



IDENTIFICATION

Department	Position Title	
Infrastructure	Project Engineer, Civil	
Position Number	Community	Division/Region
33-0251	Yellowknife	Air, Marine & Safety/HQ

PURPOSE OF THE POSITION

The Project Engineer, Civil is responsible for the planning, development, implementation, technical support and oversight of a variety of airport capital and Operations and Maintenance (O&M) infrastructure projects, through all the project stages, including assessment, planning, concept, design, construction and post-construction, associated with the 27 airports owned and operated by the GNWT. This is done so that airport infrastructure is efficiently planned, designed, constructed and maintained, in accordance with Canadian Aviation Regulations, national and international Civil Aviation Aerodrome Standards & Recommended Practices, and national/ NWT acts, regulations, standards and policies, to meet the needs of northern air travellers, airport tenants and air carriers.

SCOPE

The Project Engineer, Civil is located in Yellowknife, and reports to the Manager, Infrastructure & Planning.

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 Government of the Northwest Territories (GNWT's), the Department of Infrastructure also carries the responsibility for strategic planning for the GNWT's 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.

This position provides planning, design and management for the delivery of airport civil projects, to effectively and efficiently manage the overall integrity of the building infrastructure at the 27 airports owned and operated by the GNWT.

The position exercises expenditure approval authority of \$30,000 for contract initiation and \$100,000 for contract performance. On average, the Project Engineer, Civil is responsible for the implementation of 6 to 10 capital and O&M civil construction projects each year, contributes to 2 to 3 airport planning studies, and provides expert guidance and technical advice to the resolution of civil and surfaces issues.

RESPONSIBILITIES

1. Develops and evaluates plans and criteria for the preparation and periodic updating of airport planning studies, including Airport Development Plans which define and establish priorities, project implementation plans, and budget projections, for the development, growth and expansion of airports over a 20 year planning horizon.

- Identifies civil needs for new or updated Airport Development Plans, in consultation with regional Airport Managers, and corporate headquarters staff and management.
- Contributes to Airport Development Plans for each airport within the Northwest Territories over a 30-year planning horizon, and regularly reviews each Plan and updates as required.
- Participates as a member of the Departmental Steering Committee for Airport Planning Studies, and assesses the feasibility of solutions and concepts proposed by these planning studies, and integrates review comments of Steering Committee members.
- Provides expert civil technical advice about airport planning, while participating in consultations with air carriers, communities, Nav Canada, Environment Canada, regional Airport Managers and Superintendents, and Departmental technical staff, intended to solicit input and feedback.
- Assists in integrating the recommendations outlined in Airport Development Plans into the Department's 20-year needs and ongoing 5-year capital project plan. Supporting activities of the above responsibility.

2. Develops or directs development of project briefs, conceptual plans, functional plans, and preliminary and final designs, for new or reconstructed airport civil projects.

- Conducts feasibility studies, technical assessments and inspections, pre-design and planning studies, to establish preliminary engineering and community data.

- Manages the process used to develop functional and conceptual plans, and defines and establishes design constraints and parameters.
- Consults with Nav Canada, Environment Canada, regulatory agencies, air carriers, tenants, communities and other stakeholders, and analyses passenger forecasts, to determine specific requirements with respect to project size and function, and assesses needs in conjunction with headquarter, regional and operational personnel, and integrates input as appropriate.
- Determines needs and operational requirements through data analyses, assessments, development plans, consultations and guidelines.
- Assesses and analyses the feasibility, technical accuracy and adequacy, and soundness of proposed design solutions proposed by others.
- Applies existing criteria and constraints to new situations, and draws conclusions from comparative situations.
- Undertakes inspections and performs technical evaluations of existing civil works, to determine conformance to standards, regulations and design drawings, and to identify operating deficiencies and level of maintenance being administered.
- Recommends upgrades to existing works, re-designs, or improvements, in operating standards and procedures, to extend the life and/or improve the efficiency of existing airport infrastructure.
- Prepares detailed cost estimates for projects, and initiates requests for funding.
- Develops technical and functional requirements for each project into a scope of work and/or design brief, to guide project implementation.
- Researches new information regarding construction techniques, materials and procedures, and makes recommendations for their incorporation into infrastructure.
- Identifies project land requirements, and assists in land acquisitions.

3. Provides technical advice, and supports and implements capital and O&M civil projects.

- Develops and modifies established guidelines, new approaches, technical standards and procedures, for the design, implementation and construction or reconstruction of airport civil infrastructure.
- Provides conceptual, preliminary and tender-ready civil work designs, contract drawings, specifications, quantity surveys and cost estimates, utilizing civil engineering design computer software, and recommends optimal design.
- Stamps and seals all civil contracts, construction drawings and specifications completed under their control.
- Initiates and manages the process undertaken to implement the new construction or reconstruction work for airport civil infrastructure.
- Identifies projects requiring the services of consultants, prepares requests for proposals, reviews consultant proposals, and participates as a committee member in the consultant selection.
- Provides advice in the qualification of consultants and contractors, and in the making of final tender awards.
- Presents or participates in presenting of preliminary and final designs to community councils, band councils, community members, air carriers and airport tenants.

- Reviews drawings and specifications, and coordinates review comments of the Division's specialists in each engineering discipline, to provide project implementers' clear and consistent instructions.
 - Develops Plans of Construction Operations (PCOs), in conjunction with the Division's Programs & Standards Section and Transport Canada's Aerodrome Safety.
 - Obtains land-use and quarry permits, as required.
 - Chairs pre-tender meetings, and prepares and distributes minutes to participants.
 - Responds to technical inquiries on project design and scheduling from potential contractors during tendering process, and prepares addenda as required.
 - Monitors physical progress and financial status of capital and O&M construction projects, providing recommendations and technical advice as required.
 - Prepares correspondence, and organizes and participates in meetings to resolve project-related construction concerns / problems that involve consultants, contractors and project implementers.
 - Negotiates and prepares contract change orders.
 - Participates in progress, interim and final on-site inspections.
 - Prepares and certifies progress certificates, interim certificates and final certificates of completion of work, in accordance with the terms of the contract, and recommends and approves payments.
 - Keeps account of capital and O&M expenditure details provided by project implementers, including project expenditures to year-end, noting and explaining variances and recommending reallocation, if necessary.
 - Prepares post-construction reports.
 - Monitors and approves the production of "as-built" drawings.
 - Prepares contractor and consultant performance evaluations.
- 4. Coordinates the civil design and implementation of Nav Canada's Community Aerodrome Radio Stations (CARS) and Environment Canada's meteorological compound projects, on behalf of third-party interests.**
- Keeps apprised of regulations, standards and technology for CARS facilities and meteorological compounds.
 - Collaborates with third-party agencies in defining requirements and ensuring proper integration within approved civil works construction or renovation projects.
 - Participates in or negotiates cost-sharing agreements and project implementation arrangements with third-party interests.
 - Keeps 3rd-party interests informed of progress in implementing construction projects.
 - Coordinates turn-over of CARS and meteorological facilities to Nav Canada and Environment Canada.

WORKING CONDITIONS

Physical Demands

No unusual demands.

Environmental Conditions

No unusual demands.

Sensory Demands

No unusual demands.

Mental Demands

No unusual demands.

KNOWLEDGE, SKILLS AND ABILITIES

Knowledge and skills:

- Airport planning, airport operations, safety regulations and zoning requirements.
- Airport and aviation terminology, and northern air transportation facilities.
- Aircraft characteristics and performance, and air carrier operations and their services.
- General construction practices and materials, and factors affecting northern construction.
- Northern geotechnical and environmental considerations, and northern construction practices.
- Technical standards applicable to design of Canadian airports.
- Runway, apron and taxiway design principles.
- Project management, cost estimation, cost controls and construction contract law.
- Northern airport navigational and visual systems, airfield lighting, and field electrical centers.
- Engineering management practices and project planning.
- Financial management, budget planning and financial control systems.
- Oral and written communications skills.
- Conflict resolution and working in a team environment.
- Contract management and administration skills.
- Civil 30, AutoCAD, NMS and general office computer software skills.
- Project management and administration skills.

Abilities to:

- Design, produce and interpret civil drawings and designs, using Civil 30 and AutoCAD.
- Assess the suitability of such designs for the northern climate.
- Interpret and apply engineering, airport design and operation standards and regulations.
- Produce and review; coordinate and implement multiple projects simultaneously.
- Communicate technical concepts effectively, and to report findings to lay audiences.
- Develop and analyze short and long term construction projects, as well as to manage complex construction projects throughout all stages of planning, development and completion.
- Correspond adeptly with contractors, project personnel, divisional staff, and the public.

- Utilize Word, Excel, PowerPoint, Outlook, and other required software.
- Work in a cross-cultural environment.
- Creativity, foresight and engineering judgment.

Typically, the above qualifications would be attained by:

A civil engineering degree, along with five years of progressive experience in the planning, design, implementation and administration of airport projects, including experience in contract administration, design and construction, and supervision.

Assets include: planning, design, maintenance and project implementation knowledge specific to airports; and experience in arctic / northern construction and regulatory environments.

ADDITIONAL REQUIREMENTS

The incumbent shall be eligible for registration as a member of the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG) as a P.Eng. within six months following appointment. A Class 5 NWT Driver's License is required for this position. The incumbent will also require a Restricted Radiotelephone Operator's Certificate (Aeronautical) and Airside Vehicle Operators Permit, which may be obtained following appointment.

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