

Engineering and Related

APS Benchmark Listings

Sub. No.	Bench- mark No.	Dept.	Working Title Job Title	Know-How				Creativity/ Problem Solving		Responsibility		Total Points
				Prof./ Cont.	Comp. Div.	H.R. Skills	Points	%	Points	Profile	Points	
Engineering & Related 4 (Point Range 519 - 613)												
OO/E	524ER02	Infrastructure	Sr. Acoustical Engineer	F+	I	2	304	43	132	R1	152	588
OO/E	524ER03	Transportation	Geometrics Standards Specialist	F+	I	2	304	43	132	B	132	568
OO/E	524ER04	Environment & Parks	Environmental Risk Assessment Specialist	F+	I	2	304	43	132	B	132	568
OO/E	524ER05	Infrastructure	Senior Design Architect	F+	I	2	304	43	132	B	132	568
OO/E	524ER06	Environment & Parks	Groundwater Policy Specialist	F+	I	2	304	43	132	B	132	568
Engineering & Related 2 (Point Range 371 - 438)												
OO/E	522ER01	Environment & Parks	Water Administration Engineer	E+	I	2	230	38	87	R1	100	417
OO/E	522ER02	Transportation	Regional Bridge Engineer	E+	I	2	230	38	87	R1	100	417

[Back to top](#)

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OO/E	522ER03	Environment & Parks	Municipal Approvals Engineer	E+	I	2	230	38	87	R1	100	417
OO/E	522ER05	Transportation	Operations Eng.	E+	I	2	230	38	87	R1	100	417
OO/E	522ER07	Environment & Parks	Industrial Approvals Engineer	E+	I	2	230	38	87	R1	100	417
OO/E	522ER08	Energy	Geologist	E+	I	2	230	38	87	R1	100	417
OO/E	522ER10	Environment & Parks	River Flow Forecaster	E+	I	2	230	38	87	B	87	404
OO/E	522ER17	Agriculture & Forestry	Irrigation Water Management Engineer	E+	I	2	230	38	87	B	87	404
OO/E	522ER18	Agriculture & Forestry	Bio-Industrial Engineer	E+	I	2	230	38	87	B	87	404
OO/E	522ER13	Transportation	Regional Planning Engineer	E+	I	2	230	33	76	R1	87	393
OO/E	522ER14	Transportation	Traffic Data & Forecasting Engineer	E+	I	2	230	33	76	B	76	382
OO/E	522ER15	Transportation	Structural Standards Engineer	E+	I	2	230	33	76	B	76	382
OO/E	522ER16	Transportation	Rural Trans. Engineer	E+	I	2	230	33	76	B	76	382
Engineering & Related 1 (Point Range 269 - 370)												
OO/E	521ER03	Environment & Parks	Approvals Engineer In Training	E	I	2	200	29	57	R1	66	323

Last Review / Update: 2016-03-11

Opted out and Excluded Benchmark Evaluation - 524ER02

Identification Section

Working Title:	Senior Acoustical Engineer
Department:	Infrastructure
Division, Branch/Unit:	Capital Projects Division, Technical Services, Building Engineering
Reports To:	Director, Building Engineering (Senior Manager)
Levels to D.M.:	4
Job Description:	524ER02
MRS:	See the Minimum Recruitment Standards for Engineering and Related
Job Code:	524ER - Engineering and Related Level 4 (See Opted out and excluded pay plans and salary ranges – Schedule 1, Part 2-A)
Organization Chart (login required)	

Evaluation Knowledge
F+I2 304
↓
Creativity/Problem Solving
43% 132
↓
Responsibility
R1 152
↓
TOTAL JOB POINTS
588

Comments on Role

This position is the ministerial authority on acoustics of government facilities. Acoustics encompasses a broad range of subjects including architectural acoustics, mechanical noise control, community noise, sound systems, and building vibration. This is a highly specialized engineering position where there are only a handful of experts across both the private and public

[Back to top](#)

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sector in Alberta. The position develops acoustic design standards and guidelines as they relate to the construction, maintenance and upgrading of government infrastructure including schools and hospitals, courtrooms, recreation facilities, and government offices. As team leader of a small group of in-house and contract engineers and technologists, this position also actively participates in projects, providing acoustic design expertise for new construction and solving problems in existing facilities. Typical duties include conducting on-site acoustic measurement and analysis, then reporting on solutions, costs, or implications. It identifies recurring problems and implements appropriate changes in design standards. It participates in meetings with clients, project managers, property managers, and consultants, defining acoustic criteria, reviewing project drawings and specifications, and developing construction details/specifications for highly specialized or unusual projects. This position is required to maintain current technical and construction knowledge in the field of acoustics and to introduce this information into the design process. This is done by developing relationships with major manufacturers and suppliers of relevant building components and systems, evaluating acoustic characteristics of new projects or building materials, and initiating pilot projects in buildings to assess effectiveness of new construction methods or assemblies.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **F+:** Because of the high degree of specialization the position must possess Master's level knowledge on mechanical engineering and acoustics, supplemented by extensive experience architectural acoustics, mechanical noise control, community noise, sound systems and building vibration. The position is an F+ because it is the only position in the Alberta Government and is recognized for its senior expertise in diverse sound environments and is able to apply these specialties to a wide variety of situations such as construction, maintenance and upgrades. Private sector professionals consult with this position for advice and guidance. The "+" in the rating reflects the position is beyond a recognized expert in acoustics. The position is considered lower than a G level because it is not the single expert within the province, inside and outside of government. F+ most accurately represents the position because of the multiple areas of expertise that the position regularly applies to a wide variety of situations.

- **Complexity and Diversity:**

- **I:** The position designs and maintains acoustic design standards for hospitals, schools, courtrooms, recreation facilities and provincial offices. It also develops and maintains acoustic design guidelines for specialized spaces such as theatres. The diversity of needs for each of these facilities is high, however it is all related to acoustics. If the position had additional factors to coordinate besides acoustics, such as structural integrity, it would be rated beyond the "I". The "pieces" managed in the job are homogeneous in nature.

[Back to top](#)

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Human Relations Skills:

- 2: A major focus of the job is interpreting technical information and data for stakeholders, relaying design/renovation standards and recommendations to those that are involved in the construction and maintenance of the facility. Once the position develops specifications for improvements, it must then interpret the specifications in common language for stakeholder understanding and clarification. The position is considered above a level 1 because the daily interaction is above the “tech to tech” level. The position is continuously describing and illustrating in common language which merits the “2” rating.

- Creativity/Problem Solving:**

43%: This position spends the majority of its time developing innovative solutions to address acoustical needs and issues of unique structures. The solutions are as unique as the problems, and therefore little precedent or guidance exists. There is no formula or procedure or policy that can indicate how the position resolves these issues, and because it is the recognized government expert on acoustics, it does not have access to experts for assistance. As new technology becomes available, acoustical best practices and techniques and solution continuously change. The position is usually in a state of reinvention. Because of these reasons, the position is rated at the 43% level. There are components of the position that are not at this high of a level, such as conducting on-site acoustic measurement, reviewing project drawings, etc. However, the focus on developing acoustic design standards (policies) and construction details/specifications makes this a strategic role for the most part. The position is not rated as a 50% because the problems it is resolving do not have strategic implications for the province or the ministry.

- Responsibility:**

R1: The position is responsible for setting the standards for acoustics across government. It makes decisions on what will be constructed and how. As a recognized expert the position has an advisory role, but is not a B profile because the focus of the job is primarily to deliver the acoustics “program” for all government buildings in the province.

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2015-02-06

[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 524ER02

Identification Section

Working Title:	Senior Acoustical Engineer
Department:	Infrastructure
Division, Branch/Unit:	Capital Projects Division, Technical Services, Building Engineering
Reports To:	Director, Building Engineering (Senior Manager)
Levels to D.M.:	4

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

This position, reporting to the Senior Manager of Building Engineering, is the Ministerial authority on acoustics. This is a highly specialized engineering position that develops acoustic design standards and guidelines as they relate to the construction, maintenance and upgrading of government infrastructure including schools and hospitals. As team leader of a small group of in-house and contract engineers and technologists, this position also actively participates in projects, providing acoustic design expertise for new construction and solving problems in existing facilities. Acoustics encompasses a broad range of subjects including architectural acoustics, mechanical noise control, community noise, sound systems and building vibration.

This position is required to maintain current technical and construction knowledge in the field of acoustics and to introduce this information into the design process.

[Back to top](#)

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Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. Establish acoustic design standards and policy.

Activities:

Maintain technical content of Master Specifications for all building components that have specific acoustic requirements.

In collaboration with Specifications and Standards section, develop new sections of Master Specification to encompass new technology and products.

Develop and maintain acoustic design standards for various types of facilities (i.e. hospitals, schools, provincial office facilities).

Develop and maintain acoustic design guidelines for specialized space (i.e. audiometric suites, courtrooms, recreation facilities).

2. Investigate acoustic problems in existing facilities.

Activities:

Coordinate and review work of contract consultants engaged in acoustic investigations.

Conduct on-site acoustic measurement and analysis.

Report on solutions, costs, implications.

Identify recurring problems and implement appropriate changes in design standards.

Provide acoustical commissioning services for critical projects.

3. Provide technical advice for design/renovation of government facilities.

Activities:

Participate in meetings with clients, project managers, property managers, consultants.

Define acoustic criteria for various design disciplines.

Review project drawings and specifications.

Develop construction details/specifications for highly specialized or unusual projects.

Instruct contractors on requirements for critical or problematic construction.

4. Introduce current technology and construction methods into Alberta Infrastructure projects.

Activities:

Develop relationships with major manufacturers and suppliers of relevant building components and systems.

Evaluate acoustic characteristics of new projects or building materials.

Initiate pilot projects in buildings and assess effectiveness of new construction methods or assemblies.

Maintain competency and currency through ongoing review of technical journals, participation at conferences and industry seminars.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Design standards and guidelines have a significant impact affecting the construction of government facilities throughout the province.

Engineering investigations can be complex requiring a multi-disciplinary approach and extensive analysis.

Problems are often unique, requiring solutions that fall outside common practice.

Clients include other groups within Alberta Infrastructure, other ministries, regional health authorities and school boards.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

[Back to top](#)

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Mechanical Engineering degree with a minimum of 15 years experience in acoustic design. A Masters degree specializing in acoustics would be beneficial.

Eligible for membership in APEGGA.

Strong technical competence in acoustics and a good working knowledge of other engineering and architectural disciplines related to building design.

Knowledge of building codes, Occupational Health and Safety Act, Ministry requirements.

Good investigative skills.

Well developed consulting and communication skills.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Contacts are diverse and include a mix of internal clients, other government agencies and private sector. Internal contacts are primarily comprised of Project Managers, Property Management Professionals and Senior Ministry Management where the focus is on program delivery issues, budget, scope and timelines. Collaboration on design and construction requires extensive contact with private sector resources such as Architectural and Engineering Consultants, Contractors, Manufacturers and Specialty Fabricators. Implementing new and unusual construction technologies or materials requires interaction with a variety of Technical Specialists, NRC/IRC Researchers and very often representatives from Other Ministries that may have initiated the need for an innovative solution.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

Position supervises two positions:

Acoustical Engineer – Engineer and Related 1

Acoustics Specialist – Technologies 6

Last Review / Update: 2015-02-06

[Back to top](#)

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Opted out and Excluded Benchmark Evaluation - 524ER03

Identification Section

Working Title: Geometric Standards Specialist

Department: Transportation

Division, Branch/Unit: TCE/Technical Standards Branch / Highway & Roadside Planning

Reports To: Director, Highway and Roadside Planning (Senior Manager)

Levels to D.M.: 4

Job Description: 524ER03

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: 524ER - Engineering and Related Level 4
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
F+I2 304
↓
Creativity/Problem Solving
43% 132
↓
Responsibility
B 132
↓
TOTAL JOB POINTS
568

Comments on Role

The purpose of the job is to lead the development, monitoring and updating of geometric design and traffic engineering standards, warrants, measures, policies, procedures, regulations and specifications used by the department. The position

[Back to top](#)

helps create an engineering framework to optimize the cost-effectiveness of highway design and construction practices undertaken in the Province. It also provides technical support for complex projects and expert advice when requested by staff in the department or in the consulting industry; identifies geometric/safety deficiencies and the associated plan to address those deficiencies; and participates in project identification and project prioritization for the Department's annual 3-year and 5-year construction programs. Examples of typical responsibilities include revising and updating the Highway Geometric Design Guide, Engineering Consultant Guidelines for Primary Highways and Secondary Highways, presenting and publishing technical papers, reviewing collision records for all highways, intersections, curves and bridges in the province, identifying geometric deficiencies and collision problem areas and suggesting projects to enhance safety and geometry for highways.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **F+:** The position is an expert in geometric design and traffic engineering standards. It has extensive knowledge of highway design standards, warrants, practices, specifications and guidelines currently in use in Alberta and Canada. Knowledge of practices in highway design, road construction, planning, development and control, and utility engineering in other jurisdictions in Canada, the USA and other countries is required. Knowledge is gained through engineering academic training and theory (BSc in Civil Engineering is a minimum requirement), as well as significant (12-15 years) experience in traffic engineering. This position is considered an F+ because it is the "go-to" position for any geometric analyses or traffic engineering projects throughout the province. The position is also responsible for project budgeting, team leadership, process/project management and strategy development. The combination of the technical knowledge with business administration knowledge is beyond the "F" level of expertise.

- **Complexity and Diversity:**

- **I:** The position has a wide variety of projects across the province that it must manage. Issues are diverse, depending on the location in the province, level of highway/road usage, and traffic patterns. However, they are still related to a program within the ministry that is narrow in scope when compared to other department programs. (For example, Capital Planning or Highway Maintenance.) The "pieces" managed in the job are homogeneous in nature.

- **Human Relations Skills:**

- **2:** The position influences behaviour by providing its expert opinion to stakeholders on how to proceed with resolving a geometric traffic issue. It interprets highly technical information for non-technical stakeholders. A regular activity of

the position is to interact with a wide range of stakeholders possessing varying degrees of knowledge and understanding, which supports the need for the level 2 HR skill.

- **Creativity/Problem Solving:**

43%: While specific traffic or road structure problems may be known, the challenge in the position is to create a highway strategy to increase geometric safety across the province. It focuses on future solutions, where little precedent exists. There is no access to experts for assistance in determining what the real issues are and how they relate to the provincial strategy; this position is the expert who is accessed by other positions. For these reasons, the position is rated at the 43% level. It is not a 38% because positions at that rating are still operationally focused, and often have more stringent or well defined practices or procedures to rely upon when developing their solutions.

- **Responsibility:**

B: The position is a guide and advisor to stakeholders. It has a dual role of analyst (of geometric issues relating to traffic patterns) and program delivery (creating a set of standards for other engineers and stakeholders to use). The R1 and C1 profiles over emphasize both the service delivery and development/analysis components respectively.

Last Reviewed: November, 2009



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[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 524ER03

Identification Section

Working Title:	Geometric Standards Specialist
Department:	Transportation
Division, Branch/Unit:	TCE/Technical Standards Branch / Highway & Roadside Planning
Reports To:	Director, Highway and Roadside Planning (Senior Manager)
Levels to D.M.:	4

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

The purpose of the job is to take a lead role, through the use of resources from a small group of engineers and technologists and consultants if required, in development, monitoring and updating of geometric design and traffic engineering standards, warrants, measures, policies, procedures, regulations and specifications for the department. The position also handles (i) technical support for complex projects and the provision of expert advice when requested by staff in the Department or in the consulting industry, and (ii) the identification of geometric/safety deficiencies and the development of a plan to address those deficiencies, and (iii) participates in project identification and project prioritization for the Department's annual 3-year and 5-year construction programs.

The above activities create an engineering framework to optimize the cost-effectiveness of highway design and construction practices undertaken in the province. They also serve to ensure that the right projects are undertaken at the right time and that appropriate improvements are made to enhance highway safety and reduce road-user and agency costs on a network basis.

[Back to top](#)

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Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. **Develop, maintain and disseminate technical information related to geometric design and traffic engineering of highways in Alberta.**

Activities:

Revise and update the Highway Geometric Design Guide as required.

Revise and update the Engineering Consultant Guidelines for Primary Highway as required.

Revise and update the Suggested Engineering Consultant Guidelines for Secondary Highways as required.

Prepare and present (and/or publish) technical papers as required for technical conferences in this engineering field.

Prepare content for and present courses as required to update staff in consulting companies and in-house in the area of Highway Geometric Design and related subjects.

Provide expert advice as required by consultants and department staff for current or future projects.

2. **Provide input to the development of the Department's construction programs.**

Activities:

Review collision records for all highways in the province.

Review collision-monitoring sites for intersections, curves and bridges in the province.

Review geometrics for all highways in the province.

Identify geometric deficiencies and collision problem areas.

Identify suggested projects to enhance safety and geometry for provincial highways.

Provide technical data for the comparative rating of all projects within the province.

3. **Provide support for planning, design and construction work on highways.**

Activities:

Set-up the framework (terms of reference) for Preliminary Engineering activities on highways.

Identify projects or spot locations that require safety assessments.

Review the technical content and recommendations of all geometric assessment, safety assessment and railway-crossing preliminary engineering studies.

Review planning studies.

Review consultant proposals for design/construction projects and participate in selection process.

Evaluate innovative design solutions submitted by design consultants during the planning or design stages.

4. Undertake special assignments as required.

Activities:

Develop and manage a program to install shoulder and centreline rumble strips on highways to enhance safety in the most cost-effective way. This work includes hiring consultants to set-up and supervise contracts as well as evaluating the effectiveness and other impacts of the program.

Set-up a pilot program to gauge the effectiveness and public response to privately owned and operated Rest Areas along the provincial highways.

Develop a strategy to integrate electrical utilities on Secondary Highways (which are currently owned and operated by municipalities for the most part) into a provincial highway system (under the control of the province).

5. Monitor to ensure that geometric and traffic engineering standards are being adhered to.

Activities:

Review grading designs submitted by consultants.

Review Geometric Assessments of existing roads.

Perform an engineering audit of a certain percentage of projects to ensure that appropriate standards are being designed and used in construction.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Ministry wide impact regarding specific area of expertise.

An example of a complex issue that was handled by the position was 'how to economically construct a divided highway network that can operate at high speed without building interchanges'. This problem was solved by widening the highway at key intersections to allow safer operations especially by larger vehicles thus deferring the need for interchanges. This recommendation had to be 'sold' to the department's management and adopted into a policy. The implications on road-safety, land-purchasing requirements, access management and future capital expenditures for the department are significant. This is a very creative solution to a complex problem and one that is unique to Alberta due to the low-volume nature of rural highways in this province and the desire to provide for safe high speed travel without incurring the cost of constructing a freeway system.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Current membership as a Professional Engineer in APEGGA is required.

Extensive knowledge of highway design standards, warrants, practices, specifications and guidelines currently in use in Alberta and Canada. Knowledge of practices followed for highway design in other jurisdictions in Canada, the USA and other countries is an asset.

Knowledge of practices followed for road construction, planning and development control and utility engineering in Alberta is essential.

Abilities required include the following:

- ability to deal with a team of engineers and technologists;
- ability to manage consultants;
- ability to handle a number of multi-faceted tasks simultaneously and meet deadlines;
- ability to work within an organizational structure that is constantly changing;
- ability to influence external stakeholders in issues that are of benefit to the organization;
- ability to negotiate and an understanding of the negotiation process;
- ability to deal with the public in a business-like and polite manner.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Provides advice, technical expertise, direction to head office and regional staff as well as consultants and other stakeholders. In addition, must exercise skills of persuasiveness to influence direction, lead change and to ensure standards are adhered to. As the provincial expert in geometric standards, consults with experts from other jurisdictions on joint projects and provides/seeks/shares expert advice regarding geometric design standards.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A



Last Review / Update: 2015-02-06

[Back to top](#)

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Opted out and Excluded Benchmark Evaluation - 524ER04

Identification Section

Working Title: Environmental Risk Assessment Specialist

Department: Environment and Parks

Division, Branch/Unit: Environmental Assurance Division, Climate Change, Air and Land Policy Branch, Land Policy Section, Reclamation and Remediation Unit

Reports To: Manager, Reclamation and Remediation (Manager)

Levels to D.M.: 5

Job Description: 524ER04

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: 524ER - Engineering and Related Level 4 (See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation
Knowledge
F+I2 304
↓
Creativity/Problem Solving
43% 132
↓
Responsibility
B 132
↓
TOTAL JOB POINTS
568

Comments on Role

[Back to top](#)

The Environmental Risk Assessment Specialist is responsible for ensuring that department contaminated site management decisions are supported by sound assessments of human health and ecological risk and adhere to open, fair, efficient and effective public process. The position provides consultation and advice on environmental risk to regional staff, industry representatives, government departments and the public, reviews consultant proposals for management of contaminated sites, and participates in the contaminated sites designation process. A key responsibility of this position is the development of risk-based policies and practices for the management of contamination in air, soil, subsoil, surface water and groundwater. The work is performed within the framework provided by the Environmental Protection and Enhancement Act and regulations. The position reports to a manager for administrative purposes only.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **F+:** The position possesses a specialized and expert knowledge in the field of Contaminated Sites and Risk Management. Because of the high degree of specialization, the position must possess a minimum of an Engineering Degree and a Masters Degree in Environmental Studies. The position is given an F+ score because it is a specialist in multiple topic areas. For example, it serves as a department resource on environmental health related issues, leads the development of departmental risk management policy and reviews complex environmental assessments and risk management proposals. It also provides risk assessment and risk management expertise to the department. Only this position and no other within the province (1 of 1) carry out this responsibility.

- **Complexity and Diversity:**

- **I:** The work completed by this position affects a wide range of stakeholders that include other government departments, regional activities and industry within the province. In addition, the decisions made by the position have financial consequences as it influences the monies spent on various initiatives throughout the province relating to contaminated sites. The position negotiates with industry representatives on acceptance of programs for contaminated site management. In addition, it participates on federal and provincial committees developing national guidelines for managing contaminated sites. Although the nature of work is highly complex, the position is a 1 for Complexity and Diversity and not 1+ because the position does not manage on-site operations.

- **Human Relations Skills:**

- **2:** The position is continuously interpreting technical information for stakeholder use. The position is an expert in multiple areas relating to contaminated sites and is looked upon to provide that expertise in a constructive way. For

[Back to top](#)

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example, the position interprets regulatory goals and requirements and provides printed material and oral presentations on those interpretations. The position also engages in negotiations with industry representatives. These examples require the position to possess a level 2 Human Relations skill where it is required to influence and/or change behaviour and interpret technical information for external use.

- **Creativity/Problem Solving:**

43%: The position is considered a 43% for Creativity for several reasons. Firstly, and most importantly, the position possesses a strategic component. For example, the position manages the development of technical risk management policy and participates on federal and provincial committees in developing national guidelines, protocols and strategies for managing contaminated sites. The 38% profile does not possess a strategic component. Secondly, in addition to the strategic component, the position is allowed the latitude to select among policies and professional and scientific principles in addressing variable situations. For example, stakeholders look to the position to provide resources as required on environmental health related issues. In addition, the position facilitates stakeholder meetings/forums, guides risk management options and defines regulatory endpoints. These examples allow the position to freely choose which principles to employ in a given situation when working with the stakeholders.

- **Responsibility:**

B: The position focuses on both development and process and is considered a balanced profile. For example, the position acts as a department resource for client questions/requests, prepares review documents for stakeholder use and provides technical input to support future development in environmental management. These tasks support the development side of the balanced profile. On the process side, the position facilitates stakeholder meetings, engages in negotiation exercises and provides in-depth assessments of risk.

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[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 524ER04

Identification Section

Working Title:	Environmental Risk Assessment Specialist
Department:	Environment and Parks
Division, Branch/Unit:	Environmental Assurance Division, Climate Change, Air and Land Policy Branch, Land Policy Section, Reclamation and Remediation Unit
Reports To:	Manager, Reclamation and Remediation (Manager)
Levels to D.M.:	5

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

Reporting to the Manager, Reclamation and Remediation, the Environmental Risk Assessment Specialist is responsible for ensuring that department contaminated site management decisions are supported by sound assessments of human health and ecological risk and adhere to open, fair, efficient and effective public process. The position provides consultation and advice on environmental risk to regional staff, industry representatives, government departments and the public, reviews consultant proposals for management of contaminated sites, and participates in the contaminated sites designation process. A key responsibility of this position is the development of risk-based policies and practices for the management of contamination in air, soil, subsoil, surface water and groundwater. The work is performed within the framework provided by the Environmental Protection and Enhancement Act and regulations.

[Back to top](#)

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Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. **Provides risk assessment and risk management expertise to the department, other government departments, industry, the public and other stakeholders on contaminated sites issues to identify and minimize the potential risks to human health, safety, property and the environment.**

Activities:

Participates on committees, task groups and other forums to evaluate the impacts of contamination or proposed development on human health and the environment (e.g. environmental impact assessments or brownfield development).

Serves as the departmental resource on environmental health related issues.

Assesses human health and ecological risk for government projects and prepares relevant technical documents to support conclusions.

Interprets regulatory goals and requirements and provides printed material in response to public and industry inquiries and conducts oral presentations at seminars, workshops and conferences.

Facilitates stakeholder meetings/forums to review contaminated site-specific information and guides risk management options and defines regulatory endpoints to bring affected contaminated land back into productive use while ensuring protection of human health and the environment.

2. **Reviews complex environmental assessments and risk management proposals for contaminated sites to ensure that proposals comply with regulatory requirements, departmental policy and established standards.**

Activities:

Confirms that information submitted by industry hired consultants in support of proposals is relevant, accurate and supported by current scientific knowledge/principles.

Confirms that approved regulatory procedures and human health/environmental endpoints have been applied and audits calculations influencing the estimation of exposure, toxicity and risk.

Meets with industry representatives/consultants to negotiate for results that ensure that programs developed for the management of contaminated sites are acceptable to the department and consistent with environmental regulation.

Prepares review documents that are professional, unbiased and understood by all parties.

3. Participates on federal and interprovincial committees to develop national guidelines and protocols for managing contaminated sites.

Activities:

Facilitates departmental input to ensure Alberta perspectives are addressed in the national process.

Liaises with other provincial regulatory jurisdiction to coordinate and develop a consistent approach for environmental management in Canada.

Provides expert technical input to support development of national guidance documents for environmental management.

4. Manages the development of departmental risk management policy and participates in the development of regulatory guidelines, standards and Codes of Practice to ensure that proponent and departmental activities comply with legislated requirements and are consistent, fair and scientifically defensible.

Activities:

Represents the department on internal and external technical steering committees and internal policy task groups to establish relevant existing information and to identify further research needs and priorities.

Coordinates input from various internal and external sources and consults with specialists in other fields (e.g. soil specialist) to consolidate all relevant information.

Coordinates resources to conduct the research and implement results.

Prepares recommendations for management review.

Coordinates development and preparation of required guideline, standard or Code.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

As the provincial contaminated sites/risk assessment specialist, the work of this position directly impacts related regional activities across the province, other government departments (e.g. Health and Wellness, Infrastructure and Transportation, Municipal Development, Regional Health Authorities), and industry within the province.

Impact of the work can have significant financial consequences on industry through identifying environmental priorities where monies can be spent more efficiently and by providing cost-effective alternative contaminated site management options.

The work also impacts stakeholders including industry associations, environmental groups, and the general public.

Work is performed within accepted scientific principles, legislation and regulations, and within the CCME and other protocols for conducting risk assessment.

Within this framework, there is considerable professional judgment and technical expertise applied to resolve new or unprecedented situations, for example, developing remedial strategies and environmental quality guidelines for chemicals for which no strategies currently exist including determining the potential health impact and developing appropriate risk management objectives.

Work requires the coordination of input/resources from a wide range of technical and professional sources to address specific issues and in the development of policy, standards and guidelines.

Position provides expert advice and consultation to regional staff, other government departments, external agencies (CCME), and industry representatives to facilitate understanding of departmental requirements and to influence outcomes that comply with these requirements.

Work requires the ability to apply scientific principles/theories to varied situations with consideration for policy, economic, legal and social impact of actions taken (i.e. big picture perspective).

Critical assessment skills are applied in the review of industry contaminated site management proposals to establish the relevance and interpret the significance of technical information when developing recommendations for regulatory documents.

Knowledge, Skills and Abilities

[Back to top](#)

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(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Expert level of knowledge of the principles of toxicology, chemical fate/transport, human health/environmental exposure, and environmental engineering.

In-depth knowledge of human health and ecological risk assessment principles.

Working knowledge of environmental legislation, regulations, guidelines, and approvals.

Ability to integrate technical with regulatory information.

Working knowledge of the roles and responsibilities of other regulatory agencies (e.g. Alberta Energy and Utilities Board, Lands and Forests, Infrastructure and Transportation, Health and Wellness and municipalities).

Ability to translate complex scientific data into information that can be understood by the general public and to communicate effectively to meet needs of the target audience.

Computer programming skills to develop computer-based risk assessment models/programs and to utilize chemical transport models and information databases.

Research skills for locating, compiling, consolidating and interpreting scientific and regulatory information.

Eligible for membership in APEGGA.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Provides risk assessment and risk management expertise to the department, other government departments, industry, the public and other stakeholders on contaminated sites issues to identify and minimize the potential risks to human health, safety, property and the environment.

Participates on committees, task groups and other forums to evaluate the impacts of contamination or proposed development on human health and the environment.

Participates on federal and interprovincial committees to develop national guidelines and protocols for managing contaminated sites.

[Back to top](#)

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Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

Position does not supervise.



Last Review / Update: 2016-03-11

Opted out and Excluded Benchmark Evaluation - 524ER05

Identification Section

Working Title: Senior Design Architect

Department: Infrastructure

**Division,
Branch/Unit:** Capital Projects/Technical Standards/Facility
Planning & Architecture

Reports To: Director, Facility Planning & Architecture
(Senior Manager)

Levels to D.M.: 4

Job Description: 524ER05

MRS: See the [Minimum Recruitment Standards](#) for
Engineering and Related

Job Code: 524ER - Engineering and Related Level 4
(See [Opted out and excluded pay plans and
salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
F+I2 304
↓
Creativity/Problem Solving
43% 132
↓
Responsibility
B 132
↓
TOTAL JOB POINTS
568

Comments on Role

The Senior Design Architect contributes to the Division’s technical centre of excellence and supports the Department as a “knowledgeable owner” by being the “go-to” resource for the ministry in matters of architectural design. Conducts research to

[Back to top](#)

apply innovative, sustainable design; provides technical expertise for advanced building facilities; collaborates with technical experts to achieve design excellence in Alberta's facilities. This position is the ministry resource in architectural practice, code and by-law, sustainable design, object-based design, and spirited buildings and for urban, interior and landscape design. Participates in building planning and delivery methodologies.

The position also coordinates technical input and balancing needs with innovative design promoting the transfer of knowledge to stakeholders for innovative, sustainable architecture and design. Advocates for the balance between costs, needs, and innovative, sustainable design options. The Senior Design Architect influences the scope of work, appropriate architectural and technological design, and the standards of product and practice.

PUR is recognized as an expert in building design and sustainability within government and throughout the province.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **F+:** The scope and breadth of architectural knowledge required in this position supports an F+ as the position is critical in achieving the Branch's mandate as a Center of Excellence in design excellence, architecture, building design and construction. Industry comes to this position for advice in architectural design and guidance in technology and planning. The position is able to apply these specialties to a wide variety of situations such as construction, maintenance and upgrades for building design standards practices, specifications and guidelines and building construction. This is the "go-to" position for the GoA and industry on design architecture and may be responsible for projects throughout the province of Alberta. For example, the position provides advice to a wide range of stakeholders within the province on architectural practice, code and by-law, sustainable design, object-based design, and spirited buildings; their urban, interior and landscape design which affect all government departments, health authorities, school boards, agencies, and the general public. The architectural design expertise combined with expert leadership to the group as well as the practical application of architectural design to meet client business requirements exceeds the "F" level.

The Senior Design Architect must possess a breadth of expert knowledge in the profession of Architecture, including a Masters Degree along with 10+ years of work experience with institutional and commercial building planning and design standards, practices and specifications.

- **Complexity and Diversity:**

[Back to top](#)

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- **I:** The position requires a high level of strategic orientation in support of this complex, province-wide program. Position gets involved in project budgeting, team leadership, process management and strategy development. These affect and influence stakeholders, consultants, teams of professional and consultants.

Human Relations Skills:

- **2:** The Senior Design Architect supports the HR2 rating in that it influences behavior and/or opinions in addition to interpreting highly technical information for stakeholder use. Interprets building code and related information for stakeholders by providing expert design advice, revising guidelines and preparing and presenting technical information. In doing so, the position guides and influences architectural design advances in several areas.

- **Creativity/Problem Solving:**

43%: The position is unique within the ministry providing expert advice and direction on the architectural vertical infrastructure for the province. The position supports a 43% score for Creativity and Problem Solving as most solutions fall outside of common practice and the problems are unique to each structure. For example, the position instructs contractors on requirements for critical or problematic construction. This example requires the position to identify new problems and resolve these problems with timely solutions. The position also develops standards for various types of buildings. These developments are continuously changing and reinventing themselves as new technology becomes available. As a result, new problems are created. There is an analytical interpretative/evaluative thinking component to the position that falls under the 43% profile. Position develops design standards (policies) and construction details/specifications. These initiatives are considered strategic tasks in the direct and intentional application of expert knowledge in architectural design for industry development purposes, best described within the 43% creativity.

- **Responsibility:**

B: The Senior Design Architect's focus is on both development and service/program delivery and is considered balanced. For example, the position provides advice and guidance to a variety of stakeholders, responsible for building infrastructure. Position also provides stakeholders with information for further development and provides stakeholders with services and delivery of initiatives. The position is a blend of consultation and delivery.

Last Reviewed: November, 2009

 Alberta Government

Last Review / Update: 2015-02-06

[Back to top](#)

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Classification: Public

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Opted Out and Excluded Benchmark Job Description - 524ER05

Identification Section

Working Title:	Senior Design Architect
Department:	Infrastructure
Division, Branch/Unit:	Capital Projects/Technical Standards/Facility Planning & Architecture
Reports To:	Director, Facility Planning & Architecture (Senior Manager)
Levels to D.M.:	4

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

The Senior Design Architect contributes to the Division’s technical centre of excellence and supports the Department as a “knowledgeable owner” through the provision of expert architectural design leadership and advice. This position is the Ministerial authority on architectural design as it relates to province-wide government owned and supported infrastructure projects. This design expert conducts research to apply innovative, sustainable design; provides technical expertise for advanced building facilities; collaborates with technical experts to achieve design excellence in Alberta’s facilities. This is the departmental resource in architectural practice, code and by-law, sustainable design, object-based design, and spirited buildings; their urban, interior and landscape design; participating in their planning and delivery methodologies.

The position is responsible for coordinating technical input and balancing needs with innovative design; promoting the transfer of knowledge to stakeholders for innovative, sustainable architecture and design; and advocating for the balance between costs, needs, and innovative, sustainable design options. The incumbent determines: scope of work, appropriate architectural and technological design, the standards of product and practice, and overall coordination.

This position anticipates and responds to clients' evolving needs and contributes to the technical centre of excellence for the department, partner ministries, health authorities, school boards and post-secondary institutions in providing leading-edge architectural guidance, research and technical development.

This senior position supports the Director in strategic planning for the section and in the absence of the Director, represents the section in meetings with senior government or client officials.

Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. Maintain and offer professional practice and industry best practices in consultation with projects and their project team.

Activities:

Advocating for cost effective, timely, efficient, and appealing architecture and the value of design to meet the needs of stakeholders,

Conducting ongoing research of industry best practices and their application to current projects,

Taking a lead role in the project design or the role of professional resource to the process,

Consulting on project issues to resolve project delay, budget, scope or quality issues arising in the work,

Providing the design and technical expertise, and the leadership to achieve the highest quality objectives of the projects through creative problem solving in design, technology and methodology,

Participating in project design meetings at all stages of design.

2. Ensure safe facilities that comply with the objective-based Alberta Building Code and related bylaws

Activities:

Providing project teams with technical expertise such as code analysis,

Guiding advances in security, energy conservation, fire safety and barrier-free accessibility of buildings, and analyzing innovative equivalencies for compliance,

Applying understanding of the applications, procedures and equivalencies of the authorities having jurisdiction; their codes and by-laws.

3. Innovative and evidence-based decision-making in facility planning, design, technology and professional practice, and put the results into practice in owned and funded facilities.

Activities:

Advocating for process and methodology that meet GoA's requirements,

Providing Architectural design, technology and planning expertise to project teams;

commenting and seeking consensus on buildings design and technology. Planning includes the land-usage, budget and schedule dynamics, attendance at team and public meetings,

Participating in design team charters as a technical resource or as stakeholder, contributing goals and objectives,

Maintaining a high standard of current knowledge of industry and technological systems.

LEED®, PERSIST, building envelope, roofing, day-lighting, free-cooling, and a variety of engineering coordination and distribution systems are a few areas of interest.

4. Advocate and communicate in graphic, written and verbal materials; new compositions or in constructive critique of those submitted for review.

Activities:

Using written , power-point, excel, scheduler: computer-based and sketchbook skills in communicating principles of architectural technology and intent Do internal, industry and public presentations,

Drafting brief, articulate and accurate communications for approval by section architect(s), and management,

Reviewing architectural technology in reports, drawings and specifications in their many forms (BIM-Revit) for project managers and facility operators at all stages and milestones of project development.

5. Transfer knowledge of building technologies and methodologies to stakeholders and industry

Activities:

Maintaining current knowledge of design, systems, methods, and standards to ensure the highest standard of service available to our clients, projects and reviews,

Developing knowledge management strategies to ensure the pursuit of knowledge and ongoing access to research outcomes and building technology developments,

Collaborating with stakeholder groups providing education and guidance,

Contribute to departmental policy and procedures.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

The incumbent makes a significant contribution and has considerable impact on advanced design for publicly funded facilities and meeting the needs of the stakeholders.

Building value, spirit, quality, safety, health, sustainability and functionality which affect all government departments, health authorities, school boards, agencies, and the general public. Successful delivery of major government funded programs is highly dependent on well-planned facilities built to standards that fully meet their needs cognizant of design advances and technical innovation.

Diversity and scope of the Senior Design Architects' involvement in capital funded projects includes:

Researching and identifying emerging technologies and practices by establishing research and technology projects, including scope, cost, schedule, deliverables and risk management.

Advocating for architectural innovation of GoA in technical standards and guidelines for owned and funded buildings. The Senior Design Architect seeks creative solutions and “state of the art” methodologies to find balance in quality and cost and sustainability.

Prioritizing competing projects and initiatives with control.

Developing and implementing work plans, arranging client and stakeholder involvement, communicating and implementing outcomes that focus on the qualities of space created. •

Coordinating and leading a variety of multi-disciplinary team members, consultants and researchers with functional diversity, to complete projects or apply processes.

Impacts of the Senior Design Architects work includes:

Considerable impact on capital, health and learning projects through implementing planning and technical advances, standards, design, review, and leadership.

Results achieved directly impact the general public through the technical and functional success of implemented building projects. Ultimately, major public programs such as education and healthcare are dependent on standards that match their needs and result in highly functional, state-of-the-art facilities.

The Senior Design Architect represents the GoA as the “knowledgeable owner”. Ministry design and construction standards are used by other designers, institutions, governments and authorities.

The position has significant freedom to act within a broad framework of policies and guided by professional codes of practice. The incumbent functions as the “second in charge” for the unit performing acting incumbency duties for the Director when necessary and may represent the section with senior officials within and outside of GoA.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Education/Training Required:

Professional qualification as registered architect.

Post-graduate degree.

Research experience.

RAIC membership.

Membership in AAA.

LEED®AP an asset.

Equivalencies could be considered.

Work Experience Required:

At least ten years of related Canadian experience in progressively responsible positions involved in public and institutional buildings.

Extensive experience in the design of institutional and commercial facilities. Planning, construction, operation and maintenance experience being valuable.

Research experience is a definite asset. Sustainable design experience is valued.

Experience in leading and facilitating goal and results-oriented initiatives using a multi-disciplinary team of professionals and technical specialists.

Experience in fees and conditions of engagement will be applied in contracting and managing contractor services.

Knowledge Required:

In-depth professional knowledge is required in design excellence, architecture, building design and construction, preferably with a strong research and academic component.

Strong vision of innovation in the art and science of building to create a spirited and sustainable architecture.

A broad range of business and technical knowledge and experience is required. Leadership is required for new approaches to the planning, design, construction, operation and maintenance of facilities.

Skills Required:

Excellent decision-making and problem-solving skills.

Exceptional project management skills.

Team leadership skills and conflict resolution skills. Ability to interact with team members, peers and higher levels of authority on complex technical and professional issues.

Management consulting skills.

Strong networking skills to enable utilization of best available internal and external resources.

Exceptional interpersonal, collaboration, graphic, verbal and written communication, negotiation, mediation and leadership skills.

Excellent presentation skills for technology and knowledge transfer to stakeholders and industry.

Deductive reasoning and ability to convince others of the value of change and innovation.

Ability to formulate and compose working methodologies, and act upon the collection of data and synthesis, and proper reporting of results are routine responsibilities.

Leadership in the advocacy of architecture: in graphic, verbal and written communications including facilitation, mediation and negotiation.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Internal

Director, Facility Planning and Architecture – collaborate on strategic direction, design and technical solutions and advocate sustainable design.

Other Facility Planning and Architecture staff – collaborate on design issues and find technical solutions.

Senior officials of client departments and funded agencies – provide innovative, sustainable architectural design options that balance needs and costs.

Internal department staff - to discuss requests for support, provide advice and to determine course of action required.

Project managers - to resolve ongoing project issues (scope, timing, costs, etc.).

Internal committees – develop, improve, and communicate design guidelines and standards.

External

Principals and senior staff of consulting firms and research institutes – develop design innovations to apply in Alberta facilities.

Resources of other provincial governments and federal government – to share innovation in building technology and design.

Professional associations – to advocate sustainability, practice, design and technical design innovations. Boards and agencies representing the users of buildings - conduct needs assessment and programming. Stakeholder involvement and voluntary support of codes and standards – to share experience and design knowledge. Contractors and supplier groups (engineers, management consultants, consulting engineers and building science specialists – to advocate sustainability, practice, design and technical design innovations.

National committees and steering groups – to advocate technical design application and knowledge transfer.

Industry, sustainability and advocacy groups are similarly used: ACA, CSC, ASET, CaGBC, etc.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A



Last Review / Update: 2015-02-06

Opted out and Excluded Benchmark Evaluation - 524ER06

Identification Section

Working Title: Groundwater Policy Specialist

Department: Environment and Parks

Division, Branch/Unit: Oil Sands Environmental Management Division, Strategic Policy and Innovation Branch, Policy and Systems Design Section

Reports To: Policy Manager (Manager 2)

Levels to D.M.: 5

Job Description: 524ER06

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: 524ER - Engineering and Related Level 4
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)

(requires login)

Comments on Role

Evaluation
Knowledge
F+I2 304
↓
Creativity/Problem Solving
43% 132
↓
Responsibility
B 132
↓
TOTAL JOB POINTS
568

[Back to top](#)

This is a highly specialized, one-off provincial expert in the ministry who is the single authority on groundwater issues (hydrological and hydrogeological) as they relate to oil sands developments. Considering scientific, social, economic, and technical factors, the position develops and applies innovative provincial and national groundwater standards, economic instruments, strategies, and guidelines to ensure a reliable and quality supply of groundwater for Alberta's communities, ecosystems, and economy. It defines targets, performance metrics, benchmarks and sustainability indicators for environmental outcomes and groundwater management. As a specialist, the position supports department staff and government with its analysis of impacts and outcomes on groundwater, and identifies knowledge gaps for unique problems with the goal of integrating it with air, land, waste, and climate change strategies to manage the cumulative effects of oil sands development. The position reports to a manager for administrative purposes only.

Comments on Evaluation

- **Knowledge:**

Content:

- **F+:** A graduate degree in hydrogeological science or engineering is required. The position must develop and implement scientifically credible and defensible groundwater quantity and quality policies and environmental tools that drive innovation and improve environmental protection and management of oil sands development. To achieve these objectives, the position must understand the unique hydrological and hydrogeological features of oil sands regions, be an expert on groundwater issues in mining and in-situ oil sands developments province-wide, remain current on its technical knowledge of oil sands groundwater issues, and understand all aspects of oil sands development in Alberta including mining, in situ, processing and refining. The "+" in the rating recognizes the in-depth knowledge the position requires in multiple disciplines, including hydrogeology, contaminant hydrogeology, groundwater modeling, hydrology, pollution control, toxicology, process engineering, and risk assessment and management. At the "F" level, the position would only be required to have knowledge in 1 or 2 of these disciplines.

Complexity and Diversity:

- **I:** Understanding how highly technical and scientific information on groundwater issues can relate to environmental activities is the focus of the job. Position is an advisor, educator, and policy developer for the most specialized level of technical issues.

Human Relations Skills:

- **2:** Position supports, influences, and engages partners (industry, regulators, other government agencies including the Federal government and provincial natural resources-related ministries, the public, First Nations, NGO's, and senior

[Back to top](#)

managers within AENV) on complex groundwater issues. Translating highly complex, scientific analysis and recommendations into terms that the public and other stakeholders will relate to is why the position is rated as a “2”. The position develops communication and education strategies, liaises with other researchers and government agencies, and responds to public inquiries regarding groundwater and tailings issues, practices, and policies.

- **Creativity/Problem Solving:**

43%: This rating recognizes the lack of process and expertise available to assist this position in evaluating and interpreting scientific information. The position must constantly integrate new information as it arises, and develop creative approaches in resolving groundwater issues where little precedent exists. The position uses its expertise to conduct analysis including regional flow modeling, groundwater monitoring, and watershed planning on regular basis. Working with stakeholders that are diverse and often non-technical (such as the public) is an added level of complexity in resolving issues on water topics. This position was rated at the 43% level versus that of 38% because of the variety of client groups and issues this position is faced with and the high degree of innovation and judgment needed to design and assess groundwater and oil sands policy proposals.

- **Responsibility:**

B: The position is accountable for developing policies and guidelines supporting the development side of a balanced profile. The position also acts as a consultant, providing expertise internally and externally on the groundwater quality and quantity issues throughout Alberta’s oil sands activities. As well, the position advises regional staff on implementing the policies and guidelines which also supports the advisory consultative role of a balanced profile.

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2016-03-11

[Back to top](#)

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Classification: Public

Alberta

Opted Out and Excluded Benchmark Job Description - 524ER06

Identification Section

Working Title:	Groundwater Policy Specialist
Department:	Environment and Parks
Division, Branch/Unit:	Oil Sands Environmental Management Division, Strategic Policy and Innovation Branch, Policy and Systems Design Section
Reports To:	Policy Manager (Manager 2)
Levels to D.M.:	5

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

Reporting to the Policy Manager in Strategic Policy and Innovation Branch, the Groundwater Policy Specialist is the Ministerial authority on groundwater issues and oil sands developments. This is a highly specialized position that requires knowledge of the unique hydrological and hydrogeological features of oil sands regions, in addition to expertise on groundwater issues in mining and in-situ oil sands developments. This position actively participates in developing innovative regulations and tools to drive implementation of alternative approaches to protecting and managing the unique groundwater quantity and quality issues associated with oil sands development in the Province. Groundwater protection and management policies will be integrated with other media (including air, climate change, land, and waste) and strategies, with an overall goal of managing the cumulative effects of oil sands development. The Groundwater Policy Specialist builds strong relations with other divisions, provincial and federal departments, industry and other stakeholders to develop, advance and communicate regional, outcome-based environmental policies.

[Back to top](#)

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This expert, professional position is required to maintain current technical knowledge with respect to groundwater issues and the oil sands. It provides the department with the ability to consider scientific, social, economic and technical factors to:

Develop and apply innovative regional, provincial or national groundwater policies (guidelines, standards, economic instruments, codes, legislation, strategies and other tools) that maintain reliable quality supplies of groundwater for our communities, our ecosystems and our economy through all aspects of oil sands development in Alberta (mining, in situ, processing and refining);

Define forward-looking regional environmental outcomes as well as performance metrics, benchmarks and sustainability indicators to target, track and compare progress toward those outcomes;

Evaluate information from a variety of sources, and develop department and provincial government positions and action plans that reflect the Government of Alberta's interests and commitment to continually improved groundwater management, including the application of provincial and national strategies, policies and practices;

Identify policy and knowledge gaps for unique and complex problems, including working with the Science, Research and Innovation Section, scientists, researchers and stakeholders to improve our understanding and management of Alberta's environment;

Collaborate and consult with partners, stakeholders and other government agencies to identify priorities, mitigate risks, realize opportunities, and collectively understand and respond to existing and emerging environmental issues; and,

Provide specialist support to others in the department and government (including Water Strategy coordinators and regional approval engineers, planners and compliance officers).

All of these responsibilities are directed to protecting human and ecological health through setting innovative and leading-edge water policies and practices for environmentally sustainable development of Alberta's oil sands. They are in fulfillment of the department responsibilities as defined with provincial legislation (Environmental Protection and Enhancement Act and Water Act).

This work is often conducted within established strategies and frameworks, including the Canadian Council of Ministers of the Environment (CCME), inter-provincial agreements (e.g., Prairie Provinces Water Board and MacKenzie River Basin bilateral agreements), *Water for Life: Alberta's Strategy for Sustainability*, the Alberta Water Council (AWC), and regional partners (Cumulative Environmental Management Association (CEMA), Watershed Planning and Advisory Councils (WPACs), and Watershed Stewardship Groups (WSGs)).

Responsibilities and Activities

[Back to top](#)

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(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

The development and implementation of regional environmental outcomes and innovative policies to manage groundwater quantity and quality issues must be, and be seen to be delivered, as a government-wide initiative. Success is dependent on alignment of ministries across the Government of Alberta as well as on the actions of stakeholders and partners outside the Government of Alberta to holistically manage watersheds. Much of the focus on groundwater will be on regional planning and management objectives and policies for the protection of the quality and quantity of our water supplies (both surface and groundwater), but specific emphasis will likely be placed on protection of resources from in situ oil sands development, tailings management, water use conservation and efficiency, water storage options, and groundwater scenario models. Key responsibilities and activities include:

1. Develop effective environmental management systems for managing groundwater and watershed issues for all aspects of oil sands development.

Activities:

Design, review and modify the place-based environmental management systems for groundwater quantity and quality to ensure continual improvement, and work to integrate the systems with other media as part of holistic regional environmental and watershed management plans.

Develop and implement innovative policy and management tools to support and improve the efficiency and effectiveness of the environmental management and regulatory systems, including responding to and implementing government policies resulting from reports and recommendations from multi-stakeholder forums and legal hearings.

Identify possible regulatory process improvements and efficiency gains in parallel with the setting of regional outcomes, the development of new policy, and the implementation of innovative practices for groundwater and watershed management, especially related to the Environmental Impact Assessment (EIA) and watershed management planning processes.

Review provincial, inter-provincial and federal government activities that may affect groundwater management in Alberta's oil sands.

2. Develop regional environmental outcomes along with forward-looking benchmarks to measure progress toward and success in achieving them.

Activities:

[Back to top](#)

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Establish short, medium and long-term, place-based environmental outcomes for groundwater quantity and quality that have broad public and stakeholder support, and integrate and align those objectives with outcomes for the watershed and other media (air, land and biodiversity) to manage the cumulative environmental impact of oil sands development.

Set forward-looking performance metrics, global industry benchmarks and sustainability indicators to target, track and measure progress toward those outcomes, and collect data to analyze and report environmental performance (of individual operations and of the region) to the public and stakeholders, including developing means to compare performance of similar operations to drive innovation and improvements in environmental performance amongst industry.

Remain current on sampling, monitoring, modelling, reporting and data management protocols and technologies related to groundwater (regional groundwater flow modelling, point source and non-point source management, well construction, etc.).

3. Develop and implement scientifically credible and defensible groundwater quantity and quality policies and environmental tools that drive innovation and improve environmental protection and management of Alberta's oil sands development (mining, in situ extraction, processing and upgrading).

Activities:

Develop credible and defensible groundwater quantity and quality management objectives, guidelines, standards, economic instruments, codes, legislation and other policy tools for priority substances and climate change mitigation that best push meeting regional environmental outcomes, are protective of human health and the environment, demonstrate a commitment to continuous improvement, and have broad support of the public and stakeholders.

Ensure that groundwater protection and management policies are innovative and developed with full consideration of scientific, health, social, economic and technical factors, are in alignment with appropriate provincial, inter-provincial and national strategies and legislative requirements, and are integrated with other media to manage cumulative effects.

Provide alternative policy options, environmental tools and management approaches to incent industry to drive corporate operational and technological breakthroughs for environmental protection, especially as related to in situ development and tailings management.

Compile, analyze and summarize technical, economic and political opinion information from a variety of sources relevant to the establishment of groundwater management policy instruments.

Identify policy and knowledge gaps for unique and complex problems, including working with the Science, Research and Innovation Section, scientists, researchers and stakeholders to improve our understanding and address uncertainties and data gaps (through contractors, partners, or otherwise).

Identify emerging issues and regulatory alternatives of relevance to Alberta's oil sands development.

Provide technical support to department staff in implementing groundwater protection and management tools and policies.

4. **Remain current on scientific advances and new regulatory approaches applied locally through internationally in order to develop leading-edge policies and management tools that reflect the unique needs and conditions of Alberta's oil sands.**

Activities:

Ensure Alberta's environmental oil sands policies related to groundwater management reflect up-to-date scientific knowledge, emerging technology, and regulatory approaches.

Remain current in the fields of environment science and management, risk assessment, environmental data exchange, and social, economic and legal implications of environmental policies and tools.

Assist in developing relationships and networks with recognized groundwater, water and tailing management experts to realize the development and implementation of cutting-edge technologies and policies for oil sands management.

5. **Support and engage partners to best implement policies developed. Support and encourage public involvement, environmental education and awareness, and stakeholder consultation to meet commitments to fair, transparent and open development and application of policies, regulatory instruments, and environmental tools and practices. Provide opportunities for the public and stakeholders to make meaningful and effective contributions to develop and apply of groundwater and watershed objectives and policies.**

Activities:

Provide policy and technical expertise to, and represent the department on, multi-stakeholder and multi-agency committees involved in the development of environmental objectives, watershed management planning, groundwater quality and quantity and tailings management approaches related to oil sands development, and coordinate multi-stakeholder and public consultation processes in formulating departmental positions and developing implementation plans.

Work closely with the Governance and Partners Section and external partners (CEMA, LICA, AWC, etc.) to develop multi-stakeholder, shared-responsibility approaches to identify priorities, develop objectives, and deliver groundwater, watershed and tailings management policies.

Develop communication and education strategies for regional environmental outcomes and policy-making processes.

Liaise with colleagues, government agencies, researchers, and other stakeholders to support public education and consultation initiatives related to groundwater and watershed management in the oil sands.

Respond to public and stakeholder inquiries regarding groundwater and tailings issues, objectives, practices and policies related to oil sands development.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

This position will support the department by developing key environmental outcomes, policies and tools for groundwater management to address the cumulative impacts of oil sands development. This will require expert knowledge of hydrogeology in oil sands regions, groundwater issues related to oil sands developments, and insight into policy development. It will require balancing competing interests in an effective manner that results in a partner-based approach to driving and meeting environmental objectives. Effective planning, project management, technical, policy and communication skills are essential.

Areas Impacted:

This position involves the development and application of provincial, inter-provincial and national environmental standards, guidelines, objectives and policy instruments that are consistent with provincial legislation and with other departmental and governmental agreements (e.g., *Water for Life*, Groundwater Action Plan, bilateral agreements, CCME, etc.). The position must apply policy, scientific and technical principles, expertise and judgement in a number of environmental disciplines, including hydrogeology, contaminant hydrogeology, groundwater modelling, hydrology, pollution control, toxicology, process engineering, risk assessment and management, etc. to develop and apply new policy tools to protect and manage groundwater resources in oil sands development.

The policy instruments and environmental tools developed by the position may significantly affect the outcomes achieved and the type and cost of technology applied by the oil sands industry.

[Back to top](#)

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The regional policies must be integrated into provincial, inter-provincial and national initiatives, and conversely, the position must look at other jurisdictions around the world to assess best environmental tools to apply in the oil sands.

The environmental management framework must balance environmental, social, political, economic, spatial (place-based) and temporal considerations. This involves integrating policies across ministries (e.g., alignment of extraction policies with environmental protection policies), across media (integration of air, climate change, land, water and biodiversity), and across the department (e.g., working with research, systems and Regional Services staff to align priorities and implement policies). Furthermore, policies should align with the *Water for Life* strategy.

Stakeholders – Distinct stakeholders and client groups include:

Alberta Environment (Minister, Executive, Directors and Managers, Oil Sands Environmental Management Division, Environmental Assurance Division, and Environmental Management Division)

Other ministries and boards (especially Energy, Energy and Utilities Board, Sustainable Resource Development and Health) Partners (CEMA, AWC, WPACs, LICA and WSGs)

Other governments (federal, other provinces and territories)

Industry and industry associations (oil sands, mining, and forestry)

Non-government organizations

Researchers

First Nations and Métis associations

Members of the public, and

Engineering and related professional associations.

Complexity and Diversity – The development of the Alberta's oil sands is the largest industrial complex in the world, and the scale and rate of development is placing significant and complex pressures on our environment. The call for the development of effective and innovative policies to address environmental issues, including water management, ranges from local to international lobbying. This specialist will be considered the Ministerial authority on the complex hydro-geological issues associated with oil sands development. Notably, the expansion in the oil sands will mainly be by in situ extraction, which involves underground injection of steam, gas or other substances to recover the bitumen – resulting in an increasing call for protection of our subsurface groundwater resources. Dealing with such technically and technologically complex controversial groundwater issues, competing priorities, building the trust of stakeholders, responding effectively and in a timely manner, and managing a range of diverse opinions are typical challenges faced.

The issues managed are complex, inter-related and cumulative. The position must work with varying staff and partners (technical and policy) and at differing scales (site-specific to regional as well as departmental to interdepartmental). The

[Back to top](#)

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position must assure innovative tools and strategic approaches are developed to address groundwater and watershed management issues (e.g., integration of oil sands-specific programs with other government-wide policies such as *Water for Life*, provincial and regional plans, different environmental media, widely different philosophies on environmental management, etc.). Decisions made also affect risks to the health of Albertans, the health of ecosystems, and our economy.

Creativity and Problem Solving – Though numerous environmental issues have been identified through public consultation, there is no set path and process for managing the cumulative environmental impacts of oil sands development. Problem solving will require a strategic approach, drawing on collaboration with a network of government and public partners to develop and implement regional solutions that address local, national and international concerns. It requires integrating departmental activities into government-wide plans as well as provincial plans into inter-provincial, national or international initiatives. The position must apply original, innovative and timely approaches to resolve complex technical and policy issues. The position's judgement determines how objectives may be accomplished. Given the variety and diversity of actions and client groups, the position requires a high degree of creativity, innovation and judgement. Specifically, this groundwater expert will be relied upon to assess, design, and develop specific policy proposals related to groundwater and oil sands developments and will be considered the Ministerial authority on matters related to problem-solving groundwater-related issues in the oil sands.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Technical and Policy Analysis:

A graduate degree in and in-depth knowledge of hydrogeological science or engineering.

Eligible for membership in professional associations (e.g., Association of Professional Engineers, Geologists and Geophysicists of Alberta or a similar professional association) and willingness to meet professional requirements on an ongoing basis and increase knowledge through professional and continuing education opportunities.

Expert knowledge and practical hydrogeology experience in stratigraphy, regional flow modelling, contaminant fate, behaviour and transport, point source and non point source emissions and controls, groundwater monitoring, watershed planning, and the impacts on human health and the environment caused by groundwater management. General knowledge

[Back to top](#)

of risk assessment and management, tailings and waste management, water storage solutions, and industrial process engineering.

Ability to evaluate and interpret scientific and technical information, integrate new information as it arises, and develop creative approaches and provide recommendations for action to manage a wide variety of groundwater and watershed issues.

Knowledge and understanding of the roles, responsibilities and programs across the Government of Alberta, other governments, industry and partners for managing oil sands development and for setting environmental legislation and policy. Strong understanding of stakeholder issues on key groundwater and water topics.

Thorough knowledge of development of environmental objectives, policies (guidelines, standards, legislation, economic instruments or other environmental tools) and regulatory alternatives to manage groundwater (e.g., in situ techniques, alternative storage, etc.), including understanding of international, federal and provincial environmental activities, legislation and policy procedures.

Ability to evaluate policy proposals on a wide variety of groundwater and water management issues, compare with those applied elsewhere, and modify to offset potential problems in Alberta's oil sands.

General knowledge of statistics, chemistry and process engineering as well as familiarity with other relevant fields of economics, politics and social sciences. Ability to conduct or assess socio-economic or cost-benefit analyses would be of value.

Understanding of policy integration (environment, economy, society).

Knowledge of regional watershed planning processes and integrated resource management.

Knowledge of systems approaches, including the development of outcomes, environmental monitoring and performance measurement, as applied to groundwater and watershed management.

Leadership and Project Management:

Ability to think strategically, identify emerging operational issues, and develop options for resolution.

Ability to develop innovative approaches and adapt them to management of groundwater resources in Alberta's oil sands.

Leadership skills to motivate multi-disciplinary groups of professional (within and outside government) and to build confidence and credibility across government, industry and communities.

Strong organizational, time and project management skills to effectively balance multiple demands. Knowledge of planning and budgeting is an asset. Capable of managing large amounts of information effectively.

Ability to respond to changing priorities and timelines, as well as handle multiple tasks.

Knowledge and ability to effectively use a desktop computer and Microsoft Windows software.

Communication and Partnership:

Ability to establish contacts and build relations in the research and professional community to resolve scientific issues and inconsistencies encountered.

Excellent communication skills (written and verbal) to effectively communicate with specialists and non-specialists, including members of the public.

Negotiation, facilitation and collaboration skills to assist in developing partnerships and establishing a common vision.

Experience in multi-stakeholder engagement and consultation processes, and ability to work with stakeholder groups to respond collectively to existing and emerging environmental issues.

Strong interpersonal skills, and capable of working independently or in a multi-disciplinary team environment, as the situation requires.

Contacts

(Main contacts of this position and the purpose of those contacts.)

The position will work within the Oil Sands Environmental Management Division, across Alberta Environment (especially with Environmental Policy Branch and Northern Region), with other ministries/boards (especially Energy, Energy and Utilities Board, Alberta Geological Survey, Sustainable Resource Development and Health) and with other governments (most notably federal counterparts) to develop and apply policies that are aligned with national, inter-provincial, provincial and regional environmental and energy policies and integrated across media to manage the cumulative effects of oil sands development. The position will work with leading researchers (local and international experts), members of professional associations, industry and industry associations (technical staff and management from the oil sands, mining and forestry sectors), non-governmental organizations, and local communities to develop a common vision and to drive innovation to manage groundwater and water issues. They will also support the Governance and Partnerships team in working with partners (CEMA, LICA, AWC, Aboriginals, etc.) in a shared-responsibility approach to watershed protection and management.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

[Back to top](#)

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None.



Last Review / Update: 2016-03-11



Opted out and Excluded Benchmark Evaluation - 522ER01

Identification Section

Working Title: Water Administration Engineer

Department: Environment and Parks

**Division,
Branch/Unit:** Environmental Management Division, Central
Region, Approvals Section

Reports To: Water Act District Approvals Manager, Manager
2

Levels to D.M.: 6

Job Description: [522ER01](#)

MRS: See the [Minimum Recruitment Standards](#) for
Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and
salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)

(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
38% 87
↓
Responsibility
R1 100
↓
TOTAL JOB POINTS
417

[Back to top](#)

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Comments on Role

The Water Administration Engineer (WAE) is part of the regional team that oversees the administration of the Water Act in the Red Deer District. The Water Act is a significant piece of legislation that stipulates how water is to be used and conserved throughout the province, and impacts all Albertans wishing to divert, draw, or use water for private or industrial purposes. Albertans must request permission under the Act to use water from a variety of sources (lakes, rivers, groundwater, etc.) and if granted, an approval is specifying the type and amount and process/method of use is issued. The WAE conducts the technical review and issuance of approvals and licenses for projects ranging from small to multi-million dollar in scope. It also conducts inspections of water-related works, provides advice on enforcement matters, and educates the public. It also provides technical and policy advice to management on how to resolve water management issues, represents the department by participating in multidisciplinary and stakeholder committees, and provides input for human and financial resource allocations.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** The minimum education requirement is a Civil Engineering degree plus a P.Eng designation and extensive experience specializing in water resource management. As a fully seasoned engineer, the position is knowledgeable in all aspects relating to water resource management including water policy and strategy, approvals and licenses, and inspections. The “+” in the rating recognizes the breadth of activities requiring different knowledge, ranging from addressing public complaints on water management issues, liaising with local authorities, to promoting sustainable water use and cumulative impact initiatives, to advising management and acting as “Public Information Officer” during flood events. The position is one of several Water Administration Engineers for 1/3 of the province’s Water Act approvals, and is not the provincial expert or a one-of position for the ministry in this area of engineering. If it were the single position recognized for its expertise in Water Act administration, its specialized depth of knowledge would be rated an “F”.

- **Complexity and Diversity:**

- **I:** The position must understand the impact of industry and public activity on the province’s water resources. The position also manages multiple projects simultaneously, requiring it to integrate priorities and issues from different stakeholders, throughout the central region of the province.

- **Human Relations Skills:**

[Back to top](#)

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- 2: The position resolves conflicts among stakeholders as part of its work on analyzing water approvals. Often there are conflicting interests among the parties – ranging from a desire to preserve and sustain water to the need to use it for major industrial activity such as drilling or dam operations. As an information officer, the position interprets information to the public in the case of emergency floods, translating technical forecasts and information into terms understandable to communities that are potentially impacted by flooding.

- Creativity/Problem Solving:**

38%: The focus of this position is to improve water management with a team of professional engineers for 1/3 of the province. It advises management on recommendations regarding the Water Act and acts as a technical and policy expert in developing and implementing policy and procedures. The position works within the parameters of the Water Act but the complexity of the position is in the interpretation of the legislation. Requests for water approvals are diverse and can often be complex, long-term industry proposals that could have disastrous effects on the province's water if not analyzed thoroughly with full consultation with all stakeholders. For these reasons, the position is rated at a 38% - the highest level of operational thinking. The 43% rating is high as the position is not focused at all times on strategic planning and analysis of issues. It is a front-line, operational role. The 33% rating is low as it does not adequately recognize the complex nature of environmental issues regularly faced in the position.

- Responsibility:**

R1: The position is accountable for delivering the water approvals program for the central region of the province. It has regular interaction with local communities, providing education and information and interpretation of the Water Act.

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2016-03-11

[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 522ER01

Identification Section

Working Title:	Water Administration Engineer
Department:	Environment and Parks
Division, Branch/Unit:	Environmental Management Division, Central Region, Approvals Section
Reports To:	Water Act District Approvals Manager, Manager 2
Levels to D.M.:	6

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

The Water Administration Engineer is a front-line professional position that administers the Water Act, provides technical and policy advice regarding water management issues and represents the department publicly with the goal of resolving water management issues. This work is carried out within the framework of provincial legislation and the current business plan. The regulatory system is applied in a manner that ensures development proceeds in a responsible and sustainable manner, balancing economic growth and environmental protection. The position will learn and help develop a new regulatory framework that involves outcome based environmental management systems. The position contributes to the organization by maintaining a defensible order to the allocation of public resources.

Responsibilities and Activities

[Back to top](#)

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(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. **Process applications submitted under *Water Act* legislation such that authorizations are issued in a timely manner, meet the needs of the applicant and other stakeholders, are consistent, and achieve environmental outcomes.**

Activities:

Review applications, send referrals, resolve issues, and prepare authorization conditions.

Undertake compliance inspections upon request of compliance inspectors.

Communicate with members of the public regarding the impact of existing or proposed projects, including attending public meetings to discuss issues, preparing letters representing the Department's position and holding telephone conversations and meetings to resolve issues.

Provide information to proponents regarding *Water Act* and water issues.

Review annual reports from industry with respect to water issues.

Participate as needed in Environmental Appeal Board hearings.

2. **Process and review environmental impact assessment (EIA) submissions within the bounds of *Water Act* legislation to achieve EIA completion in a timely manner.**

Activities:

Participate in the early aspects of the EIA review process, i.e. development of the terms of reference and participate in workshops.

Act as a technical reviewer of an EIA with respect to the water issues.

Act as a discipline leader (water) for EIA reviews.

Participate as needed in Energy Resources Conservation Board (ERCB) hearings.

3. **Provide advice to the Minister of Environment, within the mandate of our office and *Water Act* legislation, which is complete, timely, and demonstrates proactive environmental protection and that rules and regulations are in place and enforced.**

Activities:

Prepare responses to action requests on behalf of the Minister.

Prepare briefing notes for the Minister and/or regional managers.

4. Provide advice to other departments or agencies regarding how a proposed activity is affected by Water Act legislation.

Activities:

Provide feedback with respect to the *Water Act* on applications referred by other departments or government agencies.

Provide advice on water-related conditions in EPEA and Public Lands Act approvals.

Provide technical and policy advice to managers regarding water management issues.

5. Represent the Department's position on water-related committees such that legislation and/or policies are clearly stated and correctly interpreted.

Activities:

Work with proponents/stakeholders to resolve water related issues by actively participating in working groups (e.g. end pit lakes, wetlands, etc.)

Actively participate in multidisciplinary and stakeholder committees/planning sessions.

Identify concerns and issues relevant to the Department's mandate, and issues raised by the stakeholders. Analyze the issues based on scientific principles and prepare proposals to address the issues using professional skills and professional judgement. The Water Administration Engineer's professional opinion, relevant Department policy, and business plan components, forms the basis for the Department's position on the stakeholder concerns and issues.

The position will represent the Department's position with respect to these concerns. This applies to EIA issues, compliance issues, etc.

6. Provide support within the office setting such that activities normal to our office are handled efficiently and as mandated by *Water Act* legislation and the current business plan.

Activities:

Respond as necessary to public requests.

Provide guidance/mentoring for junior and temporary staff.

Provide data to Water Act District Approvals Manager regarding staffing needs.

Provide data to headquarters and regional managers regarding regional water activities.

Assist in the investigation and resolution of infractions under the *Water Act*.

Perform work in a safe manner consistent with the Departments Occupational Health and Safety requirements and the OH&S plans.

7. **Contribute to Departmental and Regional Strategic Initiatives.**

Activities:

Central Regions Strategic Plan.

Strategic Priority Projects including cumulative effects initiatives.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

This position deals with water related issues in the Central Region (Spruce Grove). Involvement with the coal mine(s) in the northwest area of the region is also normal. This is a very large region, which creates logistical problems when concurrent projects are in different areas.

The stakeholders that the position typically deals with are industry representatives, professional peers in industry and consulting roles, government technical specialists and other government departments (federal and provincial), but can also include environmental groups, aboriginal groups, other special interest groups, individual landowners or citizens, department executive management, political representatives of local government, MLA's or representatives or representatives of MLA's offices.

Stakeholder's interests are varied, as is their ability to understand technical terms and concepts. The position must be able to understand technical concepts/issues and provide descriptions or responses to stakeholders that are at an appropriate technical level.

[Back to top](#)

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The position participates in problem solving that includes the development of strategies when no standards or guidelines exist.

This position requires the ability to apply scientific principles/theories to varied situations with consideration for policy, as well as the economic, legal and social impact of actions taken (i.e. the “big picture” perspective).

The position will have internal resilience to grow in a culture of learning, continuous improvement and a change from command and control to partnerships.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Must have a Bachelor of Science degree in Engineering plus at least 5 years of related work experience. Must be eligible for membership with the Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA). As well the position requires the following:

Knowledge of:

The *Water Act* and related regulations, codes and policies.

The EIA review process.

EPEA and the Public Lands Act.

The ERCB and their mandate.

Selected federal offices (DFO, EC, CEAA) and their mandate.

Surface water and groundwater principles and resources management.

Hydrology, hydraulics and other environmental topics.

Monitoring practices.

FOIPP.

Risk management.

Systems management.

[Back to top](#)

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Cumulative effects management.

Ability to:

Interpret technical reports and drawings.

Communicate effectively, in both written and verbal forms, with technical and non-technical groups and/or individuals.

Work independently (minimal or no supervision).

Apply professional judgement.

Responsibly represent the Department's position in public forums.

Translate highly technical information into a form understandable by the public.

Learn and adapt to change.

Skills:

Negotiation, facilitation and mediation skills.

Interpersonal skills.

Communication skills, both written and verbal.

Analytical thinking and problem solving.

Water resources technical skills.

Computer skills.

Contacts

(Main contacts of this position and the purpose of those contacts.)

The stakeholders that the position typically deals with are industry representatives, professional peers in industry and consulting roles, government technical specialists and other government departments (federal and provincial), but can also include environmental groups, aboriginal groups, other special interest groups, individual landowners or citizens, department executive management, political representatives of local government, MLA's or representatives or representatives of MLA's offices.

[Back to top](#)

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The position must be able to understand technical concepts/issues and provide descriptions or responses to these stakeholders that are at an appropriate technical level.

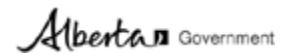
Communicate with members of the public regarding the impact of existing or proposed projects, including attending public meetings to discuss issues, preparing letters representing the Department's position and holding telephone conversations and meetings to resolve issues.

AENV management and Minister – provide advice, briefing notes and responses to action requests.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

Position does not supervise others.



Last Review / Update: 2016-03-11

Opted out and Excluded Benchmark Evaluation - 522ER02

Identification Section

Working Title: Regional Bridge Engineer

Department: Transportation

Division, Branch/Unit: North Central Region

Reports To: Regional Bridge Manager (Senior Manager)

Levels to D.M.: 4

Job Description: [522ER02](#)

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
38% 87
↓
Responsibility
R1 100
↓
TOTAL JOB POINTS
417

Comments on Role

[Back to top](#)

This position co-ordinates and administers the design, rehabilitation and construction of bridges for one of four regions in the province. There is one bridge engineer per region, and each manages approximately 20 to 25 consulting engineering agreements from \$5,000 to \$2,000,000 plus approximately 8 to 15 construction contracts ranging from \$100,000 to \$5,000,000. The position first reviews functional planning, bridge inspection and assessment reports, and completes site visits to identify and determine the scope of the project. It then prepares Terms of Reference within the required schedule for the project and manages questions and concerns from consultants during the proposal preparation period. As a member of Consultant Selection Committee, it reviews and evaluates consultant proposals providing recommendations to the Contract Review Committee (CRC) for the award of the project. Once the project is underway, the position monitors progress of construction to ensure the work of consultants and contractors are in accordance with department guidelines, standards, policies, specifications and contract requirements, and all regulatory permits, approvals and authorizations issued for the project are adhered to. All engineering work is reviewed throughout all phases of the project. The construction phase of the project is monitored to ensure the work is completed safely and in accordance with department requirements and contract specifications. Public concerns and problems related to bridge activities are addressed, and the position participates in the final inspection of the project. Lastly, the position identifies technical or operational issues that will be addressed in future improvements.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** Requires technical expertise in bridge planning, design, and construction, as well as department guidelines and standards for construction of road infrastructure. Technical experience, and structural engineering knowledge and background are required. The position must be knowledgeable enough to review and evaluate engineering services and contracts completed by professional consultant engineers, provide meaningful feedback, and provide technical input and alternatives in the solution of complex engineering problems. As a professional engineer, the position must remain current in its knowledge of bridge engineering, and constantly seeks to further develop and maintain expertise in bridge engineering, including planning, design, construction and project management, through applied experience, courses, seminars and self-study. The position is a full working level professional engineer, recognized at the E+ level for its ability to apply theoretical knowledge in engineering to a province-wide construction program. The position is not an "F" as it is one of 4 position in the ministry performing similar work, and the "F" is intended to recognize one-off specialists who have deep knowledge and expertise in one or more areas (such as bridge plus road construction). The position displays understanding in other areas such as hydro technical, environmental and structural engineering but is not the single expert in these multiple areas.

[Back to top](#)

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Complexity and Diversity:

- **1:** The position must integrate the interests of a wide range of stakeholders including engineering consultants, contractors, landowners, municipalities, railways, the public, and provincial and federal agencies/departments when managing construction projects. Coordinates approximately 20 to 25 consulting engineering agreements ranging from \$5 000 to \$2,000,000 and approximately 8 to 15 construction contracts ranging from \$100,000 to \$5,000,000. Projects include major river crossings and highway interchange structures containing complex and multi-disciplinary elements such as hydro technical, environmental, structural, materials fabrication and construction engineering. An awareness of the work of other construction engineers within the department is also required; the position liaises with peers involved in road projects, preparing the bridge component of the Terms of Reference for combined road and bridge projects.

Human Relations Skills:

- **2:** The position provides technical support and advice to municipalities, co-ordinates public advisory of bridge construction activities with various stakeholders, and serves on technical committees as a regional representative providing expertise. These tasks require the position to translate technical information into terms that non-technical stakeholders can understand. This is especially important as much of the advice given by the position is regarding public safety; it is essential that there is clear communication and strong influence from the position. Additionally, the position assists in the resolution of disputes between contractors, consultants, landowners, municipalities and stakeholders. When projects are complete, the position evaluates the consultant's work and assigns performance ratings. This merits a "2" rating in HR skills. If the position communicated only to a technical audience, it would be rated as a "1".

- **Creativity/Problem Solving:**

38%: Coordination and leadership of engineering projects and evaluation of the structural integrity of the bridges are completed within stringent codes, regulations and policies that influence the eventual solutions. The position does not always have a huge element of innovation and creativity in reviewing the work done by other consultants. Position is responsible for troubleshooting issues as they relate to a wide variety of projects with a focus on safety, timelines, and budget requirements, supporting the 38% rating. The analysis in developing the project plans and the use of technical and scientific principles to perform the work is at a senior level. The position works with a great deal of independence as one of the few bridge engineers. Position is rated above 33% as it goes beyond performing analysis to translating that analysis into recommendations.

- **Responsibility:**

[Back to top](#)

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R1: The focus of this position is to ensure that bridges are constructed or upgraded according to standards across Alberta. It is involved in the project planning and analysis, but for the most part is managing projects with a defined deliverable. The position has accountability to sign off the final review of engineering services provided by the consultants, and is responsible for selecting consultants working on sole source and service agreement assignments.

Last Reviewed: November, 2009



Last Review / Update: 2015-02-06

[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 522ER02

Identification Section

Working Title:	Regional Bridge Engineer
Department:	Transportation
Division, Branch/Unit:	North Central Region
Reports To:	Regional Bridge Manager (Senior Manager)
Levels to D.M.:	4

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

Reporting to the Regional Bridge Manager, the Regional Bridge Engineer coordinates and administers the design and construction of the Region's bridge construction and rehabilitation program consistent with national codes and department guidelines, standards, policies and technical and functional requirements.

The Regional Bridge Engineer provides the leadership to ensure the safe, efficient and timely delivery of the projects by consultants and contractors.

Responsible for the selection, assessment and evaluation of consultants, all engineering work is reviewed throughout all phases of the project. The construction phase of the project is monitored to ensure the work is completed safely and in accordance with department requirements and contract specifications.

[Back to top](#)

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Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

- 1. Consultants are engaged to provide a full range of engineering services for the delivery of the Region's bridge construction and rehabilitation program.**

Activities:

Assist Regional Bridge Manager in the planning, programming and prioritization of bridge projects.

Review functional planning, bridge inspection and assessment reports and complete site visits to identify and determine the scope of the project.

Prepare Terms of Reference within the required schedule for the project and act as a resource for questions and concerns from consultants during the proposal preparation period.

Liaise with Department Construction Engineers and prepare the bridge component of the Terms of Reference for combined road and bridge projects.

Review and evaluate consultant proposals and serve as a member of Consultant Selection Committee to provide recommendations to the Contract Review Committee (CRC) for the award of the project.

Provide comments and concerns for feedback to unsuccessful consultants and identify items for clarification and negotiation with the successful consultant.

Select consultants for sole source and service agreement assignments, review and evaluate proposals and provide comments and recommendations to Regional Bridge Manager.

Review and evaluate engineering services provided by consultants

- 2. Bridge and culvert structures are constructed in accordance with department standards and specifications.**

Activities:

In the absence of the project sponsor, chair and record the minutes for construction pre-commencement meetings.

Coordinate public advisory of bridge construction activities with department's Communication Branch, Motor Transport Branch, road construction, maintenance and operations staff.

Monitor progress of construction to ensure the work of consultants and contractors are in accordance with department guidelines, standards, policies, specifications and contract requirements.

Ensure all regulatory permits, approvals and authorizations issued for the project are adhered to.

[Back to top](#)

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Ensure traffic accommodation measures are in place and maintained throughout construction period for the safety of the traveling public.

If required, assist in the resolution of disputes between contractors, consultants, landowners, municipalities and stakeholders.

Address public concerns and problems related to bridge activities.

Participate in the final inspection of the project and advise the Regional Bridge Manager of any significant problems or concerns.

3. Engineering services provided by consultants are in accordance with department guidelines, standards and policies.

Activities:

Ensure consultant submissions for the conceptual design, preliminary engineering, choose design, detailed design and tender documents are complete.

Review all engineering reports, designs, drawings and tender documents to ensure the work completed by consultants meet department guidelines, standards, policies and provide the best value.

Review all applicable permits, approvals, authorizations, licenses and certificates obtained for the project by the consultant.

Ensure work is within scope, meets department requirements, is practical, constructible, maintainable and cost effective.

Liaise with and provide technical support and advice to municipalities.

Complete final review of engineering services provided by consultants and sign off recommending acceptance of the work.

4. Department's technical guidelines, standards, specifications and policies are reviewed and updated on a regular basis to ensure their effectiveness, efficiency, practicality, achievability and cost effectiveness.

Activities:

Develop and maintain individual expertise in the area of bridge engineering, including planning, design, construction and project management, through applied experience, courses, seminars and self-study.

Identify technical or operational issues that need to be addressed for future improvement.

Provide input during the revision and enhancement of department guidelines and manuals.

Participate and contribute in cross-functional department teams to develop design and construction standards and specifications.

Serve on technical committees as Regional representative such as Bridge Inspection and Maintenance, Bridge Inspection Certification, Bridge Construction Specifications Review, Infrastructure Management System and Standards and Design.

5. Regional bridge projects are coordinated, administered and delivered effectively, on schedule and on budget.

Activities:

Administer and coordinate the delivery of bridge projects from project inception to final completion.

Ensure department funding estimates are accurate and up-to-date.

Ensure project milestone schedules are submitted, tracked and met.

Prepare Project Management Branch (PMB) agreements and bridge authorizations for Local Road Authority (LRA) bridge projects.

Review all project expenditures including consultant invoices, municipality payments, contractor progress estimates and provide recommendation for payment.

Administer consultant agreements and review and evaluate consultant Staff Substitution and Change of Scope requests, providing recommendations to Regional Bridge Manager for acceptance or rejection.

Review and evaluate the need and cost of extra work orders and provide recommendation to Regional Bridge Manager.

Ensure the receipt of all project deliverables from consultants and ensure delivery of corporate information to the department's Technical Standards Branch.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Includes the coordination and administration of approximately 20 to 25 consulting engineering agreements with upset limits ranging from \$5 000 to \$2,000,000 and approximately 8 to 15 construction contracts ranging from \$100,000 to \$5,000,000.

Projects include major river crossings and highway interchange structures containing complex and multi-disciplinary elements such as hydro technical, environmental, structural, materials fabrication and construction engineering.

Technical experience, knowledge and background is required to review and evaluate engineering services, completed by professional consultant engineers and provide meaningful feedback.

Provide technical input and alternatives in the solution of complex engineering problems.

Stakeholders include consultants, contractors, landowners, municipalities, railways and the general traveling public.

Other significant stakeholders include Provincial and Federal Environmental regulatory agencies.

Department programs include Bridge Construction Programs for primary, secondary, rural and local roads, Bridge Maintenance Programs for primary, secondary, rural and local roads and special department initiatives such as the North-South Trade Corridor Bridge Construction Program.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

B.Sc. in Civil Engineering.

Membership in APEGGA with ultimate designation of Professional Engineer.

Extensive knowledge and experience in bridge engineering including planning, design, or construction.

Knowledge of department guidelines, standards, specifications and policies including Guidelines for Bridge Operations, Guidelines for Bridge Structures, Navigable Waters Protection Act Procedures Manual, Railway Grade Separation Approval Procedure Manual, Engineering Consultant Guidelines for Primary Highway Projects, Engineering Consultant Guidelines for Secondary Highway Projects, ASTM Standards, CSA Standards, Bridge Maintenance Standards for Local Roads, Bridge Construction Specifications, Standards Specifications for Highway Construction, Contract Administration Manual, Bridge Inspection and Maintenance Manual, Project Administration Manual, Regional/District Tendering Procedures, Contracts Branch Tendering Procedures and Design Guide for Traffic Barriers.

Strong and effective analytical and problem solving skills.

[Back to top](#)

Strong and effective written and verbal communication skills.

Strong and effective interpersonal, leadership and conflict resolution skills.

Strong and effective organizational, time and project management skills.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Regional and Head Office bridge staff to provide/seek technical engineering advice, to discuss project status, discuss program delivery, project status; Engineering consultants and contractors for the purposes of providing guidance, reviewing and monitoring projects underway or being planned, providing engineering expertise on projects; Environmental stakeholders to ensure compliance with standards; the public to deal with issues, inquiries and complaints around bridge projects.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A

 Alberta Government

Last Review / Update: 2015-02-06

[Back to top](#)

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Classification: Public

 Alberta Government

Opted out and Excluded Benchmark Evaluation - 522ER03

Identification Section

Working Title:	Municipal Approvals Engineer
Department:	Environment and Parks
Division, Branch/Unit:	Environmental Management Division, Northern Region, Approvals Section, Municipal Approvals Unit
Reports To:	Municipal Team Lead (Manager)
Levels to D.M.:	6
Job Description:	522ER03
MRS:	See the Minimum Recruitment Standards for Engineering and Related
Job Code:	522ER - Engineering and Related Level 2 (See Opted out and excluded pay plans and salary ranges – Schedule 1, Part 2-A)

[Organization Chart](#)

(requires login)

Comments on Role

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
38% 87
↓
Responsibility
R1 100
↓
TOTAL JOB POINTS
417

[Back to top](#)

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Alberta

This position establishes the environmental management requirements for municipal facilities and activities. Drinking water, wastewater, and waste systems for municipalities across the northern region of Alberta have specific treatment requirements, monitoring and reporting measures to the ministry as per the Environmental Protection and Enhancement Act (EPEA). This position reviews and evaluates the approvals and registrations for water treatment, solid waste management facilities, wastewater treatment, and storm drainage systems to ensure that safe drinking water is available in adequate quantities, and that the facilities are operating in accordance to their limits and approvals. Once issued an approval or license, a facility must then stay within the limits and parameters or they face charges of non-compliance and threaten the health of the public. This position works with water treatment plant operators in municipalities to develop and implement safe drinking water programs as outlined in the Water for Life strategy (a provincial government, cross-ministry initiative led by Environment), training operators on quality assurance procedures, and developing site-specific programs. It is also a lead for the “Source to Tap” protection activities, working to address raw water contamination issues and educating the public on how their activities affect drinking water quality. The position also works to mitigate public health emergencies, working with authorities to develop emergency response procedures when a “boil water advisory” may be required. Another major responsibility of the position is to develop effective compost, landfill, and recycling strategies with municipalities, assessing problems, identifying abatement strategies, and recommending technologies that would enhance waste management systems.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** Position requires an environmental engineering or civil engineering degree and knowledge of physical, chemical, and biological processes for water and wastewater facilities, storm water management, and landfill and compost facility design and operation. As an advisor to the public, elected officials, and internal technical staff within the ministry, the position is recognized for its ability to assess various facilities and determine the appropriate approval limits that will not negatively impact the environment surrounding the municipality. The position is scored as an E+ because of the depth of knowledge that is required in water quality and municipality-specific issues. The position is one of several Municipal Approvals Engineers in the Northern Region, and is not the single provincial expert or a one-off position for the ministry in this area of engineering. If it were the single expert in municipal approvals, its recognized, specialized depth of knowledge would be rated an “F”.

- **Complexity and Diversity:**

- **I:** The position must integrate a variety of municipal activities across ½ of the province, ranging from technical reviews of approvals to participating in cross-ministry initiatives on water quality (such as Water for Life and “Source to Tap”

[Back to top](#)

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Classification: Public



strategies), to training water facility operators, the public, and elected officials on various water quality initiatives and incident prevention. The integration of all of these activities is appropriately reflected with the 'I' rating as they are all related to water quality issues in municipalities, a homogeneous subject.

Human Relations Skills:

- **2:** The position has a significant role in educating and training non-approvals staff including the public on water quality issues and procedures. Translating the technical issues into messages that the public and municipal facility operators can understand merits a “2” rating. The position is not rated as a “1” because this represents the “tech to tech” communication between two parties that possess similar education, technical expertise and understanding on a given issue.

- **Creativity/Problem Solving:**

38%: The position operates at the highest level of operational thinking as it independently assesses the impacts that major water quality and environmental activities will have on a municipality and its citizens. It is called upon as the technical expert in many instances by various stakeholder groups to examine the impacts of and recommend whether a municipal approval can be granted or renewed. It also designs processes for facilities to treat drinking water, which can be a complex analysis due to the need to seek water resources in areas impacted by drought or shared raw water sources. It is not a 43% because the focus of the job is not to develop long term strategies or analyze scientific data. The job is located within a region of the province and exists to ensure that municipal activities are legal and environmentally safe and appropriate.

- **Responsibility:**

R1: The position is a regionalized professional providing technical expertise to a wide variety of stakeholders. It is accountable for specific deliverables: establishing treatment, monitoring and reporting requirements for municipal drinking water, wastewater, and waste systems. The position is not a “B” profile as its consulting component is not the focus of the position.

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2016-03-11

[Back to top](#)

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Alberta

Opted Out and Excluded Benchmark Job Description - 522ER03

Identification Section

Working Title:	Municipal Approvals Engineer
Department:	Environment and Parks
Division, Branch/Unit:	Environmental Management Division, Northern Region, Approvals Section, Municipal Approvals Unit
Reports To:	Municipal Team Lead (Manager)
Levels to D.M.:	6

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

The Municipal Approvals Engineer is responsible for establishment of treatment, monitoring and reporting requirements for potable water, wastewater and waste systems, review and evaluation of municipal discharges from wastewater and storm sewer facilities, proper management and disposal of solid waste generated from communities and protection of public health by ensuring availability of safe drinking water in adequate quantities. These duties are performed within the parameters of the Alberta Environmental Protection and Enhancement Act and policies of the Department.

This position requires an in-depth technical knowledge of areas involved and good verbal and written communication skills to represent the Region/Department in public forums and interaction with other stakeholders such as technical experts and owners/operators of facilities and advise elected officials. It also requires the ability to cope with emergency situations and integrate as a member of the response team.

[Back to top](#)

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Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. **Ensure effective regulation of municipal facilities within the framework of the legislative requirements by issuing approvals, renewals, amendments and registrations for water treatment, wastewater treatment, storm drainage systems and solid waste management facilities.**

Activities:

Perform technical and administrative evaluation of applications and establish project-specific conditions, performance limits, monitoring and reporting requirements, and prepare final approval documents.

Work closely with municipal facility owners and operators to foster better understanding of approval requirements and to develop and improve emergency response procedures.

Review applications for potable water and sanitary sewage facilities serving industrial plants and propose suitable clauses to be included in their approvals.

Evaluate appropriate and applicable technologies and research scientific literature and practices to develop approval standards for new technologies and management practices for which there are no Alberta standards/guidelines in place.

Participate in municipal council, public, and multi-stakeholder committee meetings.

Mediate concerns from the public and other stakeholders.

2. **Develop and implement safe drinking water program as outlined in Water for Life strategy.**

Activities:

Continually improve drinking water quality and waterworks operations.

Assist operators to optimize and operate water treatment plants “beyond compliance” such that the best possible water quality is produced for consumers. Train operators on how to review laboratory reports and quality assurance procedures.

Conduct on-site monitoring, evaluate treatment process components and develop site-specific follow-up program.

Analyze and evaluate water treatment plant design to determine if upgrades or modifications are required to meet performance criteria outlined in standards and guidelines.

Interpret bacteriological, chemical and physical monitoring results when complaints arise or when requested.

Foster installation of on-line monitoring and remote control systems for water treatment plants to increase the plant reliability and operational flexibility in terms of water quality and quantity.

Develop, maintain and update water system performance and evaluation database, and document areas of concern, follow-up initiated and progress.

Initiate and participate in activities to enhance the individual knowledge in the subject area as well as the overall team.

Initiate and lead “Source to Tap” protection activities.

Work with external and internal experts to develop watershed management and quality enhancement plans to address contamination issues of raw water source.

Facilitate Source Protection Plans to mitigate contamination of raw water and support Watershed Protection and Planning Groups.

Educate the public on how their activities can affect their drinking water quality.

Mitigate public health emergencies.

Work with Public Health authorities to develop and update emergency response procedures when a “boil water advisory” may be required.

Provide advice on Operation Plans to ensure proper maintenance and emergency preparedness.

Work closely with consultants, owners and operators to resolve situations when a “boil water advisory” is issued.

Initiate and lead activities to ensure restore safe drinking water for the consumers.

Assist compliance staff to ensure availability of database to other appropriate authorities and also assist in interpretations.

3. Conduct abatement activities at waterworks, wastewater, compost and landfill facilities.

Activities:

Work with elected officials and operators to plan and develop municipal services strategies.

Initiate studies and pilot work to ensure applicability of technologies under specific conditions.

Provide direction on process operations and controls, facility modifications and treatment changes, chemical usage, etc.

Work with Regional Health Authorities, provincial laboratories and other provincial departments to ensure public health protection, and promote access to funding program for municipal facility upgrades.

Work with local Authorities to develop and implement effective regional recycling and waste management strategies.

Review annual, monthly and special reports for technical compliance and initiate necessary follow-up; e.g., enforcement action or education.

Co-ordinate technical seminars, training sessions and workshops for elected officials, operators and the public.

Regularly visit municipal facility to conduct process and performance audits, assess problems, identify abatement strategies and address improvements in a timely, consistent and economic manner.

4. Provide technical support to internal staff and external stakeholders to ensure effective community level service in the region, protection of environment as well as health and safety of the public.

Activities:

Prepare briefing notes and responses to action requests from the Minister's and Deputy Minister's Office.

Work closely with Industrial Approval Engineers when issues arise at potable waterworks and domestic wastewater treatment plants in approved industrial facilities.

Liaise with Geo-Environmental Team regarding site assessments and groundwater monitoring requirements.

Provide technical information and support to the Compliance Branch.

Participate in interdepartmental and external committees as a technical resource person.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Internal and external areas of the job impacts:

Municipal approval, safety of drinking water, waste management and abatement, and technical services are provided to the general public, consultants, provincial agencies (Alberta Health, Alberta Transportation and Municipal Affairs) and community personnel (operators and administrators), selected industries and AENV staff.

The job varies from stand-alone facilities to extensive regional systems. Many systems are small and isolated while other systems belong to an extensive network centered around the Edmonton and dependent municipalities.

The geographic region is extensive, covering almost half of the province.

Diversity, complexity and creativity of the job:

The work is very diverse and creative in technology, from standard design to advanced technologies, such as ozone, biological activated carbon (BAC), disinfection by-product control, biological nutrient removal (BNR), UV disinfection,

[Back to top](#)

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membrane technology, and waste compost, recovery and disposal; from operator training, data assessment to assistance in development of standards and guidelines.

Creativity is involved during finding solutions to unique situations.

The work is complex and diverse in water treatment technologies due to very organic poor quality raw water sources; in developing regional waste and water strategies and systems that resolve health, environmental, emergency and economic issues in a regional or trans-regional context; in data management during development of regional supervisory control and data acquisition (SCADA) systems.

The complexity/diversity is due to the need to seek alternate water sources caused by drought and to share common raw water sources.

The work is involved in making quick decisions during emergencies, such as floods, fire, boil order, disinfection, and breakdown alone or with other departments, especially Alberta Health.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

The position requires an engineering degree in Civil or Environmental Engineering, preferably at Masters level, and eligibility for membership in APEGGA along with extensive related experience. In addition, the position requires the following:

Broad knowledge of:

physical, chemical and biological processes and what constitutes “good engineering practice” in the municipal field.

water and wastewater treatment plant unit processes and operational capabilities, storm water management, landfill and compost facility design and operation, including drawbacks.

quality assurance/quality control relating to sampling, testing, and interpreting analytical data.

legislation, standards, guidelines and other resource material to make decisions, justifying recommendations and resolving conflicts.

new and emerging treatment technologies in the field of potable water, wastewater, landfill and compost.

contaminant hydrology principles related to wastewater and landfill design and operation.

[Back to top](#)

departmental policies and directives.

risk assessment related to public health issues.

Ability to:

develop terms of reference, interpret and evaluate technical proposals, monitoring data and engineering drawings and identify deficiencies.

apply municipal engineering principles and knowledge to existing or proposed facilities independently without outside advice, with minimal or no supervision.

apply professional judgement while maintaining a common-sense approach.

evaluate technological and economical viability of proposed projects.

deal with diversified stakeholder groups (public, elected officials, operators).

manage significant workloads and independently prioritize to meet the department's goals.

respond to emergency situations (plant failure, bacteriological threat) and co-ordinate the appropriate corrective measures.

Skills:

good listening, writing and verbal communication skills.

creative and technical problem solving skills, including the ability to evaluate and oversee pilot testing and process optimization.

negotiation and conflict resolution skills through analytical thinking and problem solving proficiency.

computer skills including database queries, spreadsheet development, modelling, multimedia presentations.

Training:

defensive driving and standard first aid.

continuing education requirement as a registered member of APEGGA.

training and seminars for emerging technologies in water, wastewater, solid waste treatment, storm water management, and advanced computer skills (e.g. modelling), as required.

Contacts

(Main contacts of this position and the purpose of those contacts.)

[Back to top](#)

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Represent the Region/Department in public forums and interaction with other stakeholders such as technical experts and owners/operators of facilities and advise elected officials.

Municipal facility owners and operators to foster better understanding of approval requirements and to develop and improve emergency response procedures

Public Health Authorities to develop and update emergency response procedures when a “boil water advisory” may be required

Elected officials and operators to plan and develop municipal services strategies

Regional Health Authorities, provincial laboratories and other provincial departments to ensure public health protection, and promote access to funding program for municipal facility upgrades

Municipal council, public and multi-stakeholder committees

General public, consultants, provincial governments, community personnel, AENV staff, etc.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

Position does not supervise others.

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Last Review / Update: 2015-02-06

[Back to top](#)

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Classification: Public

 Alberta

Opted out and Excluded Benchmark Evaluation - 522ER05

Identification Section

Working Title: Operations Engineer

Department: Transportation

Division, Branch/Unit: Transportation and Civil Engineering, Southern Region

Reports To: Operations Manager, (Senior Manager)

Levels to D.M.: 4

Job Description: [522ER05](#)

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
38% 87
↓
Responsibility
R1 100
↓
TOTAL JOB POINTS
417

Comments on Role

This position is responsible for the delivery of the highway maintenance program, roadway development control program and contractor performance management program of primary highways within the City of Calgary boundaries, a high volume area

[Back to top](#)

of the province. It is the Southern Region's first line of contact with the City of Calgary's transportation department for roadway operations engineering as per the province's master agreement with the City of Calgary. It recommends improvements in traffic design, signals, lighting, signage, pavement markings, and geotechnical and slope stability problem areas. The position prepares estimates and compiles quantities to develop contracts with consultants who will improve roadway operations. It reviews field designs to ensure conformity with current standards. It works with the maintenance contractor to ensure the maintenance and development of safe highways is delivered in a cost effective and defensible manner through planning, budgeting, inspection and quality assurance. The position also authorizes and schedules direct emergency maintenance work as required to ensure that the north/south corridor within the jurisdictional boundaries of the City of Calgary remain operative. It also assists with the proactive planning for future engineering projects and proposals.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** The position is a full working level professional engineer that is a specialist in roadway operations, recognized at the E+ level for its ability to apply theoretical knowledge in engineering as the only road operations program engineer for the Calgary district. As an advisor for contractors and other engineering professionals, the position needs to have a broad knowledge of all urban transportation issues and the theories and science behind it. The position is not an "F" as it is one of several other similar positions located in other regions of the province performing similar work, and the "F" is intended to recognize one-off specialists who have deep knowledge and expertise in one or more areas (such as bridge plus road construction and operations). The City of Calgary has the highest traffic volumes on the roadways of all regions in the province, and managing the political sensitivity is an added skill set for the position.

- **Complexity and Diversity:**

- **I:** The tasks the position undertakes are all related to road operations and infrastructure, a specialized, yet homogeneous area of engineering. Although the complexity and diversity appears to be high in the variety of activities performed in the position, it is considered a 1 and not 1+ because it does not need to integrate the activities of several diverse programs. All activities fall under the same portion of the highway maintenance program.

- **Human Relations Skills:**

- **2:** The position operates at the Human Resource level 2 because it regularly resolves issues relating to road maintenance in a high traffic volume area of the province. It must deal effectively and amicably with public concerns, attending meetings with various local authorities and interested groups as a departmental representative. The

[Back to top](#)

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Classification: Public



position liaises with businesses regarding bridge rehabilitation work, which requires interpretation of technical information for the benefit of the public and bridge businesses. In emergencies, it authorizes, schedules and directs emergency maintenance work in keeping the north/south corridor operative. These tasks require the position to influence behaviour in strenuous situations, managing the scheduling of employees and contractors, and resolving conflicts. Many action requests are received from the public, enquiring upon road construction or enhancement projects. The position drafts replies for the Operations Manager's review, responds to other agencies, and provides media communication advice to ensure that the public is kept informed of roadway shutdowns, detours, or slowdowns.

- **Creativity/Problem Solving:**

38%: The position coordinates maintenance activities, ensuring that systems are consistent across jurisdictional boundaries and comply within department, city and engineering standards. These well established standards have long existed; however, the position is regularly required to identify alternative courses of action. It recommends changes to traffic design, lighting, and signage, and coordinates an entire maintenance program, which requires further creativity and problem solving ability beyond a 33% rating. The position leads a wide variety of politically sensitive projects and a major focus of the job is to ensure they are completed safely, on time and within the specified budget. The analysis in developing the project plans and the use of technical and scientific principles to perform the work is at a senior level support the 38% rating.

- **Responsibility:**

R1: The position is responsible for managing highway maintenance in the Calgary region, and has formal, designated decision-making authority from the City of Calgary to authorize and direct emergency maintenance as required. It is involved in the project planning and analysis, but for the most part is managing projects with a defined deliverable. The position has accountability to sign off the final review of engineering services provided by the road maintenance consultants, which is "R" profile work, not "B".

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2015-02-06

[Back to top](#)

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Alberta

Opted Out and Excluded Benchmark Job Description - 522ER05

Identification Section

Working Title:	Operations Engineer
Department:	Transportation
Division, Branch/Unit:	Transportation and Civil Engineering, Southern Region
Reports To:	Operations Manager, (Senior Manager)
Levels to D.M.:	4

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

Reporting to the Operations Manager, Calgary District Office, this position is the district's first line of contact with the City of Calgary's transportation department for roadway operations engineering. This position is responsible for the day-to-day administration and delivery of the highway maintenance program, roadside development control program and contractor performance management program specific to those roadways specified as primary highways which lie within the City of Calgary's boundaries. Due to the high traffic volumes on the roadways and the political sensitivity attributed to same, this position demands exceptional communication and interpersonal skills. As well, the position is responsible for the development and implementation of various contracts/service agreements for projects such as highway lighting, traffic signals, VIS repairs, etc. assisting Operations Manager in all functions of the operation of the Calgary District, including overseeing maintenance contract for rural highways, development issues, administration coordination, etc. This position may be required to assist in the various components of work and programs in the construction, bridges, and infrastructure business units via special project assignments or specified term secondments.

[Back to top](#)

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Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. Liaison Role

Activities:

Coordinate city and department maintenance activities to ensure the continuity of an efficient transportation operating system across jurisdictional boundaries by maintaining an effective liaison with other branches of the department, city administrators (engineering and transit), engineering consultants, outsource providers, etc.

2. Highway Maintenance Operations Program

Activities:

Work in partnership with the maintenance contractor to ensure that the maintenance and development of safe highways together with safety of highways during special events is delivered in a cost effective and defensible manner through planning, budgeting, inspection and quality assurance.

Contribute to development and updating of 'rural' maintenance specifications, budgeting, and forecasting.

Provide recommendations and solutions for matters involving dispute resolution, problem solving, decision-making, field design changes, traffic accommodations, etc.

Administer the contractor performance management program and provide regular reports.

Review, authorize and approve payment for work performed under the terms and conditions of the Province's master agreement with the City of Calgary.

Authorize, schedule and direct emergency maintenance work as required to ensure that the north/south corridor within the jurisdictional boundaries of the City of Calgary remain operative.

3. Roadside Development Engineering Support

Activities:

[Back to top](#)

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Responsible for the administration and delivery of the region's highway development control program and provides technical guidance and direction to Development Control staff.

4. Technical Support for Roadway Operations

Activities:

Reviews designs from highway operations and traffic engineering perspective. Assists with the assessment of location route surveys, consultant engineering projects and engineering proposals for future operational feasibility and the probability of associated problems.

Recommends improvements in traffic design, signals, lighting, signing, pavement markings, geotechnical and slope stability problem areas and related areas.

Prepares estimates and compiles quantities for contracting purpose.

Reviews field designs to ensure conformity with current standards.

Participates in cross-functional departmental teams to develop maintenance standards/contracts specifications to ensure that standards/specifications are practical and achievable through accepted maintenance practices.

5. Communications Role

Activities:

Ensures that all complaints regarding roadways specified in Schedule 'A' are addressed and expedited within time frames specified to avoid action requests from occurring.

Drafts replies for the Operations Manager's review for action requests, liaisons and responds to other agencies, deals effectively and amicably with public concerns, may attend meetings with various local authorities and interested groups as departmental representative.

Prepares and expedites media communication advice to ensure that the public is kept informed of roadway shutdowns, detours, slowdowns, etc.

Liaisons with the bridge business unit regarding bridge rehab work.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

[Back to top](#)

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Day-to-day administration and delivery of the highway maintenance program, roadway development control program and contractor performance management program of primary highways within the City of Calgary boundaries. Requires strong liaison and communication role within a high volume area of the province.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Graduate degree in Engineering, with eligibility for membership in APEGGA.

Five years post-graduate experience in highway maintenance and/or construction is desirable.

Supervisory experience and urban transportation experience a definite asset.

Class 5 Driver's License.

Effective written and verbal communication and public relations skills.

Extensive knowledge of highway maintenance, operation and construction procedures.

Knowledge of urban freeways an asset.

The position is responsible for the day-to-day administration of maintenance and operations, functions in the service area, relative to established standards and departmental policies, as outlined in the Contract Administration, Contact Specifications, Maintenance Standards, Uniform Traffic Control Device, Materials Design and Highway Signing Manuals.

Must ensure adherence to the Highway Traffic Act, Public Highways Development Act, Public Service Act.

Creativity and innovative solutions to transfer initiatives, complex maintenance and construction problems.

Utilization of technology transfer/innovations.

Contacts

(Main contacts of this position and the purpose of those contacts.)

[Back to top](#)

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The Operations Engineer may have daily interactions with the Maintenance Contract Inspectors and maintenance contractors to ensure program is delivered; the general public about traffic safety issues during maintenance operations, road conditions, concerns, problems and complaints; towns, villages and municipalities around the delivery of the maintenance program; ongoing contact with other regional and corporate staff regarding technical, standards, environmental and other issues;

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A

 Alberta Government

Last Review / Update: 2015-02-06

[Back to top](#)

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 Alberta Government

Opted out and Excluded Benchmark Evaluation - 522ER07

Identification Section

Working Title:	Industrial Approvals Engineer
Department:	Environment and Parks
Division, Branch/Unit:	Environmental Management Division, Northern Region, Approvals Section, Industrial and Reclamation Approvals Unit
Reports To:	Industrial and Reclamation Approvals Team Lead, Manager
Levels to D.M.:	6
Job Description:	522ER07
MRS:	See the Minimum Recruitment Standards for Engineering and Related
Job Code:	522ER - Engineering and Related Level 2 (See Opted out and excluded pay plans and salary ranges – Schedule 1, Part 2-A)

[Organization Chart](#)

(requires login)

Comments on Role

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
38% 87
↓
Responsibility
R1 100
↓
TOTAL JOB POINTS
417

[Back to top](#)

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Reporting to the Approvals Manager, the Industrial Approvals Engineer is responsible for the technical review and preparation of approvals to confirm/assess the environmental impact of proposed industrial operations/facilities within the region. When a municipality or industry proposes an activity that will have an effect on bodies of water, land, or air quality and quantity, an approval or license must be issued by the ministry before the activity is approved to proceed. Approval or license holders must then stay within the limits and parameters of their approval or license, or they face charges of non-compliance. This position confirms and assesses the environmental impacts of proposed industrial and municipal activities, facilities, water diversions and water body disturbances within one of 2 districts in the Northern Region (Edmonton to NWT border). It recommends limits and monitoring requirements for the control and management of substance releases into the environment. The position also represents the district on internal and external committees, providing information and advice to assist with industry compliance and abatement activities. The work is performed within the terms of reference provided by the Environmental Protection and Enhancement Act and associated regulations and provincial and national standards/guidelines for the protection of the environment and human health.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** Requires a solid working knowledge/expertise in engineering work relating to environmental protection. The position is considered a technical expert in environmental engineering. The position is scored as an E+ because of the depth and breadth of knowledge that is required in the broad areas of environmental resources (air, land and water). For example, the position must be knowledgeable in soil quality protection, water pollution control, and air pollution control technology and related principles. The position reviews and consults on outstanding issues relating to the control of industrial substance emissions into the environment. In addition to reviewing and consulting, the position seeks ways to provide educational information and literature as well as negotiating acceptable terms and conditions based on the reviews of the issues. The position is one of several Industrial Approvals Engineers in the district, and is not the provincial expert or a one-of position for the ministry in this area of engineering. If it were the single position recognized for its expertise in industrial approvals engineering and administration, its specialized depth of knowledge would be rated an "F".

- **Complexity and Diversity:**

- **I:** The position works within one of two districts in the northern region. It liaises with other like positions in similar regions to ensure equal standards are applied throughout the industry. The position represents the department at the Energy Resources Conservation Board, Alberta Utilities Commission, Natural Resources Conservation Board and

[Back to top](#)

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Environmental Appeal Board hearings in providing technical expertise. It attempts to influence the industry officials in strategy creation for environmental improvements and writes approvals on emissions. The integration of all of these activities is appropriately reflected at the I rating.

Human Relations Skills:

- **2:** As a representative of the department on various boards, the position is required to analyze and interpret highly technical and complex information and relay it to stakeholders in a general and easy-to-understand manner. It liaises with the general public and with industry to provide a general awareness of regional issues relating to environmental engineering. As well, the position delivers training programs to the industry on technical issues. The position is not rated as a "1" because this represents the "tech to tech" communication between two individuals/parties that possess similar education, technical expertise and understanding on a given issue.

- **Creativity/Problem Solving:**

38%: The position participates in research initiatives that aim at developing approval standards for areas with no such standards in place. The position is considered to be the highest level of operational thinking as it must independently assess the impacts that major industrial activity will have on the sustainability of natural resources in the province. It is called upon as the technical expert in many instances by various stakeholder groups to examine the impacts and recommend whether an approval can be granted for the activity. It is not a 43% because it does not spend the majority of its time analyzing and researching – it is first and foremost a front-line professional delivering the approvals program for the region.

- **Responsibility:**

R1: The position is a regionalized professional providing technical expertise to a wide variety of stakeholders in the form of work reviews, consulting, training and development, negotiation and participation on committees. Consulting is a component of the position along with development however it is not the focus of the position, and therefore the B profile is not as appropriate as the R1 rating.

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2016-03-11

[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 522ER07

Identification Section

Working Title:	Industrial Approvals Engineer
Department:	Environment and Parks
Division, Branch/Unit:	Environmental Management Division, Northern Region, Approvals Section, Industrial and Reclamation Approvals Unit
Reports To:	Industrial and Reclamation Approvals Team Lead, Manager
Levels to D.M.:	6

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

The Industrial Approvals Engineer is responsible for the technical review and preparation of approvals to confirm/assess the environmental impact of proposed industrial operations/facilities within the region and to establish the limits and monitoring requirements for the control and management of industrial substance releases into the environment. The position also represents the region/department at public hearings and appeals and on internal committees and provides consultation/information and advice to assist and expedite approval processes and abatement activities. The work is performed within the terms of reference provided by the Environmental Protection and Enhancement Act and associated regulations and provincial and national standards/guidelines for the protection of the environment and human health. There are approximately 25 Industrial Approvals Engineers in the province, distributed in the three Regions. In each Region, the Industrial Approvals Engineers report to the District/Regional Approvals Manager.

[Back to top](#)

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Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. **Ensures effective management and control of industrial substance releases into the environment through the review of applications and preparation of approvals and the review of registrations for the industries within the region. The approvals and registrations set the terms and conditions for industry compliance with legislated requirements.**

Activities:

Provides technical review of Environmental Impact Assessments, approval application and registration submissions, and Statements of Concern to assess/confirm the environmental impact/potential impact of materials generated by the industrial activity and industry proposed actions to address substance releases.

Coordinates input from departmental specialists in air, water, land, or external specialists to determine impacts on various environmental media. Meets with industry officials to clarify the proposed industrial activity, to review and consult on outstanding issues, types of information needed, and to discuss acceptable terms and conditions.

Researches scientific literature and practices within other jurisdictions to develop approval standards for releases for which there are no Alberta standards/guidelines in place.

Liaise with applicants, individuals who have filed a statement of concern and public interest groups to facilitate issue discussion and resolution.

Writes effective and enforceable approvals reflecting the requirements based on the assessment of all relevant environmental issues and with consideration of related social and economic issues.

2. **Supports continuous improvement initiatives for abatement issues (i.e. activities/actions in situations where problems have occurred or are occurring and where enforcement action is not considered appropriate).**

Activities:

Reviews summary reports on monitoring data required by approvals, conducts facility inspections to ensure that any air, land and/or water quality/release problems are identified and addressed in a timely, consistent and economic manner.

Meets with industry officials to influence strategies for industries to improve their environmental performance.

Negotiates with industry to develop innovative, environmentally acceptable and cost effective options for resolution of identified problems.

Provides assistance to industry to expedite approval/regulatory process.

3. Represents regional interests and issues through participation on internal and external review teams/committees and provides technical expertise and input to public hearing and appeal processes.

Activities:

Manages or participates in environmental impact assessments including joint process for energy related development as part of the Energy Resources Conservation Board (ERCB)/Alberta Utilities Commission (AUC) approval process.

Represents the region/department at ERCB, AUC, Natural Resources Conservation Board (NRCB) and Environmental Appeal Board (EAB) hearings to provide technical expertise and regional perspective.

Liaises with industry and the general public to provide information and to develop and maintain awareness of regional issues related to assigned industry activities.

Participates on internal standards/policy development committees and provides technical input and regional perspective to ensure the proposed policy/program development guidelines meet regional needs and interests.

Participates on external standards/policy development committees and provides technical input and AENV's perspective to ensure the proposed policy/guideline document meets the need and interest of the department.

Works effectively with other regional colleagues to assist each other and to deliver an effective and consistent regional program.

Referrals to Compliance staff for inspection or investigation of issues for possible enforcement action as required.

4. Participate in the development of regional/departmental expertise on specific industries by designing and delivering training programs.

Activities:

Participates in the development and delivery of industry specific training programs.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

[Back to top](#)

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Approvals directly impact industry operations/activities by establishing terms and conditions for the release of industrial substances into the environment.

Approvals establish terms and conditions that address potential impacts on human health and environmental pollution.

Impact of the work can have considerable financial consequences to the industry. Provides cost effective emission control alternatives for industry to consider.

The work also impacts stakeholders including other departments, environmental/community groups and the general public.

Work is performed within accepted scientific principles, legislation, regulations, policies and applicable guidelines.

Work requires the coordination of input/resources from a wide range of technical and professional resources to address specific issues.

Work involves considerable interaction with industry officials to establish release management strategies, clarify requirements and provide advice to improve environmental performance; position also has frequent interaction with Environmental Assurance Division specialists, management to seek specialized input or to provide regional perspective, with other agencies (e.g. Infrastructure, Environment Canada and the ERCB and AUC).

Work requires the ability to apply scientific principles/theories to varied situations with consideration for policy, economic, legal and social impact of actions taken (i.e. big picture perspective).

Reviews are coordinated with specialists to ensure consistent program delivery within the region and for specialized technical assistance (e.g. Air Specialist reviews regional emission figures).

Participates in problem solving that includes the research and development of pollution control strategies for industrial releases for which there are no existing Alberta standards/guidelines.

Provides recommendations to Approvals Manager in the review of approvals for issues of concern, compliance with existing policy or precedent setting/policy setting criteria.

Provides briefings and recommendations to Senior Management and the Minister.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Must have a B.Sc. in Engineering plus at least 5 years of related experience.

Knowledge about a variety of issues related to overall environmental quality, i.e. human health, land conservation, land management, air and water quality, aboriginal priorities and energy resource conservation.

Knowledge of air pollution control technology and principles.

Knowledge of water pollution control technology and principles.

Knowledge of industrial process operations and equipment.

Knowledge of plume dispersion modeling.

Knowledge of source and ambient air monitoring.

Knowledge of Environmental Protection and Enhancement legislation and regulations.

Ability to interpret technical information/concepts including standards and requirements.

Ability to apply technical knowledge to providing creative approaches for resolution of environmental issues, recommending appropriate EPEA approval conditions, and for providing input into environmental issues management documents, abatement strategies and regulatory reform.

Ability to communicate technical information/concepts including standards and requirements to both technical and non-technical people.

Knowledge and understanding of other provincial and federal department legislation and processes (*Water Act, Public Lands Act, Oil Sands Conservation Act, Energy Resources Conservation Act, Health Act, Canadian Environmental Assessment Act, Government Organization Act*) is required to manage AENV's integrated application approach to industrial developments.

Proficient computer skills.

Knowledge and understanding of personal safety and hazards/risks.

Eligible for membership in APEGGA.

Contacts

[Back to top](#)

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(Main contacts of this position and the purpose of those contacts.)

Internal and external committees, industrial applicants, consultants, etc. – apply technical knowledge to provide creative approaches for resolution of environmental issues, recommends appropriate EPEA approval conditions, administers approvals and influences strategies to improve environmental performance

Approvals Manager – provides recommendations in the review of approvals for issues of concern, compliance with existing policy or precedent setting/policy setting criteria

Senior management and the Minister – provide briefings and recommendations on environmental issues

General public, environmental/community groups, provincial agencies, Federal Government and other Provincial Governments, Approvals team members, AENV staff, etc.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

Position does not supervise others.



Last Review / Update: 2016-03-11

[Back to top](#)

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Opted out and Excluded Benchmark Evaluation - 522ER08

Identification Section

Working Title: Geologist

Department: Energy

Division, Branch/Unit: Energy Policy and Research, Environmental Policy and Resource Services / Geology

Reports To: Director, Geology (Senior Manager, Zone 1)

Levels to D.M.: 5

Job Description: [522ER08](#)

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
38% 87
↓
Responsibility
R1 100
↓
TOTAL JOB POINTS
417

Comments on Role

Reporting to the Director of Geology, the Geologist provides technical consultation and advice to the department for non-renewable resource delineation and development matters. This includes technical advice relating to lease continuations,

[Back to top](#)

Crown equity issues, description of indisposed Crown rights posted for leasing, enhanced recovery schemes, oil sands, coal and mineral projects, royalties issues, integrated land use management plans, access issues, and native and Métis land claim settlements. The position is responsible for the technical evaluation of industry submissions to support various applications made under the Mines and Minerals Act and related regulations. The effective utilization of Crown resources and the optimization of revenues to the Crown, particularly from oil and gas, are the main focus of the position. The work is done using accepted geological principles and professional practices and standards.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** This position is one of several full working level specialized geologists functioning on a province wide basis. The position provides content knowledge and technical advice in the area of stratigraphic views of oil/gas, oil sands, coal and metallic mineral development throughout the province. Position also requires knowledge of the industry in order to provide solid technical advice and reasoned interpretations of geological principles, practices and related legislation. The position assesses company data, clarifies data, makes recommendations based on technical assessments, liaises with stakeholders and provides expert advice when necessary. These tasks support the full working level position (E+), but do not support the deep breadth and scope of knowledge found in at the F level. Position is not a one-of specialist in the province which further supports the E+ rating. If this position were the individual specialist in geology for the province its depth of knowledge would be reflected as an F.

- **Complexity and Diversity:**

- **I:** This position is one of ten within the province and has access to assistance if needed during highly complex situations. The position must display a thorough understanding of policies and regulations in the work. The position does work on assignments that relate to a wide variety of topic areas including oil/gas, oil sands, coal and metallic mineral development throughout the province. Although the complexity and diversity is relatively high, the position is a I and not I+ because it does not manage on-site operations.

- **Human Relations Skills:**

- **2:** The position communicates at the Human Relations level 2 for several reasons. The position makes recommendations to administrative staff on the technical assessment of resource management, provides technical input and expertise and ensures consistent interpretation and application of technical data within the Ministry. These

tasks require the position to interpret technical information for stakeholder use and push the HR skill to the level 2.

The level 1 is “tech to tech” that relays, clarifies and exchanges information between individuals.

- **Creativity/Problem Solving:**

38%: The position is 38% for several reasons. Firstly, the solutions are unknown as they require interpretation of industry and other data. For example, the position assesses company data and then conducts additional research and analysis to confirm the data is adequate. The solution in this task is unknown and requires creativity not found in the 33% profile. Further, the position has the ability to decide how the work will be done as long as the outcomes fall within Mines and Minerals Act and related regulations. 33% is inaccurate because the position makes more than a few recommendations, solutions are unknown and thinking is not guided by clearly stated objectives. The 43% profile is inaccurate because of the absence of the strategic component.

- **Responsibility:**

R1: The focus of the position is on program delivery and fits under the R1 profile. While the duties provide support to stakeholders for future use and development and support the delivery of services and programs, the essence of the job is royalty calculation. The R1 profile supports the technical authority that is present in this position. The C1 profile supports analysis of short-term tasks such as research and development. Research and support is provided for future stakeholder development but is not the only type of work done. While the position contains some aspects of the B profile, for the most part its role is produce data that is used by the management group. As a result, the R1 profile accurately describes the duties of the Geologist position.

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Alberta Government

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[Back to top](#)

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Alberta

Opted Out and Excluded Benchmark Job Description - 522ER08

Identification Section

Working Title:	Geologist
Department:	Energy
Division, Branch/Unit:	Energy Policy and Research, Environmental Policy and Resource Services / Geology
Reports To:	Director, Geology (Senior Manager, Zone 1)
Levels to D.M.:	5

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

Reporting to the Director of Geology, the position provides technical consultation and advice to the department for non-renewable resource delineation and development matters. This includes technical advice relating to lease continuations, Crown equity issues, description of undisposed Crown rights posted for leasing, enhanced recovery schemes, oil sands, coal and mineral projects, royalty issues, integrated land use management plans, access issues, and native and Métis land claim settlements. The position is responsible for the technical evaluation of industry submissions to support various applications made under the Mines and Minerals Act (MMA) and related regulations. The effective utilization of Crown resources and the optimization of revenues to the Crown, particularly from oil and gas, are the main focus of the position. The work is done using accepted geological principles and professional practices and standards.

Responsibilities and Activities

[Back to top](#)

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(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. **Technical evaluation of industry submissions to ensure that resource management is being carried out according to criteria accepted by both government and industry. Criteria are to ensure that non-renewable resource exploration and development are carried out in an orderly and timely fashion and that unproven rights are returned to the provincial land bank for future disposition as soon as possible.**

Activities:

assesses company data, conducts additional research and analysis to confirm data/information provided and determines productivity of leases

follows-up with company technical staff to clarify data, request additional supporting information or to explain department requirements

makes recommendations to administrative staff, based on technical assessment of applications made under the MMA, such as lease continuations, unitization proposals, fulfillment of offsets requirements, etc.

2. **Provides technical assessments to all areas of the department in support of resource development.**

Activities:

assesses resource potential of lands being considered for native or Métis land claims, parks, restricted sites and integrated land use management plans

assesses data/information to determine impact of proposed development on government resource interests

provides technical input to other areas within the department related to impact on revenue or to assist in project planning decisions and mineral leasing issues

3. **Participates on internal and external committees and groups to provide technical input and advice to department planning and policy development activities and to maintain awareness of industry trends and issues.**

Activities:

maintains technical expertise and industry awareness through industry and government networks and contacts

participates in professional association forums and committees to remain current with developments within the industry and within the field of geology

participates on joint industry/government committees to provide administrative staff with technical opinions related to proposed changes in legislation and policy

4. Meets with industry and Energy Resource Conservation Board (ERCB) representatives to resolve complex and/or contentious technical interpretations.

Activities:

works in internal and external (intra-ministerial) teams to resolve complex scientific problems impacting delineation and management of non-renewable resources

meets with industry geologists, geophysicists and engineers to discuss complicated applications or review inconsistencies in technical data

liaise closely with ERCB technical staff to ensure consistent interpretation and application of technical data within the Ministry

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Technical recommendations are the basis for decisions made by administrative staff on applications submitted by energy companies. Ultimately, provincial revenues (royalties) generated through these applications are directly affected. These applications involve oil and gas, oil sands, coal and metallic mineral development throughout the Province.

Problems involve complex assessments where solutions require interpretation of industry and other data. Application of professional judgement, knowledge of legislation as well as industry trends, economic issues and government/department policies, are taken into consideration to provide reasoned recommendations.

Work is guided by accepted geological principles and practices, the Mines and Minerals Act, Petroleum and Natural Gas Tenure legislation and business unit policies.

Interactions are primarily with industry technical staff and require the ability to offer sound technical and reasoned interpretations demonstrating a knowledge of the industry.

Work is reviewed by Senior Geologist and/or Senior Manager for completeness and consistency of recommendations within the group.

This position provides recommendations based on a technical review, which are normally the only grounds on which a decision can be made by management.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Eligibility for membership in APEGGA.

Sound knowledge of geological principles, industry standards and practices, and knowledge of the stratigraphy of the Western Canada Sedimentary Basin.

Ability to interpret information from data provided to draw reasonable conclusions related to well productivity, future potential or to assess impact of proposed development on province's resources.

Knowledge of oil and gas industry to assess validity and applicability of technical data.

Knowledge of related legislation, including the Mines and Minerals Act, Petroleum and Natural Gas Tenure Regulations and the Oil and Gas Conservation Act and Regulations.

Knowledge of department policies and procedures.

Knowledge of computer databases, including LSAS (internal), the ERCB database, working knowledge of Microsoft Office and Windows NT and the ability to use various industry programs such as GeoScout and Surfer.

Communication skills to provide and obtain clarification, question inconsistencies in technical data in a non-confrontational manner and interpret recommendations and provide advice to non-technical staff and management.

The work requires the application of professional judgement; new situations may require direction from the Manager, however each geologist will be able to assess how a job should be completed.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Internal contacts include other Geologists on the team as well as department contacts in Continuations and Oil Sands.

External contacts include industry stakeholders such as Engineers and Geologists where contact would be required to get further clarification and dialogue on issues.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A

 Alberta Government

Last Review / Update: 2015-02-06

[Back to top](#)

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Opted out and Excluded Benchmark Evaluation - 522ER10

Identification Section

Working Title: River Flow Forecaster

Department: Environment and Parks

Division, Branch/Unit: Environmental Management Division, Water Management Operations Branch, River Forecasting Section

Reports To: Senior Manager, River Forecasting

Levels to D.M.: 5

Job Description: [522ER10](#)

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
38% 87
↓
Responsibility
B 87
↓
TOTAL JOB POINTS
404

Comments on Role

This position forecasts flooding in Alberta, providing specialist hydrological services. A team of River Flow Forecasters for the province develops hydrological tools and procedures for analyzing complex watersheds used for flood and water supply

[Back to top](#)

forecasting. The position also provides technical expertise in the development of flood operating procedures that integrate multiple reservoir operations within a watershed to provide safety for these structures, while maximizing downstream flood reduction. The position develops training/audit sessions to ensure the ongoing competency of dam operators in the application of these procedures.

During flood events, the position leads a team of professionals and support staff on forecast duty, a 24/7 operation that each position provides on a rotational basis, in providing forecasts of the location, timing and magnitude of flood events throughout Alberta. The position issues flood advisory/warnings, forecasts of water supply conditions, reports current streamflows, lake levels and predicts water quality conditions in Alberta's rivers. The position also coordinates the communication of these results to dam operators, local authorities, emergency response personnel and to the public.

All of these responsibilities are carried out under the authority of the Water Act, and associated Regulations including the Canal and Dam Safety Act, and in fulfillment of the Departmental Hazard and Risk Management Business Plan. The work often requires the position to be capable of making clear analytical decisions in spite of incomplete data under tight timelines and for extended work periods.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** B.Sc. in Water Resources Engineering with specialization in Hydrology plus extensive knowledge of all aspects of hydrology, hydraulics, climatology, meteorology, severe weather conditions, and statistical and deterministic modeling are required. Operating as a flood forecasting expert during flood season requires the position to have a very solid knowledge base to draw upon when making quick decisions that will directly impact the safety of the public. In low flood season, the position writes and modifies hydrologic flood forecasting and water supply computer models which requires extensive knowledge in computer programming. The E+ rating recognizes the in-depth specialization of forecasting combined with statistical modeling and computer programming knowledge. Position is not an "F" because it is one of several River Forecasters in the department, and the area of expertise is in a narrow field.

- **Complexity and Diversity:**

- **I:** The work impacts a wide range of stakeholders throughout the province and indirectly affects the safety and well being of the public by influencing the operation of water resource managers throughout the various levels of government and stakeholders. This requires the position to have a keen awareness of how its actions will affect the work and actions of others, and in many cases, in emergency situations. The position also must integrate data on

[Back to top](#)

water levels, ice jams, weather, etc. in order to make an accurate assessment of flooding potential. The “1” level is appropriate for this level of integration as the different types of data are homogeneous in nature.

Human Relations Skills:

- **2:** The position is responsible for interpreting technical information and influencing the opinion of stakeholders. For example, the position regularly provides technical expertise in forecasting streamflows and water levels, extraordinary flood events and flood operations procedures. The position translates technical data from computer modeling software into terms that communities, the media, and other employees can understand. Unique to this position is its capability to clearly articulate flood information to stakeholders in emergency situations. When not on forecaster duty, the position also interacts with provincial, national, and international groups, committees, and regulatory bodies to assist with Alberta’s commitment to excellence in water resource management. All of these responsibilities lead to an HR rating of “2”.

- **Creativity/Problem Solving:**

38%: Hydrology and meteorology are sciences where a complete understanding of the physical processes does not exist. The position will develop and evaluate new methods for forecasting floods and water supplies. During extraordinary flood events, the position will weigh the data at hand with the theoretical concepts to be applied and recommend the appropriate analysis or model to apply. In the reporting and/or notification related to high streamflows, floods, or dam breaches, the position has authority to act independently from the chain of command and directly communicate the situation to municipal authorities and to the public.

The position is also expected to design and implement studies that will resolve complex flood forecasting and water supply issues throughout the province and perform routine forecasting duties, most notably during extraordinary flood events. The development of plans and strategies to be operationalized during these flood events is encompassed in the 38% rating, the highest level of operational thinking. The strategic thinking is a component of the job, but not the focus of it, and therefore the position is not a 43%.

- **Responsibility:**

B: The position is an advisor to ministry staff during flood events. It is a balance between development (researching, statistical modeling) and delivery (for example, the accountability for decisions while on forecast duty). Because the position is not always on forecast duty, and because floods occur during a specific season (spring and warmer weather), it is not rated as an R1. Similarly, because the computer modeling and analysis components are not the focus of the job, it is not rated as a C1 profile.

[Back to top](#)

Last Reviewed: November, 2009



Last Review / Update: 2016-03-11

[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 522ER10

Identification Section

Working Title:	River Flow Forecaster
Department:	Environment and Parks
Division, Branch/Unit:	Environmental Management Division, Water Management Operations Branch, River Forecasting Section
Reports To:	Senior Manager, River Forecasting
Levels to D.M.:	5

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

This position provides specialist hydrological services for flood forecasting in Alberta. As a team of Forecasters for the province, the position is responsible for the development of hydrological tools and procedures for analyzing complex watersheds used for flood and water supply forecasting. The position also provides technical expertise in the development of flood operating procedures that integrate multiple reservoir operations within a watershed to provide safety for these structures while maximizing downstream flood reduction and develops training/audit sessions to ensure the ongoing competency of dam operators in the application of these procedures. During flood events, the position leads a team of professionals and support staff on forecast duty in providing forecasts of the location, timing and magnitude of flood events throughout Alberta. The position issues flood advisory/warnings, forecasts of water supply conditions, reports current streamflows, lake levels and predicts water quality conditions in Alberta's rivers. The position also coordinates the communication of these results to dam operators, local authorities, emergency response personnel and to the public.

[Back to top](#)

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All of these responsibilities are carried out under the authority of the Water Act, and associated Regulations including the Canal and Dam Safety Act, and in fulfillment of the Departmental Hazard and Risk Management Business Plan. The work often requires the incumbent to be capable of making clear analytical decisions in spite of incomplete data under tight timelines and for extended work periods.

Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

Provide specialized services for flood and water supply forecasting of Alberta's rivers and lakes by assembling and analyzing real-time and historical weather and hydrometric data using statistical analyses and computer models.

Specifically the position will:

provide technical expertise on the development of flood forecasting and communications procedures within the Team by

testing and enhancing existing flood forecasting models/tools and developing new approaches

developing improved procedures for communicating flood advisories/warnings

anticipating conditions that may arise during extreme flood events and developing procedures, tools and contingency plans

that will avoid such circumstances

- 1. Provides technical expertise in the assessment and modelling of floods and coordinates professional and technical staff during operational forecasts by:**

Activities:

evaluating and interpreting weather maps/forecasts, and storm conditions

providing technical expertise in real time operation and running watershed simulation models

under frequent conditions of missing or incomplete data/information, applying a high level of judgement in the interpretation of model results and in the issuing of flood forecasts and water levels

providing assessments of extraordinary flood events and technical expertise to other professionals in the development of approaches for modelling such events

utilizing a high level of judgement and models to project, on a real-time basis, potential levels/timing of floods resulting from a dam break, incorporating the type of breach into the analysis

issuing high water advisories and flood advisories and warnings

directing field staff on gathering flood information

providing specialist advice on reservoir operations, recommending adjustments to operations to fit the given storm/flood, thereby maximizing downstream flood reduction

informing (fax/phone and news releases) dam operators, local authorities, media and the public of flood conditions and risk and responding to real-time questions/concerns

2. Providing technical expertise in water supply forecasts by:

Activities:

providing expertise to other work unit professionals in the development of new models and procedures for short-term and long-term water supply forecasts

advising and developing automated procedures for the gathering/evaluation of hydrometeorologic data

running/interpreting watershed and other regression/deterministic models

forecasting spring runoff conditions

preparing reports on seasonal water supply outlook (monthly and long-term)

forecasting weekly and daily reservoir inflows and natural flows towards defining instream objective requirements

informing (fax and phone) contacts and responding to questions/concerns from water managers and the public

3. Provides technical expertise in the development of flood operating procedures for government dams by:

Activities:

writing flood operating procedure manuals to ensure the safety of these structures while maximizing downstream flood reduction

collating historical floods and assessing the performance of structure under these conditions and developing n-year flood hydrographs to be used in the assessment of structure performance

developing Probably Maximum Flood PMF hydrographs and applying them to the flood operating procedures to ensure safety of structure

integrating complex multiple reservoir operations within a watershed

evaluating extraordinary climatic conditions that could be used to maximize flood control during multiple events while ensuring that the integrity of the structure is not compromised

providing training sessions for dam operators and water managers

reviewing Emergency Preparedness Plans for government and privately owned dams and participating in Emergency Preparedness drills

conducting special flood drills in the forecasting office

4. Provide technical expertise towards forecasts of drought and low flow conditions by:

Activities:

investigating recent findings of related research

developing drought/low flow models and tools

running/interpreting models (regression, physical) and forecasting conditions

informing (fax and phone) contacts/stakeholders and water managers of low flood/drought conditions and responding to questions/concerns from these groups and the media

5. Provide forecasts of water quality conditions in rivers and lakes by:

Activities:

developing water quality tools

providing technical expertise in the development of methods for the QA/QC of real-time data

provide interpretation of models and model results(regression, physical)

forecasting water quality conditions

informing (fax and phone) contacts and responding to questions/concerns

6. Monitor compliance on interprovincial and international water apportionment agreements by:

Activities:

providing technical expertise in the development, calibration and application of natural flow computational procedures acceptable to the Prairie Provinces Water Board PPWB, including gathering water use reports gathering precipitation, evaporation and streamflow data

computing natural flows on a real-time basis

advising water managers on apportionment natural flow status

tracking compliance and advising on violations

7. Report current streamflow and water level conditions in rivers and lakes by:

Activities:

maintaining canoe report/hot line
maintaining web page
maintaining and writing Forecaster's Comments

8. Develop information dissemination procedures by:

Activities:

maintaining the Flood Notification Manual
accessing database/fax lists/fax broadcast systems
verifying critical clients
maintaining fax broadcast capabilities

9. QA/QC real-time data by:

Activities:

scanning hydrometric, water level and WQ data
editing information as required
reporting data/station problems
applying real-time data corrections

10. Prepare reports and briefings on flood events and findings including data summaries, graphical displays, maps.

11. Verify complex project components by conducting field inspections.

12. Developing and maintaining specialized applications for data analysis and flood forecasting.

13. Participate in development, testing and implementation of WISKI software.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Hydrology and meteorology are sciences where a complete understanding of the physical processes does not exist. The position will develop and evaluate new methods for forecasting floods and water supplies. During extraordinary flood events, the position will weigh the data at hand with the theoretical concepts to be applied and recommend the appropriate analysis or model to apply. In the reporting and/or notification related to high streamflows/floods/dam breach, the position has authority to act independently of the chain of command and to directly communicate the situation to municipal authorities and to the public.

The position is also expected to design and implement studies that will resolve complex flood forecasting and water supply issues throughout the province and perform routine forecasting duties, most notably during extraordinary flood events.

The Flood Notification Manual is an integral part of flood forecasting procedures. Other procedures and manuals related to specific scientific and computer applications are routinely used for forecasting assessments including dam operating procedures, the Newleaf real-time database, Time Studio real-time database, WISKI database, hydrologic models (SSARR/CAESAR), the fax broadcasting system, and application software (word processing, spreadsheet, databases, graphics, etc).

The position:

Directly protects public safety, property and well being of Albertans by forecasting and communicating potentially hazardous conditions and directly communicating the associated risk so that preventative or mitigative actions can be implemented in a timely manner.

Protects Alberta's water management infrastructure by developing flood operating procedures which ensure the safety of government owned dams and by providing real time operational advise during flood events and emergency situation.

Indirectly protects public safety, property and well-being by influencing the operational decisions of water resource managers in the provincial government, municipal governments, irrigation districts and of private water management infrastructure such as Trans Alta Utilities.

Indirectly protects public safety, property, and well being by influencing actions of non-water resource managers such as local authorities, transportation (ATU), CN Rail, and agricultural agencies as well as disaster response teams.

Interacts with provincial, national, and international groups, committees, and regulatory bodies to assist with Alberta's commitment to excellence in water resource management.

[Back to top](#)

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Classification: Public



Protects the public and infrastructure by developing flood operating procedures which maximize flood reduction and by delivering training to dam operators on the use of the flood operation procedures.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

B.Sc. in Engineering with specialization in Hydrology plus extensive related experience. Preference is postgraduate studies in hydrology or water resources engineering and directly related experience in hydrology/flood forecasting. Must be eligible for membership with APEGGA.

Knowledge of specialized theories/principles in all aspects of the fields of hydrology, hydraulics.

Sound knowledge and understanding of climatology and meteorology and its influence on severe weather conditions in Alberta is required.

An understanding of statistical and deterministic modeling procedures and limitations.

Proficient computer skills, including advanced programming, for writing new and modifying existing hydrologic flood forecasting and water supply computer models.

Excellent oral and written communication skills are essential.

The position must be capable of clear analytical thinking under tight timelines.

The position must be adept at interpersonal skills, and have the ability to work effectively as part of a forecast team for extended hours and on weekends if required. Shift work is required when on forecast duty (7-day, staggered start times) and during major flood events (24-hour).

Contacts

(Main contacts of this position and the purpose of those contacts.)

[Back to top](#)

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Interacts with provincial, national, and international groups, committees, and regulatory bodies to assist with Alberta's commitment to excellence in water resource management

Influences the operational decisions of water resource managers in the provincial government, municipal governments, irrigation districts and of private water management infrastructure such as Trans Alta Utilities

Water managers for provincially operated dams, Emergency Response groups, AENV staff (particularly monitoring staff), general public, etc.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

Position does not supervise others.



Last Review / Update: 2016-03-11

Opted out and Excluded Benchmark Evaluation - 522ER17

Identification Section

Working Title: Irrigation Water Management Engineer

Department: Agriculture and Forestry

Division, Branch/Unit: Irrigation and Farm Water Division, Water Resources Branch

Reports To: Section Lead (Senior Manager)

Levels to D.M.: 5

Job Description: [522ER17](#)

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
38% 87
↓
Responsibility
B 87
↓
TOTAL JOB POINTS
404

Comments on Role

This position is responsible for leading teams and providing specialized technical expertise to water management applied research and development projects. The engineer is also responsible for the development and maintenance of irrigation

[Back to top](#)

infrastructure management database systems as a resource for sector and state industry planning development. Activities are aimed at increasing irrigation water use efficiencies, promoting water conservation and facilitating sustainable development of water supply infrastructure. This position has provincial scope serving the irrigation community and the agri-business community. It acts as a project leader on programs that are often inter-disciplinary and cross-ministry in nature (such as Water for Life).

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** The position requires a degree in Engineering and has full working knowledge/expertise in water resource management and scientific research methods. The position consults and advises stakeholders, designs water management research, evaluates existing research, participates on inter-disciplinary teams as the engineering expert, and promotes sustainable practices to stakeholders. The position is required to apply theoretical body of knowledge to a variety of tasks within several water management topics (water supply management, irrigation technologies, water management plans & strategies, sector planning, etc). This position is the only Irrigation Engineer in the department and requires depth of knowledge and expertise in the field of irrigation; however, the position's specialty (water resource management) is narrow in focus and does not require the combination of breadth and depth of knowledge normally seen at the 'F' level.

- **Complexity and Diversity:**

- **I:** Although the position performs work mainly for the south region of the province, the work affects stakeholders at the provincial level as the growth and sustainability of the irrigation industry is dependent of water supply management, which is the most vulnerable agricultural sector in Alberta. As a team leader and a representative of the department with external stakeholders, the position must have a solid understanding of how it's work fits in the business goals of Alberta Agriculture, but also other ministries like Alberta Environment, and the agricultural industry.

- **Human Relations Skills:**

- **2:** The position is viewed to be at the Human Relation Skill level of 2. The position interprets highly technical information for a variety of clients, presents project results to stakeholders, provides consultation and education about new technologies and techniques, and tries to influence stakeholders to use the most sustainable practices known. Although it has no formal supervisory duties, it must lead project teams of internal and external members.

[Back to top](#)

- **Creativity/Problem Solving:**

38%: The position is considered 38% for creativity/problem solving. The engineer develops new information and addresses emerging issues associated with water supply and infrastructure management through research. It is also responsible for consulting with and educating stakeholders, and making recommendations for program development. Although work objectives are not always clearly stated, the position is not viewed to be at the 43% profile because the position plays a limited role in strategic planning within the ministry.

- **Responsibility:**

B: Irrigation Water Management Engineer has a dual role between research and implementation (promotion of new information, demonstrations, data maintenance & reporting, producing sector plans) making it a balanced profile. It is an advisor to stakeholders and to the ministry; providing information, education, and recommendations.

Last Reviewed: November, 2009



Last Review / Update: 2016-03-11

Opted Out and Excluded Benchmark Job Description - 522ER17

Identification Section

Working Title:	Irrigation Water Management Engineer
Department:	Agriculture and Forestry
Division, Branch/Unit:	Irrigation and Farm Water Division, Water Resources Branch
Reports To:	Section Lead (Senior Manager)
Levels to D.M.:	5

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

This position is responsible for providing specialized technical expertise, water management planning and technology transfer of innovative applied research and development projects, water supply management development, irrigation infrastructure management and sector planning studies. In addition, this position is responsible for the development, application and maintenance of irrigation infrastructure management computer database systems and is an integral resource for sector and state of the industry planning development. Working within the departmental and division business plans, activities are aimed at increasing irrigation water use efficiencies, promoting water conservation and facilitating sustainable development of water supply infrastructure. Activities to support the Water for Life goal of water is managed effectively to support sustainable economic development. This position has a provincial scope and serves the irrigation industry and agri-business community. This position acts as project leader on programs that are often inter-disciplinary and cross-ministry in nature. The incumbent provides engineering expertise primarily to irrigation district operators and industry associates. Supervision and leadership is provided to technical staff participating in specific project support functions. As

[Back to top](#)

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part of the Technology and Innovation Branch, the position reports to the head of the Irrigation Management Section and is expected to work closely with division staff in the Irrigation Development Section.

Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

- 1. Responsible to plan and conduct applied research projects that increase irrigation water conveyance efficiencies, improve water operational control and promote water conservation.**

Activities:

Lead the operation, maintenance and project development at the Water Measurement Demonstration and Testing Facility located at the Lethbridge Irrigation Development Centre.

Take leadership and/or participate effectively in research projects relating to applied irrigation water management, particularly as it relates to storage and conveyance systems and large scale irrigation project water management planning.

Develop partnerships with industry groups, and form collaborative arrangements with other researchers and project-team members (inter-departmental and cross-agency).

Maintain strong alliances with related industry groups to identify knowledge gaps and prioritize research requirements.

Maintain awareness of current scientific literature, the findings of other researchers and identify new technologies and techniques that may be suitable for adaptation and use in Alberta.

Keep stakeholders aware of project results through regular contact and comprehensive technical and scientific reports and web-postings on project findings.

Provide project direction, coordination of research activities, and supervision of technical staff involved in specific projects.

- 2. Responsible for technical support, data evaluation, reporting and publication of water management strategies and irrigation sector planning.**

Activities:

[Back to top](#)

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Lead the development and evaluation of technical data for water management and sector planning.

Development of needs assessment as they relate to water and climate initiatives.

Maintain strong alliances with industry consultants, irrigation districts and cross-ministry specialists.

Provide cross-ministry support on Water for Life strategies and committees.

3. Transfer technology, research result reporting and scientific investigations to the irrigation industry of Alberta and to other related water management agencies.

Activities:

Conduct demonstrations of new technology and techniques at industry field days.

Develop evaluation protocols for water measurement technologies and instrumentation.

Prepare formal reports and information fact sheets on new technologies and project findings that can be applicable and practically referenced by the industry.

Contribute to the development of computer-based decision support systems for the irrigation industry that simplify complex technical issues.

Provide assistance and direction to technical staff in the development of web-based information materials.

Present significant research or project results at relevant scientific conferences and support associated publication in journals and proceedings.

4. Provide management and leadership to unit projects and initiatives (e.g. Operations of Water Measurement Demonstration and Testing Facility).

Activities:

Initiate new projects based on current industry needs or anticipated future requirements.

Coordinate the activities of a project team through the planning, implementation, and operation of projects.

Provide leadership and support to team members and other collaborators.

Provide specialized technical input to projects (e.g. Equipment selection, facilities design specifications, etc.).

Form collaborative working arrangements with other agencies, other government departments, industry stakeholders and equipment suppliers.

Provide Branch management and other stakeholders with project details, progress reports, budget projections and other relevant information on a timely basis.

5. **Provide engineering support and consultation on technical matters related to irrigation water supply and infrastructure management, conveyance, drainage and storage operations, new project planning and water availability / allocation determinations.**

Activities:

Provide professional advice to irrigation districts and water users, industry representatives and other researchers on advanced technical issues relating to water measurement and control systems.

Direct Branch functions related to the Irrigation District Infrastructure Management System, in collaboration with the irrigation districts and the Irrigation Secretariat.

Responsible for over-seeing the delivery of Branch support associated with the Irrigation Rehabilitation Program, while working with the Irrigation Secretariat and Irrigation Council.

Provide preliminary water management engineering consultation for new irrigation project developments.

Assist water user groups with the engineering concept design of irrigation water control and measurement systems.

6. **Responsible for administrative and supervisory functions.**

Activities:

Provide supervision, leadership, and direction to technical staff reporting to this position, ensuring that all activities are conducted according to Departmental and Division business plans and in accordance with Government and Branch policies.

Assist in the development of technical support staff performance agreements and individual development plans.

Maintain diligent management of operational expenditures, to keep projects within allocated budgets as well as to advise the Section manager of any specific requirements or unplanned or unexpected expenditures.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Projects are conducted with the support and collaboration of industry partners and other government agencies, often completed in conjunction with researchers from other agencies. Projects and programs vary from small local demonstrations to large multi-disciplinary projects spanning several years. Projects may be located in any of the irrigated areas of Alberta.

[Back to top](#)

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The incumbent is expected to have a thorough knowledge of hydraulics, particularly as it applies to water conveyance and control systems, irrigation water management and irrigation infrastructure. Projects are often based on new initiatives, involving the development of new scientific methodologies. The incumbent must have a keen sense of the agriculture industry direction and emerging issues in Western Canada, and must strive to balance improvements in water management techniques with the need to increase water use efficiencies, conservation and productivity. Project stakeholders consist of irrigation district management, engineering and operations staff, industry associations and private sector companies, as well as other government agencies.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

The incumbent must have a B.Sc. in Engineering with a minimum of 5 years directly related experience. A post-graduate degree, particularly with a background in water resource management and scientific research methods, is highly desirable. The incumbent's academic or practical background should be in the areas of engineering hydrology and water flow hydraulics, agricultural production practices, including some training and experience in the agricultural application of irrigation. Eligibility for membership in the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA) is essential. This position requires strong interpersonal skills and the ability to lead inter-disciplinary teams. Project management, time management, report-writing and organizational skills are key to the success of this position. Other skills required include strong analytical and problem solving capabilities, excellent computer skills in word processing, spreadsheet applications, database management and presentation graphics, with CADD and GIS abilities as additional assets. Proficiency in technical writing and oral presentation is most desirable.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Internal

[Back to top](#)

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Section Staff	Daily	Work coordination
Section Manager	Weekly	Updates, direction, issues, actions
Irrigation Council	Quarterly	Work coordination
External		
Irrigation Districts	Weekly to Monthly	Issues identification, work coordination, technical support
Irrigation Projects Assoc.	Monthly	Work coordination
Alberta Environment	Weekly	Work coordination, technical support
Public	Daily	Technical advice, issues identification

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A

Alberta Government

Last Review / Update: 2016-03-11

[Back to top](#)

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Classification: Public

Alberta Government

Opted out and Excluded Benchmark Evaluation - 522ER18

Identification Section

Working Title: Bio-Industrial Engineer

Department: Agriculture and Forestry

Division, Branch/Unit: Bio-Industrial Technologies Division, Bio-Industrial Technology Branch

Reports To: Branch Head, Bio-Industrial Technologies (Senior Manager)

Levels to D.M.: 4

Job Description: [522ER18](#)

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)

(requires login)

Comments on Role

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
38% 87
↓
Responsibility
B 87
↓
TOTAL JOB POINTS
404

[Back to top](#)

The Bio-Industrial Engineer provides mechanical and process engineering related expertise in the procurement, installation, and commissioning of non-food processing equipment for projects at Agri-Food Discovery Place and Alberta Research Council. It also establishes safety and maintenance protocols for the equipment, and provides training and support in its use to a variety of stakeholders. The position provides trouble-shooting support to other engineers and scientists in the evaluation of new technologies. It leads in the design and implementation of research projects for industry and other research partners.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** Position requires a Mechanical Engineering Degree and a strong working knowledge of plant management, plant design, processing equipment maintenance, equipment safety, research methods, project management and adult education techniques. Theoretical knowledge is applied when assessing new technologies that can be used in the bio-industrial field, when designing research projects, and in the development of protocols to be followed by others. The breadth of duties and leadership of the position describes a full-working level of engineer, which goes beyond the 'E' level of Content Knowledge, but does not require the specialized depth to indicate an 'F'.

- **Complexity and Diversity:**

- **I:** This position is required to have an understanding of unit operations, the roles and responsibilities of the different research partners and how projects outcomes impact the agricultural industry.

- **Human Relations Skills:**

- **2:** The Bio-Industrial Engineer leads projects, which may have external stakeholders and people from different disciplines as part of the team. The position needs to direct the work, set priorities, and provide on-going feedback to ensure that the goals of the project are met. The engineer also develops and provides training to a variety of audiences in the use and safety protocols of processing equipment. These kinds of duties indicate that influencing skills are frequently utilized by the position and, therefore, has a '2' rating for Human Relation Skills.

- **Creativity/Problem Solving:**

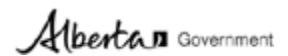
38%: Position works independently in identifying new technologies that can be used in the facilities, and designs research projects, training, and new protocols. Significant analysis is accomplished by the position because solutions are generally unknown; the focus is on new processing equipment where not a lot of research or application has been done. When results

of development work are implemented, position exhibits a high level of operational thinking. Position is considered above 33% because there are few practices or precedent this position can rely on to guide thinking or decision making.

▪ **Responsibility:**

B: The position is considered balanced because it focuses on development of new technology that can be used in facilities, as well the position also establishes safety and maintenance protocols for the equipment, and provides training and support in its use to a variety of stakeholders. Duties are split between development and implementation.

Last Reviewed: November, 2009



Last Review / Update: 2016-03-11

Opted Out and Excluded Benchmark Job Description - 522ER18

Identification Section

Working Title:	Bio-Industrial Engineer
Department:	Agriculture and Forestry
Division, Branch/Unit:	Bio-Industrial Technologies Division, Bio-Industrial Technology Branch
Reports To:	Branch Head, Bio-Industrial Technologies (Senior Manager)
Levels to D.M.:	4

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

Reporting to the Branch Head, this position provides leadership in the new direction set out by the Bio-Industrial Technologies Division (BTD) and the Industry Development and Food Safety Sector, in the development of a non-food processing industry in Alberta. This is accomplished by providing mechanical and process engineering related expertise in the procurement, installation and commissioning of processing equipment, establishment of safety and maintenance protocols. Training and support of the processing equipment in a complex, multi-user environment. Support and troubleshooting to scientists and engineers in the evaluation of new technologies, the design and implementation of applied research projects for industry and other research partners and industry initiated product/process development projects.

Responsibilities and Activities

[Back to top](#)

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(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. In support of BTD's mandate, in the development of a non-food processing industry in Alberta, this position requires initiative and judgement in the application of engineering and scientific skills. Typically this position functions as a senior expert on applied research and industry related projects. This position works on projects having partners across North America and Europe. The applied research and industry related projects that the position is involved with can range in size from small to large multi-disciplinary projects requiring extensive planning and co-ordination skills. The research and results have a major impact on the industry as the findings are used for adaptations and/or introductions of new processes and/or technologies to the Province of Alberta.

Activities:

The position is responsible for the establishment – identify, source, procure, install and commissioning of BTD's new pilot plant in both the Agri-Food Discovery Place and Alberta Research Council.

The position will work as part of a team in the identification of equipment, safety protocols and maintenance relevant to all partners (U of A, ARC and industry).

The position is a leader on various project initiatives as well as a contributing team member on others.

The position provides ongoing engineering support related to the safe operation and training on process equipment located in both facilities.

The position searches out and evaluates new technologies worldwide, related to food and non-food processing of agricultural commodities for applicability to Alberta.

The position trains and evaluates the work of technical staff and summer students as well as mentoring recent engineering graduates in APEGGA culture leading to membership.

The position designs and leads training courses for industry.

The position is required to have an understanding of the operation of a variety of processing equipment related to the value-added processing industry as well as the ability to train others on its safe use and operation.

The position is required to interpret highly technical data for a variety of clients, industry partners and other research institutes.

Scope

[Back to top](#)

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(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

This is a full scope of Mechanical engineering knowledge applied to the start-up and operation of a multi-user, multi-location pilot plant. Accepted engineering practice, standards, codes and specifications (APEGGA) associated with the field of Engineering. A good knowledge of practices in related fields is also important such as HACCP and GMPs, Preventative Maintenance, Occupational Health and Safety and Standard Operating Procedures.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

This position is required to apply a theoretical knowledge base to multiple tasks across a wide range of topic areas. In doing this, a high level of leadership, co-ordination and organizational skills are required.

The position is required to possess an advanced level of education, Mechanical Engineering degree plus experience in organizing and working in a pilot plant environment.

The position is required to possess experience in training/teaching others/partners in the safe operation and maintenance requirements of processing equipment.

The position is required to have the ability to work directly with industry in the identification of equipment and pilot plant design.

Eligible for membership in APEGGA required.

This position is required to have an understanding of the unit operations of a variety of complex processing equipment both for the food and non-food processing industries.

A wide range of reduced scale processing equipment is used in both research and developmental roles with multiple partners. It includes equipment for the separation, extraction, thermo, chemical and biological conversion of agricultural materials to chemicals, fuels and advanced materials.

Contacts

[Back to top](#)

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(Main contacts of this position and the purpose of those contacts.)**Internal:**

Division Director/Branch Heads: daily, planning/decision making and coordination of activities.

Branch staff: daily, lead, support and collaborate R&D projects in the Division.

Other Department Divisions: weekly or monthly, integration and coordination and provide input on related projects.

External to our Ministry:

Alberta Energy, Alberta Sustainable Resource Development, Alberta Advanced Education and Technology, Alberta Research Council, City of Edmonton, ACIDF, Service Alberta: monthly/biannually, collaborations, cooperation with other government department, agencies to pursue growth of the industry.

External to Alberta Government:

Private sector companies, equipment suppliers, vendors, trade agencies, regulatory consultants, Standard Council of Canada, University of Alberta: weekly/monthly, collaborative technical projects, purchasing/installation/certification of equipment.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

This position operates independently with ongoing feedback from the manager as needed. The work of this position is reviewed on an ongoing informal basis.



Last Review / Update: 2016-03-11

[Back to top](#)

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Classification: Public



Opted out and Excluded Benchmark Evaluation - 522ER13

Identification Section

Working Title: Regional Planning Engineer

Department: Transportation

Division, Branch/Unit: Transportation and Civil Engineering, Southern Region

Reports To: Infrastructure Manager (Senior Manager)

Levels to D.M.: 4

Job Description: [522ER13](#)

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
33% 76
↓
Responsibility
R1 87
↓
TOTAL JOB POINTS
393

Comments on Role

This position provides comprehensive highway planning for the Southern Region which extends from the U.S. border in the south, to Olds and Bowden in the north, as well as from the B.C. border in the west and the Saskatchewan border in the east.

[Back to top](#)



Highway planning includes short and long term construction and maintenance management of primary and secondary highways. The position ensures that plans and studies undertaken on future and existing highways are technically sound, meet accepted department standards, and are supported by a wide variety of stakeholders. The position coordinates approximately 6-12 planning studies/activities each year while participating on 2-3 other studies sponsored by Head Office staff. The studies can have very significant bearing on future costs of highway construction with decisions on multi-million dollar options. Study duration can range from 6 months to 2 years, with as many as 4-5 individual stakeholders participating on Technical Review Committees. As a project sponsor for regional planning initiatives, the position chairs Technical Review Committees (TRC) with municipal stakeholders, department representatives and technical experts. The TRC's role is to provide the consultant with relevant information for a particular study, identify local issues to be evaluated by the consultant, monitor study progress and provide technical direction or guidance to the consultant. Throughout the life of a project, the position as expenditure officer monitors invoices and approves payments, inspects the project site and ensures ongoing liaison with local stakeholders and the consultant. When projects are completed, the position reviews the consultant's draft reports for technical accuracy and adherence to project Terms of Reference.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** This is a full working level professional engineer position. It co-ordinates all regional highway planning projects and studies performed by professional engineering consultants, and must have a solid understanding of all civil and structural engineering theories, principles, and applications in order to monitor and advise contractors. As the recognized expert for this region of the province in a narrow area of transportation-related engineering, the position is rated an "E+". If it were an "F" it would need to be a province-wide expert or have specialist knowledge and expertise in one or more areas of civil engineering in addition to highway planning.

- **Complexity and Diversity:**

- **I:** The position co-ordinates approximately 8 to 15 assignments each year which are all related to highway planning, a specialized, yet homogeneous area of engineering. The position must have an awareness of other transportation-related planning activities undertaken by the ministry and other government departments, as often the projects include construction, operations, and various types of infrastructure (bridges, overpasses, etc.). The position attends cross business unit functional meetings to summarize planning recommendations from specific studies and has one-on-one meetings to keep delivery units apprised of potentially contentious issues, staging considerations or other information they require to deliver their programs in an effective manner.

[Back to top](#)

Human Relations Skills:

- 2: The position has a high level of interaction with stakeholders that are non-technical staff and peers. Stakeholders requiring information and direction from the position include consultants, local urban and rural municipalities and their planning experts, special interest groups such as Commercial Transport Advisory groups or landowner associations, departmental staff and staff from other government departments, as well as the public at large. As the chair of the Technical Review Committees (TRC) the position provides expert information engages in negotiations for service contracts and promotes implementation of outcomes and recommendations to stakeholders. The position also provides briefing notes to senior officials on the background of contentious highway planning projects, and drafts action request responses for inquiries on current planning, programming and department policies and standards. Because a major focus of the role is providing guidance (influencing behaviour) and translating engineering plans into understandable terms for other stakeholders, it is rated as a "2".

- Creativity/Problem Solving:**

33%: The coordination component of projects for the position is relatively straightforward with previously established standards and guidelines. There are standardized responses to public or consultant inquiries that the position prepares. Although the position manages multi-phase projects, it is not the focus of the role to develop new processes. The 38% rating recognizes the next level of work above this position, which is responsible for the planning and design component of all studies and projects for the region. The 29% rating is too low and does not recognize the variety of problems encountered in the position.

- Responsibility:**

R1: The position has decision making authority for expenditures and payment of highway planning contracts. It oversees the projects from the beginning, starting with scope definition, to the end, where it conducts a performance assessment on the work of the contractor. The Balanced (B) profile is inaccurate because the position is more than a recommender of action, and does not have the advisory/consultative role as its main focus.

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2015-02-06

[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 522ER13

Identification Section

Working Title:	Regional Planning Engineer
Department:	Transportation
Division, Branch/Unit:	Transportation and Civil Engineering, Southern Region
Reports To:	Infrastructure Manager (Senior Manager)
Levels to D.M.:	4

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

Provides comprehensive highway planning for the Southern Region of Alberta. Highway planning includes short and long term construction and maintenance management of primary and secondary highways. The position ensures that plans and studies undertaken on future and existing highways are technically sound, meet accepted department engineering standards, and are supported by a wide variety of stakeholders. The position coordinates approximately 6-12 engineering planning studies/activities each year while participating on 2-3 other studies sponsored by Head Office staff. The studies can have very significant bearing on future costs of highway construction with decisions on multi-million dollar options. As a project sponsor for regional planning initiatives, the position chairs Technical Review Committees (TRC) with municipal stakeholders, department representatives and technical experts. The TRC's role is to provide the engineering consultant with relevant information, identify local issues to be evaluated by the consultant, monitor study progress and provide technical direction or guidance to the consultant. Throughout the life of a project, the position as expenditure officer monitors invoices and approves payments, inspects the project site and ensures ongoing liaison with local stakeholders and the consultant. When projects are completed, the position reviews the consultant's draft reports for technical accuracy and

[Back to top](#)

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adherence to project Terms of Reference to provide comprehensive highway planning for the Southern Region that addresses functional, network and roadside development planning issues/requirements (short term and long range), through ongoing liaison within the planning/programming/construction and operations branches of the department and externally with municipal stakeholders and the public at large.

Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. **Identify and initiate planning studies to address functional, network and roadside development/access management issues within the South Region.**

Activities:

As a project sponsor for regional planning initiatives, chair Technical Review Committees (TRC) with municipal stakeholders, department representatives and technical experts in addition to selected engineering consultants. The TRC's role is to provide the consultant with relevant information available from various department sources as required for a particular study, identify local issues to be evaluated by the consultant, and in cooperation with TRC representatives monitor study progress and provide technical direction or guidance to the consultant.

As project sponsor, focus often on conflicting objectives of various stakeholder's needs and desires towards achieving required study outcomes/recommendations within agreed to project scope and budget.

Review draft reports and correspondence provided by the consultant for technical accuracy and adherence to project Terms of Reference. Clearly identify potentially contentious or politically sensitive issues for information and direction by department officials.

Through field inspections and ongoing liaison with local stakeholders and the consultant keep apprised of project issues, developments and ultimately implementation of project recommendations.

2. **Participate as Regional liaison and provide local input on more complex projects initiated for the region by senior departmental planning experts.**

Activities:

Attend and provide local input on planning issues at Technical Review Committee meetings as well as providing comment and suggestions regarding the technical merit of draft information provided by the consultants.

3. Provide contract administration of professional service agreements for planning studies to address network requirements for future highway upgrades within the Region.

Activities:

Develop terms of reference for planning studies, identifying project scope and issues to be addressed.

Initiate engineering consultant selection; negotiate quotations to ensure study objectives are achieved within defined scope of work for a reasonable dispersal amount. Coordinate contract approvals through the Region, Professional Services and Programming to ensure that funds are identified and approved for forthcoming assignments.

As expenditure officer, monitor invoices and approve payments with approved limits and track expenditures for projects during all phases.

Through ongoing liaison with the consultant, ensure timely completion of draft and final reports, on budget and within predetermined scope, meeting all milestones and achieving all deliverables. When a project scope changes, ensure the appropriateness of the work in light of changing environment or direction identified through the course of a project and seek necessary approvals for additional work.

Conduct consultant performance appraisals with a goal to enhance future performance and increase consultant awareness of department policies, procedures and accepted practices.

4. Promote implementation of outcomes and recommendations from planning studies and provide continuity in transfer of accepted information to stakeholders to ensure that planning recommendations are realized and programmed for implementation in a timely manner both in the short term and as provincial priorities and budgets allow over the longer term.

Activities:

Attend cross business unit functional meetings (constructions, operations) to summarize planning recommendations from specific studies as well as one-on-one meetings as necessary to keep delivery units apprised of potentially contentious issues, staging considerations or other information they require to deliver their programs in an effective manner.

Participate in meetings with local municipalities to discuss planning study recommendations, potential staging of improvements and identify opportunities for developing mutually beneficial implementation strategies for referral to senior management for approvals.

Circulate final reports to all departmental and municipal stakeholders and follow up on questions or issues that may arise.

Work with municipal stakeholders to achieve support and endorsement of Highway Vicinity Management Agreements (HVMA).

- 5. Prepare correspondence to encourage implementation of planning objectives, to update stakeholders on the department's policies, procedures, plans and programs within the context of specific planning issues such as access management, functional and network plans and roadside development issues affecting long term highway plans. Provide information and recommendations to departmental officials concerning specific planning issues of contentious or politically sensitive nature.**

Activities:

Provide briefing notes to senior officials to give background, identify issues and provide a recommended response or decision regarding specific planning issues raised by municipalities or the general public within the Southern Region.

Formulate draft response to action requests for information to the Minister from the public and local municipalities, based upon current planning, programming and department policies and standards.

Other correspondence as required, including status reports, summaries, etc. in support of information dissemination to stakeholders.

- 6. Other related duties in support of documentation and maintaining records, plans and files on specific planning issues.**

Activities:

Copies of final reports, including electronic copies in an acceptable format to Head Office for central filing.

Coordinate plan preparation for key plans and other plans required for planning studies to ensure appropriate formats, scales, labeling, etc. to satisfy departmental requirements and provide sufficient information for client use.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

[Back to top](#)

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Operate as Planning Engineer Specialist for the Southern Region, which extends from the U.S. border in the south, to Olds and Bowden in the north, as well as from the B.C. border in the west and the Saskatchewan border in the east.

Stakeholders include consultants, local urban and rural municipalities and their planning experts, special interest groups such as Commercial Transport Advisory groups or landowner associations, departmental staff in other branches of the department, other government departments, as well as the public at large.

Coordinates some 6-12 planning studies/activities each year while participating on 2-3 other studies sponsored by Head Office staff. The value of the studies represent a direct cost of perhaps \$500,000 in total, but can have very significant bearing on future costs of construction with decisions/recommendations on multi-million dollar options. Study duration depends on complexity but can range from 6 months to 2 years, with as many as 4-5 individual stakeholders participating on Technical Review Committees.

Currently responsible for the Primary Highway network within the region, with some involvement with Secondary Highway issues affecting planning on Primaries.

As Project Sponsor, have the opportunity to influence stakeholder acceptance of study scope and outcomes through face to face discussions of issues and build consensus concerning the approach to the assignment and its outcomes.

Refer decisions, issues and recommendations of a sensitive and contentious nature or where the department may be required to commit to a substantial allocation of resources.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

BSc. Civil Engineering.

Eligible for membership in APEGGA.

Knowledge of engineering theory, principles and practices.

Knowledge of departmental policy, procedures, practices and standards as well as business goals and objectives as they relate to planning issues.

[Back to top](#)

Knowledge of accepted national highway design and planning standards (e.g. TAC Geometric Design Guide).

Knowledge and understanding of department guidelines for planning agreements and project specifications.

Ability to operate in a team environment and to function successfully as a team leader.

Strong leadership skills (e.g. as Chairman of TRC's).

Excellent communication and interpersonal skills, both verbal and written.

Ability to resolve conflicts and to analyze problems and situations with the aim to provide clear direction and solutions to issues raised.

Strong organizational skills, time management, etc. required to coordinate activities.

Knowledge of the cross-functional roles and responsibilities of branches within the department.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Consults with regional and head office planning staff to share as well as seek advice. Also consults and monitors engineering consultants regarding planning studies, feasibility studies, planning assignments from an engineering perspective. May also interface with public or media on programming, planning, or other related issues as well as land use concerns and to explain policies, procedures, and ministry positions on projects from costs to timing.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A

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Last Review / Update: 2015-02-06

[Back to top](#)

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 Alberta

Opted out and Excluded Benchmark Evaluation - 522ER14

Identification Section

Working Title: Traffic Data and Forecasting Engineer

Department: Transportation

Division, Transportation and Civil Engineering, Program
Branch/Unit: Management

Reports To: Modeling & Forecasting Specialist (Eng & Rel
4)

Levels to D.M.: 5

Job Description: [522ER14](#)

MRS: See the [Minimum Recruitment Standards](#) for
Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and
salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)

(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
33% 76
↓
Responsibility
B 76
↓
TOTAL JOB POINTS
382

Comments on Role

[Back to top](#)

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Alberta

The Traffic Data and Forecasting Engineer is responsible for traffic data collection, traffic forecasting, traffic modeling and level of service analysis for highways and other roads in Alberta. This position undertakes the fundamental analysis determining Alberta Transportation's performance measure of improving traffic capacity of rural highways. From concept, thorough planning, programming, design, construction and operation - traffic data is integral to knowing the current and future traffic volumes which leads to design of highways including roadway width, the number of lanes, the pavement thickness and intersection treatments.

The position ensures that the monitoring of road usage and the prediction of road usage are done within scope, cost, time, and quality. In order to manage and forecast traffic data, the position develops performance measures, creates probable scenarios of highway construction, prepares performance reports for department and Auditor General, and coordinates contracts for consultants who will create the data through traffic monitoring services. The data typically measures intersection counts, speed of traffic or origin/destination of traffic. The position develops the contract terms of reference, monitors the data supplied by the contractor for validity and accuracy, verifies and authorizes repairs to equipment and sites, and performs contract invoicing and payment authorization. The position provides the contractor an inventory of the highway network to be monitored, a list of the intersections to be counted and automated traffic recording sites to be operated over the term of the contract. Once data has been collected the position organizes and compiles traffic statistics into usable formats for clients. Needs for clients are determined through consultation, and special reports are created to provide them with necessary information, such as historical trends of traffic data, recommended new traffic measures, and projection of future use and needs. This specialised traffic and transportation forecasting engineer position requires a BSc in Civil Engineering. In addition to the Civil Engineering degree, a Masters in Transportation Planning is preferred.

Comments on Evaluation

Knowledge:

Content:

- E+:** This is a full working level professional engineer position. Sound knowledge of civil engineering in the areas of highway planning, design and travel forecasting, travel behaviour and statistical modelling are required. The position must have a thorough knowledge of the costs and limitations of automated traffic monitoring equipment and of manual traffic monitoring techniques in order to cost effectively monitor usage of Alberta's highway related infrastructure for the department and its clients. Understanding travel behaviour on roads in order to predict future highway usage is a key part of the role. The position is considered an E+ because it is a specialist in a very

specific topic area, traffic data and forecasting. The narrow scope of its expertise keeps it within the “E+” rating rather than the “F”.

Complexity and Diversity:

- **I:** The position has a province-wide scope and must integrate several projects monitoring road usage. The position consults with clients who require this information, ensuring that their specific needs for the data are met and that customized reports are produced for each. It must have an awareness of the diverse needs of each client or staff member for the data.

Human Relations Skills:

- **2:** The position provides technical information relating to traffic data across the province, and translates raw data and performance measures into meaningful reports for clients and non-technical stakeholders. The “2” rating recognizes the need to convey technical information to external stakeholders that do not possess an equal level of understanding and know-how of traffic data and forecasting.

Creativity/Problem Solving:

33%: The nature of the role is a cross between analytical and project management. The problem faced is how to accurately forecast the level of usage of highways throughout Alberta. However, these problems are provided to the position; it does not generate the data needs on its own. Through consultation with others, issues are identified, and the position is then responsible for answering the question. The 33% reflects the position’s focus on determining the answer to the future-based questions about what types of highways to build. If the position was focused on indentifying the root issues, it would be rated as a 38%.

Responsibility:

B: The position, as an expert in traffic forecasting, plays a consultative role in meeting with clients to determine their needs for the data. The position is partially an analytical role in modeling and predicting traffic trends, but it also has a role in managing contracted projects. The C1 profile is inaccurate because the position is not focused solely on analysis and research.

Last Reviewed: November, 2009

Last Review / Update: 2015-02-06

[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 522ER14

Identification Section

Working Title:	Traffic Data and Forecasting Engineer
Department:	Transportation
Division, Branch/Unit:	Transportation and Civil Engineering, Program Management
Reports To:	Modeling & Forecasting Specialist (Eng & Rel 4)
Levels to D.M.:	5

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

The Traffic Data and Forecasting Engineer is responsible for all activities to carry out traffic data collection, traffic forecasting, traffic modeling and level of service analysis for highways and other roads in Alberta to support Alberta Transportation's goals of managing the highway system and reinvesting in strategic highway improvements.

This position undertakes the fundamental analysis determining Alberta Transportation's performance measure of improving the Management of Provincial Transportation Infrastructure - Traffic Capacity on Rural Highways.

The monitoring of the usage of Alberta's highways and overseeing of prediction of future usage of Alberta's highways are to be done within the accepted department standards and technical and functional program requirements.

The Traffic Data and Forecasting Engineer provides the leadership to ensure that the monitoring of usage and the prediction of usage are done within scope, cost, time, quality and to the satisfaction of clients within and outside of Alberta Transportation under a safe work environment.

[Back to top](#)

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Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. Department performance measure determined.

Activities:

Development of the performance measures for Traffic Capacity on rural highways.

Determine current and future traffic capacity performance based on likely scenarios of highway construction.

Work with senior department management on the implications and impacts of the performance measure.

Preparation of performance report for department and Auditor General.

2. Manage Traffic Monitoring Consultant.

Activities:

Development of contract terms of reference for usage monitoring requiring knowledge of the scope of infrastructure to be monitored and the current state-of-the-art in monitoring equipment and techniques.

Monitoring the Request for Proposal process requires knowing the capabilities of the consulting industry to provide monitoring services and industry costs to provide such services.

Quality assurance monitoring of the contractor, checking the data supplied for validity and accuracy.

Verifying and authorizing repairs to equipment and sites.

Contract invoicing and payment authorization.

Managing the contract to serve major clients, namely the Department - Consultants - Public.

Special data requests and surveys.

3. Monitor highway usage.

Activities:

Scope the work of the traffic-monitoring contractor. This involves providing the contractor an inventory of the highway network to be monitored with a list of the intersections to be counted and automated traffic recording sites to be operated over the term of the contract (updated as required).

Organizing and facilitating the compilation of traffic statistics into usable formats for clients. This involves the development of formats (electronic or hard copy) for historical, annual, monthly, daily and hourly reports.

Consulting with clients to collect information which meets their needs. This may mean setting up special automated traffic recording sites, intersection counts, speed studies and/or origin destination surveys.

Manipulation of databases to support the development of infrastructure standards based on usage. An example would be the development of traffic based warrants for twinning rural highways.

Manipulation of databases to support the development of performance measures based on usage. An example would be the development of traffic based measures of the use of highway infrastructure.

Dissemination of the data collected through Internet web pages, intranet site, hard copies for sale, electronic copies and direct contact with clients.

4. **Future highway usage determined.**

Activities:

Determination of historical trends through the maintenance of historical databases of traffic data.

Projection of historical trends to determine future use. This prediction technique covers 90% of the Alberta highway network outside of the Edmonton and Calgary regions.

Calibration of Urban Travel Demand Models. Provide traffic information in a format that allows for the calibration of the Edmonton Regional Demand Model run by the City of Calgary on behalf of Alberta Infrastructure and Transportation.

Knowledge of Urban Travel Demand Models (such as UTPS or EMME/2) which provide traffic forecasts for roadways in the Edmonton and Calgary regions based on scenarios that meet client needs.

Collation of Planning Study Reports future usage predictions.

Development of a knowledge base of social, economic and development trends in Alberta which affect provincial and local traffic levels.

5. **Highway level of service analyzed.**

Activities:

Assembly of highway physical characteristics.

Assembly of highway usage characteristics.

Application of current Highway Capacity Manual procedures.

Report preparation and dissemination of results through reports, electronic copies and intranet web site.

Analysis of the Alberta highway network for Passing Lanes.

Organize and report on the trip generation characteristics of various land uses.

Organize the installation, operation and reporting of data from Weigh in Motion traffic monitoring devices to support department pavement performance research efforts.

Work with other agencies such as Statistics Canada to undertake Origin Destination/Place of Work Surveys.

Update Vehicle Operating Costs used in cost benefit analysis.

Undertake Cost Benefit Analysis.

Prepare and present papers/talks on traffic monitoring for department, engineering peer and university groups.

Vehicle Classification Studies.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

The highway usage and prediction of future usage fundamentally determines the design of all highway projects undertaken by Alberta Transportation. From concept, thorough planning, programming, design, construction and operation - traffic data is integral to engineering process involved with each step. Knowing the current and future traffic volumes allows for the most cost effective and appropriate design of highways covering such primary design considerations as roadway width, the number of lanes, the pavement thickness and intersection treatments.

The determination of department performance measures for highway capacity and their calculation directly impacts the department's funding and operation within the government's overall business plan.

The requirement is to design and manage traffic data collection systems which meet these primary needs, which requires thorough knowledge of statistical methods, Alberta's road network, departmental operations and strong organizational planning and coordination skills.

Knowledge, Skills and Abilities

[Back to top](#)

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(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Membership in APEGGA is a requirement of this position.

A Bachelor's Degree in Civil Engineering is essential for this position.

A Master's Degree in Transportation Planning is desirable.

Sound knowledge of civil engineering in the areas of highway planning, design and travel forecasting.

The requirement is for thorough knowledge of the cost and limitations of automated traffic monitoring equipment and manual traffic monitoring techniques in order to cost effectively monitor usage of Alberta's highway related infrastructure for the department and its clients.

There is a major requirement to understand travel behavior, Alberta's road network, statistical methods and social and economic trends to predict future usage of Alberta's highway related infrastructure for the department and its clients.

A valid driver's license is needed to allow travel to various places in Alberta to check on the field operations of the traffic-monitoring contractor. It also allows the incumbent to experience local travel patterns and behavior that is useful in developing an awareness of current use and predicting future use.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Contacts are varied and for differing purposes: works closely with other in-house forecasting engineers and the engineering planning group on results of research to be incorporated in the highway planning process; consults with clients to collect information which meets their needs and may require setting up special automated traffic recording sites, intersection counts, speed studies and/or origin destination surveys; hires, monitors and reviews the work of the traffic-monitoring contractor to ensure compliance with prescribed work expectations, standards and overall performance; works with senior ministry staff on the preparation of the performance report for the Auditor General as well as the implications and impacts of the performance measures developed and used; works closely with other agencies such as Statistics Canada to undertake Origin Destination/Place of Work Surveys; prepares and presents papers/talks on traffic monitoring and forecasting for ministry, engineering peer and university groups.

[Back to top](#)

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Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A



Last Review / Update: 2015-02-06

Opted out and Excluded Benchmark Evaluation - 522ER15

Identification Section

Working Title: Structural Standards Engineer

Department: Transportation

Division, Branch/Unit: Transportation and Civil Engineering Division, Technical Standards Branch

Reports To: Director, Bridge Engineering (SM)

Levels to D.M.: 4

Job Description: [522ER15](#)

MRS: See the [Minimum Recruitment Standards](#) for Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
33% 76
↓
Responsibility
B 76
↓
TOTAL JOB POINTS
382

Comments on Role

The position is an in-house consultant on structural engineering issues to bridge staff located in the four regions of the province. It is responsible for developing bridge structure design guidelines, and designs standard bridges, bridge components, and bridge rails. Bridge project size can range from small culverts costing a few hundred thousand dollars to a

[Back to top](#)



major river crossing costing over thirty million dollars. The position reviews contracted consultant bridge designs for conformance to structural and safety standards, proposes design alternatives, and advises on the recommended choice of appropriate structure type to the Regions. It provides structural engineering support to the highway engineering group for items such as safety guardrails, break away traffic sign supports, large overhead sign gantries, gas line protection slabs, and truck towing anchors for run-away ramps. The position promotes new technology that will result in better design and cost effectiveness, provides structural engineering input on fabrication and construction, and conducts technical audits.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** Requires a solid working knowledge/expertise in civil engineering. The expertise lies in bridge design, bridge structure and related bridge aspects. This position is an all-around expert in bridge engineering and is looked upon to provide expertise to a wide range of interested stakeholders, and is considered an E+. For example, the position responds to queries, reviews bridge designs, provides structural engineering expertise and support, and develops design guidelines. An F position is an expert in multiple areas, which this position is not. An E position is not required to apply a theoretical body of knowledge to an entire topic area, providing expertise, solid leadership and co-ordination to that area. This position possesses a specialized depth related to the structural aspects of bridges and provides technical resources for the review of bridge designs and the E+ score most accurately supports the position profile.

- **Complexity and Diversity:**

- As a structural engineering coordinator for the ministry, the position ensures there is no duplication of effort and looks to integrate the activities of each region into a cohesive program and plan. In standardizing designs and methods used to manage projects, the position ensures there are no time or cost inefficiencies in designing similar structures more than once. The awareness of all bridge engineering projects across the province and the need to coordinate them into one program is appropriately reflected at the “I” level.

- **Human Relations Skills:**

- The position is an advisor, providing guidance and consultation to regional staff. Specifically it provides technical advice on the choice of bridge structure, proper design procedures, and all aspects of structural engineering. These aspects include bridge materials, safety guard-rails, traffic signs, overhead signs, bridge inspection procedures and gas line protection mechanisms. There are sometimes conflicts in what is a priority between regions and this position

[Back to top](#)

uses persuasion skills to build consensus and deliver a province-wide program cohesively. For these reasons it is rated at the “2” level.

- **Creativity/Problem Solving:**

The position is a coordinator of a well established program in the ministry. Precedents and access to guidelines and standards are readily available. The position is focussed on determining which projects are technically sound and a priority, and the criteria for determining this is not determined by the position; it is based on longstanding scientific principles. Developing and testing new technology within bridge construction is not completed by this position and for these reasons it is rated as a 33% not 38%.

- **Responsibility:**

B: The focus of this position providing advice and coordination to regional staff and contractors. The analytical component of the position is in the evaluation of design proposals and projects. An equally weighted component of the position is the conducting of technical audits, participating in site inspections and approval of contracted work. The C1 profile is inaccurate because the position does not spend the majority of its time on research and analysis, and the R1 profile is not the best fit because the position is not focused on operational, front-line delivery.

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2015-02-06

[Back to top](#)

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Alberta

Opted Out and Excluded Benchmark Job Description - 522ER15

Identification Section

Working Title:	Structural Standards Engineer
Department:	Transportation
Division, Branch/Unit:	Transportation and Civil Engineering Division, Technical Standards Branch
Reports To:	Director, Bridge Engineering (SM)
Levels to D.M.:	4

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

The Structural Standards Engineer provides leadership and technical expertise in support of the Division's philosophy to be a knowledgeable owner. It is responsible for the development of bridge structures design guidelines, design of standard bridges, standard bridge components, and bridgerails. The position reviews consultant designs to advise the four regions on conformance with structural and safety standards, and effectiveness in cost and performance. Also, provides in-house consulting on structural engineering issues to regional bridge staff and other staff. It is expected to work as an effective team member with all stakeholders in providing safe and quality bridge structures for the travelling public.

Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

[Back to top](#)

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1. **Provide structural engineering support to regional bridge staff to ensure that consultants provide quality designs for the benefit of the Department.**

Activities:

Respond to queries on Alberta Transportation standards and structural engineering issues.

Review proposed design alternatives, and advise on choice of appropriate structure type, and rehabilitation strategy.

Review final detailed designs and attend design review meetings. Advise on use of proper design procedures, effective and durable bridge components.

Promote new technology that will result in better design and cost effectiveness.

Provide structural engineering input as requested on fabrication and construction, contract claims and disputes.

Carry out or assist in technical audit when necessary.

2. **Develop structural engineering design guidelines to ensure safe, economical, and durable bridge structures. Evaluate new developments in design procedures, bridge technologies and materials for performance in the Alberta environment. Evaluate performance of new and existing bridges in the province.**

Activities:

Develop and keep up-to-date design guidelines to provide guidance for consultants working for Alberta Transportation. Organize and supervise consultant projects for design guideline development.

Review new developments in design codes from Canadian Standards Association (CSA), Ontario, American Association of State Highway and Transportation Officials (AASHTO), American Concrete Institute (ACI), etc. Review new developments in technical journals, magazines and other publications. Attend industry technical seminars. Visit bridge and related web sites on the Internet.

Field trips and site inspections. Review bridge inspection reports.

Obtain input from regions, consultants, contractors and suppliers on standards issues.

3. **Production and maintenance of Alberta Transportation Standard Drawings, which covers standard bridges, bridge girders, bridgerails, approach guardrails, deck joints, etc. Standard designs and drawings are used to provide Department standards on common bridge appurtenances, and to eliminate duplication and wasted efforts by individual consultants in repeating the same design for different bridges.**

Activities:

Carry out structural design for standard bridges and components.

Engage and supervise consultants in production of Standard Designs and Drawings.

Obtain input from regions, consultants, contractors and suppliers on standard design features.

Review design of specialized bridge components submitted for approval by suppliers.

4. Provide structural engineering expertise to other staff in support of their effort to provide safe and reliable bridges and highways for the public.

Activities:

Provide structural design input to bridge fabrication and construction standards staff. Assist in development of bridge specifications.

Provide input on structural design aspects for bridge inspection and maintenance procedures.

Provide structural design input on use of new bridge materials.

Provide structural engineering support to the highway engineering group for safety guardrails, break away traffic sign supports, large overhead sign gantries, gas line protection slab, truck towing anchors for run-away ramps, etc.

5. Provide information to design consultants, contractors and universities in support of their efforts to provide efficient services to the Department.

Activities:

Respond to queries on Department Bridge Design Standards and Practices.

Assist in interpretation of Bridge Design codes.

Provide information on past experience and performance of bridges.

Promote new technology that will result in better design and cost effectiveness.

Provide liaison with academics and consultants on research projects.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

[Back to top](#)

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Significant divisional impact affecting quality of designs provided by consultants, quality and safety of bridge structures, efficient use of resources and infrastructure dollars.

High quality bridges will be safer for the travelling public. There will be less breakdown time and interference on the highway. Durable bridges will save tax dollars in capital investment and long-term maintenance costs.

Project size can range from small culverts costing a few hundred thousand dollars to a major river crossing costing over thirty million dollars.

Clients and stakeholders include Regional Bridge Managers, Regional Bridge Engineers and Technicians, consultants, contractors and suppliers, university professors and students.

Services provided to all four Regional Offices of the province.

Analytical and creative thinking is required on a daily basis.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

Professional membership with APEGGA.

Minimum B.Sc. in civil engineering with a Masters degree in structural engineering preferred.

In-depth knowledge and understanding of applications and impacts on lifespans of a wide range of culverts and bridge types, as opposed to theoretical behavior implied by simplified design code procedures and textbooks. Good feel of what works well and what does not.

In-depth knowledge of Canadian, Ontario and North American structural design codes and the background for the code requirements.

Good knowledge of other highway issues including roadside safety, geometrics, environment and river engineering.

Good knowledge of complex structural design and analysis procedures and computer software. Highly competent computer skills.

[Back to top](#)

Ability to make the right call on critical decisions requiring balance between cost and benefits, sometimes involving safety issues.

Strong analytical, consulting, problem solving skills, combined with common sense and creativity. Ability to be thorough with attention to details.

Strong interpersonal skills and effective team player. • Previous work experience with consultants or contractors an asset.

Contacts


(Main contacts of this position and the purpose of those contacts.)

Clients and stakeholders include Regional Bridge Managers, Regional Bridge Engineers and Technicians, consultants, contractors and suppliers, university professors and students. The nature of the contacts are varied: ongoing communication with the four regional Bridge Sections located across Alberta to provide in-depth engineering support and guidance such as conformance with structural and safety standards, and effectiveness in cost and performance, as well as consulting on structural engineering issues; hire, monitor and review the work of consultants for the production of Standard Designs and Drawings; liaise with academics and consultants on research projects.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A.

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Last Review / Update: 2015-02-06

[Back to top](#)

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Opted out and Excluded Benchmark Evaluation - 522ER16

Identification Section

Working Title: Rural Transportation Engineer

Department: Transportation

**Division,
Branch/Unit:** Transportation and Civil Engineering Division,
Program Management Branch, Municipal
Programs Section

Reports To: Director, Municipal Programs (Senior Manager)

Levels to D.M.: 4

Job Description: [522ER16](#)

MRS: See the [Minimum Recruitment Standards](#) for
Engineering and Related

Job Code: [522ER](#) - Engineering and Related Level 2
(See [Opted out and excluded pay plans and
salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
E+I2 230
↓
Creativity/Problem Solving
33% 76
↓
Responsibility
B 76
↓
TOTAL JOB POINTS
382

Comments on Role

This position is responsible for the province-wide management and coordination of new departmental grant initiatives for rural and small urban municipalities. The ministry administers a number of municipal grant programs in partnership with Alberta's

[Back to top](#)

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cities, towns, villages, summer villages, rural municipalities and Metis settlements. The grant programs provide financial assistance to municipalities for capital-related transportation, and core municipal infrastructure needs. The position evaluates applications for funding to restore, enhance, or improve public roads, which will result in reduced environmental impact and congestion, and increased safety and economic development of the local area. Grants are provided to small municipalities to help fund their road construction projects, and without funding, they would be unable to maintain safe and appropriate highways or waterways. As a professional engineer, the position ensures that the proposed improvements requesting funding are in accordance with government legislation for road design and construction, and traffic and safety standards. Examples of proposed improvements include the addition of an HOV lane, improved rescue systems or incident response, or new traffic signaling. The position establishes appropriate information sources for program evaluation, performance measures and program development. It leads reviews and evaluations of projects requesting grants, provides training and expert advice to regional staff, determines project and program funding allocations, and co-ordinates grant approvals with municipalities. The position ensures that grant program criteria for projects include utilization of safe construction technology, elimination of potential risks for disaster, improved efficiency of the transportation system, and improved access to businesses, employment and education opportunities for the community.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E+:** This is a full working level professional engineer position. Excellent working knowledge of municipal transportation requirements, highway construction, highway design, scheduling and financial implications of alternative techniques is required to co-ordinate funding for various roadway and waterway projects. Expertise is required to work with engineers in the creation of the both rural and small urban municipalities grants. The position is considered an E+ because it is an expert in all aspects of one very specific topic area, rural highway planning, one of several grants programs.

- **Complexity and Diversity:**

- **I:** The position has a province-wide scope in managing several grant and funding programs. It must have an awareness of the diverse transportation needs of small communities across Alberta. It is appropriately rated as an “I” as it is a very specific program (a homogeneous part of the department’s overall transportation mandate).

- **Human Relations Skills:**

[Back to top](#)

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- **2:** The position is an advisor and coordinator for municipalities who have applied for grants and funding, as well as an advisor to regional staff in the ministry who must administer the funding programs on the “front line”. As the lead in province-wide grant program reviews and evaluations, the position uses influencing skills to build consensus across the province on priority projects to be funded.

- **Creativity/Problem Solving:**

33%: The position analyzes the requests from municipalities for funding for their transportation projects. These requests are typically straightforward – they are not often new, unprecedented proposals. The technical, social and political issues surrounding each transportation project are known. The creativity lies in determining what the priorities are and analyzing what will receive funding. Because this is not the highest level of operational thinking the position is rated as 33%.

- **Responsibility:**

B: Responsibilities are a cross between grant program development and delivery of funding. The position acts as an advisor to regional engineering staff and is the province’s central coordinator of projects that request funding. The R1 profile would be inaccurate because the position does not possess a final decision making authority on who receives funding and for what reasons.

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2015-02-06

[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 522ER16

Identification Section

Working Title:	Rural Transportation Engineer
Department:	Transportation
Division, Branch/Unit:	Transportation and Civil Engineering Division, Program Management Branch, Municipal Programs Section
Reports To:	Director, Municipal Programs (Senior Manager)
Levels to D.M.:	4

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

This position provides expert technical advice and guidance to the regions in their delivery of the department's new departmental grant initiatives programs to rural municipalities and small urban municipalities across Alberta. The ministry administers a number of municipal grant programs in partnership with Alberta's cities, towns, villages, summer villages, rural municipalities and Metis settlements. The grant programs provide financial assistance to municipalities for capital-related transportation, and core municipal infrastructure needs. The position evaluates applications for funding to restore, enhance, or improve public roads, which will result in reduced environmental impact and congestion, and increased safety and economic development of the local area. Grants are provided to small municipalities to help fund their road construction projects, and without funding, they would be unable to maintain safe and appropriate highways or waterways. As a professional engineer, the position ensures that the proposed improvements requesting funding are in accordance with government legislation for road design and construction, and traffic and safety standards. Examples of proposed improvements include the addition of an HOV lane, improved rescue systems or incident response, or new traffic signaling.

[Back to top](#)

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The position establishes appropriate information sources for program evaluation, performance measures and program development. It leads reviews and evaluations of projects requesting grants, provides training and expert advice to regional staff, determines project and program funding allocations, and co-ordinates grant approvals with municipalities. The position ensures that grant program criteria for projects include utilization of safe construction technology, elimination of potential risks for disaster, improved efficiency of the transportation system, and improved access to businesses, employment and education opportunities for the community. Provides expert engineering support to the regions, other branches of government, external agents and client municipalities.

Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. Develop and implement grant delivery policies and procedures.

Activities:

Establish and document appropriate grant program administration practices and project eligibility criteria and guidelines.

Take lead role in province-wide grant program reviews and evaluations.

Ensure that consistent and equitable procedures are applied.

Provide training and expert advice to regional staff respecting grant delivery and technical guidelines.

2. Manage the province-wide coordination of various grant programs.

Activities:

Establish and recommend the annual budget allocations for applicable programs.

Determine project and program funding allocations and priorities.

Coordinate ministerial approvals for individual grants and projects.

Coordinate the interdepartmental review of project applications.

Administer and coordinate the approvals and program budgets for the Streets Improvement Program, Rural Transportation Grant, Metis Settlement Access Roads, Resource Road/New Industry Program and the Community Airport Program.

3. Provide relevant information and recommendations to facilitate decision making on various issues.

Activities:

Prepare and provide input for Ministerial Fact Sheets and Briefing Notes.

Negotiate, liaise, consult and coordinate with municipalities and departments as necessary.

Initiate and/or participate in discussions on politically sensitive issues.

4. Establish, access and monitor appropriate information sources for program evaluation, performance measures and program development.

Activities:

Participate in reviews of municipal infrastructure.

Determine the requirements and assemble relevant information regarding grant-supported infrastructure with the intent to develop and maintain ongoing performance measures.

Maintain and determine a comprehensive program development information system.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Alberta municipalities are highly dependent on these grants as a source of funding and there is a high level of political interest and influence on the programs. This position must be knowledgeable in providing accurate input to municipal plans at the administrative level as well as consider the political ramifications of various courses of action.

A wide range of infrastructure projects must be reviewed and assessed on a province-wide basis.

Training of regional staff requires significant coordination, communications and team participation.

[Back to top](#)

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Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

BSc. Civil Engineering.

Eligibility for membership in APEGGA.

Excellent working knowledge of department programs and procedures, municipal transportation requirements, highway construction, design, scheduling and financial implications of alternative techniques.

Excellent writing and communication skills.

Highly developed interpersonal and negotiating skills.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Provides expert engineering support and guidance to the regions, other branches of government, external agents and client urban and rural municipalities across Alberta and addresses matters regarding the delivery of the ministry's grant initiatives programs, including the approvals process, program parameters, and actual grant approvals.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

N/A

Last Review / Update: 2015-02-06

[Back to top](#)

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Opted out and Excluded Benchmark Evaluation - 521ER03

Identification Section

Working Title: Approvals Engineer In Training

Department: Environment and Parks

**Division,
Branch/Unit:** Environmental Management Division, Southern
Region, Approvals Section, Lethbridge District

Reports To: Industrial Approvals Manager (Manager)

Levels to D.M.: 6

Job Description: **521ER03**

MRS: See the [Minimum Recruitment Standards](#) for
Engineering and Related

Job Code: **521ER** - Engineering and Related Level 1
(See [Opted out and excluded pay plans and
salary ranges](#) – Schedule 1, Part 2-A)

[Organization Chart](#)
(requires login)

Evaluation Knowledge
EI2 200
↓
Creativity/Problem Solving
29% 57
↓
Responsibility
R1 66
↓
TOTAL JOB POINTS
323

Comments on Role

This entry-level professional engineering position assists in reviewing and preparing the technical components of approvals and licenses under the Environmental Protection and Enhancement Act (EPEA) and the Water Act. When a municipality or

[Back to top](#)

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industry proposes an activity that will have an effect on bodies of water, land, or air quality and quantity, an approval or license must be issued by the ministry before the activity is approved to proceed. Approval or license holders must then stay within the limits and parameters of their approval or license, or they face charges of non-compliance. This position confirms and assesses the environmental impacts of proposed industrial and municipal activities, facilities, water diversions and water body disturbances within the Lethbridge District. It recommends limits and monitoring requirements for the control and management of substance releases into the environment. The position also represents the district on internal and external committees, providing information and advice to assist with industry compliance and abatement activities. The position is not expected to conduct reviews of approvals and licenses independently as the focus of the job is to provide significant development experience in the area of industrial approvals. This is not a terminal Engineering and Related Level 1 position; it has the potential to move to the full working level (Engineering and Related Level 2) providing there is an organizational need for work at that level.

Comments on Evaluation

- **Knowledge:**

- **Content:**

- **E:** A degree in engineering with a focus on natural resources or environmental issues is required to understand the basic theoretical knowledge of air, water, and land quality issues. The position develops from entry level engineer gaining on-the-job experience resulting in more detailed knowledge of basic air, water, and land issues, such as air pollution control technology, waste management principles, plume dispersion modeling, ambient air monitoring as well as EPEA, the Water Act, and other regulations and concepts involving environmental standards. As this position is representing entry level engineer work the role does not require the depth and breath of knowledge need to be a technical expert in this area therefore it is appropriately rated at an E versus an E+.

- **Complexity and Diversity:**

- **I:** An understanding of how this position's work relates to the work of the Approvals Team, industry, and municipalities is required. The position must consider political, economic, legal and social impacts of its work in addition to environmental and technical impacts.

- **Human Relations Skills:**

- **2:** Position must apply scientific and engineering principles and theories and explain them to non-technical audiences. As a representative of AENV's Lethbridge District at various committees and meetings, such as internal

and external review teams, public hearings and appeal processes, the position must use influencing skills and persuasiveness in order to obtain support and commitment for the work of its team.

▪ **Creativity/Problem Solving:**

29%: The 29% rating reflects the access to assistance from the Approvals Team engineers. Because the intent of the position is to develop experience in reviewing industrial approvals, the position is consciously assigned straightforward cases. The position's work is guided by legal guidelines in EPEA and the Water Act. The process to issue approvals and licenses to the public is well established, and in complex cases, the position is working as an assistant to another professional engineer who is managing the issues. Position is not expected to make decisions on how to solve problems or to use judgment to achieve these objectives, this level of problem solving would be seen at the 33% level.

▪ **Responsibility:**

R1: The position is accountable for assisting in the preparation of licenses and approval conditions for proposed industry activity that will have an environmental impact on the quality of air, land or water.

Last Reviewed: November, 2009

Alberta Government

Last Review / Update: 2016-03-11

[Back to top](#)

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Opted Out and Excluded Benchmark Job Description - 521ER03

Identification Section

Working Title:	Approvals Engineer In Training
Department:	Environment and Parks
Division, Branch/Unit:	Environmental Management Division, Southern Region, Approvals Section, Lethbridge District
Reports To:	Industrial Approvals Manager (Manager)
Levels to D.M.:	6

Purpose

(Brief summary of the job, covering the main responsibilities, the framework within which the job has to operate and the main contribution to the organization.)

Reporting to the Industrial Approvals Manager, the Approvals Engineer Intern is responsible for assisting in the technical review and preparation of approvals and licences under the Environmental Protection and Enhancement Act (EPEA) and the Water Act. The position will confirm/assess the environmental impacts of proposed industrial and municipal operations/facilities, water diversions and water body disturbances within the Lethbridge District. The position will recommend limits and monitoring requirements for the control and management of substance releases into the environment. The position also represents the district on internal/external committees and provides information and advice to assist and expedite compliance and abatement activities. The work is performed within the terms of reference provided by EPEA and the Water Act as well as provincial or national standards and guidelines for the protection of the environmental and human health.

[Back to top](#)

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Responsibilities and Activities

(Each end-result/responsibility shows what the job is accountable for, within what framework and what the added value is.)

1. **Ensures effective management and control of substance releases into the environment through the review of applications and assisting in preparation of approvals and the review of registrations submitted under EPEA for industries and municipalities within the region. The approvals and registrations set the terms and conditions for compliance with legislated requirements.**

Activities:

Provides technical review of approval applications and registration submissions and Statements of Concern to assess/confirm the environmental impact/potential impact of materials generated by the activity and applicant-proposed actions to address substance releases.

Coordinates input from internal and external specialists in air, water, noise, groundwater, to determine impacts on various environmental media. Meets with applicants to clarify the proposed activity, to review and consult on outstanding issues, types of information needs, and to negotiate acceptable terms and conditions.

Researches scientific literature and practices within other jurisdictions to develop approval standards for releases for which there are no Alberta standards/guidelines in place.

Assists in preparation of approvals reflecting the requirements based on the assessment of all relevant environmental issues and with consideration of related social and economics issues.

2. **Ensures effective management of water resources through review of surface and/or ground water applications and notifications submitted under Water Act legislation. Assists in the preparation of authorizations that are issued in a consistent and timely manner, and ensures that needs of applicants and other stakeholders are met.**

Activities:

Reviews applications for completeness, sends referrals, assists in the preparation of licenses and approval conditions.

Communicates with stakeholders involved in the process including those filing statements of concern.

Coordinates authorizations with other government departments.

Advises the designated director of any potential deviations from established objectives, policies and advise of any major environmental issues.

Manages and coordinates annual water use returns.

3. Supports continuous improvement initiatives for abatement issues (i.e. activities/actions in situations where problems have occurred or are occurring and where enforcement action is not considered appropriate).

Activities:

Reviews summary reports on monitoring data required by approvals, conducts facility inspections to ensure that any air, soil and/or water quality/emission problems are identified and addressed in a timely, consistent and economic manner.

Meets with industry, municipal officials, and individuals to influence strategies and provide assistance for improvement of their environmental performance.

Provides assistance to expedite regulatory processes.

4. Represents regional interests and issues thorough participation on internal and external review teams/committees, and provides technical assistance and input to public hearing and appeal processes.

Activities:

Works with industry and the general public to provide information and to develop and maintain awareness of regional issues related to assigned activities.

5. Assist in the development of regional/departmental expertise on specific activities.

Activities:

Participates on the Lethbridge Approvals team by providing input on various air, water, waste and engineering issues to identify and minimize the potential risks to human health, safety, property and the environment.

Confirms information submitted by industry hired consultants in support of proposals are relevant, accurate and supported by current scientific knowledge/principles, as requested.

Scope

(Illustrates what internal or external areas the job impacts, and the diversity, complexity, and creativity of the job.)

Approvals that the engineer contributes to directly impact industry and municipal operations/activities by establishing terms and conditions for the release of substances into the environment.

Approvals that the engineer contributes to establish conditions that regulate potential impacts on human health and environmental pollution.

Impact of the work of the district approvals team has considerable financial consequences to the industry/municipality involved often by providing cost effective emission control alternatives.

The work impacts stakeholders including other departments, environmental/community groups and the general public.

Work is performed within accepted scientific principles, legislation, regulations, policies and with applicable guidelines.

The engineer coordinates input/resources from a wide range of technical and professional resources to address specific issues.

Work involves considerable interaction within the approvals team and with industry and municipal contacts to negotiate release management strategies, clarify requirements and provide advice to improve environmental performance; position also has frequent interaction with Departmental specialists and management to seek specialized input or to provide regional perspective and with other agencies (e.g. Infrastructure, Environment Canada and EUB)

The engineer will obtain, through this work, the ability to apply scientific principles/theories to varied situations with consideration for policy, economic, legal and social impact of actions taken.

Knowledge, Skills and Abilities

(Diplomas, degrees and the most important knowledge factors, skills and abilities including knowledge about practical procedures, specialized techniques, etc.; analytical and conceptual skills and abilities; and skills needed for direct interaction with others. Specific training if it is an occupational certification/registration required for the job.)

[Back to top](#)

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Must have a B.Sc. in Engineering.

Basic knowledge of air, water and land quality issues and engineering principles.

Basic knowledge of air pollution control technology and principles.

Basic knowledge of water pollution control technology and principles.

Basic knowledge of waste management technology and principles.

Basic knowledge of industrial process operations and equipment.

Familiarity with plume dispersion modelling.

Familiarity with source and ambient air monitoring.

Basic knowledge of Environmental Protection and Enhancement legislation and regulations.

Basic knowledge of Water Act legislation and regulations.

Ability to communicate technical information/concepts including standards and requirements to both technical and non-technical people.

Proficient computer skills.

Knowledge and understanding of personal safety and hazard/risks associated with the operations of facilities.

Eligible for membership in APEGGA.

Contacts

(Main contacts of this position and the purpose of those contacts.)

Approvals team members – learn and gain experience from more senior engineers and assist in preparing and administering the approvals and licenses

Internal and external committees – provides information and assist more senior engineers in providing advice to assist with industry compliance and abatement activities

Applicants (industrial and municipal) – provides information and assist more senior engineers in influencing strategies to improve environmental performance

Consultants, general public, Federal Government and other Provincial Governments, AENV staff, etc.

Supervision Exercised

(List position numbers, class titles, and working titles of positions directly supervised.)

Position does not supervise others.



Last Review / Update: 2016-03-11