

Ministry
Environment and Protected Areas

Describe: Basic Job Details

Position

Position ID _____ Position Name (30 characters)
Surface Water Policy Analyst

Requested Class
Scientific 3

Job Focus Policy Supervisory Level
00 - No Supervision

Agency (ministry) code Cost Centre Program Code: (enter if required)
EASX 0000K

Employee

Employee Name (or Vacant)
Vacant

Organizational Structure

Division, Branch/Unit
Policy Division, Water and Waste Policy Branch

Supervisor's Position ID Supervisor's Position Name (30 characters) Supervisor's Current Class
Senior Hydrologic Specialist Engineering & Related Level 4

Design: Identify Job Duties and Value

Job Purpose and Organizational Context

Why the job exists:

This intermediate science position provides assessments and analyses in support of Alberta's water policies so they are informed, founded and supported by reliable and credible scientific knowledge as well as broad environmental and socio-economic evidence. The position contributes to evidence-based provincial water quantity and allocation policy, including policy research, design, control, evaluation and education.

The position undertakes hydrologic-based evaluations, assessments and knowledge that inform adaptive policy. Hydrologic science and knowledge along with other environmental and socio-economic analysis, informs the department's cumulative effects management approach to water, where water policy is a system element along with planning, management, operations, approvals and compliance.

The position identifies and evaluates policy options for water management and anthropogenic impacts on water quantity against Alberta's natural hydrologic variability and supply risks. The position requires significant hydrologic, water management, scientific, and technical assessment capabilities and the ability to apply that knowledge to policy analysis and policy development.

With broad knowledge of Alberta's hydrology, water management, and environmental principles and practices, the position supports a range of policy development, assessment, and review. Core functions include:

- Water management policy and analysis regarding water supply, variability, profiling of floods and droughts, allocation and supply risk, with an awareness of issues such as climate change and land-use change.
- Understanding and applying knowledge of natural variability in Alberta's diverse ecosystems and anthropogenic impacts (i.e., assessing what is natural and separating what is human-induced) to inform water policy planning, management, and operations.
- Examining and providing advice to improve performance in Alberta's water allocation, use, efficiencies and conservation in an international, national, provincial and regional context to support objectives of reliable water supplies for a sustained economy, safe drinking water for communities, and ecosystem health.
- Understanding and conveying knowledge of Alberta's water management policy and regulatory regime including the *Water Act*, the *Environmental Protection and Enhancement Act* (EPEA), the *Alberta Land Stewardship Act*, and associated regulations and codes of practice.

Responsibilities

1. Policy Research. Provide information, analysis and advice to inform the design, implementation and evaluation of water policies and controls that support department and government goals.

Activities include:

- Applying knowledge of Alberta's hydrology and other factors to evaluate, interpret and inform water quantity and water management conditions, trends and issues. Provide scientific and interpretive support on hydrologic science, hydrologic models, water resource management models, and water use and uses with consideration of climate, land-use, and other influences.
- Identify and generate information necessary to address uncertainties and data gaps. Apply models and other original and innovative approaches to answer technical and/or policy issues.
- Compile, review and summarize technical data and information relevant to the establishment of legislation, regulations, codes of practice, guidelines, objectives and other policy instruments. Identify emerging environmental issues and trends in water policy and their potential impacts on existing policy.
- Evaluate the scientific, environmental, and socio-economic basis for conclusions or recommendations submitted to the government, in media or produced by stakeholder organizations with water management interests.
- Research water policies, programs, and practices in other jurisdictions. Identify significant water policy shifts that may have an impact on water policy and governance in Alberta.
- Maintain current awareness of academic literature and research related to hydrology and water resources. Cultivate and maintain professional contacts with peers in research and academic organizations. Analyze and evaluate data and other information on water policy from a variety of sources (e.g., academic journals, administrative publications, government studies, books, newspapers).

2. Policy Design. Develop recommendations and options to identify alternate courses of actions and the implications for water policies. Activities include:

- Provide analysis and assessments ensuring that policy options and design are grounded in and supported by sound evidence, scientific principles, and credible models and data. Provide advice and input into the development of a provincial policy agenda on surface water quantity management, and water allocation.
- Provide leadership on water quantity assessments supporting other policy and planning area-related projects (e.g. water quality, groundwater, fisheries, land-use planning).

- Provide analysis and information for research reports, position papers and other documents about water issues, policies and programs by compiling, reviewing and summarizing technical data and relevant information. Research/compare other jurisdictional requirements or processes and assist in writing comprehensive and scientifically defensible policies and standards.
- Participate in multi-disciplinary teams of professionals and in stakeholder groups to resolve complex issues and develop guidelines and procedures with broad stakeholder and regulatory support.
- Collaborate across the department, across the Government of Alberta, with other governments, and with stake-holders in conducting research and analysis to develop thorough and consistent water policies, frameworks, regulatory instruments and plans. For example: water management modelling that identifies opportunities and trade-offs; optimizes resources amongst users; minimizes overall risks; identifies or recommends mitigation or storage; describes who is impacted, how often, how much; impact to the environment and aquatic ecosystems; integration of surface and subsurface implications; integration of water quantity with water quality implications and impacts.
- Participate in and provide scientific support to multi-stakeholder committees, workshops and initiatives that provide opportunities for public and stakeholder input into departmental activities and policy development processes (eg. provide the scientific, technical and regulatory foundation to support discussion of broader societal and economic considerations brought by other participants).

3. Policy Control. Coordinate and integrate information on water policy and regulatory tools to support and align with planning and decision-making. Activities include:

- Support development and reporting of department performance measures, environmental indicators, monitoring systems and management frameworks. Support assurance and reporting metrics for policy goals and implementation; identify data, science, monitoring and indicators to assure policy controls are achieving the desired intent and indicate when policy adjustments may be needed.
- Provide scientific and technical expertise and represent the department in committees involved in developing: environmental objectives; water management plans, management frameworks; national and provincial action plans; or other water management approaches.
- Consult and collaborate with policy, planning, and operations staff to integrate and align policy design decisions with operational practices and procedures such as licenses and approvals, codes of practice and other legislative and regulatory tools.
- Participate, if required, in hearings under the Environmental Appeals Board, Alberta Energy Regulator or Natural Resources Conservation Board to provide surface water policy expertise.

4. Policy Evaluation. Develop and maintain policy-related information for the department and provide updates on the status of the water policy controls in Alberta. Activities include:

- Identify policy performance gaps, issues and unintended consequences using the metrics and indicators developed to support robust policy implementation. Assess trends (magnitude, direction) for metrics and performance measures. Identify data gaps (frequency, parameters and location of monitoring) as well as emerging risks and opportunities.
- Describe regulatory goals and requirements and develop written briefings and presentations when providing advice and interpretations.
- Identify concerns and issues relevant to the department's and government's water management mandate and evaluate issues raised by stakeholders. Analyze issues based on evidence, scientific principles, and prepare proposals and advice to address concerns.

5. Policy Education and awareness. Prepare and build the surface water policy agenda in the public and larger governance context (e.g., water advisory councils, stewardship groups, general public, Indigenous Peoples, stakeholders). Activities include:

- Develop supporting information for leadership briefings and action requests as well as in response to news reports and release of major water management-related studies. Assist in preparing key messages for executive, communications and education staff.
 - Collaborate and work closely with department staff and other specialists to further the practices of hydrology and water management and to promote consistency in practice and standards across the department (e.g., the Hydrology Community of Practice).
 - Work with communications and education business areas to develop educational and informational products and materials including documents, fact sheets, reference materials, reports and web pages. Use knowledge and education to prepare government, public and stakeholders for upcoming policy initiatives and priorities.
 - Coordinate and respond to requests for information about water policies and programs from other divisions, ministries, jurisdictions and external stakeholders and communities. Organize and attend provincial/national technical and policy workshops and conferences as required.
 - Represent the department's perspective on various committees, teams and working groups. Interact with academic, municipal, professional and research institutions (e.g., present lectures and seminars) to share information so the wider practitioner community is aware and involved in department interests.
- 6. Support other policy research, development and implementation, to support branch, division, department, and government priorities.**
- Support and lead other initiatives, as needed, to support Government of Alberta priorities.

Problem Solving

Typical problems solved:

Analyze water demands and use and the relationship to supply security and risk to inform water management planning and policies.

Evaluate and provide recommendations on the design and execution of scientifically defensible water policies.

Recommend actions to improve the management of water quantity, water quality, aquatic and riparian ecosystems and fisheries in Alberta.

Identify actions to improve Alberta's preparedness, adaptation, and resiliency in planning for extreme events (droughts, floods, climate change).

Advise on water impacts arising from urban, agricultural, energy, and industrial development.

Consider impacts of water policy on communities, industries, and individual landowners.

Types of guidance available for problem solving:

Water For Life, *Water Act* legislation, regulations, and codes of practice, *Environmental Enhancement and Protection Act*, *Public Lands Act*, policy development, land-use plans, Approved Water Management Plan for the South Saskatchewan River Basin, Alberta Wetland Policy and directives, Alberta Energy Regulator directives, transboundary agreements, department water and environmental policies, performance measures, water use reporting information, principles of cumulative effects management.

Direct or indirect impacts of decisions:

Decisions in this role will impact:

- regulatory decisions (applications of policies by department and external regulators e.g. AER))
- policy development within and outside of the branch
- legislative and regulatory updates and amendments (e.g., identify areas of improvement, red tape reduction,

general review process)

- other divisions in the department (e.g., hydrologic modeling, drought preparedness, climate change adaptation, transboundary support, land-use planning)
- other Government of Alberta ministries (e.g., water use for irrigation, energy development)
- water stakeholders including industry, municipalities, partners, and environmental groups
- Indigenous communities

Key Relationships

Major stakeholders and purpose of interactions:

Municipalities: purpose of interactions is to provide advice on new and emerging water management and regulatory issues, engagement during policy development cycle. Meeting frequency: project dependent; 3-6 times/year

Industry: purpose of interactions is to analyze and provide expert opinion on new and proposed water management solutions, provide advice to regulatory approves (AEP and AER), engagement during policy development process. Meeting frequency: project dependent; 3-6 times/year.

Federal government: purpose of interactions is bilateral discussions on regulations and national initiatives

Indigenous communities and organizations: purpose of interaction is to provide or seek advice on new and emerging water management issues, engagement during policy development cycle.

Partners and water umbrella organizations (Alberta Water Council; Watershed Planning and Advisory Councils). Purpose of interaction is policy co-development, engagement , performance measurement and and reporting, Meeting frequency: 2-4 times/year.

Environmental non-government organizations: purpose of interaction is engagement during policy analysis process. Meeting frequency: project dependent; 1-2 times/year.

Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Bachelor's Degree (4 year)	Science	Engineering	Other

If other, specify:

Specialization in surface water quantity science and/or surface water resource management is preferred.

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

Experience in hydrologic assessment in Alberta, surface water quantity/hydrologic and water resources modeling, and familiarity with hydro-climatic data. A background in water resources engineering can also support key competencies necessary for the position.

Behavioral Competencies

Competency	Level					Level Definition	Examples of how this level best represents the job
	A	B	C	D	E		
Agility	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Identifies and manages required change and the associated risks: <ul style="list-style-type: none"> • Identifies alternative approaches and supports others to do the same • Proactively explains impact of changes 	This position involves work scope and projects with high levels of uncertainty and competing interests between stakeholder groups.

		<ul style="list-style-type: none"> • 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 	Initiatives are often subject to changing priorities, timelines and resource availability.
Systems Thinking	○ ○ ○ ● ○	<p>Integrates broader context into planning:</p> <ul style="list-style-type: none"> • Plans for how current situation is affected by broader trends • Integrates issues, political environment and risks when considering possible actions • Supports organization vision and goals through strategy • Addresses behaviours that challenge progress 	The complexity of this job is high; the incumbent must have an awareness of the complexity of the surface water resource and Alberta's water management system and be able to apply that and utilize that knowledge to achieve departmental goals and outcomes.
Creative Problem Solving	○ ○ ● ○ ○	<p>Engages the community and resources at hand to address issues:</p> <ul style="list-style-type: none"> • Engages perspective to seek root causes • Finds ways to improve complex systems • Employs resources from other areas to solve problems • Engages others and encourages debate and idea generation to solve problems while addressing risks 	This program area is tasked with developing policy for highly complex issues. Solutions require technical and policy expertise from within and outside of the department. In many cases the policy issue may not be well defined or easily isolated from other issues.
Develop Networks	○ ○ ● ○ ○	<p>Leverages relationships to build input and perspective:</p> <ul style="list-style-type: none"> • Looks broadly to engage stakeholders • Open to perspectives towards long-term goals • Actively seeks input into change initiatives • Maintains stakeholder relationships 	Work scope ranges from regional to province-wide, and could also require information from national and international sources.