



# Construction Management Services

## Annex A

# TERMS OF REFERENCE



**Project Name: Giant Mine Interim Construction Management**

**Project Number: R.014204.300**

**Site Location: Yellowknife, NWT**

Aboriginal Affairs and Northern Development

Public Works and Government Services Canada

Real Property Services

Western Region

August 2012





Contract Documents List:

Special Instructions to Bidders  
Supplementary Conditions  
General Instructions to Bidders  
Submission Requirements and Evaluation  
Terms of Reference Annex A (this document)  
PWGSC Procedures and Standards Document Annex B  
Appendices

## Terms of Reference

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## 1.0 PROJECT DESCRIPTION

### 1.1 TERMS OF REFERENCE

#### 1.1.1 PURPOSE

- .1 These Terms of Reference (TOR) have been developed to ensure that the Construction Manager has a clear understanding of the project scope, procedures and services required to deliver the completed project, within the agreed to budget and schedule.

#### 1.1.2 THE PWGSC PROCEDURES AND STANDARDS DOCUMENT (P&S)

- .1 The TOR document must be used in conjunction with the P&S for Construction Management, as the two documents are complimentary
- .2 The TOR describes project-specific requirements, services and deliverables while the P&S document outlines with minimum standards and procedures common to all projects.
- .3 In the case of a conflict between the two documents, the requirements of the TOR override the P&S Document

### 1.2 GENERAL INFORMATION

#### 1.2.1 ALL REQUESTS FOR INFORMATION MUST BE DIRECTED TO THE PWGSC CONTRACTING OFFICER ONLY.

#### 1.2.2 PROJECT INFORMATION

Project Information	
Project Title:	Giant Mine Interim Construction Management
Site Location:	Yellowknife
Project Address:	Giant Mine
PWGSC Project Number:	R.014204.300
Owner:	AANDC

#### 1.2.3 DEPARTMENTAL REPRESENTATIVE/TECHNICAL AUTHORITY

Role	Departmental representative/technical authority
PWGSC Senior Project Manager	Brad Thompson
PWGSC Contracting Officer/contracting authority	Tammy Okemaysim



#### **1.2.4 CLIENT DEPARTMENT**

- .1 The Client/User Department referred to throughout the TOR is Aboriginal Affairs and Northern Development (AANDC)
- .2 This Department's mandate is to ensure the Mine site is secure and contamination is addressed within the Client's risk management strategy.

#### **1.2.5 CONSULTANTS**

- .1 Several Consultants will be retained by the Federal Government for this program of work.

#### **1.2.6 PROJECT MANAGEMENT**

- .1 Public Works and Government Services Canada administers the project on behalf of Canada and exercises continuing control over the project during all phases of development. The Technical Authority is the PWGSC Senior Project Manager (SPM). Changes to scope, quality, cost and schedule must be approved by the SPM.
- .2 This project is to be organized, managed and implemented in a collaborative manner.
- .3 The PWGSC project management team, the Consultant, the Construction Manager, the Client Department and the Care and Maintenance teams are to work cooperatively at every stage of the design and construction process.
- .4 Under the leadership of the PWGSC Departmental representative/technical authority, all team members are responsible for establishing and maintaining a professional and cordial relationship.

#### **1.2.7 CARE & MAINTENANCE CONTRACT**

- .1 The Care and Maintenance (C&M) contract, is in effect until 2013-03-31, and has been awarded to Nuna Logistics Ltd., a Deton' Cho-Nuna joint venture.
- .2 The C&M Contractor is the designated mine manager for the site and is responsible for the overall health and safety at the site. Basic mine safety maintenance activities are being undertaken through this contract. Care and maintenance activities past 2013-03-31 will be undertaken by a future contract.

#### **1.2.8 OTHER CONTRACTORS**

- .1 Several other contractors will be working on the Mine site throughout the period of this contract. The ICM will be responsible for working cooperatively with these other contractors. Examples include work in and around Baker Creek and the removal of the Roaster Complex.

#### **1.2.9 LAND CLAIMS**

- .1 The area of the contract is within the Mōwhi Gogha Dè Nīitâèè area, as defined in the Tlicho Land Claims and Self-Government Agreement, and proximate to Yellowknife and Akaitcho Dene First Nation.
- .2 The ICM is required to provide employment and training opportunities as defined in 3.7.2 of this Terms of Reference.



## 1.3 BACKGROUND INFORMATION

### 1.3.1 NEED

- .1 The conditions of the existing infrastructure and physical site attributes require upgrade and repair in order to maintain the site in Environmental and/or Regulatory Compliance until the long term Remediation Plan can be implemented. Further, due to high risks associated with certain items, advanced remediation activities consisting of capital improvements, deconstruction activities, and stabilization activities need to be completed.

### 1.3.2 PROJECT SITE OVERVIEW

- .1 Giant Mine site is situated within Yellowknife City limits; approximately 5 km north of city centre and covers an area of approximately 846 hectares. The site lies along the western shore of Yellowknife Bay, an arm of Great Slave Lake. Giant Mine operated nearly continuously from 1948 until its closure in July, 2004. Both underground and open pit mining methods were used to mine gold ore. The underground workings extend approximately five kilometers north from the original "A" shaft located near the Giant Mine town site at the southern margin of the property. The underground mine is relatively shallow for this type of gold mine, being only 610 meters deep. There are 38 openings to the surface from underground and there are eight surface pits from which ore was mined.
- .2 Over 7 million ounces of gold were produced during 56 years of mining operations at Giant Mine. Processing gold ore at the mine resulted in the production of approximately 17,500,000 tonnes of tailings. During the first few years of operations, tailings were discharged uncontrolled into a valley leading to the foreshore in Yellowknife Bay, known as the historic tailings area, where they remain. Uncontrolled deposition of tailings also took place in the valley located north of the "C" complex including Bow Lake, which is now covered by tailings. Subsequently, most of the tailings were stored on the surface in four designed tailings impoundments covering approximately 51 hectares in the north, central and south ponds and 44 hectares in the northwest tailings impoundment. Numerous engineered rock dams were constructed to impound tailings but not water and the dams require regular inspection. A dam safety review conforming to the 1999 guidelines of Canadian Dam Safety Association was performed by an independent consultant in 2004 and recommendations have been followed up on with the development of Operation Maintenance and Surveillance and Emergency Preparedness projects as part of the ongoing care and maintenance activities at the mine.
- .3 Arsenic trioxide dust stored underground at the mine is the by-product of ore processing. Gold in the Giant Mine ore is tightly bound in a refractory arsenic-bearing mineral, and the high temperature roasting process used to liberate the gold led to the production of arsenic-rich gas. During the period 1951 to 1999, operators of the Giant Mine used electrostatic precipitators and a bag house to capture the arsenic-rich gas as it condensed in the form of an arsenic trioxide dust that is approximately 60% arsenic. The dust also contains relatively high levels of antimony. Over the life of the mine, approximately 237,000 tonnes of the arsenic trioxide dust were collected and conveyed underground into mined-



out stopes or purpose-built dust storage chambers that were sealed with cement bulkheads. (See Figure 1- Air photo of the Mine Site)

- .4 On surface, over 100 structures remain on the mine and town site, many dating back to the late 1940s. Many of the buildings contain asbestos insulation and all the buildings in the roaster complex are contaminated with arsenic and are insulated with various types of asbestos, including amosite type III fibrous asbestos. Buildings used for processing gold ore may be contaminated with various chemicals and metals. Buildings and infrastructure that comprise the mill and roaster complex contain a considerable volume of arsenic trioxide dust. These buildings have not been used for over eight years and are in various states of decay.
- .5 Arsenic-contaminated surficial "soil" materials exist around the mill and roaster complex, and in areas of tailings spills or where mine waste rock was used for road construction. Arsenic contaminated surficial materials in the Giant Mine town site are believed to be mainly mine waste rock that was used in construction of roads in the town site area. Areas of hydrocarbon-contaminated surficial materials are also present, and are generally, although not always located in areas that are also contaminated with arsenic.

### 1.3.3 CONSTRAINTS AND CHALLENGES

- .1 The work must be complete by 2015-03-31.
- .2 The work will meet all Canada's environmental requirements.
- .3 Construction activities must be coordinated with the client to minimize user and visitor conflict.
- .4 This contract should not be interpreted as a sole right to undertake all work at Giant Mine for the duration.
- .5 This project is to repair and upgrade existing site infrastructure and physical attributes, as well as complete advanced remediation activities. The sub-projects have Mining, Civil Construction, Demolition, Mechanical and Electrical components.
- .6 Care & Maintenance (C&M) activities are carried out under a separate contract. The C&M Contractor is the Mine manager for Health & Safety at the Site and all work under this contract must be completed in accordance with all requirements of the C&M's Safety Program.
- .7 A separate contract to demolish the Roaster Complex will be undertaken from January 2013 through October 2015.
- .8 A separate CM contract will be tendered for the completion of the Remediation Implementation activities.
- .9 Geotechnical investigations such as drilling in support of Geotechnical reports may be required.
- .10 Other urgent work to be contracted through the ICM for emergencies.



## 1.4 PROJECT DELIVERY APPROACH

### 1.4.1 DESIGN PHASE

- .1 For the design phase of this Project, separate consultants will be retained.

### 1.4.2 CONSTRUCTION PHASE

- .1 For the construction phase, this Project will use a Construction Management approach.
  - .1 The primary reason for this approach is that an Interim Construction Manager (ICM) will provide PWGSC with flexibility to implement and coordinate multiple projects and sub-projects and phases and expedite the schedule of completion of the Work.
  - .2 Having one construction manager to oversee all sub-projects on the specific projects provides advantages of coordination, quality assurance, efficiency and scale.
  - .3 The ICM may be requested to provide technical services in support or may be required to provide engineering services for shop drawings or construction related activities. Unless otherwise identified in the CM fees, these services will be compensated as subcontracts in accordance with Appendix A Price Proposal Form BA 03.1.b.

## 1.5 SUMMARY OF SERVICES

### 1.5.1 CONTEXT

- .1 The services of a Construction Management Firm, in the capacity of an ICM are required for the provision of Advisory and Support Services and the completion of General Contractor (GC) Work for this Project.
- .2 The ICM will report directly to the PWGSC Departmental representative/technical authority and will:
  - .1 Provide Advisory and Support Services, as outlined in Section 2; and
  - .2 Perform all Work and duties of a Construction General Contractor as outlined in Section 3 of this TOR.

### 1.5.2 ADVISORY AND SUPPORT SERVICES

- .1 The ICM, as the expert in matters of construction implementation methodologies, cost estimating and scheduling, provides advice and support services to PWGSC through all stages of the Project.
- .2 **The services required are described in Section 2 and are compensated as a fixed price as described on Appendix A Price Proposal Form BA 03.1.a**

### 1.5.3 GENERAL CONTRACTOR SERVICES

- .1 The ICM, as the General Contractor (GC), manages and delivers the completed construction Work for the Project. **The services required are described in Section 3 and are compensated as a percentage fee as described on Appendix A Price Proposal Form BA 03.1.c.**



## 1.6 SUMMARY OF WORK PACKAGES

### 1.6.1 PROJECT WORK PACKAGES

- .1 The following work packages describe the scope of the project. The construction manager has the responsibility to recommend alterations to these work packages however, this is the starting point for scope and scope change management will require reconciliation of revisions to this list. A description of each work package scope of work follows:

	Project	Construction Budget	Estimate Quality
1	C-Boiler & Akaitcho Sub-station Replacement,	\$250,000	Indicative
2	Akaitcho substation ground grid upgrade	\$150,000	Indicative
3	Site Wide Power Upgrade and integrity of main utility grid, disconnect unused live power lines; improve underground grid;	\$2,000,000	Indicative
4	ETP replace tanks/liners	\$750,000	Indicative
5	Geotechnical drilling program	\$2,000,000	Indicative
<b>TOTAL</b>		<b>\$5,150,000</b>	

### 1.6.2 C-BOILER & AKAITCHO SUBSTATION REPLACEMENT

- .1 C- Boiler and the Akaitcho Substations will be replaced. This work includes upgrades and replacement of existing pole structures, switching, fenced compound and other related infrastructure. The work is to protect the safety of personnel and the integrity of the connection to the main utility grid. The replacements will be sized to loads defined during design development.
- .2 Minor remediation of the C-Boiler substation area will be required to clean up leaking transformer oil to protect the environment.

### 1.6.3 AKAITCHO SUBSTATION GROUND GRID UPGRADE

- .1 The substation ground grid will be upgraded or removed from service depending on overall electrical assessment of the mine site.

### 1.6.4 SITE WIDE POWER UPGRADE AND INTEGRITY OF MAIN UTILITY GRID, DISCONNECTION OF UNUSED LIVE POWER LINES & IMPROVEMENT OF UNDERGROUND GRID

- .1 Multiple power components will be inspected, tested, evaluated by the Crown's electrical engineering consultant and the results will be identified for repair or replacement throughout the site.
- .2 The scope of work will include power distribution poles, all power lines, disconnecting and removing unused live power lines, improvements to ground



laid Tek-Cable, power to the underground mine including a new grid, elimination/neutralizing cable in C-Shaft, implementation of ground detection for ungrounded delta systems.

### 1.6.5 EFFLUENT TREATMENT PLANT (ETP): REPLACE TANKS/LINERS

- .1 Three tanks, comprising the B-train treatment line, have been inspected and identified for replacement; work will also include the repair and/or replacement of related utilities.

### 1.6.6 GEOTECHNICAL DRILLING PROGRAM

- .1 The drilling is intended, but not limited to support and improve upon the existing geotechnical information, qualify the properties of the rock, to measure the size of pillars to underground excavations (stopes, chambers, drifts), to allow introduction of instrumentation into the underground with the purpose of measuring the potential voids and determine the backfill levels where applicable. Drilling will also be required for soil sampling and investigations, as well providing access points for alternate distribution of power to the underground.
- .2 It is anticipated that more than one drilling technology will be required to fill all these requirements.
- .3 The current concept drilling program may include, but are not limited to:
  - .1 Recovered core geotechnical drilling near and around underground from surface.
  - .2 Approximately 40 to 60 holes between 20 and 60m
  - .3 Recovered core geotechnical drilling near and around underground excavations from underground.
  - .4 Approximately 15 holes between 5 and 25m
  - .5 Soil drilling (typically auger) with recovered samples
  - .6 Approximately 30 holes
  - .7 Drilling of service/conduit holes.
  - .8 Approximately 2 holes, up to 230m at least 150mm diameter.

## 1.7 OBJECTIVES

### 1.7.1 GENERAL GOALS

- .1 Deliver the project work to the satisfaction of the client department and PWGSC, while applying rigorous schedule, budget, quality, and scope controls throughout the design, construction, and post-construction phases of the Project;
- .2 Comply with all sustainable development requirements (waste management, environmental responsibility, and all other Acts, regulations and guidelines governing construction activities.

### 1.7.2 PERFORMANCE

- .1 Construct the Work in a manner that will:
  - .1 Enable long-term efficient and cost effective life cycle performance and
  - .2 The project life will be defined for each work package.
- .2 The ICM will provide advice during the design process that will assist PWGSC in ensuring that the infrastructure improvements will:



- .1 Embody contemporary sustainable principles and be implemented in an environmentally responsible manner,
- .3 Provide a healthy and safe environment that meets or exceeds all codes for fire, health, and life safety and that fully supports optimum work productivity.

## 1.8 EXISTING DOCUMENTATION

### 1.8.1 DOCUMENTS AVAILABLE FOR THE ICM TENDER

- .1 An aerial photograph of the overall property and a site plan that names all structures and physical site attributes is included in this package. Specific design drawings and specifications will be developed by the Crown's consultants in accordance with the schedule developed by the PWGSC and the ICM.
- .2 Cost Estimate details will be available after award of the contract and the ICM will be responsible for verifying the accuracy of the information required for construction.

### 1.8.2 DISCLAIMER

- .1 Copies of all pertinent documentation will be made available to the ICM.
- .2 Reference information will be available in the language in which it is written.
- .3 The documentation may be unreliable and is offered, "as is" for the information of the ICM.

## 1.9 COST

### 1.9.1 ESTIMATED COST

- .1 The estimated construction cost is **\$5,150,000.00 plus GST**. This amount **must not be exceeded** without an approved contract change order. It is PRICE PROPOSAL FORM Appendix A clause BA03.1 (b)

## 1.10 SCHEDULE

### 1.10.1 COMPLETION

- .1 All work under this ICM contract must be substantially complete by 2015-03-31 and finally completed by 2015-06-01. Time is of the essence.

## 1.11 ROLES AND RESPONSIBILITIES

### 1.11.1 CONSTRUCTION MANAGER

- .1 The ICM shall:
- .2 Assign qualified staff or engage the services of Specialist Consultants to provide the required services outlined in Section: 2, ICM Advisory and Support Services
- .3 Complete the Work outlined in Section: 3, ICM General Contractor Required Work the ICM's contracted Sub-Trades.
- .4 Provide all necessary personnel to perform the Services and duties for the Project, either by assignment of ICM qualified staff or by engagement of services contracted directly to the ICM.
- .5 Engage and manage the Services and Work of qualified and experienced individuals or firms to provide the Services for which the ICM does not have qualified personnel on staff.
- .6 Ensure continuity of key personnel and maintain a dedicated working team for the life of this project.



- .7 Submit in writing, to the Departmental representative/technical authority for review and acceptance:
  - .1 The respective names, addresses and confirmation of qualifications of any and all individuals and/or firms engaged to provide Services for this Project, who were not identified in the ICM's response to the RFP.
  - .2 Proposed changes to the roles of any and all persons to be employed by the ICM or any and all firms to be contracted by the ICM to provide the Services and Work for the Project and shall include the names, addresses, qualifications and experience of the proposed individual(s) or firm(s);

### 1.11.2 THE ICM TEAM

- .1 The ICM's Key site supervision personnel shall be located in Yellowknife or in the immediate surrounding area, during all construction activities on site.
- .2 The ICM's key project management staff will be available to the Project Team in Edmonton for all team meetings (minimum twice per month).
- .3 The ICM team shall:
  - .1 Have an in-depth understanding and collective 'buy-in' of the project requirements, including scope, budget and scheduling objectives,
  - .2 Work constructively to ensure a collaborative and cooperative team approach with knowledgeable and timely input and contribution by all project team members.

### 1.11.3 PWGSC

- .1 PWGSC will:
  - .1 Be responsible to deliver the project.
  - .2 Manage the internal stakeholders of PWGSC and the client department.
  - .3 Manage internal PWGSC resources to quality assure the project deliverables.
  - .4 Provide authorizations to the ICM and Consultants on various tasking
  - .5 Organize Integrated Design Review Sessions at 33%, 66% and 99% stages through the construction document stage, as required;
    - .1 Smaller sub-projects may only require reviews at 50% and 100%
  - .6 Facilitate an Integrated Design Process (IDP) between the main stakeholders of the overall project including PWGSC, the Consultant Team, the Construction Management Team; and Owner Department stakeholders for each Sub-Project. Manage the project and sub-projects through managing contracts with Consultant and ICM.

### 1.11.4 THE PWGSC TEAM

- .1 The PWGSC Departmental representative/technical authority after award:
  - .1 Serves the role as PWGSC Project manager/technical authority or delegated Deputy Project manager/technical authority assigned to administer the Project
  - .2 Is responsible for the day-to-day management of the project and for overseeing its progress and delivery, on behalf of PWGSC



- .3 Is the Departmental representative/technical authority for all project contract services and, as such, will be the ICM's single point of contact for all project direction.
- .4 Is the liaison amongst and between the Construction Manager, the Consultant, Public Works and Government Services Canada and the client department.
- .5 Is responsible for conveying all resultant client requirements to the ICM and Consultant
- .2 PWGSC Professional & Technical Resources Team
  - .1 Provides, to the Departmental representative/technical authority, expert advice and quality assurance for key Architectural and Engineering professional disciplines and other specialists
  - .2 Participates regularly in design phases and will review construction contract documents.
  - .3 May attend (during construction), contractor meetings and conduct field reviews on behalf of the Departmental representative/technical authority.
  - .4 Provides a Design Review Manager for the project who will coordinate the services of the Professional & Technical Resources Team
  - .5 The Professional & Technical Resources Team will be represented by the following disciplines:
    - .1 Environmental Specialists
    - .2 Architectural
    - .3 Engineering:
      - .1 Structural
      - .2 Mechanical
      - .3 Electrical
      - .4 Civil
- .3 The PWGSC Commissioning Specialist
  - .1 Represents PWGSC's interests in the commissioning process
  - .2 Provides technical advice and quality assurance on the commissioning process throughout the project life cycle
  - .3 Reviews all documentation and reported results relative to commissioning throughout the project delivery.
  - .4 Witnesses verification of Systems and Integrated Systems Testing as demonstrated by ICM
  - .5 Participates in warranty reviews

#### 1.11.5 CLIENT DEPARTMENT

Aboriginal Affairs and Northern Development Canada (AANDC) is the client; AANDC is represented by the Project Leader

- .1 Is accountable for the expenditure of public funds and delivery of the project in accordance with terms accepted by the Treasury Board
- .2 AANDC is responsible for the subsurface and mineral rights and has been granted the required administrative control of the surface rights; AANDC is responsible for the site and ensuring that it is remediated in accordance with the existing Remediation Action Plan (RAP).



- .3 Reports to senior AANDC executive management and the oversight committee.
- .4 Will play several critical roles for the successful implementation of the project, as follows:
  - .1 Coordinate the quality, timing and completeness of information and decisions relating to issues related to the sub-projects;
  - .2 Acquire necessary approvals from the McKenzie Valley Land and Water Board (MVLWB) and other Regulators with respect to the execution of the sub-projects. Note that all licenses and approvals related to trades and environmental and H&S aspects of the specific work activities will be the responsibility of the ICM and the respective sub-contractors
  - .3 Is the primary contact and spokesperson to and for the community and the general public.

#### 1.11.6 CONSULTANT

- .1 Several consultant teams will be commissioned. Each team will include the qualified professionals, sub-consultants and specialists with extensive relevant experience, capable of providing all required professional services for the Project.
- .2 The consultant(s) will be responsible for:
  - .1 Completing the design for the Work and for coordinating and directing the work of sub-consultants and specialists
  - .2 Preparing and assembling the tender documents for each tender package identified by the ICM
  - .3 Providing input into the Departmental representative/technical authority's Risk Management Plan

#### 1.11.7 OTHER GOVERNMENT DEPARTMENTS (OGDs)

- .1 There may be numerous representatives of OGDs involved in the Project such as Environment Canada and Department of Fisheries. HRSDC Canada Fire Engineering Services as the Authority having jurisdiction over the National Fire Code applied to Federal projects.
- .2 Periodically individual OGD Representatives may require separate meetings with the Consultant or ICM to review specific issues.
- .3 Other Government Department (OGD) Representatives will:
  - .1 Be responsible for functional issues on the project, related to their respective organizations.
  - .2 Have input to all functional and operational design requirements and subsequent changes through the Project Leader to the Departmental representative/technical authority
  - .3 Provide assurance that:
    - .1 The OGD program requirements are thoroughly understood by all,
    - .2 The functional and operational requirements are met and
    - .3 OGD approvals, as required, are signed off.



## 1.12 REVIEW AND ACCEPTANCE

### 1.12.1 FEDERAL GOVERNMENT

- .1 The PWGSC Departmental representative/technical authority, will review work in progress on a continuing basis with team members and will provide written instructions on acceptance.

### 1.12.2 PROVINCIAL, MUNICIPAL AND OTHER AUTHORITIES HAVING JURISDICTION

- .1 Although the Federal Government is not formally subject to jurisdictions at other levels of government, voluntary compliance with the requirement of these other Authorities is a requirement unless otherwise directed by the Departmental representative/technical authority.
  - .1 Codes, regulations, by-laws and decisions of authorities identified herein as having jurisdiction shall be observed.
  - .2 In areas of conflict between authorities, the Federal authority prevails.
  - .3 In areas of conflict between codes, standards and regulations, the most rigid requirements shall be adhered to.
  - .4 The ICM shall identify other jurisdictions appropriate to the project.
- .2 NWT Acts, Regulations, Standards and Inspections
  - .1 The Federal government does not defer to provincial and municipal authorities, except for specific regulations, standards and inspections noted below.
  - .2 Unless directed otherwise by the Departmental representative/technical authority, the ICM will:
    - .1 Adhere to all applicable Construction Health and Safety Acts and regulations,
    - .2 Adhere to the requirements of the NWT Workers' Safety Compensation Commission (WSCC) for:
      - .1 Employment Standards
      - .2 Construction Safety
      - .3 Designated Substance Management
      - .4 Workers Compensation
      - .5 Building Discharges into the air, water and ground
      - .6 Disposal of Designated Substances



## 2 ICM ADVISORY AND SUPPORT REQUIRED SERVICES

### 2.1 GENERAL REQUIREMENTS

#### 2.1.1 ADVISORY & SUPPORT SERVICES SCOPE

- .1 The ICM, as expert in matters of construction, councils PWGSC and the Consultant by providing strategic (advisory) and analytic (support) services throughout the design and construction phases of the project
- .2 The ICM shall:
  - .1 Analyze and become familiar with all the Project background documents and reports;
  - .2 Review site conditions, especially with respect to technical and implementation issues affecting this project.
- .3 The ICM shall provide the following support services:
  - .1 Prepare a detailed construction schedule,
  - .2 Develop a list of recommended construction trade and tender packages
  - .3 Prepare a detailed construction budget
  - .4 Prepare detailed estimates for each tender package
  - .5 Participate in all integrated design sessions and provide advice on:
    - .1 Constructability of the design and details contained in the contract documents
    - .2 Scheduling of the Work
    - .3 Costing, pricing and bid ability
    - .4 Issues related to contract management responsibilities.
    - .5 Assist in providing liaison and coordination with Government Authorities for various reviews and approvals.
    - .6 Develop and maintain a continuous and comprehensive construction management documentation system.
- .4 The ICM shall provide advisory services on:
  - .1 Construction related matters for the Departmental representative/technical authority, the User Department, the Consultant Team and members of the ICM's Project Delivery Team.
  - .2 Effective control measures and management of:
    - .1 Project costs and expenditures,
    - .2 Project schedule and progress,
    - .3 Scope & quality of the Work,
    - .4 Change management and change order control,
    - .5 Risk management Plan, with detailed risks identified and claims avoidance recommendations
  - .3 Mitigation of potential conflict and overlap, with respect to:
    - .1 The design services performed by the Consultant Team and
    - .2 The work to be performed by the various Sub-Trades
  - .4 Design quality control methodologies with respect to:
    - .1 Availability and cost comparisons of construction materials
    - .2 Methods of construction and constructability,
    - .3 Scope and quality of construction materials and systems,



- .4 Alternative approaches to completion of the design of the Work,
  - .5 Risk Management,
  - .6 Contract administration procedures,
  - .7 Procurement strategies and construction implementation phasing,
  - .8 Determining appropriate construction tender packages,
  - .9 The potential impact to the Project of applicable labour conditions and availability of materials
  - .10 Preparing a Commission Plan and Schedules for commissioning of all operating system components, systems and integrated systems at the appropriate phases of construction, so as to ensure coordinated, effective and efficient system operation;
  - .11 Obtaining and administering equipment guarantees and warranties
  - .12 Other advisory services of similar nature to support the Departmental representative/technical authority;
- .5 The above listing of basic Services is neither complete nor exhaustive and the full scope of Advisory Services required shall include the entire content of section 1 and 2 of these Terms of Reference, in concert with the terms and conditions of the Contract.

## **2.2 PROJECT ADMINISTRATION**

### **2.2.1 GENERAL OVERHEAD**

- .1 All costs related to Section 2.1.1 above are to be included with Required Advisory & Support Services.
- .2 Key site personnel including the site superintendent(s), site safety officer and ICM supervisory support staff must be resident in Yellowknife for the duration of the contract.
- .3 The senior project manager and relevant technical experts supporting the ICM contract will be required to attend bi-weekly (once every 2 weeks) site meetings otherwise Team meetings and project progress meetings normally are in Edmonton.
- .4 Travel costs, moving costs and living allowances for all Construction Manager's staff are included in this fixed fee.
- .5 The ICM will engage specialists in construction and mine site remediation to oversee the construction activities as part of their advisory services. PWGSC has separately retained environmental, mining and geotechnical engineers to prepare engineering direction.

### **2.2.2 PROJECT SITE OFFICE**

- .1 The ICM will be responsible for the provision of all temporary site office facilities to suit their needs.
- .2 The temporary site office facilities will be located on the project site at a location approved by the SPM.
- .3 The ICM will be responsible for all costs associated with the facilities including O&M. Power will be supplied to the temporary office facilities at no cost to the ICM.



- .4 Temporary site office facilities will be inclusive of furniture and furnishings to provide work space for all on-site ICM staff, a communications system (telephone, email, fax), a meeting area, a lunch area and washroom facilities.
- .5 The ICM will be responsible for all other costs associated with this including O&M. Power will be supplied to the temporary office facilities at no cost to the ICM.
- .6 This is included in the fixed cost for Advisory and Support services to the end of final completion.

## 2.3 COST MANAGEMENT

### 2.3.1 METHOD

- .1 PWGSC manages all funding for the Project, including budgeting, expenditures and Progress Payment approvals.
- .2 The ICM shall:
  - .1 Provide advice and recommendations on:
    - .1 Costs related to construction feasibility, availability of materials and labour, time requirements for installation and construction;
    - .2 Budget costs of systems, assemblies, equipment, materials and specialty labour.
    - .3 Current pricing levels and trends in associated activities relating to the project
    - .4 The selection, availability and pricing of goods and services
  - .2 Provide suggestions and/or alternatives for cost reductions or acceleration of the Construction Schedule
    - .1 Evaluate costs for alternative materials, construction techniques and installation methods.
  - .3 Prepare and submit to the Departmental representative/technical authority for review and acceptance, a draft Master Cost Plan (within 21 days of award of contract) and maintain the Plan throughout the life of the Project
    - .1 Include all ICM projected costs, Construction Cost Estimates and Construction Cost Limits;
    - .2 Develop budgets for the work of each construction trade,
      - .1 Prepare Trade budgets as soon as major project requirements have been identified;
      - .2 Update at the milestone review stages for PWGSC acceptance.
  - .4 Address all costs in Federal Fiscal Year (FY) format (April 01 to March 31 of the following year).
  - .5 Prepare cost estimates, (including summary plus full back-up showing items of work, quantities, unit prices and amounts) at:
    - .1 The Design Development Stage (Class B) and
    - .2 The time of tendering each bid package (Class A).
  - .6 Revise and refine the initially approved Master Cost Plan as the project progresses (quarterly at a minimum), incorporate approved changes as they occur and develop cash flow reports and forecasts as required by the Departmental representative/technical authority for each fiscal year's planned expenditures.



- .7 Advise as soon as possible if deviations from the Master Cost Plan occur and obtain written authorization from the Departmental representative/technical authority before proceeding with the work.
- .8 Monitor Project costs and expenditures against the approved Construction Cost Limit and identify variances between actual and budgeted or estimated costs.
  - .1 Notify the Departmental representative/technical authority in the event that the ICM considers that the Construction Cost Estimate will exceed the Construction Cost Limit
  - .2 Provide recommendations for remedial action to maintain and keep the estimates within the Construction Cost Limit.
- .9 Track costs so that PWGSC can appropriately manage the budget.

### **2.3.2 CONSTRUCTION COST LIMIT**

- .1 The stated Construction Cost Limit for this project:
  - .1 Does not include:
    - .1 GST,
    - .2 PWGSC administration costs,
    - .3 PWGSC Design costs
    - .4 The ICM's Advisory and Support Services fixed fee as per BA03.1 (a)
    - .5 The ICM's percentage fee as per BA03.1(c)
    - .6 Bonding and insurance costs as per BA03.1 (d)
  - .2 Does include:
    - .1 All of the Construction costs as per BA03.1 (b),
    - .2 Allowances for contingencies, and anticipated escalation factors, assuming that construction will start in November 2012.

### **2.3.3 CASH FLOW**

- .1 The ICM will be required to forecast the monthly cash flow expenditures.

## **2.4 TIME MANAGEMENT**

### **2.4.1 METHOD**

- .1 The ICM shall:
  - .1 Prepare and submit to the Departmental representative/technical authority for review and acceptance, a draft Master Schedule (14 working days after Project kick-off) and maintain the Schedule throughout the life of the Project
    - .1 Prepare the Schedule using industry-accepted software to develop detailed network diagrams, with work breakdown structures and Key milestones listings,
    - .2 Develop Critical Paths for all key activities, with key milestone dates and lead times for each activity,
    - .3 Identify anticipated start and completion dates for all design and construction activities, linked by interdependence on activities that must be completed prior to the start of each activity,
    - .4 Prepare separate schedules for each tender package,



- .5 Ensure that the schedule has the capability of tracking changes
- .2 Monitor changes to the schedule at least once a month and submit written reports to the Departmental representative/technical authority on any deviations from the master schedule.
  - .1 Monthly reports must identify not only reasons for delay but also offer suggestions, where possible, on how to bring the project back on track.
- .3 If changes to the Schedule become necessary, indicate the impact and the reasons for such changes and submit proposed amendments to the Departmental representative/technical authority for review and acceptance;

## **2.4.2 PROGRAM COMPLETION**

- .1 The construction manager will compile and maintain a specific project schedule using Microsoft Project each month until completion.

## **2.5 RISK MANAGEMENT**

- .1 The ICM shall:
  - .1 Review, comment and advise on the PWGSC Risk Management Plan;
  - .2 Advise on Project Risks specific to the project and recommend mitigation options to the Departmental representative/technical authority;
  - .3 Advise on issues of risk that integrate project planning with procurement planning and construction.
  - .4 Submit a monthly report on Project Risks to the Departmental representative/technical authority;
- .2 Identify and implement methodologies aimed at mitigating and minimizing the impact of construction activities on occupants during construction;
- .3 Implement a claims avoidance program.

## **2.6 SCOPE CONTROL AND MANAGEMENT**

- .1 Immediately advise the Departmental representative/technical authority of any potential increase or decrease in scope that could affect project cost, schedule or quality.

## **2.7 QUALITY CONTROL**

### **2.7.1 QUALITY ASSURANCE**

- .1 The ICM will apply rigorous quality assurance reviews during the design and construction phases, including participation in reviews of the systems, components, construction tools and techniques of the proposed design.
- .2 The primary responsibility for construction quality control remains with the ICM.
- .3 The ICM will be responsible for ensuring that the ICM's Subcontractors adhere to:
  - .1 Best industry practices and standards following the requirements of the Construction Documents.
  - .2 Professional conduct in all phases of the project, employing best practices for budget, schedule, quality, and scope management,



- .4 The ICM's Team will work cooperatively to:
  - .1 Adopt good project delivery processes such as Risk Management and advising on methods to obtain best value,
  - .2 Ensure that all Health, Safety, Security and Sustainable Development issues are properly adhered to.

## 2.7.2 QUALITY CONTROL PLAN

- .1 The ICM shall:
  - .1 Prepare and submit to the Departmental representative/technical authority (within fourteen (14) days of award of contract) a Quality Control Plan including, but not limited to:
    - .1 Identification and definition of key activities and deliverables
    - .2 Description of internal controls
    - .3 Methodologies and procedures to be utilized to deliver a high quality product
    - .4 Deliverable verification plan
  - .2 Attend regular integrated design sessions with the Project Teams during the development of the design and preparation of construction document so as to advise on quality issues related to:
    - .1 Selection of materials, building systems and equipment;
    - .2 Constructability,
    - .3 Coordination between all design disciplines (including architectural, structural, geotechnical, mechanical, electrical and civil),
  - .3 Provide a written summary of the design reviews to the Departmental representative/technical authority.
  - .4 Review construction drawings and specifications for each tender package at various stages acceptable to the Departmental representative/technical authority.
    - .1 Normally, reviews are conducted at 33%, 66% and 99% stages, however, some tender packages may require fewer reviews, due to the nature of the work involved.

## 2.8 COMMUNICATIONS AND MEETINGS

### 2.8.1 COMMUNICATION

- .1 Unless otherwise directed by the Departmental representative/technical authority, the ICM will conduct all project communication through the Departmental representative/technical authority only.
- .2 If any communication with the User Departments results in the need for any change to the Project scope of work, quality, cost or schedule, the ICM shall inform the Departmental representative/technical authority, and seek direction, before taking any action.
- .3 Correspondence
  - .1 All correspondence from the ICM shall be distributed as directed by the Departmental representative/technical authority.
    - .1 Departmental filing protocol will be followed.



## 2.8.2 ELECTRONIC COMMUNICATIONS

- .1 For written reports and studies: MS Word (\*.doc)  
For spreadsheets & budgets: MS Excel (\*.xls)  
For schedules: Microsoft Project  
For drawings: AutoCad (\*.dwg)  
For Specifications: NMS-Edit or MS Word  
For Web: Adobe PDF  
For collaboration: Buzzsaw
- .2 All team reviews will be managed through BUZZSAW.
  - .1 Team members will be provided with training and the project pass code.
  - .2 This is a communications software that allows for posting of documents and for review comments to be recorded for all parties to review.
  - .3 The licence is provided by PWGSC. The Departmental representative/technical authority will arrange for the ICM to obtain access to the PWGSC secure shared document management site
  - .4 [://usa.autodesk.com/adsk/servlet/index?siteID=123112&id=2407898](http://usa.autodesk.com/adsk/servlet/index?siteID=123112&id=2407898)

## 2.8.3 SUBMISSIONS TO PWGSC

- .1 Where submissions to PWGSC include summaries, reports, network diagrams, drawings, plans, specifications or finish schedules, submit one (1) original to the Departmental representative/technical authority in electronic format, unless otherwise directed in writing.
- .2 Electronic format:
  - .1 The electronic deliverables shall be provided using Microsoft applications.
  - .2 Alternatively, the ICM may submit all work in Adobe Acrobat \*.pdf format except for Network Diagrams which must be submitted in their original electronic format.

## 2.8.4 PROJECT RESPONSE TIME

- .1 It is a requirement of this project that the key personnel of the ICM are personally available to attend meetings or respond to inquiries promptly.
- .2 During the project, the ICM's Key Personnel shall be:
  - .1 Available to attend meetings and respond to inquiries within two working days notice
  - .2 Able to respond to PWGSC to emergencies within one (1) hour, including those occurring during off-hours and on weekends/ holidays
- .3 On occasion, there may be urgent, problem-solving meetings.
  - .1 The ICM must be available to attend such meetings in Edmonton within four (4) business hours.

## 2.8.5 MEETINGS DURING THE DESIGN PHASES

- .1 Full team meetings with PWGSC, the ICM, the Consultant and the client will normally be held in the Project Manager's office in Edmonton.



- .2 The Departmental representative/technical authority will arrange meetings every 2 weeks throughout the design phases of the project, with representatives from:
  - .1 PWGSC
  - .2 Consultant team;
  - .3 Construction Management Team; and
  - .4 Client representatives
- .3 The Consultant will be responsible for:
  - .1 Preparing minutes of meetings during the design phases and
  - .2 Forwarding minutes to the Departmental representative/technical authority and ICM
  - .3 These meetings are for the accurate exchange of information.
  - .4 All requests and decisions taken must follow the formal lines of communications.
- .4 The ICM shall:
  - .1 Attend all service related and design meetings, prior to construction start
  - .2 Respond to minutes as required prior to the next meeting.

## 2.8.6 MEETINGS DURING THE CONSTRUCTION PHASES

- .1 The ICM shall:
  - .1 Arrange and coordinate all construction meetings on site:
    - .1 Regular meetings to be held every 2 weeks through the duration of the project;
    - .2 Prepare and distribute minutes within two (2) working days of the meeting.
    - .3 Endeavour to hold all meetings as Green Meetings (i.e. Electronic copies of documents where possible or double sided hard copies)
  - .2 Establish a list of standing agenda items, including (as a minimum):
    - .1 Schedule and progress,
    - .2 Cost issues and changes,
    - .3 Risk and quality issues,
    - .4 Quality,
    - .5 Scope of work
    - .6 Site safety,
    - .7 Sustainable development and
    - .8 Commissioning

## 2.9 PROJECT DELIVERABLES

### 2.9.1 ACCEPTANCE OF PROJECT DELIVERABLES

- .1 While PWGSC acknowledges the ICM's obligations to meet project requirements, the project delivery process entitles PWGSC to review all work.
- .2 PWGSC reserves the right to reject undesirable or unsatisfactory work.
- .3 The ICM must obtain Departmental representative/technical authority acceptance of all required deliverables for the Project.
  - .1 Acceptance indicates that based on a general review of material for specific issues, the material is considered to comply with governmental and



departmental objectives and practices and those overall project objectives appear to be satisfied.

- .2 Acceptance does not relieve the ICM of responsibility for the work and compliance with the contract.
- .3 Acceptance does not prohibit rejection of work, which is determined to be unsatisfactory at later stages of review.

## 2.9.2 PROJECT PROCEDURES MANUAL

- .1 The ICM shall develop a **Project Procedures Manual** in consultation with the Departmental representative/technical authority for the execution of key Project activities. The project manager/technical authority may accept a higher standard of documentation related to tracking work packages, schedules and costs to accommodate a corporate CM business system.
- .2 The Manual will provide a clear description of procedures, roles, responsibilities, levels of authority and the information systems for the execution of the Project, including details of the processes and sample formats.
- .3 The manual will include the process and methods to:
  - .1 Maintain Project records
  - .2 Implement a quality assurance program;
  - .3 Prepare, update, monitor and maintain the Master Schedule;
  - .4 Update, monitor and maintain the Cost Plan, Expenditures, Change Orders and Cash Flow;
  - .5 Manage communications between Project Delivery Team participants based upon the documented roles, responsibilities and authority of Team members, and maintain a listing of meetings, frequency, type, etc.
  - .6 Manage correspondence, reports and performance records.
  - .7 Distribute correspondence electronically and by facsimile;
  - .8 Process Shop Drawings
  - .9 Document the process for reviews and approvals of Tender Package Contracts and change orders; and
  - .10 Maintain a decision log during the construction of the entire project, recording participants, date and place of all decisions affecting schedule, budget, scope, or quality.

## 2.9.3 PROJECT MONITORING AND REPORTING

- .1 The ICM shall:
  - .1 Provide a system for documentation and project monitoring and reporting through each stage of project delivery, for review and acceptance by the Departmental representative/technical authority.
  - .2 **Use coding for each of the identified projects as provided by the SPM.**
  - .3 Prepare and submit, 14 days after Project kick-off, a sample of the report structure for all reports for review by the Departmental representative/technical authority.
    - .1 Include monthly reporting templates provided in Appendix B



- .2 Resubmit sample report structure, as may be required for approval and acceptance.
- .3 The date of issue of the ICM Monthly Report will be established to fall on the same date each month and within one week before the established date of issue of the PM Monthly Report.
- .4 The structure of the ICM Monthly Report shall be used for all subsequent project stages.
- .4 Prepare and submit monthly progress reports during the Design Development and Construction Document Stages, in a format agreed to with the Departmental representative/technical authority. Some of the monthly report templates are provided in Appendix B.
  - .1 The purpose of the report will be to review and monitor the progress of the Services by the ICM. The report shall include, at a minimum, the following sections:
    - .1 Health and Safety
      - .1 Report on any Health or Safety incidents or near misses
      - .2 Report on any audits or inspections (internal or external) completed during the reporting period
    - .2 Regulatory Compliance
      - .1 Report on any unauthorized releases that occurred and the remedial actions completed.
      - .2 Provide information as required by the Water License and Land Use Permit.
    - .3 Financial Summary
      - .1 Identify all expenditures to date (including all change orders) in a form that compares the original budgets for each activity with the expected costs
      - .2 Change Order summary (including approved and contemplated)
      - .3 Update cash flow estimate and forecasts
    - .4 Work in Progress
      - .1 Identify the progress of all services and activities;
      - .2 General progress of the work and modifications to reflect changes in project parameters as may be identified throughout the project life
    - .5 Schedule Status
      - .1 Master Schedule Update and narrative report providing an overview of schedule issues
      - .2 Identify all instances where the schedule is not being met and mitigation measures planned
      - .3 Discuss planned activities for the upcoming month
    - .6 Risks and Risk Mitigation
      - .1 Identify project risks and proposed strategies for mitigation
    - .7 Aboriginal Involvement
      - .1 Report on aboriginal involvement on ICM's own forces, including aboriginal hours work, use of aboriginal suppliers or subcontractors, and aboriginal training and development.



- .2 Report on aboriginal involvement on a work package basis, including aboriginal hours work, use of aboriginal suppliers or subcontractors, and aboriginal training and development.
- .8 Commissioning progress report



### 3 ICM GENERAL CONTRACTOR REQUIRED SERVICES

#### 3.1 GENERAL REQUIREMENTS

##### 3.1.1 THE ICM SHALL:

- .1 Perform all the duties of a Construction General Contractor, manage the Work of the ICM's Own Forces and Sub-Trades and ensure that the Work is carried out in accordance with the requirements:
  - .1 Of the ICM Contract;
  - .2 Of Division 01 provided in Appendix C of the RFP;
  - .3 Contained in the Construction Documents; and
  - .4 Included herein, in these Terms of Reference
- .2 The work shall be tendered to Sub-Trades and enter into subcontract agreements that comply with industry recommended best practices.
- .3 Provide and maintain competent full-time staff at the project site to:
  - .1 Coordinate and provide general direction of the project and progress of the Sub-Trades on the project.
  - .2 Provide quality assurance, monitoring and reporting throughout the construction stage of the project.
  - .3 Coordinate access as required to the existing site to facilitate the work and assist in the coordination of access to the various parts of the site by the contractors, working closely with Departmental representative/technical authority or designate.
  - .4 Coordinate work of this project the Care & Maintenance Contractor who has the role of mine manager for safety.
- .4 Establish on-site organization and lines of authority and communications in order to carry out the work of the project.
- .5 Provide regular reporting to PWGSC on the Project Schedule to monitor construction progress.
  - .1 Identify potential variance between scheduled and probable completion dates.
  - .2 Update schedule of work not started or incomplete.
  - .3 Document all changes to the schedule and report to PWGSC.

##### 3.1.2 DIVISION 01 ITEMS

- .1 The Interim Construction Manager is to provide for the management of all services normally included in Division 1 of the specification associated with a stipulated lump sum contract, as provided in Appendix C of the RFP document.
- .2 This Work is to be defined as all those items that are necessary for the smooth and safe operation and co-ordination of the site.
- .3 **In addition to the work described, the following aspects are to be included in the percentage fee:**
  - .1 All personnel in the direct employ of the construction manager such as the Site supervision personnel (Project Co-ordinator, Site Superintendents, Commissioning Specialist and assistants as required), Health and Safety personnel;



- .2 Travel costs, moving costs and living allowances for Construction Manager's staff
  - .3 Charges for faxes, copying, telephone calls, courier, and e-mail services (this is in addition to the site client supplied telephones and faxes);
  - .4 Legal costs arising out of the performance of the contract provided they are not caused by negligent acts or omission;
  - .5 Cost of computer time and usage and all required software to perform the contract;
  - .6 Management and co-ordination of shop drawings, samples, product data;
  - .7 Cost of Fees, Permits, and Certificates
  - .8 Management and co-ordination of manuals, as-built drawings, maintenance schedule, training program, and related commissioning activities;
  - .9 Management and co-ordination of warranties;
  - .10 Layout of work;
  - .11 Parking costs/charges; and
  - .12 Security for Construction Manager's work area(s), materials, and office will be provided by the Care and Maintenance contractor.
- .4 **The Construction Manager will be separately reimbursed for the following Division 01 costs, provided that the costs have been pre-approved by the Departmental Representative:**
- .1 Independent Quality Control Testing;
  - .2 Equipment costs for monitoring air quality and environmental conditions;
    - .1 Protection of existing building areas that are not adjacent to the work area;
    - .2 Temporary construction costs such as heating, hoarding and scaffolding;
  - .3 Cost arising from emergencies impacting on the work
  - .4 Other special consultants
  - .5 Printing costs of tender packages

## 3.2 HEALTH AND SAFETY

### 3.2.1 THE MINE MANAGER IS RESPONSIBLE FOR HEALTH AND SAFETY AT THE GIANT MINE SITE

- .1 The Care and Maintenance Contractor is currently identified as the mine manager for the Mine Site. The Care and Maintenance Contractor's approved health and safety plan governs all activities on the site. It is the responsibility of this ICM to ensure that their site specific safety plan and SOPs comply with this governing plan.
- .2 The ICM is responsible for ensuring all SOPs in the Care and Maintenance Contractor's health and safety plan cover all work in this ICM contract and if not, develop, in conjunction with the Care and Maintenance Contractor, additional SOPs to cover this work.

### 3.2.2 THE ICM MUST WORK WITHIN THE MINE MANAGER'S H&S PROGRAM, BUT IS RESPONSIBLE FOR MAINTAINING A HEALTHY AND SAFE SITE AT ALL TIMES IN THE SUB-PROJECT WORK AREAS AND SHALL:



- .1 Ensure full compliance with the Northwest Territories Mine Safety Act and Regulations.
- .2 Ensure the full health and safety protection afforded under the NWT Mine Safety Act and Regulations to all visitors to the site, including workers, staff, contractors and the general public.
- .3 Implement a safety program on site;
- .4 Provide appropriate safeguards to ensure safe protection and security of materials and holdings on the site;
- .5 Provide appropriate safeguards to ensure safe protection of workers from listed hazardous materials incorporated into existing building construction, and which may remain in-place during entire duration of this project;
- .6 Comply with WHMIS and all other applicable regulations with respect to hazardous materials to ensure that:
  - .1 All designated hazardous materials are properly treated, handled and stored;
  - .2 Workers' exposure to fumes, is within acceptable health and safety limits;
  - .3 Temporary ventilation or protection, as required for products utilized, is properly provided;
  - .4 Construction dust is controlled such that workers and occupants are not adversely impacted by dust from construction activities within the building or on the site;
  - .5 Ensure that shop-drawing submissions include Manufacturers Standard Data (MSD) Sheets.
- .7 Compliance meetings are to be held at the Mine Site office and the ICM is to prepare and circulate minutes.

### **3.3 COORDINATION OF COMPONENTS, SUPPLIERS AND TRADES**

#### **3.3.1 COORDINATE**

- .1 The ICM is responsible for ensuring that all components, suppliers and trades are coordinated for a full and complete product.

### **3.4 COMMISSIONING**

#### **3.4.1 COMMISSIONING PLAN**

- .1 During the Planning and Design phases, the Consultant will document the commissioning program in report format, with advice from the ICM.
- .2 The Consultant will establish the design and operating standards.
- .3 During the Construction phase, the actual operation and performance of the as-commissioned work shall be verified by the ICM, as contractor and the Sub-Trades, against the original design intent and the results summarized in narrative format.
- .4 All designed systems and modifications to base building systems will be included in the commissioning process.
- .5 The ICM shall:



- .1 Provide advice and recommendations to the Departmental representative/technical authority and the PWGSC Commissioning Specialist on issues related to:
  - .1 The quality of the Commissioning Plan prepared by the Consultant
  - .2 Methods for monitoring the commissioning process to verify compliance with the PWGSC Standards and Procedures
  - .3 Methods of confirmation that all systems have been properly verified, balanced, etc., in compliance with the commissioning plan, prior to occupancy
  - .4 Acceptability of the completed maintenance manuals
  - .5 Procedures for verifying that all required training and operating systems demonstrations have been properly conducted and completed prior to occupancy.

### **3.5 SUSTAINABILITY AND ENVIRONMENTAL**

#### **3.5.1 ENVIRONMENTAL PROTECTION ACT**

- .1 Comply with Environmental Protection Act and all environmental mitigations identified by the client for this program of work.

#### **3.5.2 WASTE MANAGEMENT**

- .1 The ICM shall:
  - .1 Prepare and submit to the Departmental representative/technical authority for review and acceptance, a Waste Reduction Work Plan:
    - .1 Prepare the Plan in accordance with the requirements outlined in Division 01 in the ICM Contract,
    - .2 Ensure that the Plan is in compliance with PWGSC guidelines, the Federal Green Demolition Policy, and meets the requirements of local authorities having jurisdiction,
    - .3 Clearly outline the strategy and methodology for optimizing solid waste diversion from landfill and disposing of toxic or hazardous materials in the most appropriate manner.
    - .4 Include all related schedules outlining expected inventory targets and results required when waste audits are conducted,
    - .5 Include a non- hazardous solid waste reduction program for eliminating waste through reduction, reuse and recycling including.
      - .1 Requirements for sorting construction waste on site by types,
      - .2 A description of the most practical manner for recycling each individual material
  - .2 Develop specific procedures for conducting waste management audits on site, including audit objectives, frequency and format.
    - .1 Prepare written monthly reports containing records of waste disposal efforts, including:
  - .3 Review of the implementation of the strategy;
  - .4 Review of subcontractors disposal practices for paints, solvents and pressure treated wood scraps and other similar products or materials;



- .5 Conduct a waste management audit indicating the degree to which recycling objectives are being achieved and recommendations for improvements.

### **3.5.3 SUSTAINABLE DEVELOPMENT**

- .1 The ICM shall:
  - .1 Provide recommendations on cost effective 'green construction' materials, methods and practices that can be incorporated into the project without a significant negative impact on the budget, schedule or quality of the project.

## **3.6 TENDERING THE WORK**

### **3.6.1 TENDERING AND AWARD STAGE**

- .1 The ICM will review the method of tendering with the technical authority to select the most appropriate method to achieve value for money.
- .2 The intent of the AOC is to maximize the involvement of aboriginal businesses and individuals within the Mōwhi Gogha Dè Nīitāèè area, as defined in the Tlicho Land Claims and Self-Government Agreement, and proximate to Yellowknife and Akaitcho Dene First Nation.
- .3 Aboriginal commitments included within Subcontractor proposals will become part of their contract and will include incentive and penalty conditions as detailed in Appendix C of this document.
- .4 During the Tender Call, Bid Evaluation and Award Stage, the ICM shall:
  - .1 Determine the number and scope of each tender package, including pre-ordering of long delivery items;
  - .2 Update the Master Cost Plan, including the preparation of a pre-tender construction cost estimates for each trade package;
  - .3 Update the Master Schedule including the impact of each scheduled trade package on the final completion date;
  - .4 Review the wording and content of all addenda, prior to issue;
  - .5 Analyze the bids for each tender package to determine if the bid is comprehensive and recommended if the work should be awarded or if changes are required to keep costs within the budget or meet the specifications;
  - .6 Make recommendations for award or for alternate strategies, in the event that the low bid exceeds the budgeted amount.
  - .7 Advise the Departmental representative/technical authority on proposed revisions or amendments, if re-tendering is required;

## **3.7 CONSTRUCTION MONITORING**

### **3.7.1 MONITOR**

- .1 Monitor the work of the subcontractors and coordinate the work with activities of the contractors and suppliers.
- .2 Maintain competent full-time supervisory staff, and as required for the work, quality management and field engineering staff on site during the implementation of the work to monitor and provide general direction to all those associated with the work. Identify unacceptable work early to avoid delays that



might arise as a result of the required correction of deficient work. Ensure that comprehensive quality management processes are followed daily. Ensure that adequate back up personnel are available.

- .3 Establish on-site organization and lines of authority in order to carry out the overall work.
- .4 Attend and chair all construction meetings and maintain minutes.
- .5 Provide a daily log of the work including providing a digital photographic record of key construction progress.
- .6 Monitor progress on site and ensure coordination of trades.
- .7 Review the adequacy of all sub contractor personnel and equipment to ensure availability of materials, workers and supplies to meet the schedule.

### **3.7.2 ABORIGINAL OPPORTUNITIES**

- .1 This ICM is responsible to ensure the percentage of the total proposal amount identified in their proposal (for the ICM fixed fee portion) has been provided for aboriginal opportunities consideration (AOC) for the aboriginal businesses and individuals within the Mów̄hì Gogha Dè Nìitâèè area, as defined in the Tlicho Land Claims and Self-Government Agreement, and proximate to Yellowknife and Akaitcho Dene First Nation.
- .2 The ICM is required to monitor and report on the AOC commitments for each individual work package awarded on a monthly basis.
- .3 The ICM must ensure the confidentiality of the tendering process by restricting access to cost estimates and bids. The ICM must define a firewall approach to security that will specifically prohibit access to information for any First Nations Communities defined in 3.7.2.1 including affiliates and partners.
- .4 The incentive/penalties clauses in Appendix E of the RFP will apply.
- .5 Application of AOC in each tender package shall be per Appendix G.



### **3.8 CHANGES (NOTICES AND ORDERS)**

#### **3.8.1 CHANGES**

- .1 The ICM shall submit a cost estimate breakdown for each contemplated change to the Departmental representative/technical authority and to the Consultant for review and approval. The breakdown shall itemize all labour, materials, plant and equipment costs estimated by the ICM.
- .2 It is the responsibility of the contractor to ensure that all prices included in the ICMs breakdown (including costs and mark ups for subcontractors) are fair and reasonable.
- .3 Labour rates, for all trades, shall only be paid in accordance with trade union agreements and with the approval of the Departmental representative/technical authority.
- .4 The costs of all material, plant and equipment must be based on the actual amount paid to suppliers by the ICM or subcontractors and said costs are to include all applicable discounts.
- .5 The ICM's percentage fee of the project estimated construction cost will include for all services and work associated with changes and shall not be subject to any mark-ups or additional fees.
- .6 Upon the acceptance of the quote, a change order is prepared and issued by the ICM to the subcontractor with a copy to the consultant and departmental representative/technical authority.
- .7 A detailed log of the cost of forecasted final subcontract amounts, change notices and change orders is to be maintained by the ICM for all subcontracts, at all times throughout the project.

### **3.9 CONSTRUCTION GENERAL INSTRUCTIONS**

#### **3.9.1 DURING THE CONSTRUCTION STAGE, THE ICM SHALL:**

- .1 Fulfill the obligations as General Contractor for the designated work area, responsible for all Sub-Trade Contractors, Suppliers and any maintenance or operational requirement contractors that require access to the site; and "Manager" in accordance with the NWT Mine Health and Safety Act
- .2 Maintain on a current basis and make available to the Departmental representative/technical authority, all construction related documents, including:
  - .1 A daily log listing, as a minimum: weather conditions, visitors, workforce, by trade and number of employees, safety issues, and any other major issues.
  - .2 Records of all project contracts and drawings,
  - .3 Copies of all project related correspondence,
  - .4 Samples, purchases, materials and equipment,
  - .5 All data from sub-trades
  - .6 Maintenance instructions and operating manuals and
  - .7 A current set of project record documents for the purpose of recording all approved changes that occur during construction and for completing as-built documents



### 3.9.2 CONSTRUCTION WORK

- .1 When construction Work is duly authorized and assigned to the ICM's contract agreement, the ICM shall:
  - .1 Provide and be responsible for the development, coordination and management of all work and services included in Division 01 in the ICM Contract.
  - .2 Provide all necessary equipment to the Project and all other resources required to perform these duties and services;
  - .3 Procure, coordinate, administer and manage all construction work and contracts in a holistic fashion;
  - .4 Prepare and execute contracts with the successful Sub-Trades:
    - .1 Coordinate and manage the respective contracts in an integrated manner to avoid any conflicts between the Work of the ICM's Own Forces and the Work of the ICM's Sub-Trades.
    - .2 Coordinate, manage and complete all the Work of each Sub-Trade tender package in strict adherence to the accepted drawings and specifications of each tender package, including all addenda and authorized change orders.
    - .3 Deliver the sub-projects to be ready for occupancy by the agreed upon completion dates
    - .4 Develop and implement a procedure for review, certification, processing and payment of Sub-Trades in accordance with the terms and conditions of the ICM Contract.
    - .5 Schedule and conduct progress meetings at which Sub-Trades, PWGSC and the ICM can jointly discuss such matters as procedures, progress, problems and scheduling.
      - .1 Provide timely response to correct issues, as they occur
  - .5 Complete the Work of the ICM's Own Forces in strict adherence to Division 01 and / or in accordance with the specifically approved scope of Work.
  - .6 In the case of multi-year contracts, progressive release of holdbacks for individual work packages will be reviewed with the technical authority

### 3.9.3 COST MANAGEMENT

- .1 The ICM shall ensure that the budgets for each tender package are met.
- .2 Provide updated cost information for monthly reports, as outlined in Section: 2.9.3.4.

### 3.9.4 SCHEDULE MANAGEMENT

- .1 The ICM shall ensure that the schedules are met.
- .2 Provide updated schedule information for monthly reports, as outlined in Section: 2.9.3.4.

### 3.9.5 QUALITY CONTROL

- .1 The ICM shall ensure that quality assurance measures are implemented and that impacts on existing operations are minimized.



### 3.9.6 SHOP DRAWINGS

- .1 Shop drawings shall be stamped: "Checked and Certified Correct for Construction" by the ICM and stamped: "reviewed" by the Consultant before return to the subcontractor.
- .2 The ICM shall:
  - .1 Review, discuss, record problems and identify agreed remedial action.
  - .2 Monitor and record the progress of shop drawing review. Record parties designated for action and follow up.
  - .3 Verify that shop drawings include the project number and are recorded in sequence.
  - .4 Verify the number of copies of shop drawings required.
    - .1 Provide additional copies for the client and the Labour Canada Fire Protection Engineer's offices.
  - .5 Expedite the processing of Shop Drawings in a timely manner.
  - .6 On completion of project, forward reviewed shop drawings to the Departmental representative/technical authority.

### 3.9.7 PERMITS AND APPROVALS

- .1 The ICM will be responsible for coordinating, paying for and obtaining all permits and approvals from local and statutory authorities and shall:
  - .1 Liaise with local and statutory authorities with respect to hoarding, traffic restrictions, services and associated diversions and/or connections.
  - .2 Inform PWGSC of their requirements to inform any statutory body via applications or orders.
  - .3 Ensure that all applications are filed and executed successfully.
  - .4 Verify that all necessary approvals have been obtained.

### 3.9.8 SITE REVIEWS

- .1 The ICM shall:
  - .1 Arrange with the Departmental representative/technical authority for the issuance of necessary forms respecting interim and final completion of the work;
  - .2 Prepare lists of incomplete and deficient items;
  - .3 Schedule completion of these items with the Sub-Trades and distribute all lists as appropriate;
  - .4 Distribute interim and final completion certificates.
  - .5 Construction Phase – Design Coordination / Owner's Meetings
    - .1 The ICM will:
      - .1 Chair weekly or bi-weekly meetings as required to manage issues, and will provide an updated log of the following items each meeting. Meeting participants to include Construction Management staff, PWGSC Departmental representative/technical authority, OGD Client Representative, and Consultants. Key trade contractors may be invited on an as-need basis to one or more meetings. Detailed logs will include:



- .1 Change Log – including all contemplated change notices and approved change orders – ICM to provide an estimate for all contemplated change notices within two weeks of contemplated change notice being issued by consultant. Change log to provide summation totals of all issued contemplated changes and approved changes.
  - .2 Site Instruction Log – including all site instructions issued by consultants.
  - .3 Request for Information Log – including all RFI's sent to consultants, returned with responses from consultants, and log of contractors that RFI's were issued to.
  - .4 Shop Drawing Log – including all shop drawings listed in specifications, and required submission dates from contractors, such that normal review time by Construction Manager and consultant, along with expected manufacture and delivery times allow for equipment or material to be delivered to site in advance of it's required implementation into the construction schedule.
- .6 Construction Phase – Contractor Coordination Meetings
- .1 The ICM will:
    - .1 Chair weekly or bi-weekly meetings as required to manage issues, and will provide an updated log of the following items each meeting. Meeting participants will include Construction Management staff and contractor representatives. PWGSC Departmental representative/technical authority and others may attend these meetings on a drop in basis.
    - .1 Change Log – including all contemplated change notices and approved change orders – ICM to manage contractor change submissions on a timely basis.
    - .2 Site Instruction Log – including all site instructions issued by consultants.
    - .3 Request for Information Log – including all RFI's sent to consultants, returned with responses from consultants, and log of contractors that RFI's were issued to.
    - .4 Shop Drawing Log – including all shop drawings listed in specifications, and required submission dates from contractors, such that normal review time by Construction Manager and consultant, along with expected manufacture and delivery times allow for equipment or material to be delivered to site in advance of required implementation into the construction schedule.



### 3.9.9 COMMISSIONING STAGE

- .1 During the Commissioning Stage the ICM shall:
  - .1 Complete the commissioning Work in accordance with the requirements outlined in Division 01 and in accordance with the accepted Commissioning Plan,
  - .2 Prepare the Commissioning Schedule in accordance with the requirements outlined in Division 01 in the ICM Contract, including the following milestones for all Components, Systems and Integrated System Testing:
    - .1 Component Forms, ICM/Subcontractor verification
    - .2 Component Forms, ICM/Design Management Team approval
    - .3 Equipment start-ups (as specified in individual specification sections)
    - .4 Manufacturer representative start-ups (as specified in individual specification sections)
    - .5 System Performance Testing Procedures, ICM/Sub-contractor Verification
    - .6 System Performance Testing Procedures, ICM/Design Management Team verification coordinated with PWGSC Commissioning Specialist and User Department verification.
    - .7 Integrated System Performance Testing Procedures, ICM/Subcontractor(s) verification
    - .8 Integrated System Performance Testing Procedures, ICM/Design Team verification, coordinated with PWGSC Commissioning Specialist and User Department verification.
    - .9 Deferred testing and verification
  - .3 Develop project specific forms in greater detail than the sample references included in Division 01 in electronic form.
  - .4 Develop and implement a tracking system to confirm all commissioning tasks and documentation are complete, reviewed and approved.
  - .5 Coordinate and direct all sub-trade activity to ensure that all subcontractors:
    - .1 Complete satisfactory testing and verification of all components, systems and integrated systems in accordance with the Commissioning Plan;
    - .2 Perform their respective obligations in accordance with the specifications and adhere to the Commissioning Schedule
  - .6 Ensure that all deficiencies are corrected and final results are included in the final Commissioning Report, prior to submission of the Report to the Departmental representative/technical authority.
  - .7 Prepare and submit to the Departmental representative/technical authority for review and acceptance, a Demonstration and Training Plan
    - .1 Allocate times, method of presentation and the recording of live presentations in accordance with Division 01, Demonstration and Training.
    - .2 Provide appropriate training for building operators in accordance with the accepted Training Plan
    - .3 Confirm that all specified training is delivered.



## 3.10 WARRANTY

### 3.10.1 POST CONSTRUCTION AND WARRANTY STAGE

- .1 During the Post Construction and Warranty Stage the ICM shall:
  - .1 Assemble Record Documents in whole packages per sub-project or as directed by the Departmental representative/technical authority. Provide copies of Record Documents to PWGSC as directed by the Departmental representative/technical authority
  - .2 Review and comment on the accuracy of warranties and guarantees.
  - .3 Review the Final Commissioning Report and comment on the accuracy and completeness;
  - .4 Coordinate Sub-Trade activity to provide final Record Documents (Operations and Maintenance Manuals, As-built drawings and specifications) as required for each sub-trade.
  - .5 Within ten (10) months of the commencement of the warranty period, arrange for an inspection of the site to determine all deficiencies to be corrected;
    - .1 Prepare a deficiency list for review and acceptance by the Departmental representative/technical authority.
    - .2 Provide a schedule indicating when correction of all deficiencies covered under the warranty will be corrected and submit to the Departmental representative/technical authority for review and acceptance;
    - .3 Arrange for and correct all identified deficiencies in accordance with the schedule and advise when all deficiencies have been properly corrected.
    - .4 Ensure that all warranty deficiencies are properly corrected in a timely manner.

The construction manager warranty inspection and up to 4 return inspections will be included in the fees.
  - .6 The ICM shall be responsible for attending all warranty site meetings.
  - .7 The ICM will participate in a one day lesson's learned workshop