Government of
Northwest Territories

IDENTIFICATION

Department	Position Title	
Education, Culture and Employment	Manager Application & Data Maintenance	
Position Number(s)	**Community**	**Division**
71-7159	Yellowknife	Planning, Research and Evaluation

PURPOSE OF THE POSITION

The Manager Application & Data Maintenance sets and enforces application and data maintenance standards related to the design, development, testing, and deployment of Departmental software systems to ensure the continuity of critical Education, Culture and Employment (ECE) applications used to deliver programs and services to the public. They are also responsible for the leadership and oversight of information, communication and technology (ICT) small-scale projects for the Department. This individual will apply proven leadership, communication, and problem-solving skills to assure the quality and delivery of end-user support, data and application maintenance in order to maximize the benefit of system investments.

SCOPE

The incumbent reports to the Director Planning, Research and Evaluation (PRE) to lead the Application & Data Maintenance unit and ECE Information Management Services (IMS) as a whole throughout the software development lifecycle (SDLC) to deliver quality software products and service to ECE's Program Areas. The incumbent leads three (3) staff (Database Administrator, Application Support Analyst, and Data & Reporting Analyst) and works directly with other members of the Department as required to ensure technology solutions meet identified needs. The incumbent is expected to lead by example and provide exceptional client service to headquarters and regional staff through a proven understanding of software and hardware, in conjunction with exceptional analytical skills, to deliver appropriate, effective and efficient service to support all ECE information, communication and technology systems. The incumbent is responsible for an Operational and Maintenance (O&M) budget of $6.5M and has spending authority of $100,000.

The incumbent is primarily responsible for the processes supporting application and data maintenance functions in the Department as well as the frameworks used to conduct those activities through the direction of the PRE Director. They are also responsible for managing ECE enterprise data bases, client-server application upgrades, as well as leading and managing the delivery of technology support and asset management services for the Department. This position works directly with, and has a functional reporting relationship to Senior Managers including the Assistant Deputy Ministers and Directors of the Department, as well as stakeholders from Education Authorities, Aurora College and Regional Service Centres, in conducting application, service and asset management in the support of ECE owned technology. The incumbent, by virtue of the position, has total and unrestricted access to all client and employee personal, financial and banking data in the database systems. This data may also include criminal, civil, health, or psychological information or evaluations. They are responsible for the security, monitoring, and auditing of access to all Department data. The incumbent has considerable latitude to make decisions and must have highly effective decision-making and problem-solving skills in order to ensure that systems are designed and developed to meet complex Departmental needs. Failure to provide adequate services and/or design, develop and safeguard technology systems may result in serious consequences for the Department and the government as a whole.

Five critical systems in the application portfolio include, the Case Management & Administrative System (CMAS), Oracle Business Intelligence Enterprise Edition (OBIEE), MyECE web framework and applications, PowerSchool, and Student Data Interchange (SDI).

CMAS, originally developed in 1999 using a custom Java architecture, is a complex and mission critical system. It is the PeopleSoft of ECE. CMAS processes payments totaling over $130 million annually, and, another approximately $140 million in school board funding is directly driven by enrollment reports created from CMAS data. The CMAS system is custom-built and is accessed daily by 12 ECE Program Areas and other GNWT Departments. The system must have 7am-7pm availability Monday to Friday and can be accessed by approximately 800-1,000 clients via MyECE outside of core office hours. Approximately 180+ staff rely on system availability and functionality to deliver critical ECE services to the public. CMAS and its modules represent over 72% of the application portfolio at ECE.

CMAS integrates with OBIEE, a near real-time interactive data analysis and reporting tool with 4 software applications, and MyECE, a web technology framework with 2 software applications. Both Business Intelligence (BI) and MyECE are new additions since 2012 that integrate with CMAS' approximate 30 modules and 300 reports.

PowerSchool, also implemented in 2012, is ECE's Kindergarten to Grade 12 Student Information System (SIS) to manage marks, attendance, photos, incidents, disciplinary actions, courses, and report cards. It is used by approximately 1,200 teachers daily within all schools and Education Authorities across Northwest Territories (NWT). SDI, an automated data interchange software application between ECE and Alberta Department of Education, sends diploma exam and other student information to Alberta through web-based technologies five times per year.

Organizational Structure

ECE has a complex and multi-faceted mandate within the Government of the Northwest Territories (GNWT). Through its many programs and services ECE impacts the lives of NWT residents across lifespans through income security, early childhood, adult education, labour-market development, culture, heritage and official languages. The Department has three corporate services division: Policy, Legislation and Communications (PLC); Planning, Research and Evaluation (PRE); and Finance and Capital Planning (FCP). Together, these divisions enhance intradepartmental collaboration through coordinated activities and the setting of standards and expectations.

The PRE division is composed of 3 units:
1. Research and Program Evaluation Services
2. Information Management Services
3. ATIPP and Records Management

Collectively, PRE plays a significant role providing corporate leadership to the Deputy Minister, Assistant Deputy Minister, Directors, and program staff in order to ensure:
- lateral, systems-wide thinking in support of program integration;
- holistic and multi-disciplinary approaches to complex problem areas;
- practical accountability mechanisms that generate meaningful data and adherence to the Department's legislation, directives, and policies;
- leaner, more efficient service delivery through evidence-based decision making; and
- transparent communication in support of public accountability.

Collectively, PRE collaborates with all levels of the education system to provide strategic and evidence-based research, planning, implementation, and evaluation services. Through these services, PRE staff are mandated to support sustainable programs and technology solutions through the following functions:
- Departmental strategic and business planning;
- Statistical analysis and research;
- Program monitoring and evaluation;
- Performance measurement and target development;
- Project management;
- Business analysis;
- Risk management;
- Information systems and technology;
- Information management; and
- ATIPP and records management.

RESPONSIBILITIES

1. **Plan and manage the human and financial resources of the unit to meet divisional and Departmental objectives.**
   - In consultation with the Director, complete O&M budget and expenditure functions within the unit including tracking actual spend, committed funds and budget forecasts.
   - In consultation with the Director, complete human resource functions within the unit including staffing, performance reviews, and discipline.
   - Ensure unit staff have access to necessary resources, supplies, equipment and information.
   - Inform staff about governmental, Departmental and divisional priorities.
   - Develop annual technology work plans and schedules based on the Department business and work plans that establishes short and long term objectives for the unit.
   - Manage numerous outside suppliers and contractors who perform Information Systems functions.
   - Negotiate, manage and organize all information systems related product and service contracts.
   - Participate on technology related interdepartmental and intergovernmental committees as required.
   - Identify and implement individualized training requirements and opportunities for staff. Acts as a mentor in staff career path planning to ensure the individual member's professional development is supported and funded by ECE, to provide better staff retention and morale.
   - Ensure industry and GWNT standards are used, and with input from the Office of the Chief Information Officer, develops, updates and ensures Departmental standards are followed in all areas of ECE IMS.
   - Acts as the Director of PRE, Manager Application Development, or Manager of Business Analysis & Projects, as required.

2. **Lead the application and data maintenance functions for the Department.**
   - Manages and is accountable for the overall technical operations and availability of the Department's critical information systems. In doing so provides access to the data across service delivery, functional, geographic and jurisdictional boundaries; and ensures the security, privacy and integrity of the systems as well as data contained within.
   - Ensure the Department meets daily, weekly, monthly, quarterly and annual critical data exchange deadlines with federal, provincial, territorial governments and private industry. Deadlines must be met with data accuracy and timeliness to prevent delayed or lost payments to clients and Departments, suspended federal transfer payments, or inaccurate statistical reporting or registrations. Missing deadlines or providing incorrect data can potentially cause political embarrassment for the GNWT.
   - Develop, update and implement a Disaster Recovery Plan for ECE owned systems, databases and web sites to guarantee organizational continuity in the event of an emergency.

- Ensure that the security, monitoring and use of, the Department's business critical systems and databases is maintained and has the freedom to act as necessary to ensure the integrity and operational readiness of the databases and systems.
- Assess and cultivate long-term strategic goals for BI and data warehouse development in conjunction with end users, managers, clients, and other stakeholders.
- Establish processes for governing the identification, collection, and use of organizational enterprise metadata; take steps to assure metadata accuracy and validity.
- Review and analyze existing applications effectiveness and efficiency, and then develop strategies for improving or leveraging these systems. Cultivate and disseminate knowledge of application-usage best practices.
- Oversee the evaluation, installation, configuration, testing, and deployment of new applications, systems software, products, and/or enhancements throughout the Department.
- Oversee the maintenance of existing applications, server software, technology products, to existing applications throughout the Department.
- Ensure that any new software integration into company systems meets functional requirements, system compliance, and interface specifications.
- Liaise with software suppliers for prompt rectification of any problems or emergencies.
- Liaise with GNWT network administrators to assist with quality assurance, performance, and availability of ECE's system and data within the enterprise architecture.
- Manage and oversee the software application inventory using industry best practices.

3. **Lead technology asset and service management functions for the Department.**
   - Responsible for planning and coordinating the processes required for the provision of user applications and technology necessary for Program Area operations.
   - Manage and maintain inventory of ECE owned software and technology assets and their corresponding licensing, contracts or agreements.
   - Establish and enforce Help Desk service levels agreements in consultation with end users to establish problem resolution expectations and timeframes.
   - Oversee the ECE Help Desk staff and ensure that end users are receiving the appropriate assistance. This includes the responsibility of managing all procedures related to the identification, prioritization, and resolution of end user help requests, including the monitoring, tracking, and coordination of Help Desk functions.
   - Oversee the performance of Help Desk activities and documented resolutions, identify problem areas, and devise and deliver solutions to enhance quality of service and to prevent future problems.
   - Manage the processing and prioritization of incoming service requests and incidents to the Help Desk to ensure courteous, timely, and effective resolution of end user issues.
   - Design and enforce service request and incident handling and escalation processes.
   - Ensure effective, timely and clear communication of network, application and data availability, included planned and unplanned outages, to all ECE staff.

- Track and analyze trends in Help Desk requests and generate statistical reports for the Director. Optimize and continually improve the functioning of the Help Desk based on these trends.
- Identify and recommend end user training programs to increase computer literacy and self-sufficiency in response to application issues resulting from insufficient training.
- Oversee the development and dissemination of end-user documentation, including, release notes, help sheets, usage guides, and FAQ lists for enterprise systems ensuring accuracy and comprehensibility of content.

4. **Lead upgrade and maintenance planning exercises for the Department.**
   - Consult with divisions, Aurora College, Education Authorities, and Regional Service Centres within the Department to identify technology systems, internet and intranet needs in the short and long-term.
   - In consultation with the Director, ensure upgrade and maintenance planning for applications and servers aligns to and enables Departmental work plan priorities and outcomes in collaboration with senior management.
   - Collaborate with Program Area Managers to ensure that scheduled maintenance activities do not negatively impact service delivery or program operations.
   - Provide expert advice and guidance to the Director on current industry technology trends and solutions. Conduct in-depth technology research and analysis and make recommendations concerning current and future systems developments.
   - Communicate and collaborate with the Director and ECE senior management work processes and timelines required for ECE systems to enable Program Area work plans and strategic Departmental commitments to be achieved.

5. **Lead, develop and enforce technology standards and processes for ECE IMS.**
   - Develop and implement the enterprise data architecture vision and standards for ECE IMS.
   - Oversee the development, implementation, and administration of ECE help desk staff procedures and policies.
   - Review and analyze existing application effectiveness and efficiency, and then develop strategies for improving or leveraging these systems.
   - Develop and implement ECE IMS specific procedures and processes to align with and implement OCIO ICT Policy.

6. **Perform user, database, and application support, as required.**
   - Field incoming problem tickets from end users to resolve application and software issues within servers, and other mission-critical systems.
   - Test fixes and perform post-resolution follow-ups to ensure problems have been adequately resolved.
   - Apply minor and major software application upgrades from vendor to the production environment(s) once successful testing has been authorized.
   - Perform hands-on fixes at the desktop level, including installing and upgrading software, and configuring systems and applications.

- Perform preventative maintenance and implements server upgrades, service packs, hot-fixes, maintenance fixes, and vendor-supplied patches for application and web servers and operating systems.
- Perform and manage daily backups of application and web servers.
- Develop and build data structures from functional requirements and technical design specification.
- Install and configure relevant network components to ensure database access as well as database consistency and integrity.
- Develop new schemas, procedures, views, workbooks and workspaces as required.
- Create and maintain indexes, primary/foreign keys, and constraints as required.
- Elicit and analyze user reporting requirements, create models and specifications, and deliver new and enhanced reports to ECE staff.

WORKING CONDITIONS

Physical Demands

The incumbent is required to sit or stand for long periods during work hours at presentations, in meetings, and group or one-on-one planning sessions. The incumbent may frequently sit up to 4 hours per day at a computer analyzing data and traveling to communities as required. Eyestrain, back discomfort and keyboard-induced tensions are the most common problems.

Environmental Conditions

There are requirements for visits to other offices and remote sites for consultation, review, training, and work outside the office environment. There is exposure to noise from servers when working in the data centre (1-2 hours per week). The position may require travel in small aircraft into small communities.

Sensory Demands

The incumbent may spend long periods of intense concentration up to 4 hours per day reviewing and synthesizing data into information. There is a frequent need for accurate rapid visual judgments when providing time-sensitive data. Establishing priorities and balancing these demands is often difficult. Pressure to balance duties, the volume of work and the criticality of information systems contributes to job stress.

Mental Demands

Mental fatigue is extremely common as a result of a requirement of a heavy workload; frequent need for intense analytical work; project management that is impacted by tight deadlines that are beyond the control of the incumbent; and that the work may have financial implications to the Department or clients if delays or inaccurate data occur. Imposed, unexpected, and competing demands frequently cause high levels of stress and extreme mental fatigue in order to provide rapid response and immediate reprioritization of workload to ensure 24/7 system availability. Long extended working hours including evenings and weekends may be required to supervise the implementation or enhancement of systems

during non- business hours. Mental stress may also be induced as a result of the requirement to continually keep up to date with industry standards and learn new technologies and the use of new or enhanced products. The incumbent must be frequently available via a Departmental cell phone including, after regular working hours and weekends. Weekend and evening overtime for after-hours system implementation are required (4-8 hours per day), so as to not interrupt the daily activities of the rest of the Department(s), school(s) and school board(s).

KNOWLEDGE, SKILLS AND ABILITIES

- Expert knowledge and demonstrated experience with enterprise relational databases products, database administration, data warehouses, data modelling and Structured Query Language (SQL).
- Expert knowledge of database structures, theories, principles, and practices.
- Expert knowledge in systems architecture and data security, data communication standards, hardware, server operating systems, and network setup and protocols.
- Expert knowledge of technology systems design, implementation and upgrade.
- Expert knowledge of the GNWT's Systems Implementation Methodology (SIM) and the Systems Development Life Cycle (SDLC) methodology.
- Expert knowledge in Information Technology Infrastructure Library (ITIL) Service and Asset Management.
- Excellent knowledge of software applications and hardware capabilities including delivery platform/technical architecture.
- Exceptional customer services skills and orientation. Proven record of providing quality end-user support through proven verbal and written communication skills.
- Excellent supervisory and leadership skills based on a history of successful software implementations.
- Excellent time management with the ability to work with short deadlines, work collaboratively with other members of the ECE IMS team, and be able to work well with end users.
- Excellent priority setting and organizational skills including the ability to manage multiple projects efficiently and effectively using project management tools and methods.
- Excellent verbal and presentation communications skills including the ability to translate complex technical information into plain language for Departmental Senior Management and staff.
- Excellent written communications skills including the ability to develop complex technology strategic and business plans in plain language.
- Proven team leadership skills including the ability to delegate and direct contractors and project staff in a positive, innovative and collaborative manner.
- Ability to develop technical and operational standards, protocols, policies and procedures.
- Ability to plan and schedule maintenance activities for ECE owned applications and servers.
- Ability to conduct research into technology related issues and products.

- Ability to prepare project budgets and timelines, manage staff and contractors and conduct application testing and commissioning.
- Ability to lead projects using project management skills and experience.
- Ability to prepare technical specifications and proposals and review submissions.
- Ability to prepare and follow technical change management processes.

Typically, the above qualifications would be attained by:

The required level of knowledge, skills and ability is typically acquired through the completion of a University Degree in Computer Science or Information Systems Management and at least 6 years of experience in the Information Technology industry including at least 3 years in application and data maintenance and at least 2 years managing staff/teams, or, computer or information systems related diploma and 8 years' experience of which 3 years in application and data maintenance and least 2 years managing staff/teams. A combination of 10 years of education and directly related experience would be considered as an equivalency.

An Information Technology Infrastructure Library (ITIL) Foundations designation is considered an asset.

ADDITIONAL REQUIREMENTS

Position Security

☐ 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

☐ French required. 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

Aboriginal Language Choose a language:

☐ Required
☐ Preferred