Update

Ministry

Agriculture and Irrigation

Describe: Basic Job Details

Position

Position ID

Position Name (30 characters)

Operations & Maintenance Technologist

Current Class

Job Focus

Supervisory Level

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

Employee

Employee Name (or Vacant)

Organizational Structure

Division, Branch/Unit

☐ Current organizational chart attached?

Supervisor's Position ID

Supervisor's Position Name (30 characters)

Supervisor's Current Class

Design: Identify Job Duties and Value

Changes Since Last Reviewed

Date yyyy-mm-dd

Responsibilities Added:

Reporting to the Peace-Athabasca Senior Operations & Maintenance (O&M) Supervisor, this role is critical in the on-going safe and efficient operation, maintenance, and inspections of large, complex, and high risk provincially owned water infrastructure projects over a large geographical area in Northern Alberta (Hinton to Fort Chipewyan). These infrastructure systems vary significantly in scale and complexity, encompassing lake stabilization systems --including dams classified as very high, high, significant, and low consequence --as well as other water management and drainage structures such as canals, lake outlet works, and stabilization infrastructure. Each of these assets requires sophisticated, proactive operational oversight to ensure optimal performance and public safety.

As part of a highly specialized team, the O&M Technologist requires substantial knowledge, varied skills and work experience on major water infrastructure projects and so, the responsibilities of operations staff are multifaceted. They are tasked with conducting thorough inspections of infrastructure, identifying deficiencies, and planning and implementing maintenance activities to ensure structural integrity and operational reliability. Staff are also responsible for operating water control structures in accordance with approved operational plans to manage flows and meet regulatory and community needs. They also provide operational technical support input into capital rehabilitation projects, engineering investigations, and dam safety assessments - informing long-term investment and risk management strategies. Beyond technical duties, operations staff engage directly with stakeholders,

including adjacent landowners and municipalities, to manage local interests and concerns. They also oversee procurement processes, obtain service contracts or quotations, and supervise contractors to ensure work is completed safely and to required standards.

Due to the implications to public safety, all water management infrastructure must always be operated and maintained to the highest standards with minimal allowance for downtime on critical operating components. Operations staff are heavily involved in emergency response and flood mitigation efforts, often responding to dynamic conditions across multiple sites. They participate in a rotational on-call/standby schedule to address urgent issues as they arise, ensuring around-the-clock operational readiness.

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Responsibilities Removed:

Job Purpose and Organizational Context

Why the job exists:

Operations staff play a vital role in ensuring the safe, efficient, and continuous operation, inspection, and maintenance of large, complex, and high-risk provincially owned water infrastructure systems across a broad geographical area in Spruce Grove/Athabasca region These infrastructure systems vary significantly in scale and complexity, encompassing lake stabilization systems—including dams classified as very high, high, significant, and low consequence dams as well as other water management and drainage structures such as canals, lake outlet works, and stabilization infrastructure. Each of these assets requires sophisticated, proactive operational oversight to ensure optimal performance and public safety.

The responsibilities of operations staff are multifaceted. They are tasked with conducting thorough inspections of infrastructure, identifying deficiencies, and planning and implementing maintenance activities to ensure structural integrity and operational reliability. Staff are also responsible for operating water control structures in accordance with approved operational plans to manage flows and meet regulatory and community needs. Beyond technical duties, operations staff engage directly with stakeholders, including adjacent landowners and municipalities, to manage local interests and concerns. They also oversee procurement processes, obtain service contracts or quotations, and supervise contractors to ensure work is completed safely and to required standards.

In addition to routine operations, staff are heavily involved in emergency response and flood mitigation efforts, often responding to dynamic conditions across multiple sites. They participate in a rotational on-call schedule to address urgent issues as they arise, ensuring around-the-clock operational readiness. Their field-based knowledge and expertise also contribute significantly to capital rehabilitation planning, engineering studies, and dam safety assessments, informing long-term investment and risk management

strategies.

Responsibilities

Job outcomes (4-6 core results), and for each outcome, 4-6 corresponding activities:

Under the direction Team Lead,Peace Athabasca and or the Operations and Maintenance Supervisor the Operations technologist plays a critical leadership role in managing the planning, operation, and long-term sustainability of public water infrastructure assets across Northern Alberta. This position oversees the full infrastructure life cycle from inspection and rehabilitation to emergency response and preventative maintenance ensuring the safe, efficient, and continuous delivery of water to municipalities, industry stakeholders, and private landowners.

Under the direction of Team Lead, the incumbent is also responsible for executing capital projects, supporting dam safety initiatives, and leading the day to day operation of Paddle river Dam and cover off other area supervisors. This role demands a high level of collaboration with internal departments, external contractors, regulatory agencies, and community stakeholders. A significant aspect of the position includes managing data and performance monitoring through the Environmental Infrastructure Management System (EIMS), WISKI, and SCADA platforms.

Key Responsibilities

1. Project & Infrastructure Management

- Lead end-to-end management of complex construction, rehabilitation, and maintenance projects involving public water management systems, ensuring delivery within scope, schedule, and budget.
- Coordinate emergency repairs with precision and urgency, ensuring alignment with engineering specifications, environmental regulations, and occupational safety standards.
- Supervise the work of external consultants, contractors, and multidisciplinary teams to ensure conformance with Alberta Agriculture and Irrigation's technical standards.
- Ensure all projects meet legislative requirements under the Water Act, Public Lands Act, Fisheries Act, and Navigable Waters Protection Act.
- Produce technical reports, cost estimates, and stakeholder communications to support infrastructure development and investment decisions.

2. Operations & Asset Oversight

- Oversee the daily operation of major hydraulic infrastructure, including dams, canals, dikes, and drainage systems.
- Monitor water levels, flow rates, and infrastructure performance; make operational adjustments as needed to ensure regulatory compliance and water delivery targets.
- Respond to high-flow and flood events, providing 24/7 operational support where required.
- Direct the activities of field staff and contractors to maintain system reliability and service continuity.

3. Inspections & Preventative Maintenance

- Conduct comprehensive inspections and condition assessments of water infrastructure assets to identify deficiencies and prioritize maintenance.
- Lead or participate in annual engineering assessments and Dam Safety Reviews (DSRs); prepare recommendations and track actions through EIMS.
- Coordinate and supervise routine, corrective, and preventive maintenance across multiple sites to ensure asset integrity and alignment with original design specifications.
- Troubleshoot infrastructure issues and coordinate timely resolution with internal and external resources.

4. Northern Alberta Erosion Control Program (NAECP)

- Serve as the regional lead for NAECP, directing the rehabilitation of erosion control infrastructure in compliance with Position Paper 5 guidelines.
- Coordinate with ATEC, municipalities, and engineering consultants to manage legacy and high-risk sites.
- Administer the regional program for operation and maintenance of erosion and flood control infrastructure owned by the province.

5. Occupational Health & Safety (OH&S)

- Promote a culture of safety excellence, ensuring all field activities comply with provincial OH&S legislation and departmental policies or protocols.
- Conduct hazard assessments, lead internal safety audits, and oversee emergency response readiness, including participation in drills and simulations.

6. Stakeholder Engagement

- Foster constructive relationships with landowners, Indigenous communities, local authorities, and industry partners to address water management concerns and build public trust.
- Represent the department in intergovernmental initiatives, watershed collaborations, and stakeholder forums.
- Mentor team members on effective communication and public engagement strategies.

7. Capital Projects & Non-Operational Support

- Provide operational input and technical oversight for capital works and outsourced infrastructure projects.
- Collaborate with ATEC and internal engineering teams to ensure constructability, environmental compliance, and quality control.
- Oversee procurement, develop service contracts, and manage work orders related to capital and non-operational maintenance initiatives.
- Monitor project progress and record all relevant data in EIMS for tracking and reporting purposes.

8. Dam Safety Management

- Coordinate dam safety activities, including DSRs, Failure Modes and Effects Analysis (FMEA), and inundation studies in alignment with regulatory expectations.
- Record inspection outcomes, risk assessments, and mitigation actions in EIMS.
- Ensure timely follow-up and resolution to address the concerns or deficiencies.

9. Financial Management

- Support the development and oversight of annual budgets for operational and capital infrastructure programs.
- Lead procurement processes, including vendor selection, cost validation, and invoice authorization.
- Mentor team members on financial planning, contract administration, and fiscal accountability in project delivery.

10. Land Management Coordination

- Identify and address land use issues affecting infrastructure operations, collaborating with Land Management teams for resolution.
- Collect field-level data and provide analysis to support infrastructure planning and stakeholder engagement.

11. Data & Asset Performance Management (EIMS/WISKI/SCADA)

- Maintain detailed digital records of infrastructure performance, inspections, and maintenance

through integrated systems including EIMS, WISKI, and SCADA.

- Analyze operational data to inform strategic planning and enhance asset lifecycle management.
- Contribute to ongoing system improvements and participate in relevant working groups.

12. Emergency Management & Documentation

- Assist in the development and continual improvement of Operations, Maintenance & Surveillance (OM&S) manuals and emergency response protocols.
- Actively participate in emergency drills, on-call rotations, and SCADA alert monitoring.
- Facilitate stakeholder awareness and preparedness through education session such as and EPP Stakeholders meeting and or exercises/sessions.

13. Team Work & Coordination

- Work closely with senior Operations Supervisor and Team Lead on daily basis daily to perform tasks as as assigned.
- Commit to a create collaborative, results-driven work environment focused on continuous improvement and public service delivery.
- Mentor team members in cross-functional collaboration, technical competencies, and effective stakeholder communication.

Problem Solving

Typical problems solved:

Operational and maintenance activities frequently require collaboration and consultation with technical experts, professional staff, departmental leadership, and a broad spectrum of local stakeholders. The incumbent must apply sound judgment and technical expertise to make informed decisions independently. Their ability to clearly and accurately communicate complex information is essential, as the outcomes of these decisions can influence water management across a vast region and may significantly impact both public infrastructure and private assets valued in the millions.

Strong communication and interpersonal skills are critical, particularly when engaging with stakeholders on sensitive matters such as agreement negotiations and conflict resolution

The primary role of this position is to coordinate a broad range of water management activities across projects that vary in scope and complexity including flood control, flow augmentation, municipal water supply, and the maintenance and enhancement of public water infrastructure. This diverse portfolio of responsibilities requires a high level of independence, adaptability, and innovative problem-solving, often performed with minimal supervision and in full compliance with provincial and federal regulations, regardless of season or weather conditions.

The role involves frequent collaboration with technical experts, professional staff, departmental leadership, and a wide array of local stakeholders. The incumbent must demonstrate sound judgment and technical proficiency in making autonomous decisions that can directly influence water resource management across a large geographic area. The ability to effectively convey complex, technical information is essential, as these decisions can have significant impacts on critical public infrastructure and private assets, collectively valued in the millions of dollars.

Strong communication and interpersonal skills are vital, particularly when navigating sensitive stakeholder interactions, negotiating agreements, and resolving conflicts.

Types of guidance available for problem solving:

The incumbent will have independence to manage all day-to-day aspects of the project operations and maintenance and stakeholder relations. For operations and potential dam emergencies the incumbent will reference Operation, Maintenance and Surveillance manuals, Emergency Management Plan documents and land management guidance. Also, guidance will be sought for problem solving and rational decision by immediate

Senior Operations & Maintenance Supervisor, Peace Athabasca Team Lead and Operations Infrastructure Manager.

Direct or indirect impacts of decisions:

Key Relationships

Major stakeholders and purpose of interactions:

Daily interactions can be internal, either directly within the team or interdepartmental, and/or external as detailed below.

Internal:

- Senior O&M Supervisor: daily interaction and direction related to operations, maintenance, and surveillance activities at associated water infrastructure.
- O&M Team Lead: day-to-day interaction and direction, performance-related conversations.
- Other Operations and Maintenance staff on Peace-Athabasca Team: daily interaction and cooperation related to Operations, Maintenance, and Surveillance.
- Operations Infrastructure Manager: frequent interaction related to larger operation related issues that require input. Understanding and assurance that conditions of satisfaction are met. Furtherance of reports as required and managing various issues as they arise.
- Operations Support (Lands, SCADA) - Lethbridge: interaction related to land issues, land management, leases, SCADA control issues, alarms, or upgrades.
- Infrastructure Technical Support (Water Project Management, Dam Safety, EIMS) - Edmonton: frequent interaction, depending on involvement, with engineering projects, dam safety activities and contracts, EIMS troubleshooting.

Other Departments:

- Alberta Transportation & Economic Corridors: frequent interaction related to capital projects and non-operational maintenance implementation.
- Alberta Forestry, Parks & Tourism (Parks, Public Lands): infrequent contact depending on coordinating land issues on Public Land or Parks land, or emergency situations/preparedness.
- Alberta Environment and Protected Areas (River Forecast, Data Monitoring, ASERT) - Edmonton: infrequent contact, typically during flood, drought, emergency, water gauge issues, or abnormal operating conditions
- Alberta Emergency Management Agency: infrequent interaction with district field officer for emergency preparedness and response.

External:

- Local Authorities: communicating operations and emergency preparedness requirements and educational opportunities to local authority stakeholders (includes councillors, administrators, and emergency management directors).
- Local Landowners: land management issues. Resolving area-based issues with stakeholders.
- Engineering Consultants: provide detailed operational and maintenance information to ensure ongoing engineering/capital work meets project needs.
- Contractors: directing work being performed by external contractors for Operational and Non-Operational Maintenance and capital rehabilitation projects.

This position is part of a 24/7 operation and is subject to standby, callouts, remote alarming and emergency response throughout the year for the Paddle and South Heart Dams, Gregg Lake outlet, Goose lake outlet, Paddle and Pembina dyking system and along with other lake stabilization system/

outlets and all public lake stabilizations structures Peace Athabasca region. O&M Technologists primary operator of Paddle River Dam leads the Paddle River Dam along with coordination ands collaboration with different stakeholders , Municipalities, RCMP, Contractors, licensed water users, dam safety regulator, infrastructure technical support staff.

Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Diploma (2 year)	Engineering	Other	Other

If other, specify:

Decisions made impact the operation of water infrastructure,dam safety, public safety,regional water supp

Job-specific experience, technical competencies, certification and/or training:

Two years diploma in Civil Engineering with 4 years experience and preference given to candidates holding a **Certified Engineering Technologist (C.E.T.)** designation; equivalent combinations of education and experience may also be considered.

- Proven experience in the **operation, inspection, and maintenance of civil infrastructure**, including:
  - Dams, canals, spillways, gates, and hydraulic regulating structures
  - Dikes, erosion control works, and river training systems
- Practical knowledge of **instrumentation, electrical, and mechanical systems** associated with water infrastructure, including motorized gate operators and hoisting mechanisms.
- Strong understanding of **dam safety regulations**, **regional water security**, and **public safety principles** associated with the ownership and operation of water control structures.
- Familiarity with **seasonal operational variances** in canal and reservoir systems, including snowmelt, flood response, and irrigation demand cycles.
- Working knowledge of **SCADA (Supervisory Control and Data Acquisition)** systems for remote monitoring and alarm response in water infrastructure.
- Ability to interpret and apply **flow charts, hydrological data**, and system operations to regulate gates and control water flow accurately.
  - Proficient in identifying, planning, and executing **preventive and corrective maintenance** programs.
  - Demonstrated ability to troubleshoot operational and equipment issues efficiently in field settings.

Behavioral Competencies

Pick 4-5 representative behavioral competencies and their level.

Competency	Level A B C D E	Level Definition	Examples of how this level best represents the job
Creative Problem Solving	○ ◉ ○ ○ ○	Focuses on continuous improvement and increasing breadth of insight: • Asks questions to understand a problem • Looks for new ways to improve results and activities • Explores different work methods and what made projects successful;	Must be able to identify issue/defficencey and recommend or troubleshoot to implement corrective action and solution by considering alternatives. Creating problem skills must leverage personal experience as well as input of team members and other support groups.

		shares learning • Collects breadth of data and perspectives to make choices	
Agility	○ ○ ◉ ○ ○	Identifies and manages required change and the associated risks: • Identifies alternative approaches and supports others to do the same • Proactively explains impact of changes • Anticipates and mitigates emotions of others • Anticipates obstacles and stays focused on goals • Makes decisions and takes action in uncertain situations and creates a backup plan	Anticipate and adjust to adopt anticipated or constant varying situations or condition in operations and surveillance while working in operations or maintenance
Systems Thinking	○ ◉ ○ ○ ○	Considers inter-relationships and emerging trends to attain goals: • Seeks insight on implications of different options • Analyzes long-term outcomes, focus on goals and values • Identifies unintended consequences	Understanding the importance and impact of activities such as inspections, operations, maintenance, and rehabilitation of water management infrastructure is essential for enhancing public safety, supporting municipal services, meeting regulatory and licensing requirements, and protecting the environment.
Develop Networks	○ ○ ◉ ○ ○	Leverages relationships to build input and perspective: • Looks broadly to engage stakeholders • Open to perspectives towards long-term goals • Actively seeks input into change initiatives • Maintains stakeholder relationships	This position works with minimal daily direct supervision which requires self initiative, organization, and performance tracking. This position supervises a staff member, so ongoing mentoring and individual development is essential to success.

Drive for Results	○ ○ ◉ ○ ○	Takes and delegates responsibility for outcomes: • Uses variety of resources to monitor own performance standards • Acknowledges even indirect responsibility • Commits to what is good for Albertans even if not immediately accepted • Reaches goals consistent with APS direction	This position requires initiative related to working independently and with a subordinate staff member to plan and schedule operational and maintenance work, and identify areas for improvement as a result of inspections.

Benchmarks

List 1-2 potential comparable Government of Alberta: Benchmark

Assign

The signatures below indicate that all parties have read and agree that the job description accurately reflects the work assigned and required in the organization.

Employee Name	Date yyyy-mm-dd	Employee Signature
Supervisor / Manager Name	Date yyyy-mm-dd	Supervisor / Manager Signature
Director / Executive Director Name	Date yyyy-mm-dd	Director / Executive Director Signature