

7.3.2.1 Staff to be provided

Drainage and Hydrology Engineering services shall be carried out by a qualified project team consisting of a Senior Drainage Engineer and a Drainage Engineer, meeting the mandatory qualification requirements outlined in Table 1: Mandatory Qualification Requirements for Key Individuals found in Section 1.5.1 of this document.

The Service Provider shall have experience in analyzing and designing MTO highway drainage systems. The Service Provider must be able to undertake the analysis and detail design completely, using modern methods, with attention to MTO requirements, riparian rights, and upstream and downstream impacts. The Service Provider must have experience in obtaining external agency approvals related to drainage.

[NTD: Include a job title and a description of staffing expectations (e.g. experience, technical expertise) for scoring in phase I (EOI). Any staffing requirement(s) that would result in disqualification of the proposal if not part of the proponent's submission must also be included in Table 1 Section 1.5.1. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 1.]

Additional staffing requirements are listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* found in Section 1.5.3.

The additional technical staff for this assignment shall include the following:

- Drainage Designer
- CAD Technician
- **[NTD: Modify the list of project-specific drainage support staff]**

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

Drainage Lead

- Meet the requirements of a Senior Drainage Engineer
- Demonstrate, in their capacity as the design Professional Engineer, that they have signed and sealed design documents for preliminary and detailed hydraulic design of bridges, stream realignment works, preliminary design of stormwater quantity and quality control facilities, and floodplain mapping and flood control projects (where applicable)
- Demonstrate experience in undertaking drainage and hydraulic assessments using appropriate engineering methods, with due consideration for riparian rights and upstream and downstream impacts, and
- Experience completing work in accordance with applicable Ministry of the Environment, Conservation and Parks (MECP) requirements, including determining the need for Environmental Activity and Sector Registry (EASR) registration and/or environmental permits and approvals, where applicable.

Senior Drainage Engineer

- Shall have a minimum of five (5) years of drainage design experience (as a P. Eng.) on projects of low or medium scope and size with MTO, municipalities or other similar jurisdictions.

OR

- Have successfully been a Drainage Engineer on a minimum of three (3) or more low or medium complexity projects for MTO, municipalities or other similar jurisdictions (at a minimum two (2) of those three (3) shall be MTO projects).

AND

- Demonstrate that they have signed and sealed the design documents in their capacity as a professional engineer for the following projects:
    - Preliminary design of stormwater quantity/quality control (if applicable on the project)
    - Flood plain mapping and flood control (if applicable on the project).

Drainage Engineer

- Shall have a minimum of five (5) years of drainage design experience on projects of low or medium scope and size with MTO, municipalities or other similar jurisdictions.

The additional technical staff for this assignment shall include the following:

- Drainage Designers
- Drainage Field Technicians
- CAD Technicians

The proposed additional technical staff shall have demonstrated experience in the design and preparation of highway drainage works, including drainage and hydraulic analyses, stormwater

management, culvert and bridge hydraulic design, preparation of engineering drawings, and the use of applicable drainage analysis and CAD software required to complete the assignment.

7.3.2.2 Project Specific Requirements via Lump Sum Price

7.3.2.2.1 General

The detailed design shall include drainage and stormwater management works associated with highway, interchange improvements, watercourse crossings and associated infrastructure within the project limits. Evaluation, analysis, and design shall be undertaken to ensure that MTO drainage objectives and current Ministry standards are achieved for the proposed works.

The Service Provider shall undertake all hydrologic and hydraulic analyses using methods acceptable to the Ministry. Analyses shall be obtained or carried out for all watercourse crossings, external drainage areas contributing flows to the highway corridor, and highway drainage areas contributing runoff to drainage infrastructure within and downstream of the study limits. The Service Provider shall obtain, validate, and verify the most current hydrologic information available from Conservation Authorities and municipalities prior to undertaking hydraulic assessments.

1. The Service Provider shall complete all drainage design work in accordance with the latest version of the following documents:
    a. MTO Drainage Management Manual
    b. MTO Drainage Design Standards
    c. MTO Gravity Pipe Design Guidelines
    d. MTO IDF Curve Lookup online application
    e. MTO Culvert Inspection Guide
    f. Provincial Engineering Memoranda:
        - Implementing the New Unified Ontario Flood Method
        - Implementation of the Ministry's Climate Change Consideration in the Design of Highway Drainage Infrastructure Policy
        - Implementing new Gravity Pipe Trenchless Technologies Design Guides and Gravity Pipe Design Approvals
    g. All other applicable reports, manuals, directives, guidelines, standards, and relevant publications.

2. Any exceptions to any applicable MTO manual, report, memo, or guideline shall be clearly justified, documented, and approved as appropriate.

3. Applicable design software used in design shall be as reviewed and documented in the MTO Evaluation of Drainage Management Software online manual. The use of any other software not reviewed by MTO shall be clearly justified and documented.

The technical services above apply to the following sites, along with additional site-specific requirements as listed below:

- **ALL SITES**
    - No additional requirements.

7.3.2.2.2 Detail Design

Documentation of background information: Provide a detailed review of all relevant past drainage designs and studies for the specific portion of the roadway defined under Highway

Engineering and adjacent lands including municipal developments and local roads. The Service Provider would be responsible for abstracting and incorporating all pertinent drainage design information following a detailed review for completeness and accuracy, making all modifications and corrections that may be required. Completion of site investigation to document existing drainage conditions, production of drainage mosaics for watercourse crossings and roadway, and identification of drainage requirements to support proposed design.

Hydrologic analysis: [NTD: Include only if applicable for culvert replacement/ rehabilitation] Obtain the latest approved hydrologic data and models from the applicable Conservation Authorities and municipalities for all watercourse crossings within the project limits. Where suitable hydrologic information is not available, the Service Provider shall undertake the required hydrologic analyses using methods acceptable to the Ministry and regulatory agencies. Current MTO IDF curves, including consideration of climate change impacts, shall be used. Drainage infrastructure shall be designed to function adequately for the intended design service life of the highway facilities.

Hydraulic design of Watercourse Crossings: [NTD: Include only if applicable for culvert replacement/ rehabilitation] Ensure the detail design of all drainage elements has been undertaken using modern methods and conforms to current MTO standards. Provide detail design for all watercourse crossings within the study area. Provide protection measures for the scour of foundation of watercourse crossings and embankment erosion. The proposed drainage system should also take into consideration all liability issues that may exist or created, upstream or downstream of the highway.

Hydraulic design of Road Drainage System: [NTD: Include only if applicable for roadway drainage, storm sewer network, highway expansion] Undertake the analysis and design of the roadway drainage system in accordance with current MTO standards, manuals, and best practices. The scope shall include the evaluation and detailed design of storm sewer systems, catch basins, manholes, outlet structures, ditches, and associated drainage appurtenances within the study area. Complete roadway spread analysis to confirm compliance with MTO criteria for applicable design storm events under both existing and proposed conditions. Review and assess the impacts of the proposed works on existing drainage infrastructure and identify required modifications to maintain or improve system performance.

[NTD: Include only if applicable for relocation or installation of HMP/ ATMS] Any proposed modifications, relocations, or new installations associated with High Mast Poles (HMP), Advanced Traffic Management Systems (ATMS), or other highway infrastructure shall be evaluated for potential drainage impacts and shall require additional hydraulic analysis to ensure adequate drainage performance and protection of highway assets. The roadway drainage design shall also consider and address any potential drainage-related liability issues that may exist or be created upstream or downstream of the highway right-of-way.

Stormwater Management for MTO Facilities: [NTD: Include only if applicable for Commuter Parking Lots, Commercial Vehicle Inspection Facilities, Maintenance Patrol Yards, or other MTO facilities] Undertake stormwater management analysis and design for Commuter Parking Lots, Commercial Vehicle Inspection Facilities, Maintenance Patrol Yards and other MTO facilities [delete or add facility name as applicable] within the study area, as applicable. The analysis shall include assessment of stormwater quantity control, quality control, erosion control, grading, surface ponding, overland flow routes, storm sewer capacity, outlet capacity, and impacts to downstream drainage systems. The Service Provider shall complete stormwater management analysis under existing and proposed conditions and demonstrate that post-development flows

are controlled to pre-development levels for the applicable design storm events, unless otherwise approved by MTO. The design shall identify and assess any required stormwater management measures, including but not limited to oil/grit separators, stormwater management ponds, underground storage systems, enhanced swales, infiltration facilities, or other approved treatment and control measures, where applicable. The analysis shall also confirm that the proposed works do not create adverse drainage impacts to MTO infrastructure, adjacent properties, receiving watercourses, or upstream/downstream drainage systems.

Temporary Flow passage system: [NTD: Include only if applicable for dewatering or temporary flow passage] Prepare a Water Management Plan to maintain flow conveyance during the rehabilitation and/or replacement of culverts. Review and verify available hydrologic and hydraulic flow data and develop a workable, constructible conceptual design for temporary flow passage systems and associated dewatering measures for each culvert within the study area. The design shall consider construction staging, constructability, environmental protection, and the prevention of adverse upstream or downstream impacts. A completed SP 517F01 – Temporary Flow Passage special provision shall be prepared and included in the Tender Documents, with all required information filled in as applicable.

Inspection of crossing: [NTD: Include only if applicable for culvert inspection] Detailed inspection of all watercourse crossings shall be completed. Culvert inspection report shall be prepared using Culvert Inspection Guide (2022) and Culvert Rating Index calculated and recommendation provided for any rehabilitation or replacement.

Drainage Infrastructure Information Management System (DIIMS) Update: [NTD: Include only if applicable for culvert inspection] Based on inspection of Non-Structural culverts, the Service Provider shall update Excel files for Drainage Infrastructure Information Management System (DIIMS) database which shall be imported to DIIMS by MTO. Excel file shall be provided upon request by the Service Provider.

- **CCTV inspection: [NTD: Include only if applicable]** Complete CCTV inspection and provide recommendations of storm sewers that are being impacted by proposed works. CCTV of only those storm sewers shall be completed which are proposed to be retained.

- **Stormwater Management: [NTD: Include only if applicable]** Stormwater management should be provided for all new impervious areas for water quantity and quality control.

- **Preparation of contract documents:** This shall include refinement and completion of the detail design and preparation of contract documents with details necessary for tendering and construction of the drainage infrastructure, including plans, profiles and typical cross sections at an appropriate scale.

    1. The Service Provider shall perform the detail drainage design as follows:
       For Water Crossings:
        a. Identification and evaluation of all selected options. In the case of pipe culvert options, pipe material and size options shall be identified with future considerations and the range of feasible sizes documented in accordance with the Gravity Pipe Design Guidelines

        b. Existing structures shall be evaluated for the need to reline or replace. Lining with close fit liner and grout liner options shall be investigated and the feasible options identified.

For Highway Drainage System:

a. Layout and design of the roadside ditches, storm sewers, other minor flow channels, pump stations and any other ancillary flow elements to convey the highway runoff to a sufficient outlet. For pipe sewers, pipe material and size options shall be identified, and the range of feasible sizes documented in accordance with the Gravity Pipe Design Guidelines.

b. Accommodation of major overland flow requirements on the road surface and other major flow paths

c. Layout and design of culvert opening, erosion protection and associated structures that are part of the surface drainage system

d. Identification of the location of the outlet and preliminary design of outfall, connections to outlets and outfall protection

e. layout and design of stormwater management control facilities

2. The Service Provider shall prepare drainage design related contract package material, including all drawings, specifications, special provisions and non-standard special provisions, necessary to supplement the specifications of the Ministry. This material shall be included in the overall contract package submitted to the MTO. The latest version of all Ministry specifications and standard drawings shall be used for all final drawings at the time of submission.

3. Any deviations from standard design practices shall be clearly noted in the drainage design report.

4. Corrections and revisions to the Drawings and Documents, as is typical for assignments of this nature, resulting from Ministry reviews shall be made by the Service Provider at no additional cost to the Ministry prior to the submission of final documents.

5. The Service Provider shall coordinate with all relevant MTO functional offices as required to support the design.

6. The Service Provider shall liaise with local Conservation Authorities, Municipalities, Counties, Townships, other provincial Ministries, and all other stakeholders as required to support the design.

7. The Drainage Engineer responsible for the design shall visit the site(s) to review and familiarize themselves with the site conditions, lead the field investigation and identify any potential conflicts with the proposed work.

8. The Service Provider shall provide field and desktop investigative services to confirm topographical and stream catchment features, stream flow and rainfall data, local conditions upstream and downstream including the stream channel and floodplain, local roadside ditches, embankments and road surface at each site and shall incorporate this information into the design for each structure.

9. The Service Provider shall provide investigative services to locate and confirm the location of any/all upstream and downstream in-stream structures, utilities and other structures that

can interfere with the work, for each site. The impact of these structures shall be considered in the hydrologic and hydraulic analysis for the design options selected

10. The Service Provider shall consider and include any necessary design provisions under the Canadian Navigable Waters Act.

11. The Service Provider shall respond to all requests for clarifications, change proposals, and submissions related to drainage work during construction when necessary. The Service Provider shall correct any errors or omissions in the design by issuing sketches and/or revisions to the drawings, specifications or other components of the package in a timely manner.

The technical services above apply to the following sites, along with additional site-specific requirements as listed below:

- **Structure Name, Site No.**
  - [**NTD:** List additional site-specific requirements here]

7.3.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[**NTD: Insert tasks if known**:
- Culvert Inspection
- Non-structural Culvert
- Structural Culvert
- Storm sewer
- Stormwater Management Pond
- Creek Re-Alignment
- Quantity and Quality Control (SWM)
- Ditch Grading
- Dewatering/Temporary Flow Passage]

7.3.3 Deliverables

7.3.3.1 General

1. Provide a Culvert Inspection Report to MTO for approval at the Stage 1. **[NTD: Include only if applicable for culvert inspection]**

2. Prepare and submit a draft Hydrology and Drainage Report for the detailed design to MTO for review and approval at the Stage 2. Address all MTO comments and prepare a final Hydrology and Drainage Report for submission at the completion of detailed design. **[NTD: Include only if applicable for roadway drainage, storm sewer network, highway expansion]**

3. At a minimum, one (1) Hydrology and Drainage Report shall be prepared and submitted for each contract, unless otherwise directed by MTO. The report shall cover all applicable drainage-related scope items within the respective contract limits.

4. A digital copy of all drawings in AutoCAD DWG and PDF formats at the time of the final submission.

5. A digital copy of all drawings in AutoCAD DWG and PDF formats at the time of the final submission.

6. Submission of one (1) digital copy of each draft and final deliverable.

7. Quantity sheets for the final design option being adopted.

The deliverables above apply to the following sites, along with additional site-specific requirements as listed below:

- **ALL SITES**
  - No additional requirements

7.3.3.2 Hydrology and Drainage Reports

Draft and final reports shall be submitted to MTO for review in accordance with the reporting submission requirements identified for the assignment. Reports may be submitted individually or grouped by contract, location, structural type, drainage system, or other project-specific category **[NTD: Modify the requirements as needs]**, as appropriate for the scope of work. The expected number of report(s) per **[NTD: Select one of the following:** contract/location/structure/culvert group/drainage component**]** shall be **[insert number]**. Draft report submissions shall be made **[NTD: Select one of the following:** monthly/bi-weekly/upon completion of a minimum of three draft reports/other**]**, unless otherwise directed by MTO. Final reports shall address MTO review comments and be submitted following acceptance of the draft report(s).
For Water Crossings: **[NTD: Include as applicable]**

1. The Service Provider shall provide a Hydrology and Drainage Report for the detail design of each bridge, culvert or a set of culverts.

2. The Report shall include, but are not limited to, discussions on the following:
   a. Existing conditions
   b. Summary of field investigation, desktop data collected and geotechnical data relevant to the drainage and hydrology design
   c. A summary of all the applicable design standards and identification of the design service life for each structure
   d. Hydrology analysis with climate change considerations
   e. Stream and structure alignments; stream cross-sections upstream and downstream; MTO right-of-way boundaries
   f. Proposed work
   g. Hydraulic analysis and evaluation of the different alternatives including liner and replacement options with future considerations for culverts, bridge spans and openings, piers, abutments and footing configuration.
   h. Proposed watercourse modification, if required and provide the hydraulic analysis to support the proposed works.
   i. A summary of computer model results used in hydrologic and/or hydraulic design
   j. Bank erosion analysis and mitigation design.
   k. Scour analysis and design of protection measures at bridge footing and abutments; culvert inlet and outlet.
   l. Fisheries concerns, analysis and mitigation measures required.

m. Construction limitations, constructability and other relevant issues (utilities, property, etc.)
n. Estimated working days and construction costs to do the work

3. The Report shall include the following drawings (*Include as applicable*):
   a. detail bridge opening layout and bridge deck drainage requirements
   b. detail culvert opening layout
   c. detail watercourse modification layout
   d. detail erosion and scour protection requirements
4. The Report shall incorporate all recommendations from the geotechnical reports.

5. The Service Provider shall summarize and document the findings of all inspections, investigations, evaluations and all other pertinent findings.

6. A decision-making matrix shall be prepared for all options considered. The matrix shall be numerically based with varying weights for the factors involved.

7. Appendices shall be included containing a summary of the alternatives considered, hydrology and hydraulic analysis and supporting data.

For Highway Drainage System: **[NTD: Include as applicable]**

1. The Service Provider shall provide a Hydrology and Drainage Report for the design of each surface drainage system network and associated stormwater management components.

2. The Report shall include, but are not limited to the following:
   a. Existing conditions
   b. Summary of field investigation, desktop data collected and geotechnical data relevant to the drainage and hydrology design
   c. Summary of all the applicable design standards and identification of the design service life for each pipe run, associated structures and stormwater management facility
   d. Pipe network layout with locations of all outlets and associated structures and connections; MTO right-of-way boundaries
   e. Hydrologic and hydraulic analysis of the different possible alternatives, including liner and replacement options for all pipes, structures and stormwater management facilities used.

3. The Report shall include the following drawings: **[NTD: Include as applicable]**
   a. Accommodation of major overland flow requirements
   b. Ditch and channel layout
   c. Culvert opening layout
   d. Storm sewer layout
   e. Outfall protection requirements
   f. Storm water management control facility layout
4. The Report shall include a summary of the results on the following:
   a. Erosion analysis and control measures at all outlets
   b. Computer modelling used in the hydrologic and/or hydraulic design
   c. Construction limitations, constructability and other relevant issues (utilities, property, etc.)

5. The Report shall incorporate all recommendations from the geotechnical reports.

6. A decision-making matrix shall be prepared for all options considered. The matrix shall be numerically based with varying weights for the factors involved.

7. Appendices shall be included containing a summary of the alternatives considered, hydrology and hydraulic analysis and supporting data.

7.3.4 Reference Documents

- Drainage Mosaics/aerial photographs, land use, topographic, and soil maps
- Soil and water pH and Resistivity maps and data
- Any field inspection report, dated **[NTD: insert date]** (if available)
- Previous Drainage Report, dated **[NTD: insert date]** (if available)
- Environmental Assessment Study Reports **[NTD: insert date]**
- Previous watershed or sub-watershed Reports, dated **[NTD: insert date]** (if available)
- Original design drawings (Contract xxxx-xxxx), dated **[NTD: insert date]** (if available)
- Hydrologic and hydraulic computer models developed by others and used as basis for the design
- MTO Drainage Manual
- MTO Drainage Directives
- MTO Gravity Pipe Design Guidelines
- MTO Highway Drainage Design Standards
- MTO IDF look up curves
- The MTO Culvert Inspection Guide
- **[NTD: List any other relevant reference documents to be made available to bidders here.]**

7.4 Electrical Engineering - N/A

7.4.1 Project Scope

This project includes electrical detail design within the project limits. Electrical design work includes full and partial lighting for highways, municipal roads, bridges, commuter parking lots, truck inspection services, service centres, patrol yards, roundabouts, etc.; traffic signals; counting stations; electrical vehicle charging stations; electrical embedded work in structures/underpass lighting; electrical removals; and all associated electrical work. **[NTD: Select project-specific information]**

7.4.2 Technical Services Required

7.4.2.1 Staff to be provided

Requirements for staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for technical staff that will be reviewed for compliance in phase III.

Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

Major Electrical Work - High Complexity

Senior Electrical Engineer/ Senior Project Manager:

- Shall have a minimum ten (10) years of relevant electrical engineering experience (as a P. Eng. with PEO). This experience shall include at least 1 MTO project.
- Shall have demonstrated successful experience on a minimum of three (3) electrical engineering projects that were completed within the last ten (10) years. These projects shall include a minimum of:
  - One (1) roadway lighting design project
  - One (1) traffic signal design project

Electrical Engineer:

- Shall work under the supervision of the Senior Electrical Engineer/Senior Electrical Project Manager.
- Shall have a minimum three (3) years of electrical engineering experience (as a P. Eng. with PEO).
- Shall have demonstrated successful experience on a minimum of three (3) electrical engineering projects that were completed within the last ten (10) years in Ontario or in other similar jurisdictions in Canada or USA.
- This experience shall include at least one (1) MTO project.

High Mast Pole Inspection:

- The Visual inspection personnel must be certified by CWB according to CSA W178.2 to a Level II or Level III
- The Non-Destructive testing technician shall be certified according to CGSB 48.9712 Level 2 or Level 3 for the method used.

Licensed Electrician:

- Qualified Electrician who has received training to operate the raising/lowering equipment in accordance with OPSS 630.

7.4.2.2 Project Specific Requirements via Lump Sum Price

7.4.2.2.1 Design Services [NTD: Select applicable information below]

- Arrange and conduct site meetings to assess site conditions, inventory existing electrical plants, investigate utility hook-ups requirements and identify conflicts. Liaise and prepare agreements with all utility agencies (Hydro, Telephone, Cable TV, Gas, and Oil) regarding relocations and to resolve / avoid electrical conflicts, to obtain utility services, and to acquire utility crossing permits.
- Arrange and conduct meetings with municipalities and private owners to explain the ministry's intent, solicit comments and negotiate mutual agreement between the parties involved. Liaise and prepare draft agreements with local municipalities, private owners, and agencies

regarding maintenance, operation, ownership and cost sharing of municipal and private lighting, traffic signals and other electrical systems.

- Co-ordinate with the ITS section to determine and provide contract drawings showing joint-use Electrical and ITS plants, including chambers, ducts, under-pavement crossings and power supplies. All joint-use Electrical and ITS plants shall be included under the Electrical quantity sheets and tender items.
- Installation of aerial cables is not permitted for permanent electrical plants. Service Provider shall provide a minimum one (1) spare conduit for each under pavement crossing. Hand holes shall be minimum 600 x 600mm. Permanent underground cable splices are not permitted. Disruptions to existing electrical cables will require the installation of new continuous cable runs.
- The ministry's electrical project manager, electrical coordinator and traffic specialist (Traffic Signals) shall be invited to attend all meetings.
- Only external raising/lowering devices shall be used for high mast lighting poles. Service Provider shall provide a minimum of two (2) drills for each type of raising/lowering device. Service Provider shall also provide granular access for each high mast lighting pole. Modifications to high mast lighting pole footings are not permitted.
- The Service Provider's electrical key staff shall attend, all required Public Information Centres to explain and present the Ministry's intent to install high mast lighting and to identify mitigation measures regarding light trespass concerns.
- Lighting standards shall be included as part of the design criteria. Design Criteria relevant to electrical design shall be submitted as part of the Stage 2 submission. Use of luminaires not currently on the DSM Approved List but are available from approved manufacturers shall also be considered if lighting criteria cannot be achieved. Shielding and lower colour temperature luminaires shall be used along residential corridors.
- Prior to the Stage 2 Design Team meeting, arrange and conduct an electrical design presentation meeting to present the final concept of the electrical design to the ministry. Electrical design drawings complete with lighting calculation layout drawings, permanent traffic signal control cabinet power details, design criteria, electrical design draft synopsis together with the Service Provider's Electrical QC Check List shall be submitted to the Ministry a minimum of one week prior to the meeting.
- Avoid mounting MTO equipment on utility poles. If mounting MTO equipment on utility poles is required, the Service Provider shall comply with Electrical Safety Authority (ESA) Ontario Regulation 22/04 – Guideline for Third Party Attachments and obtain approval from the owner of the utility poles, prior to finalizing the electrical design.
- At least 3 weeks prior to the Stage 3 Design Team meeting, arrange and conduct a Final Electrical Design Presentation meeting to present the final electrical design to the Ministry. Electrical design packages together with design criteria, design synopsis, construction cost estimates and the Service Provider's Electrical QC Check List shall be submitted to the Ministry a minimum of one week prior to the meeting.

- Evaluation of lighting warrants and traffic signal operation design work such as PHM-125 drawing and timing plan, if required, shall be carried out according to Section 7.15 – Traffic Engineering.
- The Service Provider's electrical key staff shall attend all design team progress meetings that include electrical items on the agenda.

Prior to the Final Electrical Design Presentation meeting, the Service Provider shall develop and present a detail plan to acquire all power service requirement from local distribution company for all electrical infrastructure proposed in the contract.

Service Provider's shall undertake all coordination with power Utility Companies for all required servicing and shall provide a list of all electrical loads to the power Utility Companies, as required. The Service Provider shall coordinate preparation and submittal of service applications on behalf of the Ministry. High voltage installations are not permitted for MTO systems.

The Service Provider shall be fully responsible for the coordination, development, submission, and acquisition of all power service requirements and associated permits with the applicable electrical utility (Local Distribution Company – LDC) for all electrical infrastructure included in the Contract.

The Service Provider shall also:

- Identify all locations requiring electrical servicing, including but not limited to traffic signal controllers, traffic control cabinets, illumination systems (including high mast and conventional lighting), ITS devices, maintenance cameras, EV charging stations, traffic counting stations, and other electrical loads.
- Determine and confirm all load requirements, service configurations, metering requirements, and connection points in coordination with the electrical utility.
- Prepare all detailed electrical servicing drawings, including site layouts, single line diagrams, service entrance details, and duct routing required by the electrical utility to support service applications and approvals.
- Prepare and submit complete service application packages, including all required technical documentation, forms, load schedules, and supporting drawings in accordance with the electrical utility's requirements.
- Coordinate all reviews, revisions, and approvals with the electrical utility, and address all review comments in a timely manner.
- Obtain all required service approvals, connection agreements, and permits necessary to energize each installation.
- Coordinate the timing and sequencing of service installation and energization to align with construction staging and project schedule requirements.

The Service Provider shall ensure that power is successfully secured and available for all electrical systems identified in the Contract prior to construction completion and commissioning.

All requirements and constraints identified through the electrical utility coordination process shall be fully incorporated into the Contract Documents, including drawings, specifications, and construction sequencing.

7.4.2.2.2 Design Items [NTD: Fill in the project specifics and delete the section(s) that are not applicable]

A. Power Distribution

- Power distribution system to provide power for illumination, ITS, traffic control systems and, all other systems and components that require electrical power.
- The Service Provider shall prepare new arc flash hazard analysis. The arc flash hazard analysis shall include:
    - Arcing fault clearing times
    - Approach Boundaries
    - Flash protection boundaries
    - Working distances
    - Incident energy levels
    - Power distribution system single line diagrams
    - Short circuit study
    - Protective device coordination study
    - Personal protective equipment (PPE) requirements
    - Tools and safety equipment requirements
    - Hazard area classifications
    - Detailed arc flash hazard analysis labels
- The reports shall include risk assessment for likelihood and severity of occurrence of injury depending on the task performed and equipment condition for each electrical equipment as per Section 4 of CSA Z462. Provide recommendations for PPE requirements for specific tasks and for creation of warning labels.
- Each report shall identify the software package(s) used to perform the arc flash analysis and shall describe all of the data inputs used for the analysis and how the software was used to perform the analysis.
- The reports shall provide recommendations for system improvements to reduce arc flash hazards for incident energy levels greater than 12 cal/cm2. Recommendations for short circuit coordination/time current coordination of the systems shall also be provided. (example: breaker or fuse sizing, wire sizing,).
- Prepare final site reports documenting the arc flash analysis and recommended equipment labelling.
- Generate warnings labels to affix on all required equipment (for each power supply identified below).
- Collect information GPS coordinates, contract number, manufacturer, date of manufacture, indicate whether metered, transformer KVA rating, % transformer impedance, main breaker size, and load type for each power supply on an Excel spreadsheet.
- Arc Flash Warning Labels:
    - Determine where warning labels are required throughout the facility.
    - Generate and affix arc flash and shock hazard warning labels on all required equipment.
- PPE requirements on warning labels shall be according to the latest version of CSA Z462.

B. Illumination

- The Service Provider shall design illumination systems for highways, interchanges, intersections, municipal roads, bridges, commuter parking facilities, and associated infrastructure within the project limits.
- The illumination design shall ensure roadway safety, and operational efficiency, while minimizing environmental impacts and lifecycle costs.
- All illumination design shall be carried out in accordance with the latest editions of the following, unless otherwise specified:
    - MTO Electrical Engineering Manual (EEM)
    - MTO Electrical Engineering Bulletins
    - ANSI/IES RP-8 – Roadway Lighting
    - Ontario Provincial Standard Specifications (OPSS)
    - Electrical Safety Authority (ESA) requirements
    - Applicable municipal standards and specifications
- The Service Provider shall be responsible for determining the extent and type of illumination required and for ensuring that all designs are coordinated with roadway geometry, staging, utilities, municipalities, and other relevant stakeholders.
- Illumination design shall meet applicable criteria for illuminance and/or luminance levels, uniformity ratios, and glare control, while limiting light trespass and spill light in accordance with MTO and ANSI/IES requirements. The design shall consider energy efficiency and optimization of power consumption.
- All lighting calculations shall be carried out using Ministry approved computer programs. Lighting calculation layout drawings generated by the lighting program shall show roadway lighting levels, uniformities and light trespass levels. The lighting design shall accommodate more than one suppliers' luminaires. The designer shall take into consideration of ground contours/elevations and adjust grid points accordingly.
- The use of LED luminaires for all MTO high mast, conventional and underpass lighting design is required. Luminaires shall be selected from the most current MTO Accepted Photometric List. Rotatable high mast lighting fixtures shall be used for all high mast illumination design.
- Luminaire cut sheets, highlighting the specific catalog options and numbers, shall be submitted as part of the tender documents.
- The Service Provider shall remove high mast lighting luminaires and, subject to direction from the Ministry's Electrical Coordinator and available storage capacity at the Ministry's operational facility, salvage units that are in suitable working condition. Salvaged equipment shall be transported to the designated facility. The decision to salvage will be based on condition, available storage space, and anticipated future use. Reinstallation of salvaged high mast luminaires is not permitted.
- The Service Provider shall prepare and submit all required illumination designs, analyses, and documentation for review and approval, and shall coordinate with applicable authorities having jurisdiction.

Warrant Assessment:

- Conduct illumination warrant analyses for the **[NTD:** specify project limits**]** in accordance with Ministry Directive PLNG-B-05, based on current roadway configurations and forecasted traffic conditions. The warrant assessment shall include both TES and EATS (Economic Analysis Tool for Additional Collision Data) methodologies, recognizing that EATS is based on nighttime collision data and excludes daytime collisions.
- For benefit–cost analysis, utilize the latest available version of the Highway Illumination Benefit Calculator (June 2025 Excel tool) or any subsequent MTO-approved version, informed by the results of both TES and EATS illumination warrant analyses.
- Evaluate and compare all feasible roadway lighting design options and provide multiple options to MTO to determine the most effective solution for the project. This evaluation shall include, but not be limited to:
  - High mast lighting
  - Conventional roadway lighting
  - Hybrid lighting solutions
- The evaluation shall consider performance, cost effectiveness, energy efficiency, and maintenance requirements. A comparative analysis shall be prepared, supported by:
  - Photometric calculations
  - Energy consumption estimates
  - Lifecycle cost assessments
  - Integration and comparison of TES and EATS illumination warrant findings

Full Lighting:

- Provide new or retrofit highway lighting system at following locations, this includes mainline, interchanges, and underpass/overpass:
  - **[NTD:** Specify locations**]**
- Full Intersection illumination shall be designed according to IESNA RP-8 recommendations. Vertical and horizontal illuminance requirements shall be satisfied for MUP or crosswalks.

Partial Lighting:

- Provide new or retrofit partial lighting at the following locations:
  - Isolated Intersections **[NTD:** Specify locations**]**
  - Interchanges **[NTD:** Specify locations**]**

Roundabout Lighting:

- Provide new or retrofit roundabout lighting at the following locations:
  - **[NTD:** Specify locations**]**
- Warrant and design guidelines shall be according to Ministry Policy for Roundabout Lighting

Temporary Lighting:

- All existing lighting shall be maintained in operational order during performance of the Works until such time as replacement temporary or permanent lighting is energized.
- Service Provider shall review the need for temporary lighting for each construction stage and provide where required.
- Temporary illumination shall be provided for the Roads to accommodate traffic Detour Routes and Diversions in accordance with the OPSS 106 and Electrical Engineering Manual (MTO).

Municipal Lighting:

- Service Provider shall provide municipal lighting where required or warranted, including overpass and underpass structures.
  - **[NTD:** Specify locations**]**
- All municipal lighting design and construction standards shall be according to the local municipality.
- Coordinate and get endorsement on the lighting design from the municipal authority.
- Provide temporary illumination where required.

Carpool Parking Lot Lighting:

- New or retrofit lighting system at commuter lot at following locations:
  - **[NTD:** Specify locations**]**
- Illumination design shall be according to Carpool Parking Lot Lighting Policy – 2010-04

Maintenance Patrol Yard Lighting:

The Service Provider shall design, supply, and implement illumination systems and all associated electrical work for Patrol Yard as per the Maintenance Patrol Yard Design Guidelines (MPYDG)

Commercial Vehicle Inspection Facility Lighting:

- Provide new or retrofit lighting at **[NTD:** Specify locations**]** facility.
- The Service Provider shall design illumination systems and all associated electrical work for CVIF as per the Draft Commercial Vehicle Inspection Facility Design Manual.

C. Traffic Signals

MTO Permanent Traffic Signals

- New or modify traffic signals at following locations:
  - **[NTD:** Specify locations**]**
- Service Provider shall design traffic signals in accordance with Accessibility for Ontarians with Disabilities Act (AODA) and Ontario Regulation 413/12 and applicable MTO guidelines.
- Service Provider shall be responsible for liaising with all relevant municipalities and providing emergency pre-emption upon consultation with these municipalities and emergency services.
- Interconnection shall be provided only where the signal is part of an existing municipal interconnection network.
- All traffic signal poles shall be base mounted poles with underground ducts and wiring.
- All traffic signal controllers shall be equipped with uninterruptable power supplies and emergency pre-emption, based on municipal standard.
- All signal head lenses shall be 30 cm.
- Service Provider shall provide non-intrusive detection as per MTO requirements.
- Signal timing sheets shall be signed and sealed by the responsible Engineer, who shall be a Professional Engineer of the appropriate discipline.

MTO PHM-125 Legal Drawings

- Service Provider shall prepare and submit temporary PHM-125 legal drawings to Contracting Authority Representative in accordance with the Review Procedure a minimum of fifteen (15) Business Days prior to implementation of each stage of construction where physical changes occur (i.e., geometric changes, signals hardware modification, etc).
- Service Provider shall prepare and submit permanent PHM-125 legal drawings to

Contracting Authority Representative in accordance with the Review Procedure a minimum of 90 Business Days prior to implementation.
- All permanent and temporary PHM-125 drawings must be approved by Contracting Authority Representative prior to signal activation or implementation of physical changes.
- All permanent and temporary PHM-125 drawings shall identify all regulatory signs that impact operations.

MTO Temporary Traffic Signals during Construction

- All existing traffic signals shall be maintained in operational order during performance of the Works until such time as replacement temporary or permanent traffic signal is energized.
- Service Provider shall determine review the need for temporary traffic signals to facilitate construction staging and provide where required.
- Service Provider shall design and implement temporary signal timings during the Works. For temporary signal timings for traffic signals, signal timing sheets shall be submitted to the Contracting Authority Representative in accordance with the Review Procedure prior to implementation.
- All signal head lenses shall be 30 cm.
- If portable temporary traffic signals (PTTS) are being considered, the Service Provider shall provide a benefit/cost analysis and justify the use of PTTS with reference to the appropriate Ministry standards and policies. The Service Provider is advised that PTTS are only permitted for use from April to November.

Municipal Traffic Signals

- New or modify traffic signals at following locations:
  - **[NTD:** Specify locations**]**
- Service Provider shall be responsible for liaising and coordinating with all relevant municipalities with regard to all modifications that may be required at municipal traffic signals both during and after completion of the Works. Proposed modifications shall be supported by traffic engineering analysis.
- All municipal traffic signals shall be designed to municipal standards. Service Provider shall be responsible for liaising with the relevant municipality to determine appropriate design standards.
- Where municipal traffic signals are to be included in the traffic signal coordination scheme Service Provider shall define the coordination scheme, coordinate all work with the relevant municipality and keep the Contracting Authority Representative informed throughout such process.

D. Counting Stations

- Counting stations or PDCS shall be provided at the locations indicated by the area Traffic Office. Section 7.15 – Traffic Engineering
- RNITS shall be provided at the locations indicated by the area Traffic Office. Section 7. 15 – Traffic Engineering

E. High Mast Pole Inspection

- The Service Provider shall provide a visual Inspection & Non-Destructive Testing of existing high mast poles located at **[NTD:** Specify locations**]**

- Modify the pole inspection terms NSSP specific to the scope of inspection – e.g. inspect entire pole or just the pole base, raising/lowering device, etc.
- The results of the inspection and testing, including recommendations, shall be summarized in an engineering report and submitted to the Ministry.

F. Electrical Vehicle Charging Stations

- Assess feasibility for electrical vehicle charging stations for carpool parking lot
- Provide incoming hydro service to accommodate:
  - Two (2) – Level 3 (150 kW each) EV charging station and
  - Two (2) – Level 2 (7 kW each) EV charging stations
- Coordination with local hydro utility shall be conducted and electrical service layouts arranged for the location.
- Propose locations of EV charging stations and provide EV provisions (electrical chambers and conduits) to minimize disruption of the pavement

G. Maintenance Camera

- Provide maintenance cameras at following locations:
  - **[NTD:** Specify locations**]**
- Service provider shall conduct field with MTO electrical service coordinator and electrical project engineer to confirm the site conditions and determine the location of the camera(s).
- Design shall be according to maintenance camera system non-standard specification and details.

H. Electrical Embedded Work in Structures

- Electrical embedded work in structures shall be provided, where required, in all new and rehabilitated structures as per current requirements and standards.

I. Electrical Removals

- All existing electrical systems that are not required to remain in service shall be removed.

J. Temporary Electrical Work

- The need for temporary electrical work shall be reviewed and provided, as required, for all stages of construction.
- Existing lighting shall be maintained in full nighttime operation.

7.4.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[NTD: Insert a list of tasks if known]

7.4.3 Deliverables

In addition to requirements outlined elsewhere in the Agreement, the following materials shall be submitted to the Ministry after the EDIS, one (1) per contract:

Electrical Engineering Section

1. Electrical Design Synopsis, final construction cost estimates and working day estimates.
2. Illumination warrant report
3. Final calculation layout drawings generated by approved computer lighting program. The drawings shall illustrate illuminance and luminance levels, uniformities on roadway and light trespass levels at and beyond the MTO Right-of-Way.
    - One (1) set of lighting calculation layout drawings in PDF format.
    - One (1) set of lighting program files.
4. Final Electrical Contract Drawings and Documents:
    - One (1) set of 11"x17" drawings with Quantity Sheets in PDF format
    - One (1) set of electrical contract documents in PDF or WORD format
    - One (1) set of drawings in AutoCAD format (drawings with references binded)
    - PHM-125 drawings
5. Initial and final arc flash study report
    - One (1) set of arc flash study report
    - One (1) set of arc flash study report in Word format
    - One (1) set of arc flash study program files
6. High mast pole inspection report
7. Fatigue life analysis report

Electrical Operations

Final Electrical Contract Drawings and Documents:

- One (1) set of 11"x17" drawings with Quantity Sheets
- One (1) set of electrical contract documents
- One (1) set of arc flash study report in PDF format and one set of arc flash hazard warning labels

7.4.4 Reference Documents

The Service Provider shall use the latest version of the reference documents during the design.

- MTO Electrical Engineering Manual (EEM)
- MTO Electrical Engineering Bulletins
- ANSI/IES RP-8 – Roadway Lighting
- Carpool Parking Lot Lighting Policy – 2010-04

[NTD: Add additional documents as applicable, i.e. PDR, Old Contracts, etc]

7.5 Engineering Materials Investigations - N/A

7.5.1 Project Scope

This project consists of geotechnical aggregate investigation of the XX permitted aggregate

sources and sources to be permitted or approved, as listed in below table.

Site	W.P.	MAIDB #	Permitted	Zone	Northing	Easting	Remarks

7.5.2 Technical Services Required

7.5.2.1 Staff to be provided

The Service Provider shall have sufficient staff to provide the services related to Engineering Materials Investigations throughout the Design Phase of the project to the Ministry.

[NTD: Insert the following wording if dedicated staff is required for this section and add the requirement to Table 2.
Requirements for additional staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

7.5.2.2 Project Specific Requirements via Lump Sum Price

Aggregate Resources Prospecting and Evaluation

The Service Provider shall conduct geological investigations of the sites listed in Section 7.5.1 in determine the most likely prospects for finding further aggregate resources within those sources. The work shall focus on identifying prime Ministry aggregate products, including crushable samples (>35% Ret. 4.75 mm) and virgin fine aggregate (VFA gradation band available from Geotechnical Section). The site(s) to be investigated are present and former Ministry gravel and sandpits. The investigation techniques outlined below are the minimum requirements. All sampling, classification, testing field documentation and reporting shall be in accordance with approved Ministry procedures.

Before mobilizing field equipment, the Service Provider shall complete a desktop review and access/constraint screening. This shall include, as a minimum, available surficial geology mapping, known aggregate landforms such as eskers and kames, topography, existing pit faces, drainage, vegetation, access constraints, Crown land policy constraints, source-water screening, and environmental constraints that may affect access or timing.

The Service Provider should contact appropriate Ministry of Natural Resources offices to determine the need for work permits and to check whether fire restrictions are in place at the time of investigation.

The Service Provider shall be responsible for excavation of approximately XX test pits to a minimum depth of 4.5 metres, test pit information logging, sample collection, identification and transportation, photographs, backfilling, compaction, site cleanup and staking of test holes. For

bidding purposes, it is assumed that 10 test pits will be excavated per aggregate source, and XX will be crushable (35% retained 4.75 mm and 25% retained 26.4 mm by mass), XX will be non-crushable (<35% retained 4.75 mm by mass) and XX holes will be unsuitable for Granular B. These XX holes will be logged and staked but no samples will be taken. Crushable and non-crushable samples shall be determined by the results of the **laboratory gradation test.**

Test pits shall be located to support both horizontal delineation and vertical stratigraphic interpretation of usable aggregate. Field observations shall log material type, gradation information, stratigraphy, thickness of usable layers, stripping depth, deleterious layers, groundwater observations, boulders or refusal, pit-face conditions, access, vegetation, drainage, and any visible environmental or cultural constraints.

Aggregate Field Samples at Crushable Test Pit

The Service Provider shall perform following laboratory tests for samples at crushable test pit as per Section 7.7 - Engineering Materials Testing and Evaluation Services. Only laboratories on MTO RAQS Aggregates - High Complexity Testing list can perform the testing on MTO assignment.

- LS-601 – Wash Pass 75µm sieve, Guideline B (all Samples)
- LS-602 – Sieve Analysis of Aggregates (all Samples)
- LS-703/704 – Determination of Plasticity (5 samples)
- LS-608 – Flat and Elongated (3 samples)
- LS-609 – Petrographic Analysis of Coarse Aggregate (3 Samples)
- LS-616 – Petrographic Examination (2 samples)
- LS-614 – Freezing and Thawing of Coarse Aggregate (5 samples)
- LS-604 – Relative Density and Absorption of Coarse Aggregate (2 samples)
- LS-618 – The Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus (5 samples)
- LS-619 - The Resistance of Fine Aggregate to Degradation by Abrasion in Micro-Deval Apparatus (5 samples)
- LS-630 – Amount of Contamination
- AASHTO T 176 or ASTM D2419 – Sand Equivalent Value (2 samples)
- AASHTO T 304 or ASTM C1252 - Uncompacted Void Content (2 samples)
- LS-709 Permeability of granular soils (Only if the Petrographic Examination indicates greater than 10% mica retained on the 75µm sieve, on an assumed typical Granular A gradation using material from that source

Aggregate Field Samples at Non-Crushable Test Pit

The Service Provider shall perform following laboratory tests for samples at non-crushable test pit as per Section 7.7 - Engineering Materials Testing and Evaluation Services. Only laboratories on MTO RAQS Aggregates - High Complexity Testing list can perform the testing on MTO assignment.

- LS-601 – Wash Pass 75µm sieve, Guideline B (all Samples)
- LS 602 – Sieve Analysis of Aggregates (all samples)

- LS-614 – Freezing and Thawing of Coarse Aggregate (5 samples)
- LS-618 – The Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus, (5 samples)
- LS-619 – The Resistance of Fine Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus, (5 samples)
- LS-630 – Amount of Contamination
- LS-703/704 – Determination of Plasticity (all samples)
- AASHTO T176 or ASTM D 2419 – Sand Equivalent Value, (2 samples)
- AASHTO T304 or ASTM C1252 – Uncompacted Void Content. (2 samples)
- LS-709 Permeability of granular soils (1 sample)

Volumetric Estimation of Resources

Each source shall be decisioned to determine all usable quantities of aggregate contained within each source. This process can be performed either manually or electronically. The methodology to be used to determine crushable quantities shall enable a determination whether specific test holes indicate suitability for Granular A and/or Hot mix Coarse Aggregate.

7.5.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in the specific Work Order(s).

[NTD: Insert tasks if known.]

7.5.3 Deliverables

- All test pits shall be backfilled, compacted, trimmed and restored as near as practical to original conditions.
- Aggregate Resources Prospecting and Evaluation report

Photos are required of all test locations where samples are taken. These photos shall show representative examples of the types of materials encountered in the test holes and panoramic shots showing the general layout of the test pit area. The photos will be taken with digital photographic equipment (minimum resolution of 640 x 480) and the digital files and prints will be included with the final report.

- Volumetric Estimation of Resources sketch or AutoCAD plan

The consultant shall provide the Ministry with a marked-up sketch of each source showing:

- Areas of crushable material and quantities shown in green
- Areas of non-crushable material and quantities shown in red
- Ranges of each test hole with regards to the percentages retained on the 100 mm, the 26.4 mm, and the 4.75 mm sieves
- Ranges of depth of test holes

- Ranges of height of pit faces, and
- Ranges of depth of stripping required.

The suitability of each source to produce granular materials should be indicated by standard MTO terms such as Acceptable, Not Acceptable, Conditionally Acceptable, or Requires Investigation.

- Laboratory testing reports

7.5.4 Reference Documents

[NTD: Insert documents]

7.6 Engineering Materials Testing and Evaluation Services

7.6.1 Project Scope

For the purposes of this Proposal, “Engineering Materials Testing and Evaluation Services” means all aspects of laboratory and field testing required for Detail Design and the field testing under Area Materials Testing/Quality Assurance Testing Assignments.

[NTD: Insert scope of work]

7.6.2 Technical Services Required

7.6.2.1 Staff to be provided

The Service Provider shall provide the Engineering Materials Testing and Evaluation Services done by qualified firms and individuals. The minimum requirements for laboratories providing materials testing and evaluation services are defined in MTO LS-102 – *Minimum Requirements for Laboratories Conducting Engineering Materials Testing and Evaluation Services for The Ministry of Transportation* and the Ministry pre-qualified lists for the applicable services.

7.6.2.2 Project Specific Requirements via Lump Sum Price

The Ministry reserves the right to monitor and/or inspect laboratory testing facilities and their operations by means of duplicate testing, testing of extra materials and/or observing the testing directly. The laboratories shall provide the Ministry with the necessary access to the facility, equipment and personnel to carry out the monitoring activities.

Where laboratory-testing facilities are required to test audit samples supplied by the Ministry, compensation will be made at the market rate. Laboratory testing facilities shall participate in required correlation programs/proficiency sample testing programs conducted by the Ministry or others, at no cost to the Ministry.

The Service Provider shall provide the Engineering Material Testing and Evaluation services as specified in other Sections in this RFP. The field and laboratory testing shall be fully completed for each applicable Section and shall include reference to the relevant Specification, Special Provision, Directive or manual that outlines the testing frequency for each test.

[NTD: Insert additional requirements]

7.6.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in the specific Work Order(s).

[NTD: Insert tasks if known.]

7.6.3 Deliverables

- Laboratory testing reports

7.6.4 Reference Documents

- Latest MTO Laboratory Testing Manuals.

7.7 Environmental - N/A

7.7.1 Project Scope

The Service Provider is to undertake the works including the following:

- Confirm existing conditions
- Obtain additional information through agency consultation and field study where necessary
- Assemble the information on a complete Existing Conditions Map(s) for the entire project limits
- Identify potential problem areas; identify impacts of recommended highway improvements
- Prepare a consultation plan and contact list
- Provide all elements of external consultation
- Coordination of all technical speciality areas
- Obtain or assist in obtaining any required environmental permitting, registrations, exemptions, or authorizations; prepare the appropriate assessment of environmental impacts documentation and all technical reports, and
- Provide all environmental components of the contract documents; and ensure the project is eligible for environmental clearance.

A dedicated individual shall be identified as the lead for the environmental portion of this study and will be responsible for the entire environmental component of this study. They must have experience/education related to the undertaking.

Where a project-specific Scope of Environmental Services has been prepared, its content shall be deemed to be a project requirement.

Assessment of environmental impact documentation is subject to MTO approval. Draft documents shall be provided to the Ministry for review.

All environmental work is to be conducted in accordance with the requirements of the most recent version of MTO's Environmental Reference for Highway Design (ERD). Where discrepancies occur between the ERD and legislative requirements, legislation shall take precedence over the ERD. Where ERD requirements are in excess of requirements of factor specific protocols, the requirements of the ERD shall apply. Where inconsistencies are found to exist between the ERD and the project specific Terms of Reference, the Terms of Reference shall apply. The Service Provider shall be responsible for making all requirements known to any sub-consultants hired by them.

[NTD: Insert the below paragraphs if there is advanced environmental work and include advanced work deliverables in section 7.7.4 Reference Documents

The Ministry has advanced some preparatory work under a separate assignment in order to accelerate the preliminary design and EA work schedule. The environmental component of this advance work consists of **[NTD: Insert scope such as background data collection through secondary sources, desktop surveys, as well as obtaining Permission to Enter (PTE) for all properties in the study area etc].**

Advanced environmental works completed include:

- **NTD: Insert advanced work deliverables (ie. Permissions to Enter, Terrestrial Investigations, Archaeology etc]**

The anticipated level of importance to project delivery of factor-specific environmental services is as outlined below:

[NTD: Insert outline, or delete if not required]

7.7.2 Technical Services Required

7.7.2.1 Staff to be provided

Key personnel in Table 1: *Mandatory Qualification Requirements for Key Individuals* in Section 1.5.1 shall meet the qualification requirements as described below.

[NTD: Include a job title and a description of staffing expectations (e.g. experience, technical expertise) for scoring in phase I (EOI). Any staffing requirement(s) that would result in disqualification of the proposal if not part of the proponent's submission must also be included in Table 1 Section 1.5.1. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 1.

Key Staff must include Senior Environmental Planner and Environmental Planner. The Project Team shall also review their project specifics to determine if the Fisheries Specialist, Archaeologist, or Terrestrial Biologist/SAR specialist (or other staff as required) shall also be identified as Key Individuals]

Lead/Senior Environmental Planner

- Shall have a minimum of ten (10) years of experience leading the environmental assessment and approvals/permitting on MTO, transit or municipal projects of medium or high complexity scope and size, including experience in successfully managing projects involving Class EA, regulations made under the Environmental Assessment Act, other provincial assessment of environmental impact legislation, and/or Individual Environmental Assessments, including experience with the preparation, submission and successful clearance of Individual Environmental Assessment Reports, or equivalent. This experience shall include at least one (1) MTO project.
- Shall have broad based knowledge of a wide variety of environmental disciplines; and the technical aspects of these and current environmental issues, a working knowledge of federal and provincial planning and environmental policy/legislation in general, and specific knowledge of MTO policy and legislation including the requirements of the MTO Class Environmental Assessment for Provincial Transportation Facilities (2024).
- Experience with the following (where applicable on the project):
    - Preparation, submission and successful clearance of Environmental Study Reports, Transportation Environmental Study Reports and Addendum, Environmental Screening Documents, Environmental Project Reports, Environmental Impact Assessment Reports.
    - Preparation and co-ordination of public consultation programs.
    - Good understanding of the interests and mandates of environmental ministries and agencies.
    - Development of mitigation measures and contract documentation to address mitigation needs.
    - Demonstrated successful experience delivering products within tight timelines.
- Experience with the development of mitigation measures and contract documentation to address mitigation needs.

Environmental Planner

- Shall have a minimum of three (3) years of experience leading the environmental assessment and approvals/permitting on MTO, transit or municipal projects.
- Shall have broad based knowledge of a wide variety of environmental disciplines; and the technical aspects of these and current environmental issues, a working knowledge of federal and provincial planning and environmental policy/legislation in general, and a specific knowledge of MTO policy and legislation including the requirements of the MTO Class Environmental Assessment for Provincial Transportation Facilities and Municipal Expressways (2024).
- Experience with the following (where applicable on the project):
    - Preparation, submission and successful clearance of Environmental Study Reports, Transportation Environmental Study Reports and Addendum, Environmental Screening Documents, Detail Design Environmental Summaries, Environmental Project Reports, Environmental Impact Assessment Reports.
    - Preparation and co-ordination of public consultation programs.
    - Good understanding of the interests and mandates of environmental ministries and agencies.
    - Development of mitigation measures and contract documentation to address mitigation needs.
    - Demonstrated successful experience delivering products within tight timelines.

- Experience with the development of mitigation measures and contract documentation to address mitigation needs.

Requirements for additional staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

The Technical Team Members for this assignment shall include the following: **[NTD: Modify based on project requirements. Delete any technical team members in the below if they are included as Key Individuals]**

- Acoustics and Vibration Specialist
- Air Quality Specialist
- Archaeologist
  - Project Manager
  - Field Director
  - Technical Staff
- Cultural Heritage Specialist
  - Project Manager
  - Technician
- Contaminated Property and Waste Specialist (P.Eng or P.Geo)
  - Project Manager
  - Excess Soils Qualified Person
  - Field Technical Staff
- Cumulative Effects Assessment Specialist **[NTD: Include only if your project requires a cumulative effects assessment]**
- Erosion and Sediment Control Specialist
- Erosion and Sediment Control Monitoring Specialist **[NTD: require during construction]**
- Fisheries Assessment Specialist
- Fisheries Contracts Specialist **[NTD: require during construction]**
- Freshwater Mussel Specialist
- Fluvial Geomorphologist
- GIS Technician
- Groundwater Specialist
- Hydrogeologist
- Land Use Factor Specialist
- Landscape Architect/
- Species at Risk Specialist
- Terrestrial Biologist/ Ecologist
- Water Resources Engineer

[NTD: Include a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III here. The staff

requirements will be moved to Table 2 by the PM. Specify the number of individuals for each role if required]

[NTD: Include Erosion and Sediment Control Monitoring Specialist and Fisheries Contracts Specialist in CA assignment]

Acoustics and Vibration Specialist shall be registered in RAQS for this specialty and shall have:

- Demonstrated successful experience of at least three large-scale highway noise and vibration projects within the last ten years (e.g. municipal EA noise projects with numerous arterial roads).
- Demonstrated knowledge of pertinent Ontario noise and vibration policies and procedures, including MTO's Environmental Guide for Noise.
- Demonstrated expertise / experience in highway noise and vibration analysis and mitigation, and construction noise.
- Demonstrated experience using road noise prediction models (e.g. TNM).

Air Quality Specialist shall have:

- A minimum five (5) years of experience as an Air Quality/Climate Change Specialist.
- Demonstrated successful experience on a minimum of three (3) projects, in Ontario or similar jurisdictions in Canada or the USA involving air quality/climate change impact assessment for operating highways or high-order municipal roads.
- A university degree in one of the relevant disciplines: environmental, chemical or civil engineering, chemistry, physics, meteorology, or environmental sciences.
- Good understanding of:
    - Transportation engineering and transportation planning principles and practices
    - Federal and provincial legislation, standards and best practices concerning air contaminants and greenhouse gases, and
    - Science and practice of meteorology.
- Thorough and up-to-date knowledge of:
    - Environmental assessment process, as it applies to MTO transportation projects
    - MTO's Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects.
    - Vehicle and fuel technologies and related standards
    - Vehicle emission prediction models and demonstrated experience using them, and
    - Air pollutant dispersion models relevant to transportation projects and demonstrated experience using them.
- Demonstrated ability to:
    - Effectively present air quality and GHG emissions impact assessment reports
    - Respond to relevant technical questions in front of large public audiences, and
    - Write professional transportation air quality and GHG emission impact assessment reports.

Archaeological Services – Project Manager shall have

- A valid (i.e., active and in good standing) Ontario professional archaeological consulting license.
- A minimum of fifteen (15) years of archaeology experience in Ontario with demonstrated knowledge of pertinent Ontario policies and procedures in accordance with the *Ontario Heritage Act* and the Ministry of Citizenship and Multiculturalism's *Standards and Guidelines for Consultant Archaeologists* (2011).

- Demonstrated successful experience in conducting stage 1-3 Assessments in Ontario in accordance with the *Ontario Heritage Act* and the Ministry of Tourism and Culture's Standards and Guidelines for Consultant Archaeologists (2011).
- Demonstrated successful experience in conducting stage 4 Mitigation, Avoidance and Protection, and Monitoring, particularly for linear corridor projects in Ontario.
- Demonstrated experience in the successful project management of a completed linear corridor assessment in Ontario. Linear corridor experience should highlight transportation corridors.
- Experience engaging multiple Indigenous communities in archaeological investigations, including the coordination of Indigenous field monitors/liaisons.

Archaeological Services – Technical Staff
This category includes archaeological field technicians working under the supervision and direction of the Field Director, the GIS specialist for mapping archaeological site data, lab technicians for processing artifact assemblages, artifact analysts for cataloguing, and technical report writers.

Minimum Qualifications for Field Technicians and Lab Technicians:
- No minimum education or professional experience required but these individuals will have completed or be enrolled in a post-secondary archaeology program.
- Shall work under the supervision and direction of the licensed Field Director.

Minimum Qualifications for other positions:
- Appropriate educational background/certificates/degrees/diplomas, and a minimum of five (5) years of professional experience in their respective assigned roles.

Cultural Heritage Services - Project Manager shall be a Qualified Person as defined by the Standards and Guidelines for Conservation of Provincial Heritage Properties, and shall have:
- A professional member in good standing with the Canadian Association of Heritage Professionals (CAHP). This may be a built heritage specialist, architect, heritage planner or other professional with significant experience in conservation of built heritage and cultural heritage landscapes.
- Degree or Diploma in heritage conservation, heritage planning, or other related discipline.
- Demonstrated knowledge of the Ontario Heritage Act, the Standards and Guidelines for Conservation of Provincial Heritage Properties and MTO's heritage policies and procedures.
- 10+ years demonstrated successful experience in fulfilling the requirements of an environmental assessment which pertain to the protection of built heritage resources (BHR) and cultural heritage landscapes (CHL) including undertaking research and documentation on project impacts, alternatives and mitigations and providing recommendations for the management of BHRs and CHLs.
- Demonstrated successful experience of cultural heritage work on linear corridor infrastructure projects within the last five years.
- Demonstrated experience engaging with speciality consultants, contractors, governmental authorities such as other ministries, agencies and municipalities including the heritage community.

Cultural Heritage Services – Specialist shall be a Qualified Person as defined by the Standards and Guidelines for Conservation of Provincial Heritage Properties and shall have:
- A professional member in good standing with the Canadian Association of Heritage Professionals (CAHP). This may be a built heritage specialist, architect, heritage planner or

other professional with significant experience in conservation of built heritage and cultural heritage landscapes.

- Degree or Diploma from a recognized university or college in heritage conservation, heritage planning or other related discipline
- Demonstrated knowledge of the Ontario Heritage Act, the Standards and Guidelines for Conservation of Provincial Heritage Properties and MTO's heritage policies and procedures.
- 5+ years demonstrated successful experience in fulfilling the requirements of an environmental assessment which pertain to the protection of built heritage resources (BHR) and cultural heritage landscapes (CHL) including undertaking research and documentation on project impacts, alternatives and mitigations and providing recommendations for the management of BHRs and CHLs.

Cultural Heritage Services – Technician shall have:

- Degree or Diploma in heritage conservation, heritage planning, or other related discipline.
- Minimum of two (2) years experience working in cultural heritage or a related field.
- Familiarity with the Ontario Heritage Act and the Standards and Guidelines for Conservation of Provincial Heritage Properties.

Contaminant & Waste Management Services – Project Manager

- Shall be either a licensed Professional Geoscientist or P. Eng. (with PEO) and have knowledge and experience of the Province of Ontario's contamination and waste management related legislation, regulations, guidelines and policies.
- Shall have demonstrated successful experience in contamination and waste management planning and implementation for MTO design and construction projects, and/or related projects of similar scope and size.
- Technical qualifications shall include, but not be limited to, in conducting: Phase I and Phase II Environmental Site Assessments; subsurface investigations; contamination remediation and management; hydrogeological studies; the identification and mitigation of health and safety issues and concerns associated with contaminants, hazardous and designated materials; and/or construction mitigation.
- The consulting firm is to hold (or be eligible to hold) a valid Certificate of Authorization from either the Association of Professional Geoscientists of Ontario or Professional Engineers of Ontario and must be able to provide products signed / sealed by either a licensed Professional Geoscientist or Professional Engineer.
- If appropriate for the project, certain work may be required by consulting personnel that are recognized as a Qualified Person (QP) under Ontario Regulation 153/04.

Contaminant & Waste Management Services – Excess Soils Qualified Person

- A Qualified Person (QP) within the meaning of section 5 of Ontario Regulation 153/04 Records of Site Condition – Part XV.1 of the Act (O. Reg. 153/04) to ensure the project complies with O. Reg. 406/19, the Soil Rules, and any other applicable legislation.

Contaminant & Waste Management Services – Technical Staff

- Must have at least 2 years demonstrated experience in successfully conducting and completing one or more of the following:
    - Phase I and II Environmental Site Assessments.
    - Soil and groundwater investigations and remediation.
    - Ability to complete work in order to file Records of Site Condition as per Ontario Regulation 153/04, under the supervision of a Qualified Person.

- Excess Soil management, planning, and execution as per Ontario Regulation 406/19, under the supervision of a Qualified Person.
- Designated Substance Surveys and hazardous materials identification surveys and management.

Cumulative Effects Specialist shall have

- A degree or diploma in ecology, biology, applied science, climate science, resource management, or another related discipline.
- Thorough knowledge of the assessment of environmental impacts, as it applies to MTO transportation projects.
- Demonstrated knowledge of pertinent legislation, policies, and procedures relevant to cumulative effects assessment.
- Experience in cumulative effects management, assessment, and monitoring.

Preferred Qualifications (Non-Mandatory):

- Demonstrated experience in successfully completing one (1) cumulative effects assessment in Ontario or similar jurisdictions in Canada.

Erosion and Sediment Control Specialist shall have at a minimum:

[NTD: MTO PM/EP to select an option based on the anticipated erosion risk of the project identified during planning/scoping for PD RFPs and during PD for DD RFPs

[Option 1 – Low Erosion Risk]

- Successful completion of one or more recognized training or certification courses in the application of effective erosion and sediment control strategies, measures, techniques and technologies including the VOI Training Group - Erosion and Sediment Control Practitioner or Erosion and Sediment Control - Planning & Design OR demonstrated equivalent training and experience.
- 5 years of demonstrated experience in ESC planning on transportation projects with MTO, municipalities, or other similar jurisdictions in Canada or USA.

[Option 2 – Moderate Erosion Risk]

- A post-secondary degree or technical diploma with a focus in:
  - civil, environmental, geotechnical, drainage or water resources engineering;
  - civil engineering or construction engineering technology; or
  - geology, geomorphology or other earth and/or environmental sciences.
- P. Eng with PEO or P. Geo with PGO.
- Successful completion of one or more recognized training or certification courses in ESC installation/inspection, environmental construction monitoring including the VOI Training Group - Erosion and Sediment Control Practitioner (or equivalent) AND at least one of the following two courses:
  - VOI Training Group: Environmental Monitoring for Construction Projects Practitioner; or
  - Certified Inspector of Sediment and Erosion Control (CISEC) (IT- Level 1 or higher).
- Demonstrated knowledge of how to read and understand ESC plans, contract drawings, specifications, and technical reports directing the project.
- A minimum of 5 years of demonstrated successful experience of the following on a minimum of three (3) low or medium complexity projects of similar scope and size with MTO, a municipality, or other similar jurisdictions in Canada:
  - Erosion and sediment control assessment for highway construction, including:

- characterization of existing site conditions
- completing impact assessments
- selection and design of integrated erosion and sediment control best management practices.

Preferred Qualifications (non-Mandatory):
Certified Professional in Erosion and Sediment Control (CPESC).

[Option 3 – High Erosion Risk]

- A post-secondary degree or technical diploma with a focus in:
  - civil, environmental, geotechnical, drainage or water resources engineering;
  - civil engineering or construction engineering technology; or
  - geology, geomorphology or other earth and/or environmental sciences.
- P. Eng with PEO or P. Geo with PGO.
- Successful completion of one or more recognized training or certification courses in ESC installation/inspection, environmental construction monitoring including the VOI Training Group - Erosion and Sediment Control Practitioner (or equivalent) AND at least one of the following two courses:
  - VOI Training Group: Environmental Monitoring for Construction Projects Practitioner; or
  - Certified Inspector of Sediment and Erosion Control (CISEC) (IT- Level 1 or higher).
- Demonstrated knowledge of how to read and understand ESC plans, contract drawings, specifications, and technical reports directing the project.
- A minimum of 5 years of demonstrated successful experience of the following on a minimum of three (3) medium or high complexity projects of similar scope and size with MTO, a municipality, or other similar jurisdictions in Canada:
  - Erosion and sediment control assessment for highway construction, including:
    - characterization of existing site conditions
    - completing impact assessments
    - selection and design of integrated erosion and sediment control best management practices.

Preferred Qualifications (non-Mandatory):
Certified Professional in Erosion and Sediment Control (CPESC).**]**

Erosion and Sediment Control Monitoring Specialist shall have:

- A post-secondary degree or technical diploma with a focus in:
  - civil, environmental, geotechnical, drainage or water resources engineering; or
  - Natural resource management; or
  - Earth or environmental sciences.
- Successful completion of one or more recognized training or certification courses in ESC installation/inspection, environmental construction monitoring including the VOI Training Group - Erosion and Sediment Control Practitioner (or equivalent) AND at least one of the following two courses:
  - VOI Training Group: Environmental Monitoring for Construction Projects Practitioner; or
  - Certified Inspector of Sediment and Erosion Control (CISEC) (IT- Level 1 or higher).
- Demonstrated knowledge of how to read and understand ESC plans, contract drawings, specifications, and technical reports directing the project.
- **[NTD: MTO PM/EP to select an bullet option from the following based on the erosion risk/ project complexity determined during Detail Design**

Option 1:
A minimum of 2 years of demonstrated ESC inspection and monitoring experience on transportation projects of a similar scope and complexity to this Project with MTO, municipalities, or other similar jurisdictions in Canada or USA.

Option 2:
A minimum of 5 years of demonstrated ESC inspection and monitoring experience on a minimum of three (3) low or medium complexity projects of similar scope and size with MTO, municipalities, or other similar jurisdictions in Canada or USA.

Option 3:
A minimum of 5 years of demonstrated ESC inspection and monitoring experience on a minimum of three (3) medium or high complexity projects of similar scope and size with MTO, municipalities, or other similar jurisdictions in Canada or USA.

Fisheries Assessment Specialist shall be registered in RAQS for this specialty and shall have:
- A minimum of 5 years of demonstrated experience with projects in Ontario of a similar scope and complexity to this Project
- Proven ability to liaise with other specialty consultants, contractors, and Governmental Authorities, and
- Proven experience in the negotiation and development of fisheries offsetting plans that have received an authorization under paragraphs 34.4(2) (b) and 35(2)(b) of the Fisheries Act.

Fisheries Assessment Field Staff shall have demonstrated:
- Knowledge and thorough understanding of the MTO Fisheries Protocol as outlined in the MTO Environmental Guide for Fisheries – Fish Guide and MTO requirements for field investigations.
- Experience in appropriate fish collection and fish handling methods and able to identify Ontario fish and mussel species using any tool(s) available (e.g. personal experience, field guides, identification keys etc.).

When conducting a fish community inventory or fish salvage by electrofishing, at least one member of the field crew shall possess a valid Electrofishing Certification or demonstrated equivalent, comprehensive, internal training, and in accordance with the Service Provider's Occupational Health and Safety plans and procedures.

Fisheries Contracts Specialist shall be registered in RAQS for this specialty and shall have:
- 5+ years of demonstrated experience with projects in Ontario of a similar scope and complexity to this Project.
- Proven ability to liaise with other specialty consultants, contractors, and Governmental Authorities; and
- Demonstrated experience in monitoring fisheries offsetting measures that have received an authorization under paragraphs 34.4(2) (b) and 35(2)(b) of the Fisheries Act

Freshwater Mussel Specialist shall have
- A degree or diploma from a recognized university or college in biology or related discipline with specialization in mussel biology, aquatic biology, marine ecology, or another related discipline

- Proven knowledge and demonstrated experience in the use of the “Protocol for the Detection and Relocation of Freshwater Mussel Species at Risk in Ontario-Great Lakes Area”;
- Proven ability to design a survey program which includes habitat sampling procedures and equipment requirements to identify mussel presence/absence, population viability, and habitat associations
- Demonstrated experience in leading a minimum of two field technicians to sample mussel populations and their habitats using underwater viewing buckets/tubes, clam scoops, sieving, snorkel gear, SCUBA, and/or other appropriate methods for shallow-water and deep-water streams and rivers
- Proven ability to compile, analyze, and synthesize data into meaningful results for population monitoring
- Proven knowledge of mussel ecology and demonstrated experience or certification in species taxonomy/identification
- Proven ability to liaise with other specialty Service Providers, contractors, and Governmental Authorities
- Demonstrated experience with projects in Ontario of a similar scope and complexity to the current assignment
- Proven knowledge of relevant provincial and federal acts, the listing process for species at risk, and requirements for protection of species at risk and their habitats
- Proven knowledge and/or experience in the mandates of recovery teams for species at risk in Ontario (e.g., Sydenham River Recovery Team, Thames River Recovery Team, Ausable River Recovery Team)’ and
- Demonstrated experience in permitting requirements and completion of permit applications and knowledge of the time frames for obtaining such permits.

Fluvial Geomorphologist shall have

- A minimum of 10 years of fluvial geomorphology experience.
- Demonstrated successful experience on a minimum of three (3) medium or high complexity projects of similar scope and size within past 10 years
- A degree or diploma from a recognized university or college and qualified to practice as P.Geo or P.Eng in Ontario with specialization in fluvial geomorphology, geography, sedimentology, hydrology or another related discipline.
- Demonstrated experience in conducting geomorphic assessments and surveys including sediment transport, stream meander, erosion elements, bedform and channel evolution.
- Demonstrated experience in developing detailed functional natural channel designs and design briefs with a multidisciplinary team.
- Demonstrated experience in conducting desktop reviews using existing data sources to identify reach characteristics, geology, meander belt width and the 100-year migration rates.
- Demonstrated experience in conducting field assessments using standard protocols and known field indicators, Wolman pebble counts, shear stress test, level survey for cross sectional geometry and the use of erosion pins for erosion analyses.
- Demonstrated knowledge of environmental policies, procedures, and legislation that applies to work in and around waterbodies as well as fish and fish habitat in Ontario.
- Demonstrated ability to liaise with other MTO service providers and regulatory agencies.

Groundwater Specialist/ Hydrogeologist

- Shall be Licensed P.Geo (with PGO) or P. Eng. (with PEO).

- The specialist should be qualified to practice geoscience in Ontario (P.Geo.) with specific training or experience as a hydrogeologist.
- Demonstrated knowledge of pertinent Ontario policies and procedures.
- Demonstrated experience in conducting impact assessments of highway design, construction and maintenance on groundwater resources.

Land Use Factors Specialist

- Shall have demonstrated knowledge of pertinent Ontario policies and procedures as well as proven professional experience in the identification, impact assessment, evaluation, construction mitigation and enhancement of land use factors associated with highway projects and/or projects of similar scale, scope and complexity.

Landscape Specialist

- Shall, as a minimum, have demonstrated knowledge of pertinent Ontario policies, procedures and MTO Design Guidelines as well as proven professional experience in ecological highway landscape design, and native species through the successful completion of projects of similar scale and complexity.
- Shall be in good standing with the Ontario Association of Landscape Architect.

Snowdrift Specialist

- The snowdrift specialist shall demonstrate current experience in modeling snowdrift and providing mitigation measures and strategies for highways and freeways, both on and off ROW, including landscaping measures. The service provider shall be able to model and assess snowdrift potential and identify mitigation measures for the project area, utilizing current industry standard modelling, topography and meteorological data.

Species at Risk Specialist shall have

- Demonstrated successful experience on a minimum of three (3) recent (within past 5 years) medium or high complexity projects of similar scope and size (at minimum 1 of those 3 projects shall be MTO projects).
- A degree or diploma from a recognized university or college with specialization in biology, ecology, or another related discipline.
- Demonstrated successful experience on a minimum of three (3) medium to high complexity projects of similar scope within the past five (5) years, of which at least one (1) must be a MTO project.
- Demonstrated experience with projects of a similar scope and complexity, which include experience with:
  - Species at Risk (SAR) species and habitat identification, concepts of biological rarity, and ecosystems, habitats and populations assessment techniques.
  - Conducting field identification of provincially and federally listed SAR.
  - Conducting habitat characterization and identification studies for target species that are federally or provincially listed as SAR.
  - Federal and provincial (Ontario) permitting processes.
- Demonstrated knowledge of:
  - Current biological and ecological science theories and principles to conduct biological/ecology research and analysis and provide expertise to support the protection of SAR.
  - Provincial and federal listed Ontario species at risk and their habitats to provide information, expertise and advice to conduct SAR scientific research and analysis.

- Demonstrated ability to liaise with other MTO service providers and regulatory agencies.
- The experience shall be species-specific if identified in the Terms of Reference (e.g. mussels, fish, turtles, amphibians).

Terrestrial Biologist/ Ecologist shall have:

- Demonstrated successful experience on a minimum of three (3) recent (within past 5 years) medium or high complexity projects of similar scope and size (at minimum 1 of those 3 projects shall be MTO projects).
- Degree or diploma specializing in ecology/biology, wildlife, and botany resources.
- Demonstrated knowledge of pertinent Ontario and federal policies and procedures.
- Demonstrated experience conducting wetland evaluations, wildlife (including birds) inventories, vegetation assessments, impact assessments, monitoring and in developing mitigation measures for design, construction and operations and maintenance stages.
- Demonstrated knowledge of restoration techniques, invasive species management, and native planting/seeding health assessments.
- Demonstrated experience in the assessment and development of erosion protection and sediment control measures.
- Where construction monitoring is required, the Terrestrial Biologist shall also have:
  - Successful completion of an erosion and sediment control monitoring training program (e.g. VOI Training Group- Environmental Monitoring for Construction Projects Practitioner Certified Inspector Sediment and Erosion Control (CISEC), or equivalent). Certification is not required but is desirable.
  - Demonstrated knowledge of effective erosion and sediment control strategies, measures, techniques and technologies.
  - Demonstrated experience in monitoring erosion and sediment control measure installation and maintenance.

Socio-economic and Human Health Specialist

- Shall have demonstrated experience in successfully completing projects in Ontario or other similar jurisdictions in Canada or USA involving Social impact assessment and mitigation, Economic impact assessment and mitigation, and Human Health impact assessment and mitigation.

7.7.2.2 Project Specific Environmental Requirements via Lump Sum Price

7.7.2.2.1 General

“The Governments of Canada and Ontario signed a Memorandum of Understanding (Government of Canada, 2024) and established a joint federal-provincial working group governed by a Terms of Reference with the objective of leveraging expertise to assess environmental effects within federal jurisdiction. The joint working group consists of senior leaders from both levels of government and arose from the Memorandum of Understanding, which serves to contemplate potential adverse effects within federal jurisdiction by helping to identify and recommend appropriate measures to avoid or minimize environmental impacts in areas of federal jurisdiction. All project requirements shall meet the requirements of the Memorandum of Understanding and Terms of Reference. Additional information on these documents can be found on the Impact Assessment Agency of Canada (IAAC) website:

https://iaac-aeic.gc.ca/050/evaluations/proj/81381?culture=en-CA **[NTD: Delete if not applicable]**

The Service Provider shall ensure any recommendations and/or commitments are carried forward from the final EIAR into the detail design. The service provider shall also undertake any addendums if a "significant change" is required under the relevant regulations. **[NTD: Delete if not applicable]**

This project may generate excess soil, as defined under O. Reg. 406/19. To maximize reuse of excess soil, excess materials and earth borrow, the Earth Management Plan, if prepared as part of preliminary design, should be reviewed.

Environmental Assessment

MTO Projects/Undertakings are subject to the provincial Environmental Assessment (EA) Act RSO (1990) and Regulations made under that Act. **[NTD: Insert any other environmental legislative requirements that are specific to this project (e.g., Highway 413 Act and delete irrelevant legislation]**

[NTD: Delete if your assignment has no TRPAP requirements] The Transit and Rail Project Assessment Process (TRPAP) (Ontario Regulation 231/08) outlines a time-limited, streamlined approval process for transit projects.

[NTD: Delete the below 7 paragraphs if your assignment has no Class EA requirements

The 'Class Environmental Assessment for Provincial Transportation Facilities and Municipal Expressways' document establishes an EA process that has been pre-approved by the Ministry of Environment, Conservation and Parks (MECP) Minister for a defined set of undertakings. The MTO Class EA document outlines a pre-approved, self-assessment process that applies to routine projects with predictable and manageable environmental effects.

Project notices for Class EA undertakings must be sent to the appropriate MECP regional notification email account. The list of MECP regional notification email accounts and the current MECP Project Information Form are listed at 'https://www.ontario.ca/page/preparing-environmental-assessments#section-5'. If the project spans more than one MECP region, notify the MECP regional office where the majority of the project falls within.

Emails sent to the MECP regional notification email account must include a copy to the MTO Environmental Planner and require a subject line that identifies: '*project location'*, 'MTO Class EA', and '*project name'*. Note: if the project spans multiple municipalities, select 'several' from the Project Information Form drop-down menu for 'project location'. Include highway number and GWP or WP as part of 'project name'.

- Where a Notice of Study Commencement (PDF) is issued to MECP, a completed MECP 'Project Information Form' must also be attached to the email, in both Excel and PDF formats.
- Where required, a Notice of Completion (PDF) and a Notice of Addendum (PDF) must also be sent to the MECP regional notification email account. Do not include the Project Information Form as part of this notification.
- All correspondence (including copies of TESR/DCR/Addendum documents for public and/or MECP review) and other project notices (e.g. Step-down, PIC) must be sent directly to the MECP Regional EA Coordinator by the usual method, and they are not to be sent to the MECP regional notification email account. Do not include the Project Information Form as part of this notification. **[NTD: Delete if the project is exempt from the Class EA]**

Under the 'Class Environmental Assessment for Provincial Transportation Facilities and Municipal

Expressways', this project is classified as a Group **[NTD: Insert category of project (A, B, or C)]** at the time of project initiation.**]**

[NTD: Delete this paragraph if the project is a Group A, B, or C Class EA Project] Under the 'Class Environmental Assessment for Provincial Transportation Facilities and Municipal Expressways', this project was classified as an exempt project in accordance with Section 15.3(1) and (2) of the EA Act.

The federal EA process may also apply to projects that are subject to the Ontario EA Act. The Canadian Impact Assessment Act (IAA) is administered and enforced by the Impact Assessment Agency of Canada and applies to projects that are designated by the Physical Activities Regulations (SOR/2019-285), or projects that have been specifically designated by the Minister of Environment and Climate Change Canada. Where both the Ontario EA Act and IAA apply to a project, all efforts should be made to follow one coordinated process. Appropriate documentation shall be prepared and submitted for approval at a time suitable to the project schedule if the IAA requirements are anticipated.

Environmental Status Tracking Form

The Service Provider shall use the Environmental Status Tracking Form to track and record the status of key environmental deliverables. The tracking sheet shall be updated and provided to the MTO Project Manager and MTO Environmental Planner at the indicated meetings (Start-up, all Stages of Design Phase, DCPM, Exec Reviews and EDIS) and as part of the minutes.

Project Website [NTD: Include information below as required]

The Service Provider shall develop and maintain a project specific website. The Service Provider shall regularly update the Project Website, and the website shall be operational as soon as possible after assignment award. Website content shall be provided to MTO for review and approval prior to being published on the website.

The project website must meet or exceed the digital accessibility requirements set out in the Integrated Accessibility Standards (Ontario Regulation 191/11), MTO applicable guidelines and the following requirements:

- Operation that is user-friendly, AODA compliant and easy to navigate
- Appearance that is attractive and welcoming
- Transferable to MTO and/or subsequent detail design study teams, and
- Be able to support a virtual public information centre

French Language Services Act

[NTD: Insert one of the below sentences:

The Service Provider shall follow all requirements of the *French Language Services Act.*

OR

The Service Provider shall determine if French language services are required as per the French Language Services Act.**]**

Accessibility for Ontarians with Disabilities Act Obligations

The Service Provider is to ensure the consultation program is in accordance with the Accessibility for Ontarians with Disabilities Act (AODA). Further information can be found in Section 4 of the Environmental Reference for Highway Design.

7.7.2.2.2 Environmental Assessment and Consultation Deliverables

Statutory Advertisements and Environmental Assessment Notices

An advertising agency has been selected to place all statutory advertisements in newspapers for the Ministry, such items as tender notices, public notices, road closures and certificates of substantial completion. The advertising agency also places any Environmental Assessment notices that are placed in newspapers, such as notices of Commencement, public information centres, and Completion in accordance with the applicable requirements in the Class EA.

Each public notice shall appear in a local newspaper (one day). If a project lies within the Haldimand Tract, all public notices shall also be placed in the Turtle Island News and the Two Row Times, in addition to the local newspaper. **[NTD: Delete this sentence if the project is NOT within the Haldimand Tract. MTO EP to confirm with their ILS/ACIT]**

The Service Provider may instead choose to notify property owners via Canada Post direct mail if preferred (i.e. financially beneficial and considerate of the project schedule as compared to other notification options). This is to be determined in consultation with the MTO project team at the project initiation stage.

The Service Provider shall consider **Emergency Service** issues associated with loss of access during construction and develop solutions to address identified concerns in consultation with Emergency Service providers.

Meetings

The Service Provider Environmental Planner shall attend all Meetings (in person or virtual as approved by the Ministry). Environmental Specialist / key technical environmental staff shall be involved in meetings as necessary to discuss the progress/design requirements associated with environmental investigations and to assist in assessing project alternatives.

Public Information Centre [NTD: Include as required]

If a Public Information Centre (PIC) is required, the Service Provider is responsible for all aspects of the PIC including but not limited to preparing all visual aids and notices, venue rentals, staffing, and comment responses. For the purposes of bidding, please assume **[NTD: insert #]** PIC(s) for this project at **[NTD: insert #]** venue location(s).

The Service Provider shall provide an e-mail to the MTO Project Manager and MTO Environmental Planner of all critical PIC highlights by 09:00 am of the day following the PIC. Highlights will include number of individuals attending, the presentation format, identification of key stakeholders or participants and major issues, complaints and/or contentious items.

Public Information Highlights Email [NTD: Delete if there is no PIC]

The Service Provider shall provide an e-mail to the MTO Project Manager and MTO Environmental Planner of all critical PIC highlights by 09:00 of the day following the PIC. Highlights will include number of individuals attending, the presentation format, identification of key stakeholders or participants and major issues, complaints and/or contentious items.

Modified Public Consultation

[NTD: For Class EA Exempt Projects only, delete if project is a Group A, B, or C] The Service Provider shall prepare **Project Update letters**, as required, to be delivered to nearby property owners/residents/businesses, and to those along potential detour routes. In addition, the Service

Provider shall send the notice to all applicable agencies, Emergency Service providers, municipalities, businesses, bus, and truck companies, etc. potentially affected by the project.

[NTD: For Group C Projects that are more complex and may require a PIC] In consultation with MTO, the Service Provider shall determine the need for Public Information Centres (PICs) based on potential environmental impacts and potentially interested persons and any feedback to the Notice of Commencement. The Service Provider shall consider alternate consultation techniques (subject to MTO approval) to ensure effective consultation with the stakeholders most directly affected, and that the public has an opportunity to comment on the proposed improvements. This may include inviting stakeholders and the public, through mailings and the website, to participate in small group meetings or face-to-face meetings, etc.

7.7.2.2.3 Technical Investigation and Study

Acoustics and Vibration

As per the MTO' Environmental Guide for Noise, the Service Provider shall undertake a Noise Analysis and document findings in a Noise Report.

Air Quality

Technical requirements for 'Air Quality' are provided in the following documents, as amended: Ministry of Transportation Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects, Section 3.10 of the Environmental Reference for Highway Design.

The Service Provider shall develop all documentation for any permit or registration required. **[NTD: Include if the project is likely to require any permit or registrations]**

Archaeology

Technical requirements for 'Cultural Heritage – Archaeology' are provided in Section 3.8 of the *Environmental Reference for Highway Design (ERD)*. Where the ERD requirements are not compliant with the current Provincial standards, the Service Provider is to conduct archaeological assessments in accordance with Ministry of Citizenship and Multiculturalism's (MCM) most recent finalized version of the *Standards and Guidelines for Consultant Archaeologists,* relevant Technical Bulletins *and guidance*/advice available. Please note, MCM's draft standards to the *Rural Historic Farmsteads* is not a finalized document and as such it is not to be used on MTO projects.

Land-based stages of archaeological assessments may include stage 1 – 3 assessments (i.e. background research and property inspection, property assessment, and site-specific test excavation) and stage 4 mitigation of archaeological sites. Marine archaeological assessments of waterways and their shorelines may also be required.

The environmental effects of archaeological investigations must be considered in advance of undertaking the assessments. Construction impacts (e.g. geotechnical borehole drilling, stock piling of materials, parking, access roads, etc.) to archaeological resources shall be identified with appropriate mitigation/protection measures. The Service Provider should expect to have regular communication with the ministry's archaeology staff throughout the progression of the fieldwork, especially when fieldwork strategies are being prepared or modified.

The Service Provider will be responsible for submitting their licence reports to MCM for review and entry into the Ontario *Public Register of Archaeological Reports* as per the *Terms and Conditions* of their licence. This will be completed after MTO and (where applicable, Indigenous

Communities) have had the opportunity to review such reports and any requested revisions have been addressed.

MTO will be responsible for identifying and making initial contact with potentially affected Indigenous Communities. The Service Provider will assist MTO staff as requested in carrying out consultation/engagement with any potentially affected and interested Indigenous Communities as per Section 7.8.

Indigenous Engagement in Archaeology

Consultant licensed archaeologists are required to follow the technical bulletin Engaging Aboriginal Communities in Archaeology (2010) when conducting archaeological assessments triggered by and on behalf of MTO.

The Standards and Guidelines do not specify forms of Indigenous engagement but require engagement starting at stage 3 of the archaeological process and encourage early engagement at stages 1 and 2. However, MTO has developed its own guidance for the inclusion of Indigenous communities in the archaeological assessment process.

When an MTO project requires an archaeological assessment, the ministry provides project notification to the potentially impacted Indigenous communities and provides information about the retained archaeological consultant who will be conducting the archaeological assessment. The ministry provides a list of potentially impacted Indigenous communities to the retained licensed archaeologist with instructions to engage those communities at stages 1-4 in the archaeological assessment process, including hiring Indigenous Community Field Liaisons for stage 2-4 fieldwork, if requested (see Section 7.8 – Indigenous Consultation and Duty to Consult).

Within the archaeological assessment process, MTO will involve impacted Indigenous communities in stages 1-4 of archaeological assessments on pre-contact and contact period Indigenous sites if they meet certain criteria as outlined in Section 1.1 of the MCM Technical Bulletin and Section 3.4, 3.5, 7.6.2 of the Standards and Guidelines.

The licensed archaeologist will be responsible for the following:

- Sending notification letters to Indigenous communities in advance of each stage of the archaeological assessment process.
- Sharing stage 1-4 draft reports with Indigenous communities prior to submitting to MCM and incorporating their feedback and traditional knowledge/history into the reports. The ministry encourages the licensed archaeologist to include traditional knowledge/history provided by Indigenous communities in the communities' preferred location within the reports (e.g., within a chapter of the report rather than an appendix) but understands that this is ultimately the licensed archaeologist's decision.
- Conducting follow-up phone calls or community meetings, when requested, and informing MTO representatives in advance of any meetings.
- Entering into agreements with Indigenous communities to facilitate the participation of archaeology Community Field Liaisons (CFLs) for stage 2-4 work, as requested by impacted Indigenous communities. Further information about MTO's approach to CFLs is outlined below. Indigenous communities should be notified of upcoming fieldwork at least 30 days in advance.

Built Heritage and Cultural Heritage Landscapes

Technical requirements for 'Cultural Heritage – Built Heritage and Cultural Heritage Landscapes' are provided in Section 3.7 of the Environmental Reference for Highway Design, the

Environmental Guide for Built Heritage and Cultural Heritage Landscapes (BHCHL Guide) and the Ontario Heritage Bridge Guidelines for Provincially Owned Bridges (OHBG). Cultural heritage assessments will be prepared in accordance with the *Standards and Guidelines for Conservation of Provincial Heritage Properties*.

MTO will provide the Service Provider with a copy of the Cultural Heritage Assessment Report (CHAR) prepared for Preliminary Design, if available.

Cultural Heritage Evaluation Reports (CHER) will be prepared for properties based on recommendations of the CHAR. The CHER will determine whether a property possesses cultural heritage value or interest through an evaluation of the property using Ontario Regulation 9/06 (O. Reg. 9/06) and Ontario Regulation 10/06 (O. Reg. 10/06). CHERs are to follow MTO's Outline for Cultural Heritage Evaluation Reports.

Heritage Impact Assessments (HIAs) will be prepared for properties identified as having cultural heritage value or interest and that are anticipated to be directly impacted by the project. HIAs are to be prepared in accordance with the Ministry of Citizenship and Immigration's *Information Bulletin 3* and will follow MTO's Outline for Heritage Impact Assessments.

Cultural Heritage Resource Documentation Reports will be prepared for properties based on the recommendations of the HIA. Requirements for completing a Cultural Heritage Resource Documentation Report are found in Section 6.3.1.4 and 6.3.3.3 of the BHCHL Guide.

Waste and Excess Soils

Environmental Site Assessment **[NTD: Delete if not required]**

General technical guidance for the 'Contaminated Property Identification and Management' is provided in Section 3.6 of the *Environmental Reference for Highway Design,* June 2013 and *Environmental Guide for Contaminated Property Identification and Management, October 2006* (Guide).

The project shall be designed in conformance with, but not limited to, the applicable standards, criteria and requirements of the applicable documents listed in the *Technical Standards and Specifications* (of this Request for Proposals document).

The Service Provider shall perform work which includes but is not limited to the following:

- ***Contamination Overview Study (COS):*** **[NTD: Delete if a COS has already been completed]** A Contamination Overview Study shall be completed. Requirements for completing the COS are detailed in Section 1.2.2 Step 1 of the Guide.
- ***Phase One Environmental Site Assessment (Phase I ESA):*** **[NTD: Delete if COS indicates Phase I ESA is not required or if Phase I ESA has already been completed]** The information gathered through the COS should be used to complete a Phase I ESA under the direction of a QP. Requirements for completing the Phase I ESA are detailed in Section 1.2.4 Step 3 of the Guide.
- ***Phase Two Environmental Site Assessment (Phase II ESA):*** **[NTD: Delete if a Phase I ESA has not been completed and insert the Phase I ESA requirements]** A Phase II ESA shall be completed for the following Areas of Potential Environmental Concerns (APECs) identified through the completion of a Phase I ESA under the direction of a QP:
  - **[NTD:** List APECs identified in Phase I ESA or a COS**]**

Requirements for completing the Phase II ESA are detailed in Section 1.2.5 Step 4 of the Guide. If the Phase II ESA indicates that contaminants of concern (COCs) are present on the property that exceed the applicable site condition standards, further assessment may be required as extra work.

Excess Soil Management

Regulatory requirements are provided in *O. Reg 406/19 On-Site and Excess Soil Management* made under the Environmental Protection Act, R.S.O. 1990, c.E.19 and *Rules for Soil Management and Excess Soil Quality Standards* (the Soil Rules), document adopted by reference.

The project shall be designed in conformance with, but not limited to, the applicable standards, criteria and requirements of the applicable documents listed in the *Technical Standards and Specifications* (of this Request for Proposals document). Where excess soil is going to be generated within a project area, the Service Provider shall retain a Qualified Person (QP) within the meaning of section 5 of Ontario Regulation 153/04 Records of Site Condition – Part XV.1 of the Act (O. Reg. 153/04) to ensure the project complies with O. Reg. 406/19, the Soil Rules, and any other applicable legislation.

The Service Provider's QP shall review existing background information and environmental reports, such as Contamination Overview Study (COS), Preliminary Site Screening reports (PSSs), Phase One/Two Environmental Site Assessments (ESAs), geotechnical investigations and/or remediation reports, to determine if the project area is or has ever been, in whole or in part, an "enhanced investigation project area" as defined by O. Reg. 406/19.

The Service Provider's QP shall review the design and excavation details and potential reuse options of the excavated soil to determine if the project is exempt from the reuse planning and registry rules of O. Reg. 406/19 as per Section 8 and Schedule 2 of the regulation. If the project is determined to be exempt from the reuse planning and/or registry rules, the Service Provider shall review the project exempt status and any proposed due diligence soil management scope with MTO prior to the commencement of any field sampling program.

[NTD: Insert the following if an assessment of past uses has been previously completed for the project and more than 18 months has elapsed:

The Service Provider's QP shall complete a review of the Assessment of Past Uses (APU) previously completed and dated **NTD: [insert date]**, and reassess the validity of the report. Where existing environmental reports are available, update as necessary to ensure that the objectives of an APU are achieved, and the 18-month validity of an APU is met.**]**

[NTD: Insert the following if an assessment of past uses has not been completed for the project and the project is not exempt from the excess soil planning requirements:

The Service Provider shall complete an Assessment of Past Uses (APU) as indicated below:

- The APU shall be completed in accordance with the requirements provided in Section B of Part I of the soil Rules;
- Where existing environmental reports are available, update as necessary to ensure that the objectives of an APU are achieved, and the 18-month validity of an APU is met; and
- Where excess soil is to be excavated from a project area, the APU shall include all information as required, including but not limited to, the identification of Potentially Contaminating Activities (PCAs), Areas of Potential Environmental Concern (APECs), and

Contaminants of Potential Concern (COPCs) in relation to the proposed excavation areas to support the development of a Sampling and Analysis Plan (SAP).]

[NTD: For projects that are NOT EXEMPT, insert the following if an assessment of past uses has been completed, but a sampling and analysis plan has not been completed for the project:

Sampling and Analysis Plan

The Service Provider shall complete a Sampling and Analysis Plan (SAP) based on the findings of the Assessment of Past Uses, as indicated below:

- The SAP shall be completed in accordance with the requirements provided in Section B of Part I of the Soil Rules
- The scope of the SAP shall comply with all requirements provided in the Soil Rules, including but are not limited to the sampling frequency and analyzing parameters. The sampling location and depth shall represent both the horizontal extent and vertical profile of the excavation areas and/or APECs
- The SAP shall include tables and figures which clearly demonstrate the proposed borehole locations, soil sample locations and depths, and analyzing parameters, in relation to the APECs and excavation areas (and proposed sample depth)
- The SAP shall include soil sampling and analysis for waste characterization purposes (i.e., impacted or contaminated) for potential disposal of contaminated soil (if present), and
- If an in-situ sampling approach is not considered practical or feasible, an alternative sampling approach shall be provided.

The APU and the SAP shall be submitted to and approved by MTO prior to the implementation of the SAP or commencement of in-situ environmental soil sampling.

The implementation of the SAP to support the completion of the soil characterization report shall be completed in accordance with the requirements provided in Section B of Part I of the Soil Rules, O. Reg. 153/04 and any other applicable legislation.

In-situ soil sampling shall be incorporated as much as possible into geotechnical investigations to be cost effective. Any required sampling locations and depths that cannot be completed in conjunction with geotechnical investigations may be completed by an independent environmental drilling and sampling program.

Soil Characterization Report

The Service Provider shall complete the Soil Characterization Report (SCR) based on the findings of the Sampling and Analysis Plan, as indicated below:

- The SCR shall be completed in accordance with the requirements provided in Section B of Part I of the soil Rules
- Preparation of a Soil Characterization Report for the project area shall include APECs identified within the project area, investigation methods including drilling, excavating test pits, soil sampling, sediment sampling, field screening measurements, analytical testing, with necessary modifications; stratigraphy from ground surface to the deepest planned excavation, approximate depth to water table, borehole logs, figures with cross sections, tables and laboratory certificate of analysis
- The SCR shall include the estimated volumes for soil that is feasible to be reused onsite within the project area and offsite on beneficial reuse sites that meet different tables of

generic excess soil quality standards (and generic leachate screening levels for excess soil reuse), and the estimated volume of contaminated soil (if any) that cannot be reused for beneficial reuse and must be disposed of at a landfill or Class 1 Soil Management Site. The areas with soil quality meeting different excess soil quality standards shall be illustrated on figures.**]**

[NTD: For projects that are EXEMPT, insert the following for projects that are exempt from the planning requirements of the excess soil regulation:

The Ministry has determined that Section 8 of O.Reg.406/19 does not apply to the project because the reason for excavating the soil that will become excess soil is **[insert reason, e.g., "maintaining infrastructure in a fit state of repair."]**. As such, the decisions, recommendations, and requirements being implemented as part of the Ministry's due diligence to meet the intent of the regulation and follow applicable guidance (i.e., Rules for Soil Management and Excess Soil Quality Standards) shall be documented in the Earth Management Plan referenced in Section 7.10 – Highway Engineering.

The Service Provider shall undertake Environmental Due-diligence Sampling to ascertain the quality of the earth material being excavated and managed both on-site and off-site, as per the following requirements:

- **[NTD: Insert requirements through consultation with the design team at the Scoping Meeting]**

The Service Provider shall also include the following information in the Earth Management Plan:

- Onsite beneficial reuse of excess soil should be considered as the first reuse strategy for excess soil generated within the project area and this should be included in the preparation of an Earth Management Plan. See Section 7.10 - Highway Engineering for more information on the Earth Management Plan. Drawings showing temporary onsite soil storage stockpile and reuse locations should be clearly identified in this plan.
- Provide excess soil management approaches during construction through the inclusion of special provisions, non-standard special provisions, environmental constraints, etc. as required. As a minimum, the contract documents shall ensure the Contractor to obtain a QP for excess soil management during construction and to comply with O. Reg. 406/09.**]**

Contaminated Property Identification and Waste Management

Technical requirements for 'Contaminated Property Identification and Management' are provided in Section 3.6 of the *Environmental Reference for Highway Design*, and respective sections of the *Environmental Guide for Contaminated Property Identification and Management*. These reference documents provide general information and should not be interpreted to represent a project-specific scope of work.

The Service Provider shall perform work which includes but is not limited to the following:

1. The Service Provider shall identify any potential soil or groundwater contamination issues that may be encountered during construction and provide remediation and/or mitigation strategies. The consultant shall provide clear and comprehensive direction in the contract documents to address the management of any contaminated soil and/or groundwater generated during construction in accordance with all applicable regulations

2. The Service Provider shall identify waste and excess material that are expected to be generated during construction, but not limited to: excess earth; contaminated soil or

groundwater; excess construction waste (pavement and bridge material; lighting material; utility material, etc.); designated substances including PCBs; effluent and cleaning material generated from cleaning operations; and provide a waste management approach and contract specifications, e.g. special provisions, environmental constraints, etc. for the project

3. The Service Provider shall identify and provide details of any environmental protection requirements during structure rehabilitation and/or replacement activities
4. The Service Provider shall provide direction on management of any wastewater generated from construction to prevent discharge to surface water, vegetation, soil, earth, groundwater, or any other element of natural environmental in accordance with all applicable regulation, and on disposal of any liquid waste in accordance with all applicable regulations
5. Where groundwater monitoring wells are installed, unless required to remain for construction, they should be properly decommissioned by a licensed well contractor in accordance with *Ontario Regulation 903 R.R.O. 1990* (made under the Ontario Water Resources Act, R.S.O. 1990, c. O.40), when no longer in use, and
6. The Service Provider shall conduct a Designated Substance Survey (DSS) for the structures that are to be rehabilitated or replaced within the project area to ensure compliance with Section 30 of the Occupational Health and Safety Act (OHSA). The DSS shall be conducted as per the MTO Memorandum "Implement the Ministry's Design Policy for Identification of Designated Substances through SSP101F21" (HSB-DCSO 2014-05 October 20, 2014) and any applicable regulations. The findings of the DSS Report shall be included in the Contract Package. For bidding purposes assume **XX** properties require DSS reports.

Field methods must be conducted in accordance with *O. Reg. 153/04* and its technical supporting documents, and industry best practice. A QP shall be obtained for conducting and/or supervising contamination work. The Service Provider shall ensure that all intrusive investigation activities, screening, sampling, and other fieldwork required to obtain the desired results are supervised at all times by experienced competent staff.

Erosion and Sediment Control

[NTD: This section to be reviewed and revised by the EP in consultation with Environmental Services Office; this is currently written based on the new, unpublished ESC Guide and thus should not be used as written until the revised ESC guide has been published. This note will be revised once the ESC Guide has been published. If an Erosion Risk Assessment was not completed during Preliminary Design, that scope must be included here]

The Service Provider's Erosion and Sediment Control (ESC) Specialist shall review the Erosion Risk documentation (i.e. Erosion Risk Summary Memo or Complex Erosion Risk Assessment Report) and Templates ESC-1 to ESC- 4 to identify high, moderate and low risk areas and the develop the ESC Strategy for the project.

The Service Provider shall incorporate site-specific recommendations for erosion control (both permanent cover and temporary erosion control) and temporary sediment control measures into the Detail Design.

The Service Provider shall review the application of the following items into the Detail Design and Contract Documents:

- Temporary erosion control and temporary sediment control measures.
- Advanced placement of permanent cover.
- Retention of vegetation, and/or deferred grubbing, during clearing operations.

The Service Provider shall be responsible for the submission of an ESC Strategy Summary Report. A draft of the report shall be submitted to the MTO Project Manager and MTO Environmental Planner by the Stage 2 milestone and the final report shall be submitted at the Stage 3 milestone.

The ESC Strategy Summary Report shall include, at a minimum:

- A summary of proposed work including:
  - Project overview
  - Description of the project area
  - Scope of work, including a list of the primary construction activities that will disturb earth and have the potential to impact environmentally sensitive receptors and high-risk areas within the project limits.
  - A summary of erosion risk factors (i.e., construction activities, erosion potential) adjacent to the environmentally sensitive receptors and high-risk areas, including the potential erosion and sedimentation impacts to the sensitive receptors posed by these factors.
- Rationale for the recommended approach to implement ESC measures into the Contract Documents including:
  - Temporary erosion control and temporary sediment control measures (for all high, medium, and low risk areas as identified in Template ESC-4).
  - Advanced placement of permanent cover.
  - Selective clearing and deferred grubbing.
  - Adaptive management approaches to erosion control and sediment control during construction.
- Summary of general legislative requirements and permitting conditions
  - Where permits/authorizations are required for the project, the negotiated ESC requirements should be detailed in the report and confirmed to be included in Contract Documents.
- Confirmation that the Project Team, including MTO Construction staff, agree on the proposed mitigation plan and confirm it is feasible, constructible, and properly implemented in the contract.
- Monitoring recommendations and requirements.
- Appendices:
  - Templates ESC-1 to ESC-4 from Preliminary Design and Template ESC-5 completed by, or under the supervision of the ESC Specialist.
  - Maps (topographic or imagery-based) showing both the name and location of environmentally sensitive receptors, moderate and high-risk areas. Locations where possible non-standard temporary erosion control and temporary sediment control measures may be implemented shall be highlighted.
  - Photos of sensitive receptors, moderate risk areas, and high-risk areas.
  - Contract Drawings of applicable areas of site-specific mitigation.

Fish and Fish Habitat

The Service Provider is to confirm whether there are any waterbodies (including associated ditch lines, wetlands, stormwater management ponds etc.) within 30 metres of the contract limits that may be impacted by the proposed work. The Service Provider shall undertake field investigations appropriate to the project to accurately characterize any fish and fish habitat that may be present and shall undertake the necessary impact assessments.

All work shall be undertaken, and deliverables (including but not limited to reports, MTO Project Notification Packages, DFO Request for Review Packages, *Fisheries Act* authorization/SARA permit applications, and contract documentation) shall be prepared in accordance with the following documents, as amended: MTO Environmental Guide for Fisheries (Fish Guide), the MTO Environmental Guide for Fisheries – Best Management Practices (2025) (Fisheries BMPs), and with any applicable MTO Operational Procedures, Directives, or Release Notes etc., as posted on the MTO Technical Publications or RAQS/MERX websites.

The Service Provider shall be responsible for obtaining all necessary permits and/or authorizations required by the project, including those required for field investigations and construction. If fish sampling and/or rescues are required as part of the project, a licence to collect fish issued by the MNR according to Ontario Regulation 664/98 shall be obtained.

MTO will provide the Service Provider with the Fisheries Impact Assessment Report prepared for Preliminary Design. Fish community sampling and habitat mapping is not required for any watercourses that are identified in the provided report; however, visual field-verification of site conditions will be required. For any watercourses within 30 m of the contract limits not identified in the provided report, or where the current site conditions have changed considerably from the conditions documented in the provided report, or if additional field/site condition information to help inform the design is needed, the Service Provider shall gather existing conditions information as per the above noted MTO fisheries guidance documents. **[NTD: Include if existing information is available and not out of date]**

The Service Provider shall work collaboratively (i.e. fisheries plus terrestrial, structural, hydrology, fluvial geomorphology etc.) to develop any associated natural channel designs, fisheries enhancement, and offsetting measures.

Groundwater

Technical requirements for ‘Groundwater’ are provided in Section 3.3 of the Environmental Reference for Highway Design. The work may include but is not limited to the collection of background information, field investigations, hydrogeological assessments, impact assessments, mitigation measures, permits to take water, and preparation and review of reports.

Fluvial Geomorphology

A Fluvial Geomorphologist shall conduct detailed analyses of aquatic ecosystems and evaluate the potential impacts of proposed designs on stream environments, applying fluvial geomorphology principles. The Fluvial Geomorphologist shall work with the project team to develop natural channel designs for all waterbodies where culvert or bridge replacements or expansions, channel realignments or modifications, outfall structure replacements, and stormwater management (SWM) pond outfalls are proposed. The Fluvial Geomorphologist shall integrate fish habitat restoration and enhancement measures to restore and, where feasible, improve the morphological and ecological function of watercourses.

[NTD: Include the following paragraph and bullets where fluvial geomorphological studies were not previously completed during PD or where additional information is required; to be modified by the MTO EP as required:

The Fluvial Geomorphologist shall employ the principles of fluvial geomorphology, and, at a minimum, undertake the following (as appropriate to the waterbody location), using industry approved methods and assessment criteria:

- Fluvial geomorphic assessments.
- Erosion and scour assessment.
- Meander belt assessments.**]**

In addition, the Fluvial Geomorphologist shall develop construction and post-construction monitoring objectives and requirements to assess the overall functionality and success of the implemented designs.

[NTD: Include the following paragraph where fluvial geomorphological studies were previously completed during PD
MTO will provide the Service Provider with the Fluvial Geomorphology Report prepared for Preliminary Design. Existing conditions data collection is not required for any watercourses that are identified in the provided report; however, visual field-verification of site conditions will be required. For any waterbodies within 30 m of the contract limits not identified in the provided report, or where the current site conditions have changed considerably from the conditions documented in the provided report, or if additional field/site condition information to help inform the design is needed, the Service Provider shall gather the necessary fluvial geomorphic existing conditions information to inform the Detail Design.**]**

Land Use

Technical requirements for 'Land Use Factors' are provided in Section 3.5 of the Environmental Reference for Highway Design. The Service Provider's work shall include but not necessarily be limited to information gathering and review of background data, site visits, identifying existing conditions, determination of significance, impact assessments, development of mitigation measures, and report preparation.

Landscape

Technical requirements for 'Landscape Composition' are provided in Section 3.9 of the Environmental Reference for Highway Design. There may be opportunities for landscape planting as enhancement planting and/or for restoration planting due to impacts resulting from construction activities.

The Service Provider is to identify existing vegetation (quality/sensitivity, quantity etc.) to be removed/impacted by the project. Landscaping is to be incorporated into the contract documents and contract design drawings, including quantities where feasible. The Service Provider may be required to provide input to site restoration, monitoring and compensation plans for Species at Risk.

Terrestrial

Technical requirements for 'Terrestrial Ecosystems' are provided in Section 3.2 of the Environmental Reference for Highway Design. The Service Provider shall obtain permits/authorizations under the Species at Risk Act and Migratory Birds Convention Act, if required. Other permits/authorizations (e.g., Federal Migratory Bird Regulations, Species Conservation Act shall also be obtained through discussions with ECCC and MECP, where applicable.

The Service Provider shall provide services involving pre-design inventory and assessment work of terrestrial ecosystems including wetlands and stormwater management ponds in accordance

with the Ministry's policy (e.g. Environmental Reference for Highway Design, the Environmental Guide for Wildlife in the Oak Ridges Moraine). The Service Provider may also be responsible for pre-construction monitoring of various MTO projects. The Service Provider will have regard for Species at Risk as per the *Species Conservation Act* and/or *Species at Risk Act.*

Regulatory requirements will be confirmed as the Project approaches implementation to verify if adjustments are required for the Project (e.g., confirmation of applicable legislation at the time permits are sought).

The Service Provider will be required to prepare reports (e.g. existing conditions and impact assessment), prepare monitoring, restoration and compensation plans, obtain necessary permits and approvals, register work where required, and develop mitigation measures for design, construction, operations, and maintenance stages.

Detailed investigations of all work areas and adjacent areas shall include the inventory of migratory bird nests on/in/below etc. all structures/culverts/areas within the contract limits, identification of existing vegetation (SAR trees and shrubs, quality/sensitivity, quantity etc.) to be removed/impacted and the removal of trees which **may** trigger a SAR bat surveys.

Snowdrift Mitigation

A separate report or memo, depending on the scale of the project, shall be prepared to document the snowdrift potential and mitigation measure alternatives and locations. The assessment shall include a cost comparison and feasibility analysis for each of the mitigation measures proposed for the project.

Mitigation measures should include but not be limited to grading, plantings and fencing or barriers, as well as additions, modifications or repairs to existing mitigation measures. Snowdrift assessment shall be coordinated with other disciplines, such as landscape architecture.

Snowdrift mitigation measures will be incorporated into the contract document and drawings and summarized in the environmental assessment documentation required for the project.

7.7.2.2.4 Environmental Schedule

The environmental schedule requirements for this project are the following:

[NTD: Insert requirements

Example:

- Terrestrial ecology investigations must be completed prior to any archaeological investigations or other invasive field investigations such as for foundations, to determine whether there are any SAR (plant or animal), critical habitats or ground nesting birds that may impact the timing of archaeological excavation/ploughing or other engineering or environmental field investigations. Archaeological and other field investigations must comply with any resulting timing restrictions and be incorporated into the project schedule. Archaeology must be completed prior to other invasive engineering investigations (e.g. geotechnical borehole drilling).
- Permission to Enter (PTE) must be obtained prior to entering onto private property for any purpose including environmental field investigations.
- Critical habitat for aquatic species at risk (e.g. Redside Dace/Silver Shiner) which includes the meander belt +30m of riparian habitat on each side must be identified and appropriate permits/approvals obtained prior to undertaking intrusive field investigations above or

below the high water mark (e.g. foundations/geotechnical investigations, archaeology etc.)**]**

7.7.2.*3* Project Specific Environmental Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[NTD: Insert a list of tasks if known

Land based archaeological assessments may encompass stage 1 (with property inspection), 2, 3 and 4 archaeological assessments including unexpected deeply buried archaeological finds and burials/burial site investigation. Marine archaeological assessments of waterways and their shorelines may also be required.**]**

7.7.3 Deliverables

The Service Provider shall prepare a Detail Design Environmental Summary (DDES) at the end of the Design Phase for the Ministry's internal use. The DDES will summarize existing conditions and impact assessments undertaken during Preliminary Design (if applicable), all environmental studies and field work undertaken under this assignment.

The Service Provider shall also prepare:

- Consultation plan as per Section 4.1.1 of the ERD **[NTD: Include for Group A, B, or C Projects]**
- Post-TESR Record of Consultation **[NTD: Include only if a TESR is being completed]**
- EA Addendum Process as per Legislative Requirements (ie. TESR Addendum), as per requirements of the Class EA **[NTD: Specify the process and include if likely to be required]**
- Environmental Synopsis
- Summary of Environmental Concerns and Commitments table
- Letter of Eligibility for Environmental Clearance, which confirms:
    - All design-related environmental approvals/permits/exemptions received;
    - All preconstruction environmental mitigation/work completed;
    - All environmental design commitments addressed; and
    - **[NTD: Insert either** TESR **or** Environmental Screening Memorandum**]** completed.

All commitments from the Preliminary Design Environmental Documentation or assessment of environmental impacts shall be reviewed and incorporated into this project's Detail Design environmental program. The Service Provider shall review the Preliminary Design documentation to confirm any additional fieldwork that will be required as part of Detail Design.

At the conclusion of the project, an electronic copy of all project reports shall be provided to MTO.

All GIS files (e.g. file geodatabase, shapefiles) and AutoCAD files (e.g. .dwg and .dgn) should be provided in a format usable for MTO internal data needs. Appropriate metadata shall also be provided with the digital data, following common standards, and including a detailed data dictionary as necessary.

Environmental Technical Reports

In addition to the environmental assessment process documentation, the following environmental technical reports are required: **[NTD: Modify the list as required]**

- Fisheries Impact Assessment Report
- Terrestrial Ecosystems Impact Assessment Report
- Archaeological Report(s) - land based and marine
- Cultural Heritage Evaluation Reports (CHER)
- Heritage Impact Assessments (HIA)
- Strategic Conservations Plans (SCP)
- Snowdrift Mitigation Report or Memo
- Hydrogeological Report
- Watercourse Crossing Design Report
- Noise Assessment Report
- Socio-Economics Technical Report
- Human Health Implications Study Report
- Air Quality Impact Assessment
- Regional Air Quality Burden Analysis Report
- Climate Change Assessment Report
- Landscape Report and Community Value Plan
- Agricultural Impact Assessment
- ESC Strategy Summary Report
- Fluvial Geomorphology Report
- Designated Substance Survey Report (DSS)
- Assessment of Past Uses
- Sampling and Analysis Plan
- Soil Characterization Report
- Earth Management Plan (refer to Section 7.10 Highway Engineering)

7.7.4 Reference Documents

All MTO environmental policy documents are collectively titled Environmental Standards and Practices (ESP). These ESP documents are referenced in Appendix F: Technical Standards and Specifications. **[NTD: EP & PM to confirm relevant documents are included in the appendix]**

The ESP documents provide the Ministry's staff and its agents with the requirements, guidance and tools to protect the environment during all stages of provincial highways management. All of the ESP documents are available electronically on the MTO Technical Documents website at: MTO Technical Documents.

The ESP documents shall represent the minimum expectations for the work that the Service Provider must follow. It is the responsibility of the Service Provider to verify which of the documents specifically apply to the work, unless otherwise specified. The latest version of all referenced and posted ESP documents shall be used.

The project-specific environmental references are the following:

[NTD: Insert references. Also insert deliverables from Advance Work as reference documents here]

7.8 Indigenous Consultation and Duty to Consult

7.8.1 Project Scope

[NTD: The project scope should reflect the complexity of the assignment, including the duty to consult and interest-based engagement with Indigenous communities. The MTO Environmental Planner (EP) and MTO Indigenous Liaison Specialist (ILS) will modify the following draft terms to provide an appropriate scope of work]

The Service Provider shall support the ministry with consultation and engagement with Indigenous communities for the project. The Service Provider shall **[NTD: Modify the list as required]:**

- Work collaboratively with MTO and the Indigenous Relations Team.
- Develop and maintain an engagement and consultation plan.
- Provide input into the project communications plan for the purposes of keeping Indigenous communities regularly informed of the status of the project and develop communications materials (e.g. project notices, requests for review, etc.).
- Maintain knowledge of the details of the project and identify key items for discussion with Indigenous communities (i.e., environmental reporting, permitting, mitigation & compensation); and identify engagement and consultation milestones and opportunities.
- Work collaboratively amongst the Key Individuals and Technical Team Members).
- Prepare materials for review by MTO in support of consultation and support the coordination of logistics for meetings with Indigenous communities as needed (e.g. booking venues as required, coordinating equipment and materials, etc.).
- Prepare and/or support the development of plain language summaries of technical engineering/environmental documents for discussion with Indigenous Communities, as required.
- Support building Indigenous relations capacity internally (e.g. identify opportunities to share community-specific protocols, provide internal training as appropriate, prepare land acknowledgements, etc.).
- Attend regular meetings with Indigenous communities and agencies, and maintain records; including requirement to attend in-person meetings with communities.
- Develop Indigenous Consultation Comment Tracking Sheet to be reviewed bi-weekly. This tracking sheet shall document and manage all Indigenous community questions, comments, and concerns. Prepare responses to comments and concerns from Indigenous communities for MTO review and track status of responses sent by MTO.
- Provide recommendations for accommodation measures as appropriate.
- Develop approach for addressing new or evolving issues that may arise as the study proceeds. Identify matters that may impact the consultation and engagement process, including matters affecting communities and stay informed of any changes to provincial and federal legislation, regulations, policies and practices. Take a leadership role in identifying and recommending solutions to questions raised.
- Collaborate with key individuals, detail design assignment teams and MTO to support the tracking of commitments and requests from Indigenous communities and agencies.
- Remain knowledgeable of fieldwork being completed; including support/facilitation of the Community Field Liaisons and recommend opportunities for Indigenous procurement.
- Prepare internal briefing material as required to inform project decisions that concern Indigenous engagement and consultation.
- Manage Indigenous Community SharePoint Sites if used, including but not limited to uploading reports, presentations (SharePoint Site) for review by Indigenous communities.**]**

7.8.2 Technical Services Required

7.8.2.1 Staff to be provided

Key personnel in Table 1: *Mandatory Qualification Requirements for Key Individuals* in Section 1.5.1 shall meet the qualification requirements as described below.

[NTD: Include a job title and a description of staffing expectations (e.g. experience, technical expertise) for scoring in phase I (EOI). Any staffing requirement(s) that would result in disqualification of the proposal if not part of the proponent's submission must also be included in Table 1 Section 1.5.1. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 1.

Depending on the complexity of the assignment, an Indigenous Consultation Lead and/or Indigenous Consultation Support will be identified as part of the Table 1 and/or Table 2. EP and ILS will make a determine the required roles and appropriate table based on specific project details and anticipated level of work. In all cases, MTO will lead consultation and engagement with Indigenous communities, and the Service Provider will support MTO in this work.]

Indigenous Consultation Specialist shall meet the below minimum qualifications:

- 10 years of demonstrated experience with the following:
  - Conducting consultation and engagement with multiple Indigenous communities on the planning and design of large, complex infrastructure projects. This experience should include at least one (1) complex linear facility project.
  - Developing appropriate accommodation measures and minimizing impacts to Indigenous communities.
  - Issues management and issues resolution related to Indigenous relations and consultation matters.
  - Facilitating effective review processes in support of meaningful information sharing with Indigenous communities (e.g. comment-response exercises).
  - Implementing culturally appropriate communication and facilitation methods.
  - Effectively managing concurrent, competing timelines for multiple coordinated projects.
  - Facilitating consultation meeting with Indigenous communities.
- Knowledge of Canadian legal framework with regards to Aboriginal and treaty rights (e.g. duty to consult and where appropriate accommodate, relevant case law, etc.).
- Knowledge and experience preparing and implementing consultation/engagement plans for Indigenous consultation for complex projects.
- Knowledge and experience with Indigenous consultation process requirements for infrastructure projects.
- Experience facilitating consultation meetings with Indigenous communities.
- Strong understanding of current and emerging Indigenous relations issues.
- Conceptual understanding of planning and design process for infrastructure projects.

Indigenous Consultation Support shall meet the below minimum qualifications:

- Experience leading engagement and consultation with Indigenous communities for infrastructure projects.
- Broad knowledge of Canadian legal framework with regards to Aboriginal and treaty rights (e.g. duty to consult and where appropriate accommodate).
- Experience with the preparation and implementation of engagement/consultation plans for infrastructure projects.
- Experience with review processes (i.e. preparing responses to comments put forward as part of information sharing).
- Experience facilitating consultation meeting with Indigenous communities.

Requirements for additional staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

7.8.2.2 Project Specific Requirements via Lump Sum Price

Indigenous Community Consultation and Engagement

The Crown has a legal 'duty to consult' Indigenous communities when it has knowledge of an established or credibly asserted Aboriginal or treaty right and contemplates conduct that may adversely affect that right. This 'rights-based' consultation is a separate and distinct legal requirement from the interest-based consultation required during the Class EA process. Rights-based consultation may require a deeper level of consultation than what is required through the Class EA process, and it cannot be limited to regulatory timelines for public consultation established under the Class EA.

This project may require rights-based consultation with Indigenous communities and/or interest-based consultation with Indigenous communities, organizations and individuals. MTO will be the lead on Indigenous consultation and will develop the list of Indigenous communities that should be consulted on a rights or interest basis. In most cases, any direct correspondence with Indigenous communities will be sent by MTO.

The Service Provider shall ensure full integration between Indigenous Consultation, public consultation, and environmental deliverable requirements.

The Service Provider shall prepare the draft and final correspondences/ letters with Indigenous communities and submit to the Ministry Environmental Planner and Indigenous Liaison Specialist for review and approval. The Ministry will distribute the final letters to Indigenous communities, unless otherwise specified. The Service Provider will also assist with the preparation of information packages as required (e.g. printing, etc.).

7.8.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

Indigenous Community Field Liaisons

Archaeology CFLs are any person(s) from or representing an Indigenous community who works with the consultant archaeologists to observe archaeology work, provide advice or community knowledge when necessary, and report back to their community.

MTO also recognizes Indigenous communities' interest in environmental protection and, at times, monitoring the potential environmental impacts of MTO projects. An environmental CFL is any person(s) from or representing an Indigenous community who will participate in on-site observation of potential environmental impacts during environmental field activities in the planning and design of a MTO project. MTO considers the participation of environmental CFLs on MTO projects on a case-by-case basis when requested by Indigenous communities.

The Service Provider is advised that if the Ministry receives any requests from an Indigenous community for the inclusion of CFLs for any archaeological or environmental field activities associated with this project, and the request is determined to be appropriate by MTO, the Ministry will direct the Service Provider to support the participation of CFLs. The ministry may issue a Work Order to the Service Provider if this responsibility was not already outlined in the contract. The Service Provider will take the necessary actions to coordinate CFL activities and provide compensation for CFLs using MTO approved CFL rates and guidelines. This typically requires the Service Provider to enter into a written and signed agreement with Indigenous communities regarding CFL participation and compensation.

[NTD: Insert tasks if known]

7.8.3 Deliverables

- Indigenous engagement and consultation plan
- Indigenous Consultation Comment Tracking Sheet

7.8.4 Reference Documents

[NTD: Insert documents]

7.9 Foundations Engineering - N/A

7.9.1 Project Scope

The Foundations Engineering services are required for Detail Design, Contract Preparation and Design Support during tendering and Construction for [Hwy No. and project description], as per the detailed project description provided in the Project Scope of the RFP.

The Foundations Engineering services required for this assignment have been categorised per MTO's Service Provider acquisition system, "Registry, Appraisal and Qualification System (RAQS)" as the following:

- **Foundations Engineering Category:**
  - **Insert requirements**
- **Engineering Materials Testing and Evaluation Category:**
  - **Insert requirements**

The Foundations Engineering services shall include the following tasks:

- Compile and review existing subsurface information and site reconnaissance.
- Conduct foundation field investigations and laboratory testing as specified.
- Prepare Foundation and Hydrogeological Investigation and Design Reports and technical memoranda as specified.
- Attend project meetings as specified.
- Develop and review contract package.
- Design liaison during tendering and construction.
- Foundation engineering oversight.

The minimum requirements for Foundations Engineering are outlined in Section 7.9.2.2.1 General.

Project-specific requirements are detailed in Section 7.9.2.2.2 Project Specific and shall govern where any conflict exists with Section 7.9.2.2.1.

Further details pertaining to structures and roadway design as related to Foundations Engineering are found elsewhere in this Request for Proposal Terms of Reference.

The WO/WP/GWP number shall be included on the subject line of all correspondence with MTO.

7.9.2 Technical Services Required

7.9.2.1 Staff to be provided

Key personnel in Table 1: *Mandatory Qualification Requirements for Key Individuals* in Section 1.5.1 shall meet the qualification requirements as described below.

[NTD: Include a job title and a description of staffing expectations (e.g. experience, technical expertise) for scoring in phase I (EOI). Any staffing requirement(s) that would result in disqualification of the proposal if not part of the proponent's submission must also be included in Table 1 Section 1.5.1. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 1.]

Requirements for additional staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III.

Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

7.9.2.2 Project Specific Requirements via Lump Sum Price

7.9.2.2.1 General

Design Liaison

The Foundations Engineering Service Provider shall liaise with the Progressive Design Build (PDB) Team to communicate and integrate Foundations Engineering requirements into the design. The Foundations Engineering Service Provider shall also support any liaison with other jurisdictions such as Railways to facilitate their approval of the work.

The Foundations Engineering Service Provider shall expect to attend team XXXX meetings (including start-up meeting) with the Ministry and PDB Teams.

Contract Package Development and Review

All contract package submitted to MTO Foundations shall include two (2) cover letters to confirm the following:

1. From Foundations Engineering Service Provider:
   - The Contract Package (i.e., contract drawings, tender documents including standard and non-standard specifications) has been reviewed to confirm that the designs and recommendations for the Foundations Engineering components are adequately reflected in the Contract Package.
   - All the review comments submitted to the Prime Service Provider have been satisfactorily incorporated and addressed in the Contract Package.
2. From Prime Service Provider:
   - Foundations Engineering designs, recommendations, and review comments from Foundations Engineering Service Provider have been satisfactorily incorporated and addressed in the Contract Package.
     The appropriate Foundation Investigation Report(s), specifications, and Foundation Drawings 'Borehole Location and Soil Strata' have been incorporated in the Contract Package.

MTO Foundations shall be informed if any design changes that affect Foundations Engineering are made after the Executive review meetings.

Minimum Requirements for Foundations Engineering Services

The minimum and general requirements for Foundations Engineering services are outlined in the latest version of the Guideline for MTO Foundations Engineering Services (the Guideline).

The Guideline specifies the minimum requirements for Foundations Engineering services, including review and use of existing data, project initiation requirements, permits and approvals for site access and investigation, traffic protection and health and safety, site investigation and field testing, engineering materials testing and evaluation, and engineering and reporting.

The Foundations Engineering Service Provider shall review the Guideline for project requirements in conjunction with this Foundation Terms of Reference in preparation of the proposal and carrying out the Foundations Engineering Services.

Project-specific requirements are detailed in Section 7.9.2.2.2 Project Specific and shall govern where any conflict exists with the Guideline.

Quality Control

To ensure consistency and accountability, the designated MTO Principal Foundations Contact identified for Foundations Engineering services by MTO must be the liaison for this project and shall sign, and where required, seal all submissions and correspondence.

All deliverables to MTO related to Foundations Engineering Services, such as reports, and technical memorandum shall be submitted in draft for review by MTO Foundations Group prior to implementation.

The draft submission shall be marked ‘DRAFT’ but must be comprehensive and technically complete except for issues that are clearly identified as under development and conceptual.

The Service Providers shall allow **a minimum of two (2) weeks** in the project schedule for the Ministry to review and provide comments on the submissions. The Foundations Engineering Service Provider shall consider MTO comments received on the draft submission in preparation of the final submissions.

Draft submissions submitted to the MTO Foundations will be considered in the evaluation of performance of the Service Providers. Draft submission shall be signed but not sealed by two Professional Engineers licensed by the Professional Engineers of Ontario (PEO), representing the Foundations Engineering Service Provider, one (1) of whom shall be the RAQS Approved Key Personnel registered in the relevant RAQS Foundations Engineering specialty.

Final submissions shall be signed and sealed by two (2) professional engineers registered with PEO, representing the representing the Foundations Engineering Service Provider, one of whom shall be that firm's designated MTO Principal Foundations Contact for MTO Foundations Engineering projects.

Final submissions shall also include a letter from the Foundations Engineering Service Provider indicating how the MTO comments from the draft submission were addressed.

All submissions and written confirmation for Contract Package Development and Review shall be accompanied by a Quality Control (QC) Plan Checklist completed to that submission milestone, signed by Foundations Engineering Quality Control Personnel.

7.9.2.2.2 Project Specific

[NTD: Insert requirements]

7.9.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[NTD: Insert tasks if known]

7.9.3 Deliverables

[NTD: Insert additional reports or delete the ones that are not applicable. Request minimum 1 report per contract for components such as HML, SWMP... if there are multiple contracts]

Foundations Engineering Reports and other reporting formats shall be delivered as per the below table.

Deliverable		**Item**
Foundation Investigation Report (FIR)	**Final**	**One (1) Digital (PDF, AutoCAD, gINT(.gpj))**
Foundation Investigation and Design Report (FIDR) and Technical Memorandum	**Draft**	**One (1) Digital (PDF)**
	Final	**One (1) Digital (PDF, AutoCAD, gINT(.gpj))**

7.9.4 Reference Documents

The minimum and general requirements for Foundations Engineering services are outlined in the Guideline for MTO Foundations Engineering Services and may be viewed from the Foundation Library (Web-Based):

http://www.mto.gov.on.ca/FoundationLibrary/index.shtml

Existing reports, if available, are also to be found on the GEOCRES Library website provided above. For assistance, please email MTO.Foundations@ontario.ca.

The following Preliminary Design and Design-Build Ready reports prepared for the **[project description]** and located within the project limits shall be reviewed and referenced.

- **[Insert list of reports]**

7.10 Highway Engineering - N/A

7.10.1 Project Scope

This project involves detail design for the new construction/rehabilitation of Highway **XXX**.

The Progressive Design Build services include total project management, detail design, contract package preparation, scheduling, estimating and risk assessment in accordance with applicable codes, policies, directives, manuals, standard and specifications, practices and procedures (including applicable regional memoranda), and relevant municipal standards for any municipal work [Delete if not applicable]. The Servicer Provider shall apply the latest version of the documents to the design and services.

The Highway Engineering scope of work includes the following: [Modify the tasks as needed]

- Document the existing conditions through detailed field reviews, and provide recommendations for all highway elements including safety improvements
- Design highway XXX within the project limits, and provide constructability review and quality management on all components of the project
- Design and prepare documents related to roadside safety items, geometrics, cross-sections, interchanges, intersections, staging/detouring, utilities, property, signage, land management/development, erosion and sediment control, earth borrow, earth disposal and all environmental protections.
- Coordinate with the Ministry specialty offices to develop and evaluate multiple construction staging and detour options, including integration with traffic modelling, and analysis of staging impacts, constructability, and cost implications
- Coordinate with the Ministry Operation staff to incorporate Operation and Maintenance needs into the design
- Prepare and discuss/negotiate any legal or cost sharing agreements with others, such as municipalities and utility companies, and obtain required permits, approvals, licenses, etc.,
- Resolve utility conflict and relocation
- Assist the Ministry staff in responding to inquiries related to property acquisition and corridor management
- Design new and/ or modify existing municipal roads and private entrances impacted by construction
- Liaise with Indigenous communities, stakeholders, municipalities, and the public, including facilitation of Public Information Centres
- Coordinate with municipalities regarding active transportation initiatives and provisions within the MTO right-of-way
- Facilitate project meetings to review progress, resolve issues, and obtain Ministry Senior Management approvals at key decision points
- Carry out constructability reviews at each design Stage, integrating contractor input to optimize staging, phasing, design and delivery approach
- Provide technical expertise and respond to any bid inquiry during the tendering phase(s).

The detail design assignment shall be conformed with the Ministry's latest policy, directives, design criteria, guidelines, specifications and standards.

7.10.2 Technical Services Required

7.10.2.1 Staff to be provided

Requirements for staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for technical staff that will be reviewed for compliance in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.

Lead (Supervisor) Highway Engineer

- Shall have a minimum ten (10) years of highway design experience (as a P. Eng.) on projects for MTO or other similar jurisdictions in Canada or USA of medium or high complexity scope and size
- Shall have demonstrated experience with complex staging of highway projects (at minimum three (3) projects with complex staging).

Highway Design Engineer

- Shall have demonstrated successful detail design and/or preliminary design experience on a minimum of three (3) MTO projects or projects with similar size and scope from other jurisdictions (within the past 10 years)
- Shall be able to demonstrate recent experience in the production of two (2) or more highway contract packages for projects of medium or high complexity.

Senior CAD/ GIS Technician

- Shall have a minimum of five (5) years of experience performing plan processing or mapping in Senior position.

OR

- Shall have performed significant work for MTO or other similar jurisdictions in a Junior Drafter position on a minimum of three (3) previous highway engineering projects.

AND

- Has extensive knowledge of all applicable ministry policies, standards and technical procedures, including regional practices pertaining to highway engineering design and template.
- Has extensive knowledge of quality assessment and use of CAD and ArcGIS software.**]**

7.10.2.2 Project Specific Requirements via Lump Sum Price

7.10.2.2.1 General

Design

The Service Provider shall complete the detail design and perform the following tasks, in accordance with the Legal Terms and Conditions and the following:

a) Prepare detailed quantity estimates for tender, materials and sundry construction

b) In major grading areas and areas of excavation greater than 0.5 m, quantities are to be calculated using original ground cross sections

c) All surplus stripping, grubbing, earth and rock material is to be used where possible within the

highway ROW

d) Provide hard copies of all plot plans and cross-sections required for the construction

e) Contract documents shall be prepared using the latest version of the Ministry's Contract Preparation System (CPS). Cross-sections shall be completed using Open Roads Designer (ORD) software. MTO ORD configuration contains design resources developed as per MTO Geometric Design standards, MTO IESCAD standards and CDED manual

f) Incorporate design drawings and specifications of work designed by others, when required

g) Review all traffic control special provisions with the Ministry staff by the second last progress meeting

h) Submit documentation for the Design Phase at the Final Submission of construction Contract package to Contract Section using current Ministry standards, policies and practices if applicable

i) Provide Engineering Materials Testing and Evaluation quantities for construction.

Advance Work and Early Procurement [NTD: Delete if not applicable]

The Service Provider shall evaluate opportunities to advance specific work packages ahead of the main contract(s) and procure long lead time materials where it is practical and beneficial to the overall project. This may include activities such as electrical and structural components ordering, utility relocations, environmental mitigation measures, or early construction tasks that could optimize the schedule, reduce project risks, or minimize throwaway work. The Service Provider is expected to identify potential advance packages during the design process, assess their feasibility, and provide recommendations to the Ministry for review and approval. Any proposed advance packages shall include justification, scope definition, and anticipated benefits to the project.

Contract Package

For bidding purposes, [insert #] separate contract packages are required for the project, as outlined below:

- **[Insert requirements]**

These packages are provided for planning and pricing purposes only. The Ministry reserves the right to adjust the scope or sequencing of these packages, as required.

7.10.2.2.2 Earth Management

To support the Government of Ontario's objectives for the conservation of resources and the diversion of reusable earth material from landfill, the Service Provider shall strive to be proactive and innovative during design by considering all possible options and incorporating reasonable measures to confirm that the generation of excess earth is minimized on Ministry's projects.

Soil, crushed rock or soil mixed with rock or crushed rock, that has been excavated as part of a project and removed from the project area is deemed **Excess Soil** under O. Reg. 406/19 and

must be managed in accordance with the requirements under the regulation. Refer to Section 7.6 for further details. The Service Provider shall make all reasonable effort to beneficially reuse excess soil. The beneficial purpose for reuse is as defined under section 5.(1). 3 of O. Reg. 406/19 and should be taken into consideration.

On projects where excess material (e.g., soil, muskeg, rock) will be generated, opportunities for management options to be incorporated into the detail design package should be explored in accordance with the *MTO Earth Best Practices and Recommendations for Design and Construction*.

Reporting requirements under O. Reg. 406/19 are covered in Section 7.6. The Service Provider shall produce and maintain an Earth Management Plan detailing the management of earth and showing the measures taken by the designer to minimize excess material generation and maximize reuse within the project area, including:

a) Incorporation of any previously prepared Earth Management Plan and associated information

b) Quantities of earth within the project limits, i.e. total earth excavation; earth used within contract limits, earth that is suitable for re-use for engineered purposes vs. earth that is unsuitable for engineered purposes but that may be suitable for re-use for other purposes within the project area, earth to be stockpiled, earth to be managed as excess soil

c) Quantities of excess material, including excess soil, removed from the project area and final placement locations

d) Identification of earth quality through representative sampling and testing procedures and protocols, and identification and management of areas of potential environmental concern. Analytical testing to determine the environmental quality of the earth shall be conducted by an accredited laboratory (meeting Standards Council of Canada requirements).

e) Features that were built into the design to minimize excess (surplus and unsuitable), material generation with consideration of cost implications and justification

f) Identification of viable management options and recommended methods and placement locations, including stockpiling areas located:
   i) Within Ministry ROW,
   ii) On lands otherwise under MTO jurisdiction and control,
   iii) On other lands (the Service Provider shall provide written evidence of appropriate consultation, landowner's consent, and any required municipal or other permits/approvals, and
   iv) In pits and quarries licenced or permitted under the Aggregate Resources Act, in compliance with O. Reg. 244/97, the applicable Aggregate Resources of Ontario Standards, as well as the Site Plan which must state that soil may be imported for the purposes of rehabilitation. Where soil is to be imported for rehabilitation, details on the type, use, volumes and quality of the imported soil, as well as details on any related testing, tracking and recordkeeping that will be carried out must be stated on the Site Plan.

g) Tables summarizing the management data, including:
   i) the activity that generates excess material (e.g., stripping, culvert excavation, earth ditch cleanout, distortion treatments [e.g., frost heaves], other earth excavation activities)
   ii) the location of the activity (e.g., station numbers and offsets)

iii) the quantity of excess material generated per activity at each location
iv) the quality of the excess earth generated at each location according to the sampling results provided, and
v) the final placement location of the excess material.

h) Where excess material could be stockpiled, a Stockpile Monitoring Plan and schedule shall be appended, and include information on monitoring and other responsibilities necessary to confirm coverage until the material is transported to its ultimate destination for reuse

i) Analysis and justification of recommended management options including any additional changes and expenditures, necessary elsewhere in the contract, to optimize earth management

j) Contract provisions required for the management of earth, including excess soil.

The Earth Management Plan is to be developed during the Stage 1 and updated as detail design progresses and new information becomes available. The Earth Management Plan is to be finalized by the completion of Final Design and provided for reference during tendering.

The Earth Management Plan shall include details on how any Excess Soil, as defined by O. Reg. 406/19, will be managed to meet the requirements of the regulation. This includes identifying temporary stockpile and final placement locations for beneficial reuse, along with information on soil quantities and quality. It is the responsibility of the Service Provider to identify specific beneficial reuse sites for any excess soil after exhausting opportunities to manage the material within the project area.

The Service Provider shall confirm that the requirements of the Earth Management Plan are incorporated into the construction contract documents. An overview of the Earth Management Plan shall be included in the Design Synopsis for the project, providing information on how excess material, including excess soil, will be minimized and managed on the project.

Earth Borrow Material

As Part of the Earth Management Plan the Service Provider is required to carry out and document the results of an investigation to identify any potential sources of suitable earth/borrow material such as:

- Existing MTO stockpile location
- Other MTO projects in design or under construction
- Other road authority stockpile or project locations, and
- Other potential external sources.

The Service Provider's Qualified Person shall review the excess soil reuse planning reports such as APU, SAP and the SCR as per section 7.7 – Environmental, and confirm that MTO can accept excess soil for beneficial reuse from a project area where the owner is not MTO, and the excess soil source site is not from an "infrastructure project" as defined under O. Reg. 406/19.

The Service Provider is responsible for all field and office surveys and other activities necessary to complete the investigation. The field investigation shall include sampling and analytical testing by an accredited laboratory (meeting Standards Council of Canada requirements), to determine

the environmental quality of the Earth Borrow material. The field investigation and subsequent report must confirm that identified Earth Borrow does not contain the following:

- Any solid non-hazardous or other waste material (as per EPA O. Reg. 347); or
- Any petroleum hydrocarbon or other contaminants as identified through the presence of visual, olfactory or other evidence; and/or
- Contaminants of concern exceeding applicable Ministry of the Environment, Conservation & Parks (MECP) excess soil quality standards, as found in the most recent version of the *Rules for Soil Management and Excess Soil Quality Standards* document.

Reused grading materials are required to meet OPSS 1010, OPSS 206 and any other applicable specification when obtained from within the right-of-way. Classification of acceptable materials, use and disposal are outlined in CDED B-206.

Confirmation of earth quality and documentation of potential sources of Earth Borrow shall be included in the Earth Management Plan.

7.10.2.2.3 Erosion and Sediment Control

The Service Provider shall design the erosion and sediment control as per Section 7.7 – Environmental. The permanent and temporary erosion control measures, and timing of the installation and removal shall be effective for the site-specific conditions, construction activities and staging work.

7.10.2.2.4 Drainage

Ditching shall be designed by geodetic control using standard PQP cross section intervals at locations where a 'D' depth for ditching is indicated in the Pavement Design Report and at other locations where geodetic control is required to provide positive drainage.

Should excavations for ditching/ditch cleanout operations be in excess of 0.5 m in depth, geodetic control is required. The Service Provider shall prepare templates which will be used for construction. Equipment rental for ditching may be used for areas indicated for 'ditch cleanout' in the Pavement Design Report provided positive drainage can be attained. The Ministry needs to review any additional proposed rental ditching areas identified by the Service Provider. The Ministry must approve lineal metre ditching in lieu of equipment rental.

The project includes reviewing existing drainage and hydrology of the highway drainage system (e.g. culverts, sewers, catch basins, off take ditches) within the project limits. All culverts will also require a thorough inspection, assessment and an evaluation of replacement alternatives where warranted. Hydraulic analysis shall be completed for all proposed culvert replacements and culverts with a history of capacity deficiencies. The drainage and hydrology designs will be done in conformity to Ministry accepted standards. The Service Provider shall provide recommendations for rehabilitation or replacement as appropriate.

[NTD: Include the paragraphs below if new SWMP is included in the project:

At a minimum, the design of the stormwater management pond (SWMP) shall incorporate the following requirements to provide safe, efficient, and cost-effective inspection, operation and long-

term maintenance:

- Safe and convenient access for routine inspections and annual maintenance activities including lockable access gates where required, shall be provided to all SWMP inlets, outlets and control structures.
- A continuous maintenance access road shall be provided around the perimeter of each SWMP to accommodate construction and maintenance vehicles. Permeable grass pavers are the preferred surface treatment for the perimeter access road and other maintenance access areas, where feasible and appropriate. The Service Provider shall also identify if a truck ramp can be added to the design for snow disposal purposes.
- Perimeter fencing shall be provided around each SWMP to enhance safety and security.]

7.10.2.2.5 Water Taking Permits

General

The Service Provider shall determine all water taking requirements associated with the Project, including but not limited to construction dewatering, dust control, hydrodemolition, flushing, and other construction-related activities.

The Service Provider shall identify all applicable regulatory requirements in accordance with the **Ontario Water Resources Act**, **O. Reg. 63/16 (Environmental Activity and Sector Registry – Water Taking)**, and **O. Reg. 387/04**, as amended.

The Service Provider shall determine the appropriate approval pathway (i.e., **EASR registration, Permit to Take Water (PTTW), or exemption**) early in the design process and shall document the rationale.

The Service Provider shall complete all work associated with Ministry of the Environment, Conservation and Parks (MECP) requirements for water taking, including:

- Determination of the applicable approval pathway (EASR, PTTW, or exemption) by the Stage 1 Submission
- Preparation of all technical analyses and supporting documentation by the Stage 2 Submission, and finalize them by the Stage 3 Submission or 90 days prior to the Design Completion Submission, whichever is earlier
- Completion and submission of:
  - **EASR registration**, where applicable; and/or
  - **PTTW application through the MECP online Environmental Permissions system** (mandatory as of January 5, 2026) https://www.ontario.ca/page/permits-take-water, https://www.municipalengineers.on.ca/news-information.html?id=456
- Submission of all supporting documentation and draft permit conditions (where applicable) by the Design Completion Submission
- Inclusion of all relevant requirements, mitigation measures, and monitoring obligations into the Contract Documents

Regulatory Considerations

The Service Provider shall:

- Assess whether proposed water takings exceed **50,000 litres per day**, which triggers regulatory requirements unless otherwise exempt

https://www.ontario.ca/page/permits-take-water

- Evaluate eligibility for **EASR registration**, noting that:
  - Many construction dewatering activities may now be registered rather than requiring a PTTW
  - There is **no upper volumetric limit** for eligible dewatering registrations, provided all regulatory criteria are satisfied
  - Surface water takings generally remain ineligible for EASR and require further review https://www.pgo.ca/uploaded/files/events/Fact%20Sheet_Changes%20to%20permission%20requirements%20for%20water%20taking%20activities-.pdf
- Confirm whether any activities are exempt from approval under current regulations
- Classify PTTW applications (Category 1, 2, or 3) and plan scope accordingly
- Engage a **Qualified Person (QP)** to complete all required technical assessments in accordance with MECP requirements

Water Taking Report

Where EASR registration is required, the Service Provider shall prepare a **Water Taking Report**. The report shall be completed and signed by a Qualified Person and shall include, at a minimum:

- All information required for EASR registration through the MECP online system
- Technical assessment and documentation demonstrating compliance with O. Reg. 63/16 requirements, including:
  - Identification of sensitive environmental features
  - Impact assessment and mitigation measures
  - Erosion and sediment control measures
  - Discharge and water quality considerations
- Documentation confirming that the activity meets all eligibility criteria for registration
- Record-keeping framework in accordance with regulatory requirements
- Written permission for access to water taking locations outside the MTO right-of-way, where applicable

The Service Provider shall retain all records required under O. Reg. 63/16 and ensure availability for audit.

Permit to Take Water Report

The Service Provider shall prepare and submit a Permit to Take Water (PTTW) Report when it is determined that a PTTW is required. The PTTW Report shall include the following information:

- Completed PTTW application with fee and all applicable attachments
  - Apply for the maximum or worst-case water-taking rate
  - Apply for a minimum of 1 and maximum of 5 viable water sources
  - Identify the Ministry as ‘applicant’ on application form
  - The Ministry’s Manager is signatory to the application, and
  - Service Provider’s ‘Qualified Professional’ is the ‘Project Technical Information Contact’.
- Technical analysis completed by a Qualified Professional to support the application
- Indigenous Consultation letters
- Written permission to access water taking locations outside the MTO right-of-way, and
- Indigenous consultation documentation (as required)
- Photographs and site documentation

The Service Provider shall refer to the following MECP documents for information regarding the application process and requirements:

- *Guide to Permit to Take Water Application Form* (available online at MECP's website)

The Service Provider shall review the Guide to determine the category of PTTW application. For bidding purpose, it is assumed that the proposed water taking activity/activities to be a Category 2 application.

Multiple water-taking activities required for a single project shall be addressed under a single permit application. This can include activities that are eligible for registration. A written request to MECP for a Section 20.18 Director's Order to exempt any eligible water taking activities from registration shall be included in the Permit to Take Water Report if they are to be included under a PTTW for a single project.

Design and Contract Integration

The Service Provider shall:

- Coordinate water taking requirements with design, staging, and environmental mitigation measures
- Ensure that all permit conditions, monitoring requirements, contingency measures, and reporting obligations are fully incorporated into:
  - Specifications and Special Provisions
  - Environmental protection plans
  - Construction staging and sequencing
- Coordinate water taking activities with other approvals (e.g., Fisheries Act, Conservation Authority permits and municipal permits)

7.10.2.2.6 Field Reviews

The Lead Highway Engineer and individual(s) responsible for highway design are required to undertake detailed field reviews with the Ministry Maintenance staff. The reviews must document the existing conditions and field recommendations for items such as drainage, culverts, sewers, guide rail, slope flattening, signing, pavement markings, erosion control, side roads and entrances.

7.10.2.2.7 Traffic

Staging/Detours

The Service Provider shall be responsible for determining all staging, detour and staged improvement requirements. This includes confirming any requirement for temporary traffic control signals and temporary illumination.

The Service Provider shall develop multiple Construction Staging options, including, but not limited to, full closure of side roads to facilitate the construction of bridge structures, ramps, and associated works. Subject to MTO obtaining municipal endorsement for full side road closures with long-range detours, the Service Provider's Construction Staging Plan shall incorporate detailed provisions for such closures. This shall include all required signage, detour routing, traffic management measures, and a comprehensive construction schedule demonstrating how full closures can expedite overall project delivery.

The Service Provider shall develop Construction Staging options incorporating multiple phases of work that maintain continuous side road traffic operations. Each option shall demonstrate safe and efficient traffic accommodation through staged construction sequencing and shall be supported by a detailed construction schedule outlining the sequence and duration of the works.

The alignment and cross sections of the staging/detour shall be determined based on safety, effectiveness, and cost. The Service Provider shall detail the proposed alignment(s), cross-section(s) and any impacts including property, utilities, environment, delay and disruption to traffic.

Signing and Pavement Markings

The project includes all temporary and permanent signing and pavement markings throughout the project. The Service Provider is to review and recommend all signage and pavement marking requirements throughout the project including cautionary signing at critical locations. All recommended permanent signage is to be reviewed by the Ministry. Approved permanent signage is to be detailed in the contract package. The Ministry must approve additional signs and pavement markings, and wordings on both permanent and construction identification signs.

7.10.2.2.8 Property and Corridor Management

The Service Provider shall provide all the services related to property acquisition and corridor management as specified in section 7.12 Property/ Corridor Management. The Property Request(s) must be identified early during the initial design and prioritized according to the property needs to do utility relocation and other advance works.

At the end of the Stage 1, the Service Provider shall also review the surplus properties within the project limits and prepare plans/sketches identifying any crossing roads to be transferred to the applicable municipality. The Ministry Project Manager will request assistance in preparing any documents related to the road land transfer. **[NTD: Delete if not applicable]**

The Service Provider shall conduct well condition surveys within the project limits to establish baseline conditions prior to construction activities. The survey shall document the location, type, and current condition of all identified wells and provide a summary report for inclusion in the project record.

The Service Provider shall review all entrances within the project limits and provide recommendations and design for entrances that are required relocations, closures or modifications. The Service Provider shall also assist Corridor Management Offices in reviewing permit application and development/ regional projects within the project limits.

[NTD: Delete if not applicable The Service Provider shall provide a design for Carpool Parking lots and associated services such as EV charging stations, lighting, cameras and drainage as per applicable policy, guidelines, specification and standards at the following locations:

- Insert location and specific requirements**]**

7.10.2.2.9 Utility

The existing utilities must be reviewed against all civil work to identify conflicts, and the Service Provider may need to obtain the planned utility locations from the municipal and/ or regional design projects. The Service Provider shall advance the utility relocations within the project limits to avoid delay to the construction contract(s). The requirements for utility relocation design, construction and post-construction are specified in Section 7.16 – Utilities.

7.10.2.2.10 Operations and Maintenance

The Service Provider shall consider Operations and Maintenance needs and cost for each alternative option during the detail design. The life cycle cost estimate for alternative options should also include operations and maintenance costs, not just rehabilitation and/ or construction costs. Additional access for maintenance vehicle only should also be considered and designed in consultation with the Maintenance staff where possible.

[NTD: Delete if not applicable The Service Provider shall be responsible for development of a detail design package of a Maintenance Patrol Yard in collaboration with the Ministry Staff. The Maintenance Patrol Yard (MPY) site and building design shall be **[NTD:** insert MPY class] as per latest Maintenance Patrol Yard Design Guideline document. The Service Provider shall include the following facilities in the design:

- Salt storage facilities (domes, barns, or covered sheds)
- Sand/salt mixing and loading areas
- Brine production and storage systems
- Fleet parking areas (plow trucks, patrol vehicles)
- Heated vehicle maintenance garage / repair shop
- Fueling station (diesel/gas, above-ground tanks)
- EV charging station
- Washing facilities (truck wash bays, runoff containment)
- Administration Building in two parts – One part for the MTO staff and another part for the Maintenance Contractor including crew facilities (locker rooms, lunchroom, washrooms), operational control room, storage for tools and equipment
- Aggregate stockpiles (sand, gravel)
- Cold patch asphalt storage
- Signage and traffic control device storage
- Snow disposal areas
- Winter and Spring maintenance materials yard

The Service Provider shall complete the detail design of the MPY Site Infrastructure including but not limited to:

- Heavy-duty paved yard (concrete/asphalt)
- Internal circulation roads designed for large trucks
- Stormwater management system (oil/grit separators, salt runoff containment)
- Drainage and environmental protection systems
- Perimeter fencing and controlled access gates
- Spill containment systems
- Fire protection systems

- Full illumination for night operations across the entire yard
- Independent power supply in case emergency and power outage
- Lineup traffic signal at driveways for ease of operations
- Security system for controlled access to site including CCTV, gates etc.]

7.10.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

- Additional services related to PTTW application under Category 3 if determined by MECP

[Insert a list of tasks if known]

7.10.3 Deliverables

- Highway Engineering plans, profiles, cross-sections, and typicals
- Earth Management Plan
- Erosion and Sediment Control (ESC) Strategy Summary Report
- Contract package(s) and all associated documentation

7.10.4 Reference Documents

- Preliminary Design Report
- Preliminary Design Report Addendum
- Preliminary Design Criteria
- Culvert Inspection Summary Report
- Contract Book xxxx-xxxx
- Maintenance Patrol Yard Design Guideline
- Carpool Parking Facilities Policy, Procedures, and Responsibilities
- AASHTO Guide for Park and Ride Facilities

7.11 Pavement Engineering - N/A

7.11.1 Project Scope

This project involves the design for the rehabilitation or reconstruction or construction of the pavement structure on Highway **xx** from **xxxxx** to **xxxxx**, **xx** km, including the interchange ramps and improvements at the intersection within the project limits.

In the proposal submission, the proponent shall provide:

- A table summarizing:
  - The field investigation program
  - The location, frequency and total number of pavement boreholes and pavement cores

  - The extent of any non-destructive testing including GPR testing for carrying out the field investigation.
- A plan indicating the type and number of anticipated laboratory tests of sampled material shall also be included.
- A breakdown of the proposed pavement boreholes, pavement cores and non-destructive testing should be provided based on main lanes, and shoulders of proposed highway, interchange ramps and sideroads shall be indicated in the field investigation plan.

The anticipated number of boreholes, pavement cores, GPR testing, and laboratory sampling are to be determined and included in the proponent's proposal.

For this assignment, the Service Provider shall: **[NTD: Modify the tasks as needed]**

- Have Pavement Engineering team complete a review of the design drawings and documents at each Stage and provide a list of comments to the Ministry
- Have the Pavement Engineering team participate in Design Team Review meetings and DCPM, and answer all reasonable questions related to their work at any time until completion of construction
- Complete site investigation and field testing as specified
- Visually assess the pavement surface distresses, and determine the probable cause of the distresses considering the investigation results and pavement construction history
- Formulate alternative pavement structure designs based on a construction and maintenance cost analysis, MTO GreenPave analysis of the alternatives, and provide recommendations as specified
- Provide pavement structure and other geotechnical recommendations for the pavement distress locations and proposed highway improvements identified in this RFP with the considerations for constructability issues, grade raise restrictions, new materials, and innovative technologies, etc.
- Prepare a Soils Profile for the new alignment sections of Highway **XXX** and the ramps at the **XXX** interchange
- Prepare a Pavement Design Report, including Executive Summary;
- Prepare all field and laboratory data, including summary tables of pavement and granular depths, for inclusion in the Pavement Design Report and the Contract Package
- Notify the Geotechnical Section of aggregate types and approximate quantity requirements for the project as specified
- Within areas of foundation investigation, additional pavement engineering explorations shall be advanced such that the combined data meets the requirements of the Provincial Pavement Engineering Investigation Guideline.
- Collaborate with the Environmental Service Provider to provide the technical services required for Excess Soil Management as described in Section 7.7 - Environmental of the RFP.

7.11.2 Technical Services Required

7.11.2.1 Staff to be provided

Requirements for staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for technical staff that will be reviewed for compliance in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

7.11.2.2 Project Specific Requirements via Lump Sum Price

7.11.2.2.1 Meetings, Geotechnical

Key personnel providing Pavement Engineering services shall attend as a minimum the following meetings:

Project Start-up Meeting

The Project Start-up Meeting shall be attended to ensure a clear and mutual understanding of the project scope and the Ministry's expectations for the assignment. This meeting also provides the Service Provider with an opportunity to review the construction history of the highway sections using available documentation, such as the Preliminary Design Report and Preliminary Drawings.

Progress Meeting

A Project Progress Meeting shall be attended as the site investigation and laboratory testing approach completion. The purpose of this meeting is to present the results of the investigation and testing, identify potential problem areas or soil conditions related to embankment stability, settlement, soil erosion, or construction staging, and provide a list of viable pavement design alternatives for further design analysis.

To help expedite the project schedule, the Service Provider may, as an alternative, submit information on the investigation results, identified problem areas or soils, and proposed pavement design alternatives via email or teleconference.

A draft copy of the pedological sketches and available borehole logs shall be submitted to the Ministry a minimum of XX (XX) working days prior to the progress meeting or teleconference.

Pavement Engineering Design Presentation

The Service Provider shall present the results of the pavement structure design work for discussion. The presentation shall be in two (2) parts.

- The first part shall present the pavement structure design alternatives considered and the recommendations for new pavement structures, including detour structures, pavement structure rehabilitation, and new alignment connections to existing roadways. The recommended types and specification requirements for the various pavement layers shall be presented.

- The second part shall present the grading recommendations, including design recommendations to mitigate the impacts of frost action, the suitability of cut materials for fill construction, and erosion control.

Any proposed major deviations from standards, specifications and procedures, and potentially controversial issues shall be identified and discussed with the Ministry.

Draft soils profiles for new alignment sections shall be submitted to the Ministry with a minimum of XX (XX) full working days prior to the Pavement Engineering Design Presentation.

Design Team Review Meeting

Prior to the meeting, the Service Provider shall provide a complete contract package to the Pavement Engineering team for their review. The Service Provider shall respond to any questions related to the pavement design and geotechnical recommendations.

7.11.2.2.2 General Information

Pavement Structure Information

[NTD: Insert information]

Location Identification

In these Pavement Engineering terms of reference, pavement investigation locations are referenced by chainage taken from the available Engineering Drawings (e.g. E 16+660 - 16+740 Bear Twp.), **or** chainage painted on the road (e.g. R 17+920 – 18+050), **or** by kilometer distance from a reference point (e.g. K 0.29 - 0.38), **or** by GPS co-ordinates - latitude and longitude. These are approximate location references. The Service Provider shall adjust the limits to suit conditions encountered in the field and shall reference the precise location of the investigation areas to the actual control lines used for detail design purposes.

Location Referencing

The Service Provider shall reference the precise longitudinal and transverse location of investigation areas and the recommendations of the Pavement Design Report to the actual control lines used for detail design purposes and in the Contract Package.

Frost Penetration Depth

[NTD: Insert requirements or delete heading]

Structures [NTD: Delete if not applicable]

The condition of the wearing surface on the following structure(s) shall be visually evaluated. If the condition of the wearing surface warrants, pavement rehabilitation recommendations for wearing surface shall be provided in the Pavement Design Report. Prior to finalizing the recommendations, the Structural Section shall be contacted to solicit comments. A copy of the Structural Section comments shall be appended in the Pavement Design Report.

Structure	Site No.	Location	Township

7.11.2.2.3 Site Investigation and Field Testing

The Pavement Engineering requirements include:

- Soils investigation
- Geotechnical field investigation
- Laboratory and field testing
- Geotechnical Recommendation/ Pavement structure design, and
- Preparation of Pavement Design Report, and contract data sheets.

The Service Provider shall perform the work in accordance with the latest policy, directives, guidelines, specifications and standards including the Provincial Pavement Engineering Investigation Guidelines which specify the minimum requirements, and this RFP. The requirements of this RFP shall take precedence in the event of conflict. The Service Provider shall be responsible for determining the extent of field investigation activities based on the scope of the project and carry out adequate site investigation and testing to support recommendations made for the design and construction of the project and to calculate accurate construction tender quantities.

Site Investigation and Field Testing shall be completed in conformance with the requirements specified in this section and as stipulated elsewhere in this RFP.

Prior to commencing the site investigation, the Service Provider shall thoroughly review available previous drawings and use sound judgment in the programming and ongoing adjustment of site investigations.

Prior to drilling, the Service Provider shall contact utility companies to determine the locations of buried utilities within the limits of the project, and to obtain the proper clearances, including those on private lands. Before commencing work on Crown lands or private property, the Service Provider shall obtain the necessary Ministry of Natural Resources (MNR) permits, or permission to enter in writing from the landowner. When obtaining permits or permission, the landowner shall be made aware of the full impacts of the site investigation on the property, including any permanent damage to vegetation.

The Service Provider shall promptly notify the Ministry immediately, in writing, of any subsurface condition encountered which is beyond the scope of the investigation work as outlined in the Provincial Pavement Engineering Investigation Guideline and this RFP. Notification shall include a factual description of the conditions, and field investigation data. Areas identified in the Foundation Engineering section of this RFP are exempt from this requirement.

The site investigation and recommendations for culverts, including installations/ replacements and extensions, swamp areas, and cut/ fill embankments less than or equal to 4.5 m in height (including temporary widening), that are not listed in the Foundation Engineering terms of reference, shall be completed by a Service Provider qualified in the RAQS Foundations Engineering category, Geotechnical (Structures and Embankments) – Low Complexity category. The recommendations for these project components shall be included in the Pavement Design Report. The investigation, testing, and reporting requirements shall be in accordance with the Provincial Pavement Engineering Investigation Guidelines.

Soils Investigation

A detailed description of the proposed work is provided elsewhere in the RFP documents. The site investigation work shall include:

- A soils investigation including borehole drilling, material sampling, and laboratory testing shall be carried out for the following project components: **[NTD: Modify the list as required]**
  - all proposed new highway construction
  - all proposed new side roads and entrances
  - all proposed horizontal and/or vertical alignment revision
  - all areas where new construction will tie into an existing highway or side road
  - all proposed road/highway platform widening and slope flattening areas
  - rock cut widening areas
  - all proposed reconstruction work
  - the identified areas of pavement distress
  - detour alignments
  - ditching and drainage
  - new culverts
  - culvert extensions and replacements
  - XX illumination/signal poles
- Samples of each type of granular base and granular sub-base materials encountered shall be taken. Samples of each earth subgrade material type encountered shall be taken. A minimum of one (1) sample of each material type per kilometre shall be taken and tested as described in The Provincial Pavement Engineering Investigation Guidelines. Where sufficient material cannot be extracted from a test hole drilled through the pavement, additional holes may be drilled in the adjacent shoulder to obtain the required sample weight.
- Samples of existing granular base material shall be taken from below the bottom of the bounded layer. Care shall be taken to avoid contaminating the granular base sample with shouldering material.
- The boreholes drilled through the existing pavement shall be advanced to 1.5 m or to rock grade, whichever is less. The size of the boreholes shall be 150 mm in diameter.
- The holes shall be backfilled with the soil cuttings produced while drilling. The hole shall be backfilled such that the subgrade soils are placed in the bottom of the hole. The granular materials shall be placed in the top part of the hole. The whole column of soil shall be compacted in layers. The thickness of each layer shall not exceed 300 mm when using mechanical equipment for compaction, or 150 mm thick when hand tamping. Mechanical equipment includes the use of the power auger to pack the material into the hole.
- The holes drilled through the pavement shall be capped with cold mix asphaltic concrete. The thickness of this cap shall be equal to the depth of the existing pavement, to a maximum of 150 mm. The cold mix shall be properly compacted. The cold mix cap shall stand proud of the existing pavement surface by approximately 10 mm immediately after the cold mix has been placed and compacted.
- If a problem is encountered with the backfilled boreholes following the investigation (e.g. subsidence resulting in a surface cavity), the Service Provider shall return to the site and repair the boreholes to the Ministry's satisfaction.
- Recommendations shall be provided where the replacement or the extension of existing

centreline culverts is proposed. Soils investigation work shall be performed as described in the Provincial Pavement Engineering Investigation Guidelines.

- Where the top of the proposed new culvert embedment material will be placed above the frost penetration depth, and new culvert sections will be located inside the edge of new shoulder rounding, an investigation to determine the existing frost taper details shall be undertaken. Test holes shall be drilled in the shoulder » 500 mm from the existing edge of pavement. The holes shall be placed at intervals that will show the rate of the existing frost tapers. Generally if standard tapers were constructed, the rate is 10:1. The rate can however vary, depending on site conditions and past remedial work.

- The Service Provider shall provide erosion control recommendations where excavation of earth ditches and earth slopes is anticipated. A recommended maximum slope or slope configuration shall be provided for all cut embankment slopes. Sufficient field investigation, laboratory testing, and design analysis shall be conducted to support the recommendations. Specific erosion control recommendations are required for all areas of highly erodible soil (K>0.6).

- In addition to the investigation work discussed in the foregoing, areas where ditch clean out is needed shall be detailed. Areas where new OPSD 200 series ditches should be provided, based on current alignment and cross-section, shall also be detailed. For each area listed, the type of cut material, either rock or earth, shall be identified. Separate lists shall be provided for the two types of ditch work (i.e. ditch cleaning or new standard ditches). This information shall be included in the Recommendations Section of the Pavement Design Report. No boreholes are required for ditch clean out. Refer to Provincial Pavement Engineering Investigation Guidelines Section 1.2.8 for investigation requirements for new ditching.

- The Provincial Pavement Engineering Investigation Guidelines Section 1.2.2d), for Cuts, is deleted and replaced by the following:

  > “Boreholes shall be advanced to 1.5 m below profile grade, unless bedrock/rock fill/rock shatter is encountered. Termination of the investigation on dense or hard soil, boulders, tree roots, or other obstructions shall not occur.”

Decommissioning of Pavement Engineering Explorations

All aspects of implementation of geotechnical test holes (including, but not limited to, planning, licensing, construction, maintenance, abandonment, and reporting) shall be in accordance with O.Reg. 903 and its Amendments (the water/ well regulation under the OWRA).

Explorations shall be constructed, maintained and abandoned, or otherwise restored, to safeguard the public safety and environmental integrity of the site. Test pits shall be backfilled with suitable material and re-vegetated or otherwise protected from erosion. Temporary open holes shall be adequately covered. Holes in roads shall be backfilled as required to prevent future settlement and acceptably patched where pavement surfaces have been damaged.

Geotechnical Field Investigation

The field investigation shall consist of, but not be limited to, the following:

- Acquiring permission to enter private properties, contacting utility companies, and obtaining clearances prior to commencing fieldwork, providing notice to various MTO

offices of the proposed activities, and procuring traffic protection in accordance with all applicable regulations and current Ministry's practice. The Ontario Traffic Manual (OTM) Book 7, Temporary Conditions shall be referred to for traffic control requirements in work zones during the geotechnical field investigation.

- Perform pavement field investigations on the new pavement and proposed widening sections based on the number of boreholes, pavement cores (for existing highway corridor only), and other subsurface investigative techniques,–including mapping of pavement structure by Ground Penetrating Radar (GPR), material sampling and laboratory testing, as required to evaluate the subsurface conditions (for the existing and new highway corridors) in support of engineering recommendations and to provide contract documents information for construction purposes.

- Undertaking sufficient field sampling and laboratory testing to ensure that the existing cut material is suitable for reuse as earth embankment construction. To determine the suitability of the existing cut material for reuse, at least one soil sample of each soil type at every 250 m should be investigated

- Boreholes and pavement corehole points shall be referenced with the Global Positioning System (G.P.S.).

Advancement of soils boreholes shall be carried out in accordance with the requirements of the Ontario Water Resources Act – R.R.O. 1990, Reg. 903.

Borehole logs shall be completed in tabular form using the abbreviations for boring and test data listed in OPSD 100.06. This information shall be included with the Preliminary Geotechnical Recommendations.

In addition, the following gINT borehole and corehole reporting format is also required. This information is not to be included with the Preliminary Geotechnical Recommendations but shall be provided as a separate electronic submission.

gINT Pavement Borehole and Corehole Data Requirement

All borehole and corehole data shall be completed in the - gINT software file format (.gpj). The MTO gINT library file (MTO Library.glb) and the project template file (mto project template.gpj) are provided in the link below and shall be used to ensure consistency. Also, the borehole log, grain size distribution and plasticity chart shall follow the format given in the link under MTO RAQs Consultant – What's New In RAQs.

https://www.raqsa.mto.gov.on.ca/login/raqs.nsf/English/Graphic/RAQSPages/B.+Consultant%20Heading+-+G.+What's+New+For+Consultants?OpenDocument

Below is the sample gINT project file excerpt containing some pertinent borehole information that is required in the gINT file under the Borehole page. The Lithology page for each borehole should also be filled out. Refer to the MTO template file for the complete table.

Bore hole ID	Total Depth (m)	Subsurface Description[Note1]	Surface Elevation [Note2] (m)	North [Note3]	East [Note3]	MTM Zone	Latitude	Longitude	Survey Grade [Note4]
001	1.50	0 - 60 Asph 60 - 200 Cr Gr 200 - 1.1 Br F-Med Sa Tr Gr & Si (Moist) 1.1 NFP Prob Bld Poss BR		5127067.49	622170.06		46.286183	-79.414029	

Note 1: Subsurface description as per OPSD 100.06

Note 2: Ground surface elevation

Note 3: Northing and Easting datum – If pre-engineering used MTM NAD83 (Original), continue to use MTM NAD 83 (Original), otherwise use MTM NAD83 (CSRS)v6.

Note 4: Indicate if the survey is done using GPS, total stations or traditional leveling

The locations and elevations of all boreholes, test pits and soundings shall be surveyed and referenced to MTO horizontal and vertical project control. Locations are to be identified on the borehole log by MTM co-ordinates (Northing and Easting) and Latitude & Longitude in the same datum, realization, map projection, and zone used for the pre-engineering surveys. If the datum, realization, etc. of the pre-engineering surveys are unknown, the regional Geomatics Section should be consulted. *Where applicable, NAD83 (CSRS)v6 datum shall be used, NAD83 (Original) otherwise.

Both Northing and Easting Grid Coordinates and Latitude and Longitude Geographic Coordinates of the borehole location shall be indicated in the location of the borehole log record sheet. LHRS Station, Offset and Township shall be provided to supplement the location description in the report.

Minimal positional accuracy of boreholes, test pits, and soundings with respect to the nearest project control is 0.5 m vertical and 2-3 m horizontal.

Horizontal Datum: NAD83 (Original) or NAD83 CSRS (2010 epoch)

- Northing and Easting Grid Coordinates in metres, in the 3° Modified Transverse Mercator (MTM) projection (corresponding zone shall be indicated), to a precision of one (1) decimal place
- Latitude and Longitude Geographic Coordinates in decimal degrees to a precision of six (6) decimal places

Vertical Datum: Canadian Geodetic Vertical Datum (CGVD 1928)

- Elevation in metres to a precision of one (1) decimal place

gINT Reporting Format Deliverables

A disc with the following digital files shall be submitted to the Ministry:

- gINT software file (.gpj) and, if applicable, AutoCad file (.dwg) with all the boreholes and coreholes information
- A plan and profile drawing of boreholes and coreholes generated using gINT, saved in PDF format (.pdf)
- Borehole and corehole logs generated using gINT, saved in PDF format (.pdf)

Upon completion of the field work, two (2) review meetings must be scheduled with the MTO Geotechnical Engineering Office to present the findings and discuss the results. During the first meeting, the Geotechnical Engineering Service Provider shall provide the pavement recommendations along the main lanes, interchange ramps and sideroads. Upon approval by MTO, this information must be incorporated in the design packages such as the drawings, quantity sheets, tender document and further reviewed by the Geotechnical Service Provider.

Prior to the 90 % Team Review meeting, the Service Provider and Geotechnical Engineering Service Provider must review the package and schedule a second meeting with the geotechnical office to confirm that the recommendations are adequately addressed and included in the final package.

During construction, the geotechnical sub must be available to address any construction issues or design discrepancies that are pavement related and provide recommendations to the contract administrator as needed.

7.11.2.2.4 Engineering Materials Testing and Evaluation

Minimum Materials Testing and Evaluation requirements are described in the Provincial Pavement Engineering Investigation Guidelines.

The Engineering Materials Testing requirements are found in Section 7.6 – Engineering Materials Testing and Evaluation Services.

[NTD: Insert requirements]

7.11.2.2.5 Design Services

Pavement Design Selection [NTD: Modify as required]

The Service Provider shall use at least two (2) appropriate methods when formulating the pavement design for this project. The results generated shall be evaluated by an experienced pavement designer, with consideration of the historical performance of pavement structures in the project area and the guidelines provided in the MTO Pavement Design and Rehabilitation Manual. The Service Provider shall provide pavement design alternatives with service life estimates ranging from 8 to 18 years."

Applying a single pavement design over the whole project length may not be appropriate. If significant sections of the project, two (2) kilometres or more in length, are found where the pavement performance, pavement structure, or soil and moisture conditions differ substantially from those found on the bulk of the project, separate pavement design analysis is required.

Recommendations shall be provided in order that the pavement life expectancy for these sections will match the pavement life expectancy of the remainder of the project.

The Service Provider shall present a recommended pavement design for discussion. The Service Provider shall include the reasoning for all rehabilitation/design alternatives, considered or rejected, as part of the presentation. Cost/benefit analysis, life cycle costing a summary of the design methodology, and comments regarding ease of construction, traffic delays, etc., are required for each alternative presented. The lifecycle cost analysis shall be based on a 30-year analysis period for local, collector and arterial highways and a 50-year period for freeways. The discount rate shall be

- From 0 to 30 years uses 4.5% nominal social discount rate
- From 31 to 75 years uses 4.0 % nominal social discount rate

Pavement Design Report

The final Pavement Design Report and any subsequent addenda shall be prepared in the format outlined in the MTO Pavement Design and Rehabilitation Manual and shall be signed and sealed by a Professional Engineer licensed in Ontario. Each report shall also bear the signature or stamp of the independent checker of the work.

The report shall include the following where applicable to this project:

- A summary of the geotechnical field investigation program
- A description of the subsurface conditions, and identification of any circumstances that may impact the Detail Design Study and/or require further geotechnical investigation
- A full description of the methodology (geotechnical investigation, pavement condition survey- wherever applicable, laboratory testing, etc.) Utilized in assessing surface/subsurface conditions for the development of engineering recommendations.
- Detailed design of new pavement structures and/or rehabilitation of existing pavement structures within the project area and temporary pavement structures within the project area should be in accordance with the 1993 AASHTO Guide for the Design of Pavement Structures. Traffic load calculations shall be carried out as described in the Ministry of Transportation Report "Procedures For Estimating Traffic Loads For Pavement Design, November 1995". AASHTO pavement design parameters shall be selected as described in the Ministry of Transportation Materials Information Report MI-183 "Adaptation and Verification of AASHTO Pavement Design Parameters for Ontario Conditions."
- Pavement design recommendations for **both new flexible and rigid pavements** as required within the project limits.
- Pavement construction or rehabilitation/reconstruction requirements for all new pavement or existing pavement structures and proposed widening of pavement within the project limits. For new pavement construction projects, at least two pavement types, flexible and rigid pavement construction, with at least two types from each pavement types, shall be considered for the main lanes where feasible and also provide multiple options for the proposed widening platform.
- The designer shall evaluate the resurfacing treatments based on the AASHTO 1993 calculation method. In addition, the selected treatment should be supplemented with

engineering judgement and the consideration of other factors such as the historical performance of previous treatments on similar freeways, constructability issues, grade raise restrictions, new materials, and innovative technologies, etc. These factors should be reflected in the final recommended rehabilitation treatment to avoid excessive and costly overlay thickness. In addition, the proponent must exercise different pavement recommendations for the new pavement widening to recommend the cost-effective solution. The proponent should verify his design(s) jointly with the AASHTO 93 Pavement Analysis and the AASHTOWare Pavement ME model to predict future pavement performance after rehabilitation.

- A Life Cycle Cost Analysis in accordance with Ministry practice and guidelines comparing the flexible and rigid pavement design alternatives.
- Evaluation of pavement design alternatives using MTO GreenPave. The GreenPave evaluation worksheet shall be appended to the Pavement Design Report. In the event of equivalent Life Cycle Cost Analysis (within 10%) between pavement design alternatives, the MTO GreenPave rating should be considered as one of the pavement alternative selection factors.
- Identification of potential problem soils that are weak, high in moisture, frost susceptible or contain organics. A detailed remedial treatment should be identified to address these issues.
- Detail assessment of suitability of cut material to be used as fill within the project limits in accordance with the MTO Earth best practices guidelines.
- Identify any potential borrow sources the borrow material will be used for earth embankment construction.
- Preliminary proposed slope geometry in cut and fill areas including the requirement for berms and erosion control.
- Topsoil depths.
- Assessment of detour requirements for construction staging including the suitability of existing shoulders for carrying traffic.
- Identification of the type and depth of any encountered rock. Shale material requiring excavation shall be defined as rock regardless of degree of weathering.
- Effective subsurface drainage and frost protection, including the provision for subdrains or any other drainage treatments.
- Suitability of existing shoulders on the main highway and crossroads for construction staging, including recommendations for shoulder paving, strengthening, or reconstruction, as well as the pavement design for any new detour alignments, if required.
- Identification of soil type and condition in areas of the proposed excavation, assessment of subgrade capacity to support any new pavement structures, and recommendations for removal of frost susceptible, organic, or unsuitable material.
- Summary of bedrock depths in all areas where the rock will be encountered during the construction of any of the project components. The information shall be summarized in tabular form so that it can be used to develop rock profiles. Shale material requiring excavation shall be defined as rock regardless of the degree of weathering.
- Identification of soil types as defined in the Ontario Occupational Health and Safety Act & Regulations for Construction Projects pertaining to any excavations. All excavations should be carried out in accordance with the Occupational Health and Safety Act (OHSA) and M.T.O. Regulations for Construction Projects.

- Within areas of foundation investigation, additional pavement engineering explorations shall be advanced such that the combined data meets the requirements of the Provincial Pavement Engineering Investigation Guidelines.

7.11.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[NTD: Insert tasks if known]

7.11.3 Deliverables

For bidding purposes, XX **[NTD: insert wording]** (XX **[NTD: insert number]**) work projects are included in this assignment, and each work project shall be treated individually. Separate reports, data sheets, and all other documents shall be provided for each work project. **[NTD: Delete if not applicable]**

Except where otherwise directed, project deliverables shall be produced as described in the Provincial Pavement Engineering Investigation Guidelines and this RFP. The Service Provider shall submit the deliverables specified in this section to the Ministry's Project Manager.

Any deliverable or addendum that contains a recommendation or an interpretation of results requires the signature and stamp of a professional engineer, licensed to practice in the Province of Ontario. These include, but are not limited to Pavement Design Report, Soils Investigation Report, and Laboratory Testing Reports.

Pedological Sketches [NTD: Delete if not applicable]

Pedological sketches shall be submitted in an appendix of the Pavement Design Report. The sketches can remain in rough field note format. The sketches shall indicate locations of all investigations and the type of equipment used.

Borehole and Asphalt Core Logs [NTD: Delete if not applicable]

A digital copy, on contract plates in AutoCAD format, shall be submitted. The hardcopies of the Pavement Design Report shall contain a hardcopy of borehole and asphalt core logs in an appendix. A plan and profile drawing of borehole and coreholes generated using gINT, saved in PDF format. Borehole and corehole logs generated using gINT, saved in PDF format shall also be provided.

Summary of Asphalt Core and Granular Information [NTD: Delete if not applicable]

Separate Summary tables of asphalt core and granular base and sub-base information shall be prepared for insertion into contract documents. The tables shall be in the following format:

LOCATION AND ASPHALT THICKNESS DATA					
Core	Station	CL	Core Dimensions (mm)	Rut Depth (mm)	Location Remarks

No.		Offset	Diameter	Depth	Outside Track	Inside Track	
1	45+000	4.5Rt	50	48			Fully Paved Shoulder
2	45+200	1.2 Lt	150	126	5	8	Hot Mix Patch
3	45+400	1.1Rt	50	213	3	5	Wheel Track
4	45+600	1.9 Rt	150	160	6	10	Midlane

ASPHALT CORE TESTING DATA																
Core No.	Depth Tested (mm)	Rec Pen	%Air Voids	% AC	Percent Passing											
					26.5 mm	19 mm	16 mm	13.2 mm	9.5 mm	4.75 mm	2.36 mm	1.18 mm	600 µm	300 µm	150 µm	75 µm
2	Full Depth	45	3.2	4.4	100	100	99.1	91.7	68.5	48.6	36.9	26.5	15.9	8.6	5.2	3.6
5	0-50															

GRANULAR BASE GRADATION														
Base Sample No.	Location			Percent Passing										Acceptable *
	Station	CL Offset m	Sample Depth m	37.5 mm	26.5 mm	19 mm	13.2 mm	9.5 mm	4.75 mm	1.18 mm	300 µm	150 µm	75 µm	
3	48+200	4.4Lt	0.2	100	100	95.6	85.6	75.6	59.4	24.9	16.3		3.5	Not Accep for Gran A

GRANULAR SUB-BASE GRADATION															
Sub Base Sample No.	Location			Percent Passing											Acceptable *
	Station	CL Offset m	Sample Depth m	150 mm	106 mm	26.5 mm	19 mm	13.2 mm	9.5 mm	4.75 mm	1.18 mm	300 µm	150 µm	75 µm	
3	48+200	4.4Lt	0.6	100		95				60	71	25		7	Accep for Gran B

* Check Gradation, %Crushed and %Asphalt Coated Particles (refer to SP110S13).

Summary Tables shall be included in an appendix to the Pavement Design Report.

Pavement Design Report

A draft Pavement Design Report shall be submitted for Ministry review.

A digital copy in Microsoft Word and PDF format and three (3) hard copies of the final Pavement Design Report and any subsequent addenda shall be submitted to the Ministry.

Soils Profiles

Two (2) 11”x17” hardcopies of the draft soils profiles shall be submitted for review. The draft soils profiles shall be submitted prior to the Pavement Engineering Design Presentation Meeting. The Ministry will provide comments within 10 business days of the receipt.

A digital copy, on contract plates in AutoCad format, and three (3) 11”x17” hardcopies of the final soils profiles shall be submitted with the Pavement Design Report. All copies of soils profiles shall be signed and sealed by a member of the Service Provider’s Pavement Engineering team who is a Professional Engineer licensed in the Province of Ontario.

Recommendations and Pedological sketches shall **not** be placed on soils profiles. The following items shall be shown:

- The information block shown in the Provincial Pavement Engineering Investigation Guidelines appendix;
- Original Ground Line;
- Approved Design Profile Grade Line;
- Centreline culvert sites, if known;
- Location of test holes along centreline (or as near to C/L as practical);
- Location of offset test holes, including offset distance and elevation difference in relation to the centreline elevation (Datum), offset hole information shall be provided as a notation, placed on the profile as close as possible to the station where the holes were drilled;
- Bedrock line and swamp limits. All information, including Pedological sketches, shall be used to determine rock line and swamp limits;
- Soils Types encountered along centreline;
- Boundaries between soil strata encountered along centreline. The boundaries may be delineated either by line profile or Strata Plot;
- Estimated degree of consistency or denseness of the soils, in-situ;
- Ground water levels encountered in test holes at the time of the soils investigation;
- Laboratory test results, soil frost susceptibility, and erosion potential (K-factor). Laboratory testing, frost susceptibility, and K-factor data should be provided in table format and placed on the profile as close as possible to the station that the soils sample was taken.

The Soils Profile shall be prepared on Contract Plates using AutoCAD. The information shall be placed on the profiles in layers. Separate layers shall be used for:

- Original ground line
- Design profile grade line
- Culvert sites
- Location of test holes
- Bedrock line and swamp limits
- Soils types, estimated soils consistency or denseness, groundwater levels, laboratory test results, relative frost susceptibility, and erosion potential.

7.11.4 Reference Documents

The following reference documents are applicable to the project and will be provided to the successful proponent upon request

- Provincial Pavement Engineering Investigation Guidelines
- Ministry of Transportation Report "Procedures For Estimating Traffic Loads For Pavement Design".
- Ministry of Transportation Materials Information Report MI-183 "Adaptation and Verification of AASHTO Pavement Design Parameters for Ontario Conditions".
- Ministry of Transportation "Guidelines For The Use of Life Cycle Cost Analysis on MTO Freeway Projects."
- Pavement Design and Rehabilitation Manual
- GreenPave Reference Guide
- Ontario's Default Parameters for AASHTOWare Pavement ME Design Interim Report
- AASHTOWare Pavement M-E Design MTO User Guide
- MTO Earth Best Practices and Recommendations for Design and Construction, MTO Earth Task Force

7.12 Property/ Corridor Management - N/A

7.12.1 Project Scope

This project involves detail design for the new construction/ rehabilitation of Highway **XXX**. The Service Provider will work collaboratively with the Ministry during the development and progression of the design, including refinement of property requirements as the design advances.

The Property and Corridor Management scope of work includes the following: **[Modify the tasks as needed]**

- Review, validate, and progressively refine preliminary property requirements in collaboration with the Ministry throughout the design development phase
- Prepare Permission to Enter package and letter pursuant to Section 6 and Section 13 of the *Public Transportation and Highway Improvement Act*
- Maintain and manage property ownership information, stakeholder records, and access permissions required to support investigations and design activities
- Design new entrances and/or modify existing property accesses within the project limits, ensuring compliance with Ministry standards or approved deviations
- Coordinate property impacts with geometric design, staging, utilities, and drainage to minimize impacts and optimize outcomes
- Review and confirm the preliminary design property request plans and develop new property request plans if required
- Assist Corridor Management Offices in reviewing building and land use applications, commercial signage applications within the permit control area, municipal projects during the detail design
- Identify and continuously update property risks, constraints, and opportunities throughout design progression, while working collaboratively with the Ministry to optimize property impacts, minimize acquisition requirements where feasible, and support timely approvals. Liaise with affected property owners, agencies, and stakeholders in coordination with the

Ministry, and support the Ministry in responding to property-related inquiries and resolving issues arising during design development
- Support the Ministry staff in responding to corridor management inquiries.

7.12.2 Technical Services Required

7.12.2.1 Staff to be provided

The Service Provider shall have sufficient staff to provide the Ministry all services related to Property and Corridor Management throughout the Design Phase of the project.

[Insert the following wording if dedicated staff is required for this section and add the staff list to Table 2. Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

Requirements for technical staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.**]**

7.12.2.2 Project Specific Requirements via Lump Sum Price

7.12.2.2.1 Property Access

The Service Provider shall prepare for each property to be impacted by the field work the Permission to Enter (PTE) letter, form and a plan illustrating the area for intrusive and non-intrusive field work on each property for the Ministry approval. The Service Provider shall also prepare and issue a letter pursuant to Sections 6 and 13 of the Public Transportation and Highway Improvement Act (PTHIA) if the PTE is denied or not responded.

The Service Provider shall prepare all required documents such as agenda, meeting minutes, materials, PTE letters and forms for the consultation with the property owners and collect the signed PTE forms. It is assumed that XX **[insert wording]** (XX **[insert number]**) properties will require PTE and XX **[insert wording]** (XX **[insert number]**) properties will require PTHIA letter to complete field investigations.

The Service Provider shall complete at least two (2) rounds of PTEs for each property owner within the project limits. Each round shall consist of one (1) PTE letter and form, one (1) follow up attempt by letter, phone call or email as appropriate, and one (1) PTHIA letter (if required).

The Service Provider shall send out the letters via email or via Canada Post - Registered Mail if the property owners' emails are not available.

The Service Provider is responsible for obtaining all the property owners contact information from the Land Registry Office and/or the local municipality within the project limits if the Ministry does not have the property owner's information. The impacted property owners contact information will be part of the Contact List and Consultation Record, where available.

The Service Provider must promptly inform the Ministry of any denied PTE requests and denied access as per PTHIA letters. If permission to access private property for field investigations (e.g., environmental or engineering) is denied, the Service Provider shall conduct investigations from publicly accessible areas and the MTO right-of-way, where feasible.

7.12.2.2.2 Property Request

The Service Provider shall identify the property needs after the start of the design assignment and accelerate all Property Requests in efforts to acquire the properties before **[insert timeline]**. The Service Provider shall also be responsible for early identification and management of property-related risks (e.g., schedule impacts, complex acquisitions, utilities, environmental constraints) with mitigation strategies integrated into the design process.

The Service Provide shall develop integration of property acquisition strategy with construction staging, traffic management, and early works to support accelerated delivery opportunities. The Service Provider key property staff will be required to participate in collaborative design reviews and workshops to optimize property footprint, minimize impacts, and improve outcomes.

The Service Provider is responsible for issuing the Property Request(s) and identifying to the Ministry all permanent property requirements and temporary property interest integral to the completion of the project. Also, the Service Provider is responsible for distinguishing any Ministry-owned lands identified as surplus to the project. If a Property Request was submitted and approved at the end of the Preliminary Design phase of the project, the Service Provider is to confirm the approved Property Request and indicate any proposed changes thereto.

A Property Request is the formal document that authorizes the Ministry to proceed with the acquisition of property rights. The Property Request can be “new” or amending (additional property rights or the deletion of previously identified property rights). The Property Request is composed of three (3) documents, which are a plan/graphical illustration, a summary sheet, and a completed ADM-S-787 form. The Property Request must be clear and concise so that there are no misunderstandings about:

- What property and/or property rights are needed
- Why (purpose and justification for) the Ministry is acquiring the property rights
- When and/or how long the Ministry should acquire and hold the property rights

It is essential to know what property is owned by the Ministry before determining what additional property is required to complete the proposed construction or before delineating Ministry-owned lands surplus to the project. It is the Service Provider’s responsibility to obtain the property mark-up from the Ministry’s Project Manager; the property mark-up delineates the applicable, existing Ministry ownership and title information, along the entire section of highway under review. The Service Provider is responsible for marking and recording, on the property mark-up, the names and addresses of all owners and tenants adjacent to the entire limits of the project, including the corresponding Land Registry Office PINs.

The Property Request includes all property requirements and temporary interests that are considered integral to the completion of the project and where the privilege of expropriation

could/would be exercised (i.e., the land is used or altered not for the sole benefit of the property owner). The limits of the lands required must be sufficiently detailed to defend the Property Request at the Assistant Depute Minister's request.

Property Requests shall be reviewed by the Ministry's Geomatics Section and Property Section prior to approval.

If the property requirements are altered (additions and/or deletions), then an amending Property Request must be issued to the Ministry. Additions to and partial deletions from identified property requirements may have significant impact to the Property Clearance Date, as additional survey and/or appraisal work will be necessary prior to acquisition and/or expropriation**. A minimum of 18 months** is required for the acquisition of property rights to take place after "approval" of the Property Request or amendments to a Property Request. As it may be necessary to expropriate property, it is essential that sufficient design information to defend the "taking" of the property as being fair, sound and reasonably necessary is available **at least ten (10) months before the Property Clearance Date.**

Refer to the document entitled the "Property Request Manual" for a more detail description of the creation and the timing of Property Requests.

Upon the issuing of any Property Request and its subsequent approval, the Ministry will obtain the necessary title searches and legal surveys/plans necessary to complete negotiations and conveyance of the property requirements that have been identified.

The Service Provider will be responsible for making any required arrangements (i.e., agreements, Permissions to Enter) with municipal authorities, private landowners etc. for the temporary use of property during design and construction of the project (i.e., site investigations, field testing, pre-engineering activities and temporary field offices). The arrangements for the temporary use of private property that the Service Provider is responsible for securing are **restricted to properties where the privilege of expropriation will not be exercised since the property is not integral to the completion of the project.**

Examples of when Permissions to Enter are required are in order to enter onto an owner's property for the purpose of making **minor** grade changes to their vehicular entrances during construction or for entry onto an owner's property for the purpose of surveys or geotechnical work. Where a substantial grade change to an entrance is proposed which may adversely impact the owner's property, the matter will be discussed with the Ministry Project Manager. Alternative solutions will need to be considered for presentation to the property owner. In situations where the owner refuses to sign "Permission to Enter", the situation should be documented and the owner's land left "as is". If the Service Provider has exercised all reasonable attempts, then the Service Provider should refer the matter to the Ministry's Project Manager.

Permissions to Enter that deviate from standard Ministry practice or are precedent setting or have equity implications, along with all agreements are to be pre-reviewed by Ministry's Project Manager. Original copies of agreements and Permissions to Enter must be sent to the Ministry's Project Manager to be retained for record purposes.

The Service Provider is to conduct Preliminary Site Screenings on all property identified as required and/or surplus on the Property Request, in accordance with the requirements of Directive QST B-42 and provide a **separate** Preliminary Site Screening form for each property. The Ministry's "Preliminary Site Screening Reports" must be submitted to the Ministry's Project Manager with the submission of any Property Request or amending Property Request.

The Service Provider shall support the Ministry's property acquisition process by answering questions about the Property Request requirements, providing supplementary documentation (e.g., profiles, grading plans), preparing drawings and other related materials, and participating in liaison with affected property owners. The Service Provider also shall attend all property meetings.

7.12.2.2.3 Corridor Management

The Service Provider shall support and operationalize the Ministry Corridor Management Offices functions during the detail design which involve:

- Support Integrated Transportation and Development Planning
- Coordinate corridor-wide inputs including:
  - Municipal planning and growth strategies
  - Transit, active transportation, and carpool integration
  - Utility corridor optimization and futureproofing
  - Interface with regional/municipal road networks
- Ensure all design decisions are considered:
  - Ultimate corridor widening
  - Future interchanges and infrastructure protection
  - Minimization of corridor conflicts by proactively by design
  - Identify Potential Corridor Disputes and provide recommendations to resolve the issues

The deliverables required for corridor management are identified in the sections below.

7.12.2.2.4 Corridor Management Plan

The Service Provider shall comply with the Highway Corridor Management Manual for all permitting processes within MTO jurisdiction and for all Highway Corridor Management related matters.

The Service Provider shall develop a Corridor Management Plan in collaboration with the Ministry staff. The Service Provider shall also prepare Permit, Licenses, Agreements and Approvals tracking sheet, and Utilities Encroachments tracking sheet for permit control area as supplemental documents to the Corridor Management Plan. Information in the Corridor Management Plan and supplemental documents should be considered when the Service Provider evaluates design alternatives and make recommendation for a preferred option.

The Corridor Management Plan shall include the following sections:

- ***Building and Land Use*** includes a summary of the development and plan submissions during the detail design with reference to the Permit, Licenses, Agreements and Approvals tracking sheet

- ***Utility Encroachment*** includes summary of encroachment permit reviews during the detail design with reference to the Utility Encroachment tracking sheet
- ***Highway Access Management Plan*** (if applicable)
- ***Signage Inventory*** includes a summary of 3rd party commercial signs within the permit control area
- ***Transportation Integration*** includes information, proposals and recommendations related to other modes of transportation that are integrated with the highway or operated on MTO infrastructure such as public transit, active transportation and carpool lot.

Building and Land Use

The Service Provider shall assist the Ministry in reviewing development proposals, municipal and regional projects and permit applications within the Ministry's Right of Way. The review timeline will be project specific, but it shall not be more than two (2) weeks. For bidding purposes, it is assumed that XX projects are to be reviewed during the detail design in additional to the projects that have already identified in assignment.

Utilities Encroachment

The Service Provider shall assist the Ministry in reviewing permit applications related to new, altered or moving existing utilities encroachment and generate a tracking sheet for the new and existing permits within the project limits.

Highway Access Management Plan

[Insert ONE of the below paragraphs

The Service Provider shall determine if Highway Access Management Plans (HAMPs) and/ or Interchange Highway Access Management Plans (I-HAMPs) are required for this project and make a recommendation to the Ministry for consideration. If the development of HAMPs and/ or I-HAMPs is required, the design services are included in Section 7.18 - Additional Biddable Work**.**
[Add design requirements for HAMPs and I-HAMPs to Section 7.18]

OR the below paragraph

The Service Provider shall develop the Highway Access Management Plans (HAMPs) and Interchange Highway Access Management Plans (I-HAMPs) in collaboration with MTO Corridor Management Office and relevant municipalities. The development of HAMP's and I-HMAP's shall be at sequenced in design development to manage the potential access issues in advance. A plan shall be prepared for each intersection and/ or each interchange, to be signed by the Ministry and municipalities **[Delete HAMPs or I-HAMPs if not applicable]]**

Entrance Deficiencies

The Service Provider shall review all existing residential and commercial entrances within the limits of the work project to ensure entrance designs conform to current Ministry standards as per the Highway Corridor Management Manual. Entrance deficiencies shall include but are not limited to residential horseshoe entrances, residential/commercial entrances with headwalls, residential/commercial entrances not built to the current standards (i.e. to wide; two openings instead of one; parking areas constructed within the highway limits etc.).

The Service Provider in consultation with the Corridor Management Officer (CMO) shall:

- Prepare and maintain an entrance removal/relocation/redesign spreadsheet as the project advances and undertake a Last Registered Owner (LOR) search in order to determine property owner name(s) and addresses for all identified entrance removal/relocation,
- Review and assess the condition of all entrance culverts and recommend corrective measures for all deficient culverts,
- Notify affected property owners by registered mail to the last known address of the owner of the deficiency and required modifications to the entrance (shown on a plan), and the proposed method of performing the work,
- If the notice failed to reach the owner, personal delivery must be arranged. In the event the title to the property is included in an estate, notice shall be mailed or delivered to the administrator of the estate,
- Incorporate all entrance removals/relocations/redesign and culvert replacements in the Contract drawings,
- Arrange site meetings as required with individual property owners to discuss proposed entrance modifications and ensure a CMO is present at the site meeting,
- Coordinate with the CMO for the issuance of an entrance permit and signed Entrance Works Agreement (EWA) for each entrance requiring removal/relocation/redesign,
- Confirm that entrance modifications will not impact existing utilities. If the modifications require relocating a utility, the Service Provider shall make arrangements for the relocation as per Section 7.16 - Utilities.

Entrance Closures/Relocations and Modifications

The Service Provider shall confirm and procure all necessary approvals for all sideroad and entrance closures/alterations and commercial entrance designs. The Service Provider shall provide the Ministry's Corridor Management Offices with plans of the project, for both existing and the proposed works to assist in the entrance reviews, and technical justifications for entrance closures, relocations and modifications. For the construction of commercial entrances, the design should be reviewed with the Ministry, prior to contacting the owner.

At the properties that are impacted by the project's property acquisition, the Service Provider shall provide new entrance designs for all partial-taking properties where possible to minimize the number of full buyout properties and also avoid land lock.

Commercial Signage

The Service Provider shall confirm and obtain approvals from the Ministry's Corridor Management Offices for all existing signs removal/relocations. Tourism Oriented Destination Signing (TODS) and/or Commercial signing may exist throughout the project.

The Service Provider shall assist the CMO in reviewing the sign permit applications within the permit control area as per Highway Corridor Management Manual Chapter 5 for signs that may be installed inside or outside of the Ministry ROW. The Service Provider shall document these

permit applications and provide the Ministry a plan showing the preliminary locations. All new commercial signs must be reviewed by the CMO for approval. For bidding purposes, it is assumed XX reviews are required during the detail design.

Future Proofing Items

[NTD: Add requirements for future proofing items or delete the heading]

7.12.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in the specific Work Order(s).

- New Property Request or modification to the existing request(s)

[Insert tasks if known]

7.12.3 Deliverables

- Additional property request plans, as required
- Corridor Management Plan
- Interchange Highway Access Management Plans (I-HAMPs), as required.
- Highway Access Management Plans (HAMPs), as required.
- Permit to Enter (PTE) tracking sheet
- Permit, Licenses, Agreements and Approvals tracking sheet
- Utilities Encroachments tracking sheet
- Entrance removal/relocation/redesign spreadsheet
- Commercial Signage inventory

7.12.4 Reference Documents

- Preliminary Design Report
- Approved Property Request to be provided to the successful Service Provider
- Highway Corridor Management Manual
- Public Transportation and Highway Improvement Act (PTHIA)
- MTO Design Supplement for Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads

7.13 Rockfall Engineering - N/A

7.13.1 Project Scope

This project includes Rockfall Engineering design services for all rockfall hazards within the project limits.

The scope of work includes:

- Post Rockfall Incident Reviews
- Detailed Hazard Mitigation Design
- Preliminary Rockfall Hazard Screening
- Detailed Rockfall Hazard Evaluation

The below table lists **high priority rockfall hazard sites** within the project limits:

Site No.	Base Point / Offset	Side	Latitude	Longitude	Comments
					-

In addition to the high priority rockfall hazard sites noted above, there are numerous low priority and moderate priority rockfall hazard sites within the project limits. A summary table from the ministry's Ontario Rockfall Hazard Rating System (RHRON) database is attached, which summarizes the most recent RHRON data for the project limits. This table lists all rockfall hazards, their respective RHRON rating, their respective location, and other pertinent information. **[NTD: Modify as appropriate]**

7.13.2 Technical Services Required

7.13.2.1 Staff to be provided

Key personnel in Table 1: *Mandatory Qualification Requirements for Key Individuals* in Section 1.5.1 shall meet the qualification requirements as described below.
[NTD: Include a job title and a description of staffing expectations (e.g. experience, technical expertise) for scoring in phase I (EOI). Any staffing requirement(s) that would result in disqualification of the proposal if not part of the proponent's submission must also be included in Table 1 Section 1.5.1. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 1.]

The Key Personnel for this specialty shall be a qualified Rock Mechanics Engineer, who is registered in the Ministry's RAQS for the 'Rockfall Hazard Inspection, Evaluation and Design' Specialty or a Professional Engineer licensed in Ontario with a minimum ten (10) years professional engineering experience in rockfall hazard assessment and rock slope remediation. The Key Personnel shall provide four (4) references for projects of similar scope and complexity completed successfully within the last ten (10) years.

Requirements for additional staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.
[NTD:_Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III.

Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

- Rock Mechanics Engineer(s)
- Technician

[NTD: Modify the list of additional staff]

Site inspections and detailed hazard mitigation design services shall be completed by a qualified technical staff.

The Rockfall Hazard Investigation and Design Report (the "*Design Report*") shall be prepared by a qualified technical staff. The Design Report shall be reviewed by Key Personnel registered in this Specialty.

The Service Provider shall have the individual that prepared the Design Report attend appropriate internal technical review meetings. The individual that prepared the Design Report is responsible for confirming that the recommendations in the report have been properly interpreted and incorporated in the contract package.

7.13.2.2 Project Specific Requirements via Lump Sum Price

The Service Provider shall perform all work in accordance with the most recent version of the 'RHRON: Ontario Rockfall Hazard Rating System – Field Procedures Manual (MERO-043)'. The requirements of the RFP shall take precedence in the event of conflict. The RHRON manual specifies minimum requirements. The Service Provider shall complete adequate site inspections and analysis to support recommendations made for the design and construction of this project.

For all rock cuts, moving the rock faces back to meet clear zone requirements or to improve sight distances shall be reviewed and considered during the design.

In general, all newly constructed or widened rock cuts shall be designed in accordance with Northern Region Engineering Directive NRE 2000-204 High Rock Cut Design Guidelines.

7.13.2.2.1 Meetings

Project team including at least the Key Personnel and one of the technical staff for this Specialty shall attend the following meetings as a minimum:

Project Start-up Meeting

The project team shall attend the Start-up meeting presenting their clear understanding of the project and Ministry expectations for the project.

Background information related to rockfall hazards within the project limits will be provided to the successful Service Provider. If available, background information will include RHRON database excerpt, rockfall incident reports, historical construction documents, photographs, and past evaluation and design reports.

Progress Meeting

The project team shall attend the progress meeting(s) following completed site inspections. The intent of the progress meeting is to present the results of the inspection, potential areas of concern, viable rockfall mitigation design alternatives, and potential constructability issues. The Service Provider shall inform the ministry Geotechnical representative when the Rockfall Engineering item is added to the progress meeting agenda. The Service Provider may provide the aforementioned information by email or teleconference to expedite the schedule.

Design Team Review Meeting

The project team shall attend Design Team Review Meetings to respond to any questions related to Rockfall Engineering. Prior to delivery to the ministry, the Design Team Review Package shall be reviewed by the Rockfall Engineering team to confirm that the recommendations in the Design Report are properly interpreted and incorporated in the contract package.

7.13.2.2.2 Post Rockfall Incident Reviews

Rockfalls occur each year on ministry highways in the Northeast Region, some of which require review by an experienced Rock Mechanics Engineer to ensure the rock slope is stable and additional rockfalls do not occur. These reviews are normally accompanied by Rockfall Hazard Rating and Detailed Hazard Mitigation Design services.

Site investigations for Post Rockfall Incident Reviews shall be completed by a qualified Rock Mechanics Engineer. These site investigations may require drone surveys, rope access, mobile elevated work platform, or other suitable methods.

Findings are documented within a Post Rockfall Incident Review report comprising, but not limited to, the following sections:

- Site Description: including, but not limited to, topography, geology, vegetation, drainage, existing land use and structures, etc.
- Rock Mass Structure Description: including, but not limited to, lithology, discontinuities, groundwater, etc.
- Investigation Procedures
- Site History: including, but not limited to, past evaluations/inspections, construction history, previous rockfall activity, etc.
- Rockfall Event: including, but not limited to, date and time, volume, reach, mechanism, etc.
- Investigation Results

7.13.2.2.3 Preliminary Rockfall Hazard Screening

Preliminary Screening shall be completed as per the methodology outlined within the MTO's 'RHRON: Ontario Rockfall Hazard Rating System – Field Procedures Manual (MERO-043)'. In the event of conflict, the requirements stipulated herein shall prevail.

In accordance with the MERO-043 field procedures manual, Preliminary Screening inspections shall be completed by a qualified Technician working under the direct supervision of a qualified Rock Mechanics Engineer. Prior to the commencement of the field work, the qualified Technician(s) familiarity and proficiency in RHRON may be evaluated using the pre-qualification procedure described in Part 2 of the MERO-043 field procedures manual. The prequalification

procedure will be conducted in advance of the actual field work at "practice sites" near XX **[NTD: insert city/ town name]** in the presence of the ministry Project Manager and Geotechnical staff. The Service Provider shall be responsible for providing qualified substitute technical staff should the Technician(s) fail to demonstrate familiarity and proficiency in RHRON during the prequalification as determined by the Ministry. The prequalified Technician(s) shall complete the field work for this project unless a staff substitution has been accepted by the ministry. Substituted technical staff may also be subject to the prequalification procedure.

For Preliminary Screening, the scope of work shall include the following:

- Review background information. Background information related to the project will be provided to the successful Service Provider. Background information will include rockfall incident reports, previous RHRON preliminary and/or detailed rockfall hazard ratings, photographs, LHRS composite listing, construction records, AADT, etc.
- Conduct telephone interviews, or arrange site meetings during field work, with MTO Maintenance Coordinators to discuss rockfall history within their respective area of responsibility. Coordinator contact information will be provided to the successful Service Provider.
- Conduct field work in accordance with MERO-043 field procedures manual and the following requirements:
    - For four-lane sections, negative offset measurements are not acceptable (i.e. offsets measured in the opposite direction of the LHRS listing and reported as negative values). Rock cuts in close proximity shall not share the same LHRS offset value. In these instances, the offset shall be approximated to the nearest 0.05.
    - Obtain an accurate geographic coordinate for all rock cut sites (Class C included) in WGS84 latitude/longitude.
    - Measure and record a crest angle for all rock cut sites. The actual measured crest angle for Class C sites shall be reported. "< 27º" entries for Class C sites are not acceptable.
    - Existing site numbering shall be retained.
    - Notify the ministry of any rockfall hazards that require immediate attention. Areas of special concern shall be presented in the summary report and shall be accompanied by photographs in an appendix. "Area of special concern" are defined as a high potential rock fall hazard that would impact the travelled portion of the highway and should be addressed as soon as possible using OPSS 202 methods.
- Preparation and submission of a summary report, which discusses field procedures, rockfall history, construction history, preliminary screening results, site class changes, areas of special concern, etc. Photographs, maps, and Rockfall Hazard Logs shall be included in an appendix.
- Preparation and submission of a Rockfall Hazards Log in Excel format outlining all sites investigated and a Preliminary Screening Data Sheet for each rock cut. Formatting for both documents will be provided by the ministry.

- Preparation and submission of the screening results in an Excel format for upload in the ministry's RHRON database. The Excel format will be provided to the Service Provider following submission of the draft report.
- Photograph all high priority (Class A and Class B+) rockfall hazard sites. The summary report shall contain photographs of all Class A and Class B+ rockfall hazard sites.
- Preparation of a rockfall hazard map for each highway presenting all Class A rockfall hazard sites. The maps shall be included in an appendix to the summary report.

7.13.2.2.4 Detailed Rockfall Hazard Evaluation

Detailed Evaluation shall be completed by a qualified Rock Mechanics Engineer as per the methodology outlined within the MTO's 'RHRON: Ontario Rockfall Hazard Rating System – Field Procedures Manual (MERO-043)'. In event of conflict, the requirements stipulated herein shall prevail.

For Detailed Evaluations, the scope of work shall include, but not limited to, the following:

- Review background information. Background information related to the project will be provided to the successful Service Provider. Background information will include rockfall incident reports, previous RHRON preliminary and/or detailed rockfall hazard ratings, photographs, LHRS composite listing, construction records, AADT, etc.
- Conduct telephone interviews, or arrange site meetings during field work, with MTO Maintenance Coordinators to discuss rockfall history at evaluation sites. Coordinator contact information will be provided to the successful Service Provider.
- Conduct field work in accordance with MERO-043 field procedures manual and the following requirements:
    - Obtain an accurate geographic coordinate for all rock cut sites in WGS84 latitude/longitude.
    - Existing site numbering shall be retained.
    - Notify the ministry of any rockfall hazards that require immediate attention. Areas of special concern shall be presented in the summary report and shall be accompanied by photographs in an appendix. "Area of special concern" are defined as a high potential rock fall hazard that would impact the travelled portion of the highway and should be addressed as soon as possible using OPSS 202 methods.
- Preparation and submission of a summary report, which discusses field procedures, rockfall history, construction history, evaluation results, site class changes, areas of special concern, etc. Photographs, maps, and Calculation Form PH-D-102 shall be included in an appendix.
- Preparation and submission of the detailed evaluation results in an Excel format for upload in the ministry's RHRON database. The Excel format will be provided to the Service Provider following submission of the draft report

7.13.2.2.5 Detailed Hazard Mitigation Design

At rockfall hazard sites, hazard mitigation recommendations, construction drawings and specifications may be required. The hazard mitigation design work will typically be documented in a Rockfall Hazard Investigation and Design Report (the "*Design Report*").

High Priority Rockfall Hazard Sites

For the high priority rockfall hazard sites, Rockfall Engineering services shall include:

a) reviewing background information provided by the Ministry

b) establishing the limits of the existing rock slopes (i.e. offset distance from edge of pavement to face of cut, rock slope height, etc.) and determining the RHRON hazard rating in accordance with Part 4 of the RHRON manual

c) conducting a quantitative assessment of discontinuities in the rock mass using conventional field measurement techniques complimented with advanced survey methods. The Service Provider shall analyse the Digital Model using specialty computer software to augment orientation data and to accurately define planes of discontinuity (i.e. plane fitting)

d) identifying potential rockfall locations and documenting those specific locations with photographs or other means. The natural slope above the rock cut shall be fully inspected for rockfall hazards. This inspection shall be completed by drone, rope access, mobile elevated work platform, or other suitable methods. Access onto private property may be required

e) performing kinematic analyses to determine potential failure modes, conducting stability analyses (planar, wedge, circular, toppling) for potentially unstable rock masses, and carrying out rockfall simulations to evaluate ditch catchment effectiveness and rockfall overspill potential onto the travelled portion of the highway

f) providing alternative solutions, along with associated quantity and cost estimates, for rockfall removal, reduction, protection, and stabilization options. The Digital Model shall be used to develop designs and to calculate quantities such as, but not limited to, drilling lengths, bolt/anchor lengths, mesh area etc. Comparative surfaces shall be used to develop designs and to calculate quantities such as, but not limited to, rock excavation volume, shotcrete volume, concrete buttress volume, etc.

g) contacting the appropriate utility companies to solicit comments regarding the proposed work where the alternatives may impact existing utilities. Working clearances for utility poles and aerial lines shall be determined and considered while assessing the feasibility of alternatives

h) recommending the preferred engineering alternative. When recommending rock excavation, the new rock face geometry for each site shall be designed to suit the existing rock mass structure and to ensure overall face stability. The time frame in which the rockfall hazard recommendations should be implemented is also to be included

i) developing necessary special provisions to be included in the contract for all related aspects of the work

j) documenting findings and recommendations in a Rockfall Hazard Investigation and Design Report, and

k) preparing contract documentation (i.e. Contract Drawings and/or Rock Hazard Report and staging drawings, if required) detailing all aspects necessary for the construction of the recommended alternative. The contract documentation shall include sufficient detail to carry out the required work. The contract documentation shall address all conditions specified by utility companies. The Digital Model shall be properly and accurately

represented in the contract documentation in plan, profile, and cross-section.

Digital Modelling

The Service Provider's technical staff shall perform the following tasks using specialty software:

- Processing and refining the Digital Model,
- Adding design surfaces to the Digital Model,
- Computing quantities from the Digital Model,
- Computing quantities based on comparative surfaces – Digital Model versus design surfaces,
- Developing design cross-sections, and
- All other tasks to produce the required deliverables.

As part of analysis and design, the Rockfall Engineering staff and Computer Technical Support staff will be required to liaise frequently and collaborate effectively to produce the required deliverables.

Low Priority and Moderate Priority Rockfall Hazard Sites

In addition to the high priority rockfall hazard sites, the Service Provider shall review all low priority and moderate priority rockfall hazard sites (i.e. remaining RHRON Class B sites and RHRON Class C sites) within the project limits for potential maintenance scaling.

For these low priority and moderate priority rockfall hazard sites, Service Provider services shall specifically include:

a) identifying ditch cleanout locations required to remove fallen rock debris by station to station limits

b) identifying machine scaling areas to remove visibly loose and/or partially detached rock fragments that could fall in the ditch adversely impacting clear zone and/or longitudinal ditch drainage

c) estimating machine scaling hours for each scaling area contained within a rock cut, and

d) submitting high quality 'marked-up' photographs that delineate machine scaling areas, indicate method of machine scaling (i.e. hoe-ram or bucket) and specify estimated scaling hours for individual areas. Photographs shall be taken with a metric graduated leveling rod (6 m minimum) positioned in front of the face of the cut in order to provide a suitable reference scale. These 'marked-up' photographs shall be compiled in a Rock Hazard Report.

7.13.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[NTD: Insert tasks if known]

7.13.3 Deliverables

Except where otherwise directed, project deliverables shall be produced as described in the RHRON manual and this RFP. The Service Provider shall submit the deliverables specified in this section to the Ministry.

- Post Rockfall Incident Review report
- Preliminary Rockfall Hazard Screening summary report
- Rockfall Hazard Evaluation results
- Rockfall Hazard Report Investigation and Design Report

Rockfall Hazard Investigation and Design Report(s) (the "*Design Report*") applies to the high priority rockfall hazard sites.

The Service Provider shall reference the precise longitudinal and transverse location of inspection areas and the recommendations of the Design Report to the actual control lines used for design purposes.

The Design Report shall comprise two main parts: Part A - factual information and Part B - engineering discussion and recommendations.

Part A of the report shall include the following sections:

- Site Description: including, but not limited to, topography, geology, vegetation, drainage, existing land use and structures, etc.
- Site History: including, but not limited to, past evaluations/inspections, construction history, rockfall history, etc.
- Inspection Procedures
- Rock Mass Structure Description: including, but not limited to, lithology, discontinuities, groundwater, etc.
- Inspection Results

Part B shall present discussion and recommendations for design. The Service Provider shall discuss the results of the site inspection, the results of the quantitative assessment of the discontinuities, and the results of analyses and simulations. Based on these results, the Service Provider shall present comprehensive and practical recommendations pertaining to temporary, interim and permanent slope conditions. The Service Provider shall develop and evaluate alternatives based on advantages, disadvantages, costs and risks. The evaluation should consider the cost-effectiveness of alternatives including the likely success and durability of the treatment(s) and any ongoing maintenance requirements.

The report shall include high quality photographs in an appendix that identify rockfall locations, recommended treatments, and other detailed requirements or relevant special features.

Contract Documentation

Contract Drawings and/or Rock Hazard Report(s) shall be prepared and submitted separate from the Design Report.

If required to detail work at high priority rockfall hazard sites, Drawings shall be prepared and incorporated into the Contract Drawings for the overall project. The Contract Drawings shall include all relevant design cross-sections produced from the Digital Model. At a minimum, work at high priority sites shall be detailed in the Design Report.

Rock removal areas for low priority and moderate priority rockfall hazard sites shall be detailed in the Rock Hazard Report(s).

The Rock Hazard Report(s) shall include a title page with necessary contract information and a cover page with a legend, construction notes, etc., and shall be submitted in a layout and format suitable for contract advertisement.

The Service Provider shall provide all necessary special provisions and contract quantities by station-to-station limit.

Design Delivery Requirements

Draft deliverables shall be submitted for Ministry review. Unless the draft deliverables contain considerable deficiencies, the Ministry's comments will be provided to the Service Provider within ten (10) business days of receipt. The final deliverables shall be submitted within fifteen (15) business days after resolution of the Ministry's comments.

The Service Provider shall submit a copy of the final Design and any subsequent addenda. The Service Provider shall also submit a copy of the report, high quality photographs, and any other attachment digitally by USB, email/ cloud service or CMS.

Final Rock Hazard Report(s) shall be submitted electronically only.

All copies of the final Design Report and any subsequent addenda shall be stamped by the technical staff and the Key Personnel.

Rockfall Engineering Contract Drawings and the cover page of the Rock Hazard Report(s) shall also be stamped by the technical staff.

7.13.4 Reference Documents

- RHRON: Ontario Rockfall Hazard Rating System – Field Procedures Manual (MERO-043)
- Northern Region Engineering Directive NRE 2000-204 High Rock Cut Design Guidelines.
- Summary table from the ministry's RHRON database outlining the most recent RHRON data for the project limits
- Background information related to rockfall hazards (for the successful Service Provider only)

7.14 Surveying & Plan Preparation - N/A

7.14.1 Project Scope

The Ministry requires that a Service Provider, specializing in Engineering Surveys, perform a **full engineering survey (topographic)** and supply the required digital plans and profiles, horizontal and vertical control information, and digital terrain models. This information is required for detail design and to provide updated engineering records for future use by the Ministry.

7.14.2 Technical Services Required

7.14.2.1 Staff to be provided

Requirements for staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for technical staff that will be reviewed for compliance in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

[Modify the following list as required

- **Supervisor /Project Manager – Engineering Surveys**
  - Shall have a minimum of ten (10) years of experience in a Geomatics Project Management position.

  OR
  - Has performed significant work for MTO in a Senior position on a minimum of five (5) previous highway corridor engineering survey projects.

  AND
  - Shall have demonstrated leadership skills in coordinating and managing all aspects of an MTO engineering survey project.
  - Have extensive knowledge of all applicable ministry policies, standards and technical procedures pertaining to engineering surveys.
  - Be a competent person according to the Occupational Health and Safety Act in order to perform supervisory duties.
  - Have extensive knowledge of Ontario Traffic Manual Book 7 and the Engineering Survey Manual (Latest Version).

- **Party Chief (Field Supervisor – Engineering Surveys)**
  - Shall have a minimum of five (5) years of experience performing engineering surveys in a Party Chief position.

  OR
  - Has performed significant work for MTO in a Senior Field Technician position on a minimum of five (5) previous highway corridor engineering survey projects.

  AND
  - Demonstrate leadership in planning, supervising, and performing surveys and directing survey field staff. Be able to represent the Ministry and communicate effectively with project lead, direct reports, public landowners and other stakeholders.
  - Have extensive knowledge of all applicable ministry policies, standards and technical procedures pertaining to engineering surveys.
  - Be a competent person according to the Occupational Health and Safety Act in order to perform supervisory duties.
  - Knowledge of Ontario Traffic Manual Book 7 and the Engineering Survey Manual (Latest Version).**]**

- **Senior Field Technician – Engineering Surveys**
  - Shall have a minimum of two (2) years of field experience performing engineering surveys in a Senior Field Technician position.

  OR
  - Shall have performed significant work for MTO in a Junior Field Technician position on a minimum of two (2) previous highway corridor engineering survey projects.

  AND
  - Has knowledge of modern field survey techniques, quality control methods, use of Geodetic Control Datums, and safe work practices under the Occupational Health and Safety Act.
  - Knowledge of Ontario Traffic Manual Book 7 and the Engineering Survey Manual (Latest Version).
- **Senior CAD Technician – Engineering Surveys**
  - Shall have a minimum of five (5) years of experience performing plan processing in a Senior Drafter position.

  OR
  - Shall have performed significant work for MTO in a Junior Drafter position on a minimum of three (3) previous highway corridor engineering survey projects.

  AND
  - Has extensive knowledge of all applicable ministry policies, standards and technical procedures, including regional practices pertaining to engineering surveys. And has extensive knowledge of field survey methods, quality assessment and use of CAD software (i.e. Civil3D & ArcGIS Pro).**]**

7.14.2.2 Project Specific Requirements via Lump Sum Price

To support design and analysis tasks performed under this agreement, the Service provider shall perform engineering surveys in accordance with the following requirements:

- Data provided by the ministry must be verified no later than 60 days after the project is awarded.
- The Service Provider is fully responsible for converting the available data to acceptable coordinating system
- The accuracy and completeness of any data supplied shall be verified by the Service Provider.

All surveys and drafting shall be in accordance with the latest version of the following documents:

- Engineering Survey Manual
- AutoCAD Standards Guide
- The AutoCAD/Civil 3D standard template and related files and guideline

The Ministry's customized Civil3D and other CAD standard templates, files and guides can be downloaded from the MTO file application download website:
http://www.xfer.mto.gov.on.ca/PTASapps/index.htm

Horizontal Project Control

The project will be referenced to **NAD 83 CSRSv6:2010.0** control values provided in the appropriate MTM zone.

See Engineering Survey Manual:

- Section 5 - Project Control
- Section 5.2.1 - Accuracy Standards
- Section 5.3.1 - Survey methodology
- Section 5.4.1 - Monumentation Standards

Vertical Project Control

The project will be referenced to **Canadian Geodetic Vertical Datum of 1928 (CGVD28)** using the primary vertical control values provided.

See Engineering Survey Manual:

- Section 5 - Project Control
- Section 5.2.2 - Accuracy Standards
- Section 5.3.2 - Survey methodology
- Section 5.4.2 - Monumentation Standards

Canadian Geodetic Vertical Datum of 1928 (CGVD28) **1978 southern Ontario adjustment.**

Digital Terrain Model

See Engineering Survey Manual:

- Section 6 - Topographic Detail
- Section 6.2 - Terrain Model
- Section 6.3.1 – Road Features
- Section 6.3.2 – Drainage Features
- Section 6.3.4 - Bridges
- Section 7.1.4 - Digital Terrain Model
- Appendix F - Field Feature Codes

Detail

All manmade and topographical features will be detailed within the survey area.

See Engineering Survey Manual:

- Section 6 - Topographic Detail
- Section 8 – Site Plans

Topographic detail at Bridges, Structural Culverts, Railway crossings, Pipeline crossings, Maintenance Patrol Yard Facilities, and Truck Inspection Stations shall conform to the requirements outlined in Section 8, Site Plans (Engineering Survey Manual).

Alignment

See Engineering Survey Manual:

- Section 7.1.5 – Alignments

In the case where previous construction contracts have introduced alignment and curve revisions, the revised alignment and curve parameters shall be used (see previous Contract Books).

All spiral curves will be spiralled using an "A" Factor per the MTO standards for Design Speed of XX kilometres per hour

H&V control sheets will be produced using the H&V software utility supplied by MTO, showing the coordinates of, and station/offset ties to all primary and project horizontal and vertical control points, boundary monuments, and alignment intersections.

The Horizontal and Vertical Control sheets will be prepared using Microsoft Excel and the files will be named according to the plan number with “hv” added to the beginning of the plan number.

Plan And Profile

Drawings shall be in Autodesk Civil3D 2021 format.

See Engineering Survey Manual:

- Section 7 - Digital Data
- Section 7.1.2 - Plan Specifics
- Section 7.1.6 – Profiles
- Appendix G – Sample CAD Plans

Field Inspection

See Engineering Survey Manual:

- Section 9.2 – Field Inspection Prints

A set of plans demonstrating that a complete and thorough field check has been completed is to be submitted.

MTO Ownership Limits

See Engineering Survey Manual:

- Section 6.3.6 – Legal Survey Monuments

The Service Provider shall tie-in all the existing right of way monuments and verify MTO ownership limits where required.

Staking

See Engineering Survey Manual:

- Section 10 - Stakeout

The Service Provider must stake out the approved alignment in the field.

Pavement Markings

Pavement Marking Detail Notes will be recorded after the approved alignment has been staked. The notes will include size, colour, location (station) and type of all pavement markings within the project area.

Operations Notification

The Service Provider shall forward details of their planned field activities to the Manager, Operations **<NAME (EMAIL)>.**

If there is any change to the Service Provider's planned field activities, the Service Provider shall notify the Manager, Operations of the nature of the changes. The Geomatics Project Manager, **<NAME (EMAIL)>,** shall be copied on all correspondence regarding the above procedures.

Permission To Enter

Every effort must be made by the Service Provider to obtain permission from the property owner, prior to entering onto privately owned property for the purposes of obtaining pre-engineering survey data. The Service Provider must clearly inform the property owner that the purpose of the survey is only to update our existing engineering plans information with no immediate effect on the existing highway right of way limits.

See Engineering Survey Manual:

- Section 3.3 - Public Relations

Row Staking

The Ministry requires that the Service Provider have any new MTO boundaries or limits staked in locations where a utility is being relocated. This shall be performed by an Ontario Land Surveyor. The timing will be determined at the project's mandatory Utility Coordination Meeting. This work is to be completed one time only.

Unless specified otherwise, stakes are to be placed at existing monuments on the new MTO boundary.

It is the Service Provider's responsibility to research and supply all survey plans and other documents.

The Service Provider shall supply and use 2"x2"x4' wooden stakes for the ROW staking.

The service provider shall supply a written report, signed by the Ontario Land Surveyor and delivered to the MTO Project Manager, detailing the dates when the staking was performed, and all issues encountered including missing survey bars and encroachments across the boundary that was staked.

In the event that the requirements of the Terms of Reference conflict with the Standards or Manuals listed above, the Terms of Reference for this specific project shall govern.

7.14.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[NTD: Insert tasks if known]

7.14.3 Deliverables

See Engineering Survey Manual:

- Section 5.6 - Project Control Deliverables
- Section 6.1.1 - Field Notes
- Section 7.1.5 – Centreline Offset Reports
- Section 9 - Other Deliverables

The deliverables for this project will include:

- Proposed Schedule
- Progress reports (every XX weeks during surveying and plan preparation)
- Project Specific Supplementary Quality Control Plan (submitted through RAQs)
- Occupational Health and Safety Plan
- Traffic Protection Plan

The Service Provider shall provide sufficient information to complete detail design. Upon completion of field surveying and plans processing, at the Engineering Survey Information key milestone date <OR> in advance of utilization of survey data for highway engineering Detail Design purposes, the Service Provider shall submit the following:

- Digital file of least Squares adjustment Input and Output Files **or** Site Calibration/ Local Transformation raw data files including sketches and adjustment reports
- Civil3D 2021 files for all plan submissions
- Civil3D 2021 files database required
- H&V digital file for all plan submissions in Excel format
- DTM in InRoads format
- Digital and hard copy of H&V report sheets
- All raw data files from the topographic survey
- All field survey notes, including traverse/network sketches, data capture notes
- Fly level notes
- Bridge clearances, over-head utilities, signs etc, where needed
- Drainage detail, eg invert elevation, pipe sizes etc.
- Pavement Marking Detail Notes
- Centreline station offset reports demonstrating goodness of fit of the alignment with each B-Plan submission.
- MTO P-Plan and other non-MTO legal Plan mark-ups of found, missing and disturbed monumentation
- A set of plan mark-ups showing the Service Provider has completed a Field Inspection

Three milestone reports are required:

- The Survey Report (Section 9.4.2, Engineering Survey Manual) The Data Processing and Drafting Report (Section 9.4.3, Engineering Survey Manual)
- The final Quality Control Report table indicating quality assurance activities with appropriate sign offs.

7.14.4 Reference Documents

The Ministry will provide the Service Provider with the following:

Survey Information	Document/Data Type	Comments
Ortho mosaics	Mr SID	2020, 2023
Photogrammetric Base Mapping/DTM **Preliminary design accuracy**	CIVIL3D	1:500, 2013 1:500, 2013
Alignments	LDD	
H&V Sheets	LDD & PDF	Available
Horizontal Control Data Vertical Control Benchmark Data	LDD & PDF	Published values available through Cosine Database
Property/legal plans	AutoCAD	MTO P-Plans, Title Records and Ontario Parcel Data
Note: • The accuracy and completeness of all/any data supplied must be verified. Existing information is accurate for the date of the survey • All horizontal values are in NAD 83 CSRSv6:2010 • All vertical values are in CGVD 1928, 1978 Southern Ontario Readjustment **Photogrammetric accuracy** Compiled to meet horizontal and vertical accuracy of 10 cm on well-defined hard surfaces and 25 cm on other non-obscured surfaces		

The accuracy or completeness of any data supplied shall be verified by the Service Provider.

The associated Civil 3D 2021 database is mandatory for all submissions.

7.15 Traffic Engineering - N/A

7.15.1 Project Scope

The Service Provider shall conduct and document a detailed traffic design within the study area. The traffic design shall include, but not be limited to, the following:

- Traffic management plan
- Signing and pavement marking requirements
- Construction access/egress

- Construction staging/detours
- Geometric, operational and safety improvements
- Guide rail requirements
- Review of applicable documents (including available correspondence and the Preliminary Design Report)
- Traffic data collection
- Collision analysis
- Temporary traffic signals
- Permanent traffic signals
- Roundabouts
- Illumination requirements
- Traffic counting stations

7.15.2 Technical Services Required

7.15.2.1 Staff to be provided

Requirements for staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for technical staff that will be reviewed for compliance in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

- **[Insert if Roundabout is included]** Peer Review shall be qualified in RAQS under the specialty Roundabouts or shall have the following qualifications:
    - must be independent from the Roundabout and Prime Service Providers
    - demonstrated successful experience as Peer Review Lead in similar projects
    - at least ten (10) years of verifiable North American experience with designing roundabouts.
    - at least five (5) years of verifiable Canadian experience on roundabout design
    - at least three (3) projects that include single-lane roundabouts and low speed approaches.
    - at least three (3) projects that include multi-lane roundabouts and higher speed approaches.

7.15.2.2 Project Specific Requirements via Lump Sum Price

This Terms of Reference is to be read in conjunction with the Preliminary Design Report and Draft Design Criteria to be provided to the successful Service Provider.

See other sections of this RFP document for additional project details.

Additional requirements related to Traffic Engineering may be included in Section 7.4 - Electrical Engineering and Section 7.10 – Highway Engineering of this RFP document.

The Service Provider shall review all existing correspondence related to public complaints and concerns and consult with the Ministry's Area Office staff regarding operational and safety concern areas. A copy of existing correspondence will be provided to the successful Service Provider.

The Service Provider shall confirm all appropriate Special Provisions (SP) and Non-standard Special Provisions (NSSP) are included as part of the Contract Package/Tender Documents.

Ministry Standards and Area Policies and Practices

The Service Provider shall undertake all works for this discipline in conformance with the following Ministry standards and area policies and practices (the latest publication or release) including but not limited to:

- Geometric Design Guide for Canadian Roads
- MTO Geometric Design Supplement
- Ontario Traffic Manuals (OTM) Book Suite
- Roadside Design Manual
- Roadside Evaluation Manual
- MTO Traffic Data Collection and Processing Procedures and Standards
- Sign Support Manual
- Guideline for Operational Performance Reviews
- Traffic Management Guidelines for Structure Rehabilitation projects
- Traffic Control Signal Timing and Capacity Analysis at Signalized Intersections
- Portable Temporary Traffic Signals Policy
- Commercial Site Access Policy and Standards Manual
- Full Road Closures Policy
- Operational Analysis of Roundabouts Guidelines
- Roundabouts: An Informational Guide (FHWA Publication) w/appropriate Highway Design Bulletins
- Applicable Ministry and area Standards, Policies, Directives and Guidelines
- Bikeway Design Manual
- Traffic Office Policy #2014-01

For any deviation of Ministry standards and area practices, the Service Provider shall provide recommendations and rationale for Ministry acceptance.

The Service Provider shall employ AutoCAD Standards complying with the requirements as indicated elsewhere in the Agreement.

Traffic Data

Available traffic data, as listed in Section 7.15.4, will be provided to the successful Service Provider.

All raw traffic data collected and processed for this project shall be provided to the Ministry as per the applicable Guidelines. The Service Provider shall format all data as per Ministry standards.

Collision Analysis

The Service Provider shall reference the Preliminary Design Report (PDR) for collision data and collision analysis.

Roadside Safety

The Service Provider shall review all roadside safety findings and recommendations detailed in the PDR to confirm they remain appropriate. The Service Provider shall identify any changes required to the recommendations in the PDR. If necessary, the Roadside Evaluation Manual shall be utilized to determine benefit/costs for identified changes.

Elimination of guide rail through slope flattening shall be the preferred method of disposing of excess material.

The Service Provider shall undertake a Safety Improvement Benefit/Cost Review to assess the safety benefits and evaluate alternative countermeasures within the context of the project utilizing Traffic Engineering Software (TES) and applying the Highway Safety Manual methodology, and available data, provided by the ministry. The Service Provider shall submit a draft and final Roadside Safety Report, summarizing the above requirements for review and approval before any construction is undertaken.

Permanent Signing & Pavement Markings

Signing includes both the signs and the sign support structures (ground mounted signs, overhead, cantilever and bridge-mounted type sign support structures).

The project includes all temporary and permanent signing. Temporary signing requirements are further detailed in the Traffic Management Plan Section.

The Service Provider shall review the Preliminary Sign Layout recommended in the Preliminary Design Report with the work proposed in the Detail Design. Any changes to the Concept Plan shall be documented, justified and submitted to the Ministry for review.

Existing Conditions

The Service Provider shall provide a detailed sign inventory of all existing signing within the project limits. The Service Provider shall contact the Area Office Sign (Services) Coordinator to arrange a site meeting to review and identify which signs shall be replaced or which signs shall be salvaged and reinstalled based on their condition. **The Service Provider shall not rely solely on the existing inventory provided by the Area Office Sign (Services) Coordinator but shall field confirm the information.** The detailed sign information shall include, but is not limited to:

- Sign attributes (size, reference code)
- Location (chainage and offset)
- Message
- Condition of sign and support (appropriate for re-use)
- Support type with dimensions

The Service Provider shall contact the appropriate municipal road authorities to confirm, in writing, the official local road names and the civic address (‘911’) signing requirements. If the information received indicates a road name and/or civic address change, the Service Provider shall obtain

the Municipal Bylaw, Council Resolution or written direction in this regard and forwarded a copy to the area Traffic Section for their records. The Service Provider shall submit an Existing Condition sign inventory and proposed changes to MTO before proceeding with proposed sign fabrication.

Future Conditions

Wording on both permanent and construction identification signing must be Ministry approved. All proposed signing recommendations are to be submitted to the area Traffic Section for review and approval.

The Service Provider shall be responsible for identifying all permanent signing recommendations (including new, relocation, replacement and removals) and provide a summary in a Permanent Signing Table.

The Service Provider shall contact the TOD Sign representative, in writing, to confirm the affected stakeholders are informed of the change in alignment and any changes to access for the businesses.

Final sign design details for aluminum extruded signs will be supplied by the Ministry.

The Service Provider is to review and recommend if any oversized wild animal crossing signs are required within the specified limits

The project includes the design and documentation of all permanent and temporary pavement markings throughout the project Limits. All permanent and temporary pavement markings, including mainline and any connecting roadways, are to be designed in accordance with OTM Book 11 and quantified in the Contract Documents.

The Service Provider shall:

- Identify locations where existing markings are not consistent with OTM Book 11 and where they may be contributing to operational problems/concerns.
- Provide recommendations to the Ministry regarding modifications or adjustments to the existing pavement markings
- Identify the need for any additional pavement markings which may be necessary as a result of proposed or recommended highway improvements
- Review and incorporate innovative technologies such as rumble stripes (painted rumble strips), textured markings, glass bead systems, and orange temporary markings (for construction staging) as appropriate.
- Recommend the method of pavement marking removal (grinding, soda, water-blasting). The condition of the existing pavement surface and the likelihood of resurfacing shall be considered in the selection process.
- Review and recommend all temporary pavement markings throughout the project Limits
- Confirm proper sight distance calculations have been completed and documented to establish appropriate passing / no-passing zones (for both permanent and temporary pavement markings)
- Be responsible for identifying all permanent HOT/Managed Lanes sign recommendations including identifying permanent signing recommendations that may be affected (including

new, relocation, replacement and removals) and provide a summary in a Permanent Signing table.

- Provide recommendations to the Ministry regarding HOT/managed lanes or adjustments to the existing pavement markings
- Identify the need for any additional pavement markings which may be necessary as a result of HOT/managed lanes

The Service Provider shall be responsible for preparing (permanent) pavement marking drawings at interchanges (from 250 m prior to the start of the deceleration taper to 50 m beyond the end of the acceleration taper) including ramps and terminals and at intersections with auxiliary lanes or traffic control signals and typical(s) for tapers.

The Service Provider shall be responsible for preparing (permanent) pavement marking drawings at intersections with auxiliary lanes or traffic control signals and typical(s) for tapers

The Service Provider shall provide all Signing and Pavement Marking (temporary and permanent) Layout drawings two (2) weeks prior to the Stage 2 Design Team Review meeting for Ministry review. For multi-lane and freeway projects, layouts shall be provided in roll plan for each construction stage.

The Service Provider shall prepare and submit to the Ministry the following items for review and approval:

- Signing and Pavement Marking Layout Drawings (1:1000 scale)
- Temporary/Staging Signing Plan
- Permanent Signing Table
- Sign Details (The Ministry will provide Sign Details for aluminium extruded signs)

Approved Signing and Pavement Marking layout drawings shall be included in the Contract Package.

Two (2) copies of the approved Signing and Pavement Marking layout in roll plan format shall be provided at the Design Package Handover Meeting.

Construction Staging / Detour

The Service Provider shall be responsible for determining all staging, detour and staged improvement requirements. This includes confirming any requirement for temporary traffic control signals and temporary illumination.

The Service Provider shall develop multiple Construction Staging options, including, but not limited to, full closure of side roads to facilitate the construction of bridge structures, ramps, and associated works.

Subject to MTO obtaining municipal endorsement for full side road closures with long-range detours, the Service Provider’s Construction Staging Plan shall incorporate detailed provisions for such closures. This shall include all required signage, detour routing, traffic management measures, and a comprehensive construction schedule demonstrating how full closures can expedite overall project delivery.

The Service Provider shall develop Construction Staging options incorporating multiple phases of work that maintain continuous side road traffic operations. Each option shall demonstrate safe and efficient traffic accommodation through staged construction sequencing and shall be supported by a detailed construction schedule outlining the sequence and duration of the works.

The alignment and cross sections of the staging/detour shall be determined based on safety, effectiveness, and cost. The Service Provider shall detail the proposed alignment(s), cross-section(s) and any impacts including property, utilities, environment, delay and disruption to traffic.

All staging/detour options, including construction access/egress, shall comply with clear zone requirements at all times.

The Service Provider shall recommend an optimum staging configuration, including cost estimates, for each location. The Service Provider shall review options for staging/detours and full closures with alternate route selection.

The Service Provider shall analyze, recommend and submit staging/detour drawings for the final design. For detour routes (full closure) that direct traffic onto roads or affect existing traffic on roads not under Ministry jurisdiction, the Service Provider shall include the following in the recommended construction staging information:

- A detour design criteria
- Documentation confirming the detour route option is both viable and appropriate and was included in Public Notices.
- Recommended detour route plans on 1:1000 scale drawings
- Documented notification of the appropriate agencies
- Written approval from the appropriate road authorities for the use of their roads

Refer to the Full Road Closures policy for further details and criteria for full road closures.

Staging & Detour – Traffic Modelling

Using VISSIM or AIMSUN micro simulation software package, conduct Level of Service calculations and assess existing basic freeways and highway segments, weaving sections, ramp and ramp terminal operations under existing conditions and for the construction year.

Calibrate and validate existing conditions.

Micro simulate the construction year conditions in both directions based on information from macro modelling analysis. Conduct evaluation for construction sequencing and staging alternatives including detour routes. The limit of the micro-simulation model shall be discussed and agreed upon at the start of the project but shall extend as a minimum one interchange on both sides from the study limit.

Traffic shall be modelled for, the a.m. and p.m. peak weekday & weekend periods (3 hours/period) or, the time set for the construction staging and detours. The model should provide a reliable estimate of the entire study area operation. The service provider shall investigate using the model and other tools all possible scenarios to identify and assess all proposed staging alternatives.

Prepare a 3D graphical traffic micro simulation model (VISSIM or AIMSUN) of the freeway within the identified study area to show traffic operations of the various staging alternatives on the selected preferred design alternatives for presentation to MTO Senior Management and display at Public Information Centres.

The simulation model input and output files, assumptions used in the models, calibration results, documentation of any model limitation, and snapshots (with road name labels) and traffic operation summaries of key simulation findings under various scenarios shall be submitted as part of the deliverables.

The traffic operation summaries shall include at a minimum documentation of the average vehicle speed along various sections of the network, travel time, average delay, levels of service, weaving, queuing or slow moving vehicles (due to difficult lane changes) that are observed on the network, etc. under the various scenarios.

All input and output files shall be submitted in both electronic and hardcopy formats for review.

The Service Provider shall include the following in the recommended construction staging design:

- Vertical and lateral clearances maintenance in conformance with the Traffic Management Guidelines for Structure Rehabilitation projects. If this cannot be met, the Service Provider shall propose options to address inadequacies.
- Illumination requirements, when required
- Temporary traffic signals requirements, when required
- Road user benefit/cost analysis
- A queue and delay analysis/study to identify impacts during summer and non-summer weekdays and weekends. From this, traffic impacts associated with SP 199F01 recommendations and staging/detours shall be detailed.

The staging/detour alternatives shall be submitted for Ministry review two (2) weeks prior to the Stage 1 Design Team Review meeting.

Traffic Management Plan

The Service Provider shall prepare a detailed Traffic Management Plan for the recommended staging/detour designs. The purpose of this Traffic Management Plan is to:

- Provide safe and adequate traffic management requirements that are to be included in the construction tender documents.
- Determine the impact of any staging schemes for the safe and efficient movement of traffic
- Aid in the selection of staging schemes that will safely and adequately facilitate efficient operations without creating undue delay to the travelling public.
- Aid in proposing methods to inform the travelling public, emergency response agencies and other stakeholders of the potential impacts of the recommended staging/detour design.

The OTM Book 7 shall be used, as a minimum, to plan and implement all traffic management in this project. The Ministry has traffic management and incentive/disincentive SPs and NSSPs, which are specific for each area and shall be incorporated into the Traffic Management Plan.

The Service Provider shall use the Temporary Conditions Traffic Management Manual when designing Detour Route Markers for all 400-series highways, the QEW and highways with a posted speed of 90km/h or higher. For highways with a posted speed below 90km/h Detour Route Markers are to be designed in accordance with OTM Book 7.

Highway XX shall be considered Freeway status as per OTM Book 7.

The Service Provider shall provide recommendations for the need of reduced regulatory speeds at work zone locations. For each recommended location, the Service Provider shall detail the following:

- Limits of the regulatory speed reduction (Stations).
- Justification / reasoning for the speed reduction.
- Construction operations when the speed reduction would apply.
- Any additional conditions where the speed reduction would or would not apply.
- Any anticipated impacts.

The Service Provider shall make provisions for vehicle access to be available to all ramps, acceleration / deceleration lanes, entrances (including commercial and private) at all times during construction and shall identify this requirement in the detour/staging drawings in the contract documents.

As appropriate, the Service Provider shall complete Temporary Sign Layout plan and Temporary Pavement Marking drawings for all staging/detour locations. The Temporary Sign Layout plan and Temporary Pavement Marking drawings shall be submitted to the Ministry for review and approval.

The Service Provider shall identify all existing signs (including ground mounted, overhead, electronic) that need to be modified or relocated to accommodate staging or the highway works.

It is anticipated Portable Variable Message Signs (PVMS) will be required for this project. The Service Provider shall determine the number and location of such signs as part of the Traffic Management Plan.

This Traffic Management Plan shall include the appropriate provisions to minimize impacts and delays to the travelling public within the work site. The Plan shall include, but not be limited to:

- Final staging/detour drawings
- Temporary Sign and Pavement Marking layout drawings
- Temporary Advance Information Signs, (TC-64) wordings and location plan
- Special provisions (SP)
- Non-standard special provisions (NSSP)
- Advance notification strategies (via additional signing, media / communications plans, other innovative methods)
- Traffic Control Plan (e.g. final staging/detour drawings, signing plans, special provisions, etc.)
- The Service Provider shall prepare a comprehensive Communication Plan addressing all long-term traffic staging and detour activities. The plan shall incorporate advance

notification measures for impacted communities and the travelling public, including the use of signage, media channels, and stakeholder/association notifications, as appropriate.

- Contingency Plan (in event work or traffic management strategy doesn't go as planned)
- Incident Management Plan (strategy for emergency situations)
- Monitoring / Performance Measurement Plan
- Implementation Plan

At a progress meeting, the Service Provider shall make provisions for the Traffic Management Plan to be discussed and the appropriate documents to be reviewed. The Traffic Management Plan shall be presented to Head, Construction, Area Manager, Construction, Head of Project Delivery, and Head of Pre-Contract Traffic Engineering a minimum of two (2) weeks prior to the Stage 2 Design Team Review meeting for comment and acceptance. A copy of the draft documents are to be submitted, for all meeting attendees, to the ministry two (2) weeks prior to the meeting date to allow time for review and comment

A copy of the accepted Traffic Management Plan shall be provided to the area Traffic Section and the Ministry's Project Manager.

Permanent Traffic Signals

The Service Provider shall review the Permanent Traffic Control Signal requirements as presented in the PDR with the proposed work generated from Detail Design. If changes in the Permanent Traffic Control Signal requirements in the PDR are required, the Service Provider shall identify and recommend such changes.

The Service Provider shall commit at least one (1) site visit by key personnel responsible for permanent traffic signal design prior to the Stage 2 Design Team Review meeting. The site visit shall determine the location of the traffic control cabinets, modelling requirements and details of traffic signal proposed for each location.

Intersections where roundabouts were recommended in the PDR shall be reviewed with the proposed work generated from Detail Design. The Service Provider shall be responsible to complete all revisions in accordance with Ministry Standards and area Practices.

OTM Book 12, MTO Traffic Signal Operating & Timing Policy (2010-01), Highway Capacity Manual (HCM) Methodology, Highway Capacity Software (HCS) 6, SimTraffic and Synchro 12 shall be used to develop the signal timing. All recommendations shall be in accordance with Ministry Standards and area practices.

The Service Provider shall conduct a queue/delay analysis to identify impacts the proposed traffic control signals will have during summer and non-summer weekdays and weekends.

For each signal location, the Service Provider shall be responsible to determine the appropriate phasing and timing requirements and to prepare all final Traffic Control Signal Legal Drawings (PHM-125).

The Service Provider shall prepare and submit a finalized plan which depicts the recommended geometric improvements and final traffic control signal design for Ministry review. The final traffic

control signal design shall include geometric requirements such as taper, parallel and storage lane dimensions.

For each permanent traffic control signal installation, the Service Provider shall submit the following to the Ministry for review and approval **six (6) weeks** prior to the Stage 2 Design Team Review meeting:

- Three (3) hard copies of Final Draft PHM-125 Drawings (1:500 scale)
- A digital copy to scale in AutoCAD (DWG) Format on USB flash drive
- Proposed Traffic Control Signal phasing, timing, and detector assignments

The Service Provider shall submit the following documents two (2) weeks prior to the Stage 3 Design Team Review meeting for each permanent traffic control signal installation:

- Three (3) copies of the Final PHM-125 Drawings (1:500 Scale)
- One (1) copy of the Final Electrical Drawing(s) to be forwarded to the area Traffic Section
- A digital copy to scale in AutoCAD (DWG) Format on USB flash drive
- Recommended Traffic Control Signal phasing, timing, and detector assignments
- Input and output files of the SimTraffic / SYNCHRO analysis of the recommended signal control

Temporary Traffic Signals

The project includes the detail design of temporary traffic control signals for areas utilizing long duration single lane (one-lane/two-way) construction staging, existing signalized intersection construction staging, bridge rehabilitation (one-lane/two-way) or anywhere else temporary traffic signals are required for construction

The Service Provider shall be responsible for determining temporary signal phasing/timing requirements and other operational considerations, i.e. time-of-day, actuation, etc. The proposed signal timings and associated calculations shall be provided to the area Traffic Section for review.

The temporary traffic control signals will be operated and maintained by the Contractor during the course of construction. The electrical contractor will be responsible for supply of traffic signal controller appropriate for timing and operations identified by Service Provider. The traffic signal controller must be able to accept any revisions to the signal timing that may be required during construction. All recommendations shall be in accordance with the Ministry Standards and area Practices.

The Service Provider shall determine if the signals should be operated as actuated or on fixed time. As part of the work, the Service Provider shall investigate if any auxiliary signal heads, advance flasher beacons and down lights are required at the site. Other operational considerations such as actuation, time-of-day plans, active advance warning, progression, signing, etc. shall also be discussed and detailed.

The following locations will require temporary traffic control signals:

- **[Insert the List including Station + Offset]**

The Service Provider shall conduct a queue/delay analysis to identify impacts the proposed temporary traffic control signals will have during summer and non-summer weekdays and weekends.

- Review the need to integrate the existing permanent traffic signals with the recommended temporary and permanent traffic signals.
- Provide recommendations regarding the parameters of each traffic signal.
- Conduct a review to determine if the temporary traffic signal at <Intersection Location> can operate independently from the existing traffic signal network.

The "Temporary Electrical Work" item for the temporary traffic signals shall be detailed in the Contract Package. All signal heads shall be mounted on span wire with a mounting height of 5.8 m. If portable temporary traffic signals (PTTS) are being considered, the Service Provider shall provide a benefit/cost analysis and justify the use of PTTS with reference to the appropriate Ministry standards and policies. The Service Provider is advised that PTTS are only permitted for use from April to November.

For each temporary traffic control signal installation, the Service Provider shall submit the following to the Ministry for review and approval **six (6) weeks** prior to the Stage 2 Design Team Review meeting:

- Three (3) hard copies of Final Draft PHM-125 Drawings (1:500 scale)
- A digital copy to scale in AutoCAD (DWG) Format on CD
- Proposed Traffic Control Signal phasing and timing

The Service Provider shall submit the following documents two (2) weeks prior to the Stage 3 Design Team Review meeting for each temporary traffic control signal installation:

- Three (3) hard copies of the Final PHM-125 Drawings (1:500 Scale)
- One (1) copy of the Final Electrical Drawing(s) to be forwarded to the area Traffic Section
- A digital copy to scale in AutoCAD (DWG) Format on CD
- Recommended Traffic Control Signal phasing and timing
- Input and output files of the SYNCHRO analysis of the recommended signal control (if applicable)

Roundabouts [Delete if not applicable]

Additional information may be available elsewhere in this Agreement.

The Service Provider shall review the design of all roundabout locations as provided in the PDR to verify the recommendations remain appropriate. This review shall also include verifying if the designs of the roundabouts comply with current Ministry policies and standards and existing conditions. Any changes to the recommendations from the PDR shall be documented and a Peer Review (as described below) shall be completed.

The key individual identified to undertake the design of the roundabout (Roundabout Service Provider) shall be qualified in RAQS under the specialty Roundabouts.

The Operational Analysis of Roundabouts Guidelines shall be applied to determine if microsimulation is required for roundabout operational analysis. If micro simulation is not required,

operational analysis shall be performed using ARCADY 7. Upon completion of the analysis, all input and output files shall be forwarded to the Traffic Section in digital format (electronic files that can be accessed and processed by AIMSUM/VISSIM and/or ARCADY 7).

A Peer Review shall be completed for each proposed roundabout design. The Peer Review Service Provider shall be independent from the Roundabout and Prime Service Providers and be qualified in RAQS under the specialty Roundabouts or the Peer Review Service Provider shall have the qualifications listed in section 7.15.2.1.

The Peer Review includes a detailed review of design assumptions, signage, markings, anticipated operations, etc. by a firm specializing in roundabout design with appropriate experience. All correspondence and comments with the Peer Review Service Provider shall be copied to the Ministry. Upon completion of the Peer Review, the Peer Review Service Provider shall provide confirmation that all roundabouts designed meet all Ministry standards and requirements, in writing, with a copy forwarded to the Ministry.

All drawings submitted shall include, but not be limited, to the following:

- geometric design elements (i.e. taper lengths, lane dimensions/arrangements, inscribed circle diameter (ICD), weaving lengths, angle of entry)
- north point
- road names
- illumination
- pavement marking layout
- signing layout (station & offset)
- sidewalks and pedestrian crossing locations.
- splitter island location
- landscaping items
- dropped curbs, etc.

The following items shall also be considered and discussed:

- Sight distance and visibility requirements.
- Operational requirements.
- Pedestrian Requirements – Number and location of crossings, curb depressions, and padding requirements.
- Lane configurations.
- Service Provider may be required to carry out speed studies.
- Lane markings must be implemented according to the Ontario Traffic Manual and applicable Ministry Policies.
- Splitter island location, landscaping, dropped curbs etc.

The Service Provider shall provide public education regarding the proper operation of the roundabout(s) as part of a Public Information Centre (PIC) in addition to the requirements described elsewhere in this Agreement. Examples include, but not limited to:

- Effective use of media to educate the general public
- Provide a Public Education Information Session (As part of PIC)

- Provide and maintain a public website during the design phase for information about roundabouts and its correct usage. The Service Provider shall design and maintain the website to allow its migration to a governmental website at a later date.
- Brochures and printed material for distribution to the area residents and businesses.

The Service Provider shall compile a Roundabout Evaluation Report in compliance with current Ministry policies and procedures. The Report shall be presented to the Ministry's Roundabout Implementation Team at the Stage 1 and Stage 2 of the Design Phase. Copies of the report and any presentation materials shall be submitted to the area co-ordinator two (2) weeks in advance of the Roundabout Implementation Team meeting date to allow time for review and comment.

The Service Provider shall submit the following to the Ministry for review and comment six (6) weeks prior to the Stage 2 Design Team Review meeting for each roundabout location:

- Three (3) hard copies of Final Draft Roundabout drawing (1:500 Scale)

The Service Provider shall submit the following to the Ministry for review and comment two (2) weeks prior to the Stage 3 Design Team Review meeting for each roundabout location:

- Final Roundabout Drawings
  - One (1) hard copy at 1:1000 Scale
  - One (1) digital copy in AutoCAD (dwg) format on CD (1:1 Scale)
- Other Deliverables
  - One (1) hard copy of Final Electrical Drawings
  - One (1) hard copy of the Input and outputs of all analyses
  - One (1) electronic copy of the Input and outputs of all analyses on a USB or shared cloud or CMS.

All required elements for the roundabouts, including detailed drawings, shall be included in the contract package.

Illumination Requirements

The Service Provider shall:

- review the illumination requirements in the PDR with the proposed work generated from Detail Design
- identify and provide recommendations of any changes in the illumination requirements detailed in the PDR

The scope of work related to changes or additions to recommendations in the PDR include identifying, analyzing and recommending locations within the study limits which warrant illumination (partial, full, or temporary). This may include:

- upgrading existing illumination
- installation at additional locations to achieve partial or full illumination
- temporary illumination for staging, detour, traffic management, and construction access.

The Service Provider shall also refer to Section 7.4 – Electrical Engineering for additional information and requirements.

The project includes the detail design of Temporary Illumination at all decision areas within and approaching the construction zone.

The Service Provider shall provide a detailed justification, benefit/cost analysis, and a detailed construction cost estimate for each recommended illumination treatment. All appropriate provisions shall be included in the contract package.

The municipality owns the existing mainline illumination through the **town (or village).** The Service Provider shall confirm that no improvements are warranted based on current Ministry policy.

Prior to the Stage 2 Design Team Review meeting, the Service Provider shall submit the illumination recommendations with all supporting work sheets and documents to the Ministry for review and approval. A minimum of two (2) weeks shall be allowed for this review and approval process.

The Service Provider shall submit to the Ministry final recommended design drawings for:

- Full and/or partial illumination upgrades;
- Permanent illumination at lane transitions, signals, etc.;
- Temporary illumination required for traffic staging.

Highway Geometrics

Refer to Highway Engineering Section.

Guide Rail

All existing guide rail shall be reviewed to identify any safety concerns and documented in a detailed report as outlined in the Highway Engineering component of this assignment. Any locations that have been identified in the operational and safety review must be included in the Guide Rail Report and provide a summary of findings. Also refer to the Roadside Safety Review Section.

All locations being recommended for upgrades or new installation must be justified due to operational or safety concerns.

One (1) copy of the draft Guide Rail Report shall be submitted to the area Traffic Section for review and comment prior to finalizing. One (1) copy of the Final Guide Rail Report shall be submitted to the area Traffic Section.

Rumble Strips

The Service Provider shall review existing shoulder, transverse and/or longitudinal rumble strips within the project limits.

In accordance with Ministry Standards and area Practices, the Service Provider shall make recommendations regarding new installations, removal of existing, and replacing in-kind by utilizing a benefit/cost analysis.

Operational Impacts

The Service Provider shall review all the findings and recommendations regarding operational impacts in the PDR remain appropriate. The Service Provider shall identify any changes required to the recommendations in the PDR.

The Service Provider shall analyze all alternatives (including staging alternatives) ensuring proper sight lines and safety measures based on benefit/cost analysis (i.e. Operational Performance Review Guidelines).

Traffic Count Stations

The Service Provider shall review the location and type of existing count stations and report to the area Traffic Section if replacement or additional Traffic Count Stations are required to be installed as a result of the highway works. The area Traffic Section will review the findings and provide guidance on the location of new Traffic Count Stations. All Traffic Count Stations shall be installed according to Ministry Standards and area Practices.

The Service Provider shall review the locations of new traffic count stations and loops in the PDR and provide recommendations if changes are required.

The Service Provider shall review and document all drawings and items necessary to reinstate the Permanent Data Collection Station (PDCS). This includes confirming any requirements related to loops, ducts, MH, HH, wiring, controllers, modems, power supply and surge protection **<PDCS Station name>**

Permanent Roadway Pavement Markers

The Service Provider shall:

- Review and document the location of existing permanent roadway pavement markers (PRPM) to be removed.
- Recommend locations for PRPM reinstatement. All recommended locations to install PRPM shall include:
    - Detailed justification of the use of PRPM
    - Location (station & offset)
    - Colour
    - Quantity

The Service Provider shall submit a list of recommended PRPM installations to the Ministry at the Stage 2 Design Team Review Meeting.

Carpool Parking Lots

The Service Provider shall review existing commuter parking lot(s) and identify any deficiencies with respect to signing, parking lot operation/location and accessibility parking requirements and identify potential locations for new commuter parking lots at Highway Interchanges within the project Limits. Integration with local transit within the proposed locations shall be considered and analyzed.

7.15.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in specific Work Order(s).

[Insert tasks if known]

7.15.3 Deliverables

The following deliverables are required for each contract:

- Traffic volume projections (mainline, side road and turning movement counts, etc.)
- Operational improvement recommendations: permanent/temporary traffic signals, signing, pavement marking, geometric improvements, etc.
- Roundabout Evaluation Report
- Temporary and Permanent PHM-125 drawings
- Recommendations for traffic staging and detouring strategies for roadway, structures
- Recommendations for illumination requirements
- Recommendations on traffic counter loop placement.
- Plans showing recommended strategies and typical sections.

7.15.4 Reference Documents

The following information will be provided to the successful Service Provider and if additional data is required, it is to be collected as described in Section 7.15.2 – Traffic Data):

- Projected sectional traffic volumes (5, 10, 20 year)
- Design hour volumes (DHV), AM & PM peak hour volumes, % commercial
- Collision data
- Preliminary Design Report / Traffic Operations and Safety Report
- Turning movement / side road volume counts
- Latest AWD and hourly volumes for ramps and side roads
- Directional split
- Inventory counts
- Freeway Traffic Management System (FTMS) hourly mainline counts on **XX, year1-year2**
- Existing Traffic related correspondence
- HOV Study

Only the successful Service Provider will be allowed access to hard copy collision reports of Highway **XXX** at the Ministry located at the MTO's **XXX** at a time and date convenient to both parties. The Ministry will provide suitable access and workspace for the Service Provider to retrieve data from the collision reports. At no time will the Service Provider be allowed to photocopy or otherwise remove original copies of the hard copy collision reports from the Ministry.

7.16 Utilities - N/A

7.16.1 Project Scope

This project involves detail design for the new construction/ rehabilitation of Highway XXX.

- Identify and investigate the existing utilities in the study area, including record review, site reconnaissance, test pitting and Subsurface Utility Engineering (SUE); undertake SUE activities to achieve utility mapping up to Quality Level A (QL-A) [**NTD: If Subsurface Utility Engineering service is required, add requirements 7.16.2.2.]** to support detail design and reduce utility-related risks
- Coordinate with utility companies to identify utility conflicts, support relocations, prepare cost estimates, and support agreements
- Prepare a detailed utility composite plan to show all existing and future utility locations
- Coordinate with other MTO specialty offices to prioritize the detail design and property acquisition at the areas that are required utility relocation and expedite the relocation process to meet construction timeline
- Develop utility milestone schedules, schedule risks and recommend mitigation strategies
- Protect the existing utilities, verify minimum clearances and develop protection specifications during construction
- Oversee the utility relocation construction phase and provide support during the utility relocation post-construction phase.

7.16.2 Technical Services Required

7.16.2.1 Staff to be provided

Requirements for technical staff listed in Table 2: *Mandatory Qualification Requirements for Technical Team Members* in Section 1.5.3 are provided below.

[NTD: Include job title(s) and a description of staffing expectations (e.g. experience, technical expertise) for other staff that will be reviewed for compliance only in phase III. Specify the number of individuals for the same role if required. The PM will copy the job title(s) to table 2.]

Lead Utility Coordinator

The Lead Utility Coordinator shall have the following minimum experiences:

- Five (5) years experience in utility coordination, construction and project management
- Three (3) highway projects with complex multi-utility relocation (at least 9 months working on the utility relocation task for each project to be counted toward the three (3) highway projects experience)
- Liaison with utilities companies, consultants, contractors and other government agencies
- Knowledge of utility relocation processes, conflict resolution, the Ministry's Utility Relocation Guidelines.
- Understanding of underground and overhead utilities, engineering drawings, utility plan and construction specifications and standards

7.16.2.2 Project Specific Requirements via Lump Sum Price

General

The Service Provider shall:

- Schedule the first Utility Coordination Meeting no later than fifteen (15) business days after the project is awarded. The purpose of all the Utility Coordination Meetings is, at minimum, to:
    - Provide an overview of MTO's project scope (at the first meeting only)
    - Develop and maintain a project communication protocol
    - Identify MTO project information to be shared with Utility Companies
    - Review the Utility Composite Plan
    - Identify locations where additional accuracy of an existing plant's location is required to complete detail design. Additional intrusive investigations, if required, shall be completed under a work order.
    - Identify design components required to advance the utility relocation at each utility conflict location
    - Develop a mutually agreed upon schedule for all works required to complete the utility relocation works, including the utility design, Utility Relocation Plan and time to complete relocation and monitor the schedules and critical milestones
    - Determine if there is a need for coordination of the utilities' physical relocation works (i.e. subsequent or concurrent) and development of a field work plan/schedule
    - Identify property acquisition and timing for placement of survey stakes, where applicable,
    - Review permitting, approvals and utility agreements
    - Identify risk, potential delays and any utility plant 'work around' restrictions (existing and proposed locations), and
    - Discuss need for future Utility project Meetings.
- Include the protection and/ or relocation of utilities and address property requirements. The proposed method of minimizing impacts and delays to the traffic traveling through the work site (i.e. any suggested uses of A+B bidding, lane rentals, etc.) is to also be addressed.
- Secure all environmental and property clearances prior to utility relocations.
- Schedule utility relocations in advance of construction start to avoid conflicts which could result in the Ministry being considered a "Constructor" under the OHSA.

In the proposal, the Service Provider shall demonstrate how the detailed utility composite plan will be developed throughout the design phase to complete all utility relocations by the required deadline. This plan shall also identify dedicated utility relocation team that will focus efforts exclusively on utility relocation activities through the duration of the project. **[NTD: Delete if not applicable]**

[NTD: Insert additional requirements if needed]

Coordination and Consultation

The Service Provider shall coordinate with the utility companies, municipalities and other agencies **[NTD: delete if not applicable]** immediately after the start of the design assignment to identify utility conflicts, support relocations, prepare cost estimates, and support agreements. The Service Provider shall prepare and distribute notifications to the Utility owners, in accordance with the Building Highways Faster Act.

The Service Provider shall review all crossing agreements received from the utility owner and incorporate all appropriate construction requirements into the contract for all construction work within the prescribed distances specified. The crossing agreement shall be provided to the Ministry for sign-off.

Utility Relocation Design Phase

All existing and proposed utility plans conflicting with the project shall be identified, adjusted, protected and/or relocated. The Service Provider shall complete the investigation and identification of the existing utilities early in the project, including test pit services as required. For bidding purpose, the Service Provider shall assume that XX test pits (including XX hard surfaces and XX soft surfaces) are required, and each test pit is to a maximum depth of 3m.

The Service Provider shall identify all utility relocation requirements and initiate utility relocation procedures in accordance with Ministry's Relocation Procedures (Utilities) document. This document has been prepared to provide a consistent approach in dealings between major utility companies (i.e. Bell Canada, Hydro One, Enbridge Gas and Union Gas), Ministry staff and its Service Providers. The procedures in this document shall be followed but may be modified for individual circumstances. For other utility owners, similar processes and procedures will apply.

The Service Provider shall identify all utility relocation requirements and initiate utility relocation procedures. The Service Provider shall assess all alternative designs to mitigate or minimize relocations and/or other protection measures and secure all necessary arrangements, with respect to utility relocations within the project limits.

The Service Provider shall verify/obtain all existing and proposed utility information from utility owners, arrange for test pits and attend all on-site meetings with utility companies and/or other external stakeholders (assume XX on-site meetings for bidding purposes). The Service Provider shall identify all utility relocation requirements, determine the most cost-effective relocation strategy, and secure all necessary arrangements, with respect to utility relocations required within the project limits.

The Service Provider shall advance the detail design of the project at the utility conflict locations and coordinate with the utility companies to develop the utility relocation plan as soon as possible. The Service Provider shall also inform MTO specialty offices including Property and Corrido Management staff the locations that are required advance design to start the utility relocation.

The Service Provider shall prepare a composite plan illustrating all existing utilities within the project area based on information provided by the utility owners. The Service Provider shall, in conjunction with the utility owners, develop utility relocation plans, and prepare cost-sharing arrangements if applicable. The Service Provider shall submit to the Ministry the following information for Approval of the relocation plan:

1. The composite plan (digital or hard copy)
2. The plan of proposed relocations (digital or hard copy)
3. A letter stating that the Service Provider has reviewed the proposed relocation in conjunction with the Detail Design, and that the Proposal will not conflict with the proposed construction, and

4. The Moving of Utility order, showing the cost sharing arrangement (along with the supporting cost estimates).

Submitted plans and profiles should be to the following scales unless otherwise requested:

1. Key Plan - 1:100 000 or 1:250 000 or as necessary for orientation

2. Detail Plan - 1:1000 in rural areas, 1:500 in urban areas

3. Profile - 1:1000 horizontally and 1:100 vertically in rural areas

- 1:500 horizontally and 1:50 vertically in urban areas

The Service Provider shall verify all reference documents, identify the utility relocation needs and property required for utility relocation to secure property and utility clearances before the commencement of construction. **[NTD: or insert specify time]**

The Service Provider shall also prepare a composite plan illustrating all existing and future utilities within the project area based on information provided by the utility owners and the final detail design.

Utility Mark-Up Plans are to be approved by the Ministry prior to issuance to the utility companies in Letter 5. Processing of Letter 6 (Final Cost Estimates), Letter 7 (Relocation Notification and PSWH Act) and the Moving of Utilities (MOU) – Financial Breakdown shall be the responsibility of the Ministry staff. Depending on cost, utility company and their schedule, it could take up to 6 months to get the MOU issued after final plans are established and sent to Corridor Management section and construction to begin.

All work within the right-of-way and restricted area of the pipeline of a company under the jurisdiction of the Canada Energy Regulator (C.E.R) will be reviewed for conflict. Work in the vicinity of this type of pipeline must be conformed to the utility owner (in accordance with the Canada Energy Regulator Act and Regulations).

Utility Coordination Constructability Review

In addition to the utility coordination requirements identified above, the Service Provider shall undertake a **Utility Coordination Constructability Review** concurrently with the development of the detail design and utility relocation plans.

The Service Provider shall:

- Review all utility conflicts, relocation requirements, and proposed protection measures in conjunction with roadway design, grading, drainage, structures, traffic staging, and construction sequencing to confirm that all proposed utility works are constructible and can be implemented without adversely impacting the Project schedule.
- Ensure that proposed utility relocations and/or protection measures:
    - Are compatible with the proposed construction staging and traffic management strategies
    - Can be implemented within available right-of-way, site constraints, and access limitations

  - Do not conflict with temporary works, including detours, excavation limits, or shoring requirements.

- Coordinate with utility companies to validate the constructability of proposed relocation solutions, including installation methods, timing constraints, sequencing, outages, and access requirements. All utility owner constraints shall be incorporated into the design and scheduling of the works.
- Identify and mitigate constructability risks associated with utility relocations, including but not limited to space constraints, interface with other infrastructure, conflicts with traffic staging, and schedule dependencies. Appropriate mitigation measures shall be incorporated into the design.
- Review and refine utility relocation strategies to optimize constructability, cost, and schedule, including consideration of minimizing relocations, protection-in-place, and sequencing of advance utility works relative to roadway construction.
- Document constructability review outcomes and ensure that all requirements are reflected in the Contract Documents, including utility composite plans, relocation drawings, staging plans, and applicable specifications.

The Utility Coordination Constructability Review shall be an **ongoing and iterative process** carried out throughout the Detail Design phase to support the timely completion of utility relocations and to minimize construction conflicts and delays.

Utility Relocation Construction Phase

The Service Provider shall provide coordination and oversight services during utility relocation construction to support timely and orderly relocations and minimize impacts to the Ministry's construction contract(s). Services shall include the following:

- Develop and maintain a utility relocation coordination and sequencing approach, including identification of construction dependencies, interfaces, and anticipated durations for utility relocation activities.
- Participate in pre-start and pre-construction meetings (virtual and/or on-site meetings, as required) with utility agencies and relevant stakeholders prior to the commencement of individual utility relocation scopes.
- Verify that key pre-requisites have been addressed prior to advancement of utility works, including but not limited to pre-grading requirements, traffic control sequencing, road occupancy permits, utility locates, permits, and approvals.
- Undertake regular site attendance, commensurate with construction activity, to monitor ongoing utility works and facilitate coordination between utility agencies and the roadway construction contractor.
- Confirm that utility relocations are constructed in accordance with approved plans and do not conflict with Ministry construction contracts or future works.

- Establish and maintain an up-to-date list of emergency contacts for the Ministry and utility agencies to enable timely response to urgent or unplanned issues.
- Schedule, chair, and document regular coordination (touch-point) meetings to review schedules, staging plans, traffic control interfaces, permit status, utility locates, and emerging issues or conflicts.
- Prepare and maintain schedule updates reflecting real-time utility relocation progress, including review of sequencing logic and confirmation that critical dependencies are being met.
- Proactively identify opportunities to advance the overall schedule where dependencies are resolved earlier than anticipated or where utility works are completed ahead of schedule.
- Maintain a field conflict and issues tracking log, incorporating input from relevant stakeholders, and convene ad-hoc meetings or discussions as required to mitigate impacts to schedule or construction.
- Review and assess revised cost estimates or claims submitted by utility agencies where unforeseen conditions, conflicts, or additional works are encountered, and provide recommendations to the Ministry.

Utility Relocation Post-Construction Phase

Following completion of utility relocation activities, the Service Provider shall support close-out and financial reconciliation activities, including:

- Verify itemized invoices received from utility agencies against approved budgets, agreements, and authorized change orders, and preparation of payment recommendations for Ministry review.
- Review and maintain “as-built” documentation from utility agencies upon completion of relocation works, in accordance with executed agreements and applicable standards (e.g., CSA S250-11 or successor standards).
- Support final coordination activities necessary to confirm utility relocation completion and readiness for subsequent construction phases.

Other Requirements

[NTD: Insert requirements or delete the heading]

7.16.2.3 Project Specific Requirements via Work Order

The following services will be delivered via Work Order as needed. Full scope of work, reporting requirements, and monitoring frequency (if applicable) will be defined in the specific Work Order(s).

- Additional test pits
- Intrusive utility investigations beyond the 3m
- Additional on-site meeting with the utility companies and/ or other external stakeholders

[NTD: Insert tasks if known]

7.16.3 Deliverables

- Detailed Utility Composite Plan
- Detailed utility relocation strategy as part of the proposal to complete all utility relocations

7.16.4 Reference Documents

- Preliminary description of major utility conflicts identified in the Preliminary Design Phase.

7.17 Additional Biddable Work

7.17.1 [Intentionally Deleted]

[NTD: Insert requirements]

7.17.2 Additional Biddable Work Items

Additional Biddable Work Items will form part of the total lump sum price submitted with the Proposal. The Service Provider will provide total biddable costs as line items in form: Appendix 1: Forms and Tables - Summary of Project Lump Sum Prices for Detail Design.

During this Assignment these items may be partially or fully removed from the Assignment at the Ministry's discretion.

{list required services/item headings}

7.17.2.1 Progressive Design-Build – Progressive Performance Requirements (PPR)

Prior to the development of a Lump Sum Bid as the Construction Phase Bid, the Service Provider shall collaboratively develop the Progressive Performance Requirements (PPR) Special Provision, with the Ministry, to:

- Define design and construction parameters that will govern the Lump Sum Bid, including but not limited to scope boundaries, design assumptions, staging and sequencing expectations, environmental or regulatory obligations, and key construction methodologies that influence performance outcomes;
- Coordinate all required inputs, including technical requirements, risk considerations, and project constraints, and;
- Submit draft and revised versions as needed until the PPR Special Provision is finalized to the satisfaction of the Ministry.

PART C: CONSTRUCTION PHASE

SECTION 8: CONSTRUCTION PHASE SPECIFICATIONS

8.1 Scope

This Project includes the preparation of Contract Document(s) to deliver the Work detailed in this RFP. The Construction Phase will be delivered through one or more main Construction Phase Contract(s) and may also include one or more Advance Contract(s), collectively referred to as "Contract" in this Section 8. Each Contract may be in the form of a Tender Item Bid Contract or a Lump Sum Bid Contract, as determined collaboratively during the Design Phase.

The Service Provider shall include in each Contract, Ontario Provincial Standard Specifications (OPSS), Ontario Provincial Standard Drawings (OPSD), MTO Drawings (MTOD), Structural Standard Drawings (SSD) and MTO Special Provisions currently utilized by the Ministry, according to the designer notes and warrant. For a Lump Sum Bid Contract, where designer notes make reference to tender items, it shall be understood to refer to the OPSS(s) most closely associated to the work.

8.2 Progressive Design-Build General Specifications

The Service Provider shall include the following Progressive Design-Build Special Provisions in each Construction Phase Contract:

- PDBSP 0100 Amendment to OPSS.PROV 100, April 2026, MTO General Conditions of Contract
- PDBSP 0001 Construction Phase Project Administration for Progressive Design-Build for Highways Contracts

8.3 Performance Specifications

The Service Provider shall include the following Progressive Design-Build Performance Specifications in each Construction Phase Contract:

- PDBPERF 1072 Performance Requirements for Environmental Management
- PDBPERF 1075 Performance Requirements for Information Management
- PDBPERF 1077 Performance Requirements for Traffic and Mobility Management

8.4 Progressive Design-Build Special Provisions

The Service Provider shall include in each Construction Phase Contract, the latest and relevant PDBSP's, DBSP's and Special Provisions applicable at the time of Contract award, in consultation and with approval from the Ministry. Each Contract may include the following Special Provisions:

- PDBSP 0002 Design Liaison Services Tender Item
- PDBSP 0003 Construction Phase Field Office Tender Item
- DBSP 103F03M Hot Mix Asphalt – End Result

- DBSP 0539 Temporary Protection Systems
- DBSP 0902 Excavating and Backfilling - Structures
- DBSP 0903 Deep Foundations
- DBSP 0904 Concrete Structures
- DBSP 0906 Structural Steel for Bridges
- DBSP 0909 Prestressed Concrete - Precast Girders
- DBSP 1350 Concrete - Materials and Production
- DBSP 1355 Precast Concrete – Material and Productions
- Notice to Contractor – Contractor's Project Office

Lump Sum Bid Contracts shall also include the following Progressive Design-Build Special Provisions:

- PDBSP 0004 Progressive Performance Requirements (PPR) for Progressive Design-Build for Highways Contracts
- DBSP 0599 Statutory Bonds
- An NSSP providing administrative item pricing for administration of payment adjustments related to End Result Specifications (ERS)

8.5 MTO Special Provisions

The Service Provider shall work with the Ministry to identify and include all relevant MTO Special Provisions into the Tender documents for each Contract.

8.6 Requirements for Lump Sum Bid Contracts

All Ontario Provincial Standard Specifications, related MTO Special Provisions and Design-Build Special Provisions included in each Lump Sum Bid Contract are subject to the following exceptions and modifications:

a) When the Specification refers to "Measurement for Payment" or to "Basis of Payment" such clauses and language do not apply with the exception of the specification listed below:

Specification	Title	Date
DBSP 0599	Requirements for Statutory Bonds	Oct 2020

b) When the Specification refers to "Unit Prices" such language does not apply.

c) When the Specification refers to any bonus, incentive, penalty or price adjustment, such language does not apply unless and only if addressed directly in a Performance Specification or a Design-Build Special Provision, with the exception of any specification (example: SP 199S60) identified by the Ministry. The Service Provider shall consult with the Ministry's Contract Management Office on any exceptions and identify the

same in each relevant Contract.

d) When the Specification refers to “approval by Contract Administrator” shall mean approval by the Progressive Design-Builder’s Engineer, and requires that documentation of such approval shall be provided within two Business Days to the Contract Administrator, unless indicated otherwise in a Design-Build Special Provision.

The above does not apply to repair or remedial action proposals for non-conforming or deficient work or materials, Change Proposals (submitted by the Progressive Design-Builder), or anything associated with regulatory obligations/approvals of the Owner. In these situations, the Progressive Design-Builder shall obtain approval from the Contract Administrator.

e) All reports, test data, submissions and other such documents required by a Specification or Special Provision shall be submitted to the Contract Administrator within two Business Days unless otherwise specified. Any non-conforming or rejectable material shall be removed and replaced.

f) When the Specification refers to an Engineer, unless specifically noted as an Owner’s Engineer, shall mean an Engineer retained by the Progressive Design-Builder.

f) The Ministry shall not make any payments for surplus crushed granular materials.

g) All Quality Assurance samples (QA) shall be delivered according to SP 199F57.

h) The Service Provider shall obtain from the Project Manager, in consultation with the Ministry functional offices, an exclusion list of Standard SPs that should NOT apply to the Lump Sum Bid Contract.

i) If PERFs are being included, the Service Provider shall obtain from the Project Manager, in consultation the Ministry functional offices, a list of excluded SPs that should NOT apply to the Lump Sum Bid Contract.

8.7 Attached Specifications

See **RFP Part F – Attached Construction Phase Specifications**

PART D: APPENDICIES

[See Attached]

PART E: DESIGN PHASE LEGAL TERMS AND CONDITIONS

[See Attached]

PART F: ATTACHED CONSTRUCTION PHASE SPECIFICATIONS

[See Attached]