



## IDENTIFICATION

Department	Position Title	
Infrastructure	Manager, Marine Engineering	
Position Number(s)	Community	Division/Region(s)
33-8000	Hay River	Air, Marine and Safety /HQ

## PURPOSE OF THE POSITION

The Manager, Marine Engineering undertakes, develops, plans, manages and monitors the execution of a variety of Capital and Maintenance projects associated with the (GNWT) ferry fleet and facilities infrastructure improvements, refits, repairs and maintenance. This position provides the technical expertise for the ferry fleet and infrastructure to Managers, Marine Operations – North and South, the Regional Superintendents who have ferries in their regions and to the Director, Air, Marine and Safety to maintain the operational integrity and reliability and to comply with governing authorities and public safety in accordance with territorial and federal legislation, GNWT policy and departmental procedures.

## SCOPE

Located in Hay River, this position reports to the Director, Air, Marine and Safety.

The Department of Infrastructure is highly decentralized in the delivery of its programs and services and is responsible for territory-wide government programs such as the operation and maintenance of public buildings and transportation infrastructure and systems, project management, facilities planning, design and technical support services, environmental assessment and remediation, property management, procurement shared services, information technology, information management, disposal of surplus property and goods motor vehicle and mechanical/electrical regulatory services and fleet management.

The Department is also responsible for programming aimed at increasing the use of domestic energy resources and reducing energy costs in the NWT (Northwest Territories), delivering

renewable energy solutions, providing energy supply services to non-market communities, and leading efforts in energy conservation and efficiency.

On behalf of the GNWT, the Department of Infrastructure also carries the responsibility for strategic planning for the GNWT's (Government of the Northwest Territories) long term investment in the development of public transportation and energy production and distribution systems for the Northwest Territories, as well as the continuity of marine transportation services for the provision of fuel and dry goods to northern destinations.

The Manager, Marine Engineering;

- Applies technical and professional skills and knowledge to the maintenance, repair and improvement of the ferry fleet and associated infrastructure;
- Provides technical advice to the Director, Air, Marine and Safety related to long-range capital plan for fleet renewal and major overhaul of vessels as well as an operational plan for the maintenance of vessels to maintain certification and public safety;
- Monitors and assists marine engineers, and ensures that on-board technical activities meet the needs of Transport Canada for certification.
- Implements projects and operational activities in a manner that is both efficient and effective and consistent with requirements under GNWT and Transport Canada, Marine Safety policy and regulations, and the Canada Shipping Act.
- Develops procedures and obtains approvals to adapt legislative requirements to the unique NWT operational environment and constraints.

## **RESPONSIBILITIES**

### **1. Plans, organizes and implements the program of improvements, maintenance and refits for the ferry to ensure adequate resources are available and projects are undertaken to ensure vessels are safe, efficient and effective by:**

- Developing plans and strategies for the implementation of technical marine projects, including work methods, procedures and acceptance criteria.
- Preparing accurate and timely engineering plans and reports based on preliminary engineering data.
- Producing terms of reference for each project outlining scope of work and budget required.
- Establishing schedule for all stages of project planning and implementation for each project with due consideration for maintaining operations.
- Establishing staff requirements to implement each project; arranging for additional manpower as required.
- Identifying projects that will require the services of a consultant and contractors.
- Identifying consultants and contractors to be invited to submit proposals for the design implementation of the project.
- Identifies opportunities to achieve GNWT policy objectives throughout all stages of project planning and implementation, (particularly Business Incentives, Local Accommodation, Local and Northern Involvement policies) and takes action to achieve policy objectives.

## **2. Manages the design phase of project implementation by:**

- Preparing the terms of reference for architectural and/or engineering consultants.
- Managing the tender and award of contracts for project consultants.
- Reviewing proposals submitted by consultants; participating as a committee member in the evaluation of proposals on selection of consultants.
- Administering the consultant contract to ensure the project terms of reference are met.
- Reviewing design alternatives and recommendations with respect to feasibility, economics, established naval architecture and design standards and practices.
- Reviewing itemized detailed quantity and cost estimates for various items of work required.
- Obtaining operational, technical and regulatory approvals, as appropriate, throughout the design stage.
- Preparing contract documents, specifications, plans and cost estimates and arranging tendering through Procurement Shared Services.
- Creating construction drawings to the level required by Transport Canada, Marine Safety for approval.

## **3. Manages the construction phase of project implementation by:**

- Managing the tender and award of construction contracts including answering queries from bidders prior to tender closing.
- Attending tender openings and reviewing, analyzing and making recommendations as to acceptance or rejection of tenders.
- Carrying out pre-construction activities including pre-construction meetings, verification of project scope, budget and schedule, and address outstanding technical and regulatory issues.
- Managing the construction contracts (e.g. verifying and approving payments, resolving technical and financial issues, and justify change orders).
- Reviewing the contractor's work for layout, completeness of work, construction testing, diary records and compliance with contract specifications and plans.
- Interpreting contract plans and specifications in case of dispute.
- Resolving complaints received from municipal authorities, utility companies, contractors, the public and other agencies.
- Conducting inspections and issuing project completion certificates and reviewing O&M manuals and as built drawings for completeness and accuracy.
- Producing "as-built" plans or ensuring contractor production and preparing and issuing contractor performance and final construction reports.
- Ensuring that all necessary arrangements for staff, accommodations, vehicles, equipment and supplies are made.
- Monitoring contractors actual versus tendered targets to achieve GNWT policy objectives.
- Monitoring actual versus planned expenditures to maintain budgetary controls and management.

**4. Provides technical expertise and marine transportation experience by:**

- Acting as Project Manager on all major modification of ferry vessels ensuring that contractors comply with the terms of the contract specifications and their workmanship is consistent with good shipyard practices and is responsible for the progress and effective operation of such modifications.
- Making routine and special inspections of the ferry operations to advise on: Compliance with applicable vessel operation and maintenance standards; adherence by Captains and contractors to the tenets of the *Canadian Shipping Act*, Safety Codes and Transportation Directives; suitability of vessel haul out facilities for utilization when required; maintenance and upkeep of approach causeways and development of long range capital forecasts and refit plans.
- Performing research and providing recommendations as required by the Director in conducting feasibility and cost studies of any extraordinary additional requirements of the Department Directives; suitability of vessel haul out facilities for utilization when required; maintenance and upkeep of approach causeways and development of long range capital forecasts and refit plans.
- Providing the Director with assessments of the requirements of new ferry crossings consistent with the Northwest Territories (NWT) Highway Expansion Program, advising the Director on conceptual ferry design in the areas of physical configuration, local capacity, navigational and propulsive systems, crew quarters, etc.
- Using technical knowledge and marine experience to "trouble shoot" emergency situations such as mechanical breakdowns, vessel stranding with subsequent supervision of recovery operations, and shallow water situations requiring the institution of dredging or dragline operations.
- Performing a liaison function as directed by the Director, in respect of ferry operations with the Canadian Steamship inspection service in carrying out of annual and quadrennial surveys of ferry vessels as required under the terms of the Canada Shipping Act.
- Developing procedures and obtaining approvals to adapt legislative requirements to the unique NWT operational environment and constraints
- Participating as a member of Emergency Response after hours support team
- Participating as a member of the operations team and providing support as required.
- Participating in the investigation and root cause analysis of all incidents, accidents and hazards with operations and public safety and provides recommendations for mitigation.

**5. Maintains and promotes reliable and efficient operation of all ferries vessels, equipment and installations by:**

- Conducting regular inspections, diagnostic testing, checks and verifications on equipment condition and performance.
- Undertaking emergency repairs and alternatives so as to minimize interruption of service.
- Undertaking work by own forces or combination of own forces and as and when contractors/contracted forces where feasible.

- Mentoring staff assigned to help with projects providing technical advice, training and support.
  - Adjusting, calibrating, re-aligning and repairing equipment and installations to the required operational reliability and performance standards.
  - Reporting equipment failures and abnormalities in equipment performance, and recommending corrective action.
  - Verifying that operational reliability and performance levels have been restored after repairs and overhauls.
  - Maintaining drawings, data and inventory to "as built" status.
  - Maintaining adequate supply chains for materials, spare parts, tools and test instruments to perform emergency repairs and deliver the preventative maintenance program.
- 6. Manages the maintenance of all marine systems, physical plant, mobile assets and the Departments facilities in accordance with the principles of life cycle management and the sound engineering and environmental practices through formal ferry operations contracts and own forces by:**
- Providing technical expertise and project prioritization into the 1, 3, 5, 10, and 20 year needs for the life cycle management and regulatory compliance for all ferry assets.
  - Establishing annual refit needs and implementation schedules with Manager, Marine Ops – North and South.
  - Participating and presenting in annual Ferry conference.
  - Developing best practices for project planning, implementation and risk management.
  - Maintaining records of preventative maintenance undertaken.

## **WORKING CONDITIONS**

### **Physical Demands**

This position routinely travels to and from job sites. Work on job sites may require lifting of equipment, bending in awkward positions, working in confined spaces, climbing ladders and down manholes when troubleshooting, repairing or determining maintenance requirements on vessels.

### **Environmental Conditions**

The incumbent may be required to work outside through a full range of seasonal conditions and weather can be adverse at times with rapid changes. Scheduled work must be organized outside the ferry operational season requiring it to be undertaken in fall and winter.

### **Sensory Demands**

The incumbent uses multiple senses simultaneously to investigate and determine the nature of problems in the equipment as well to service and repair same.

## **Mental Demands**

There is travel to remote locations on short notice to investigate mechanical emergencies and the incumbent may be called in to take over a shift at short notice.

## **KNOWLEDGE, SKILLS AND ABILITIES**

- Extensive knowledge of marine engineering motors and a wide range of marine activities pertaining to the operation and upkeep of vessels and related shore equipment and facilities, including trades competency in related marine tasks of welding, fitting, mechanical, rigging, etc.
- Knowledge in hydraulic slip way winches and power pack and able to repair it, to pull ferries out water with rubber tube with winch or dozer and also knowledge with vessel in ice conditions and how to retrieve it.
- Knowledge and practice of Transport Canada Ship Safety Branch Regulations and Standards.
- Knowledge with operating passenger ferries and contract mode.
- Ability to direct Officers on Safety and Policy matters.
- Excellent oral and written communication skills.
- Working knowledge of contract administration.
- Ability to develop employees for the ferry operations.
- Ability to focus on clients' expectations and needs.

## **Typically, the above qualifications would be attained by:**

- Certification as a 3rd class Marine Engineer Motor (minimum) and minimum ten (10) years' experience in Marine Field with Grade 12 education with a red seal Heavy equipment technician in Marine needed to repair ferries for Transport Canada inspections.
- NWT Class 5 Driver's License.
- Seven (7) years' experience in a wide range of marine activities pertaining to the operation and upkeep of vessels and related shore equipment and facilities, including trades competency in related marine tasks of welding, fitting, mechanical, rigging, etc.
- Seven (7) years knowledge and practice of Transport Canada Ship Safety Branch Regulations and Standards.
- Two (2) years comprehensive experience in operations of passenger ferries and contract mode.

## **ADDITIONAL REQUIREMENTS**

### **Position Security (check one)**

- ☒ No criminal records check required
- ☐ Position of Trust – criminal records check required
- ☐ Highly sensitive position – requires verification of identity and a criminal records check

**French language** (check one if applicable)

☐ French required (must identify required level below)

Level required for this Designated Position is:

ORAL EXPRESSION AND COMPREHENSION

Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

READING COMPREHENSION:

Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

WRITING SKILLS:

Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

☐ French preferred

**Indigenous language:** Select language

☐ Required

☐ Preferred