

Public (when completed)

Common Government

Ministry

Transportation and Economic Corridors

Describe: Basic Job Details

Position

Position ID

Position Name (30 characters)

Bridge Technologist

Current Class

Technologies 6

Job Focus

Supervisory Level

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

Employee

Employee Name (or Vacant)

Organizational Structure

Division, Branch/Unit

☐ Current organizational chart attached?

Supervisor's Position ID

Supervisor's Position Name (30 characters)

Supervisor's Current Class

Design: Identify Job Duties and Value

Changes Since Last Reviewed

Date yyyy-mm-dd

Responsibilities Added:

Responsibilities Removed:

Job Purpose and Organizational Context

Why the job exists:

Working within the current standards, funding policies, and program guidelines, the Senior Bridge Technologist is responsible for assisting the Bridge Manager in the development, delivery and monitoring of the bridge construction, rehabilitation and maintenance programs within the Southern Region. This position engages Consultants and Contractors to perform inspections, construction, rehabilitation and maintenance, in a timely and cost effective manner

on various bridge structures in the Southern Region. The purpose is to provide a safe and well-maintained bridge infrastructure to the traveling public.

Responsibilities

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

1. Oversees the delivery of the Bridge Maintenance Program on the Provincial Highways

- Reviews any Level I or Level II, Bridge Maintenance Inspections for maintenance items and schedules the repairs.
- Develops plans or repair procedures to site specific conditions for 50 to 150 projects a year.
- Reacts to emergency repair situations for the Department's Bridge infrastructure.
- Uses a variety of delivery methods to complete the work including preparing Bridge Maintenance Authorizations for local Highway Maintenance Contractors (from \$100 to \$300,000) and preparing working with consultants to deliver work through publicly advertised tenders for work estimated to cost \$100,000 or more.
- Provides technical information to the Regional Environmental Coordinator to support obtaining any necessary environmental approvals from external agencies, for each project.
- Prepares a cost estimate, completes negotiations for quote (from the Contractor) and submits them both to the Bridge Manager for approval.
 - Initiates the funding approval process by completing the necessary forms for signatures.
- Attends any program meetings.
- Provides regular updates to the Bridge Manager.

2. Engage Engineering Consultants to provide supervision and technical answers for a variety of maintenance projects

- Defines the scope of the work and prepares the Terms of Reference for Consultant Agreements or Regional Service Agreements.
- Oversees the Consultant completing the Level 1, Bridge Inspection program in the Region.
- Monitors the performance of the Consultant and acts as the Department's first contact for the contract administration.
- Provides any written performance evaluations of the Consultant.

3. Contract Administration

- Monitor the Contractor's work including traffic accommodation and environmental controls.
- Check for compliance to the specifications.
- Liaise with the Contractor to provide solutions to engineering and logistical problems.
- Approves work orders in PMA-Maintenance, verifies quantities and initiates payment procedures.
- Reviews and approves progress estimates and invoices prepared by consultants.
- Completes the final inspections for compliance.

4. Assist in the delivery of other Regional Bridge Programs

- Assists other Regional Technologists and Engineers in the delivery of the Rehabilitation and Construction Programs for provincial highways.
- Liaise with both internal and external agencies on bridge related matter.

5. Provides assistance to External Stakeholders

- Provide technical drawings, technical advice and file information to the Municipalities to assist in the delivery of their local road bridge program.
- Provide file information and review utility line installation approvals near bridge structures.

Problem Solving

Typical problems solved:

This position assists in the delivery of the bridge maintenance and bridge rehabilitation programs for the Southern Region. The technologist is responsible for defining the scope of the work and engaging a contractor and/or consultant to complete it. Most Bridge Maintenance projects are given to the local Highway Maintenance Contractor with the technologist providing plans and specifications to the Contractor. Sufficient and innovative technical knowledge of repair procedures and how to oversee the work is essential. The number of bridge maintenance projects each year range from 50 to 150 sites (with an individual cost of up to \$300,000). Timing the repairs to have the least impact on the

public and organizing dozens of projects at different stages of assessment, tendering and construction is required. Liaising with all interested parties and stakeholders, including the Department of Fisheries and Oceans and Alberta Environment, utility companies, and the public is required for each site. The position also works with engineering consultants to solve issues during the design of our bridge rehabilitation projects.

A strong civil engineering background and extensive experience is required to oversee the design, construction, and maintenance activities that are contracted externally to industry engineering and construction partners. The position requires knowledge and expertise in all areas of earthworks, structural, and project management for civil infrastructure projects and oversees all phases of projects from preliminary engineering to construction completion of the work. The duties related to this position have a high degree of impact and influence on highway operations and public safety. This position has direct authority over the day to day activities for delivery of capital rehabilitation and new construction. Impacts of change on the project(s) with respect to cost and schedule to the overall project that would be presented to the Bridge Manager and/or Executive Director for final decision

Types of guidance available for problem solving:

While established practices, guidelines, specifications, and policies are referenced, there is considerable variety in the problems encountered and their complexity varies greatly. Evolving practices, lessons learned, and new materials must be combined with technical creativity and innovative solutions in the daily delivery of the linear infrastructure capital programs. This position has considerable freedom to act, basing decisions on engineering principles and fiscal responsibilities. Some decision making is collaborative with input from contractors, consultants, and senior manager. Project management principles, contract law, Department specifications, and the Technical Standards Branch are all resources at the disposal of the incumbent.

Direct or indirect impacts of decisions:

This position has the ability to influence the outcome of the direction of the projects on which they are engaged, take responsibility for the outcomes of the project delivery and partnering initiatives with industry, and overall day to day management of the project(s) on which they are engaged. The ability to problem solve and make informed decisions in a timely manner will have direct impacts on the ability to deliver projects on time and within the program budget. This may also have lasting impacts on relationships with local stakeholders, First Nations, regulatory agencies, etc.

Key Relationships

Major stakeholders and purpose of interactions:

Contractors, consultants, landowners, homeowners, utility companies, environmental agencies, interest groups, highway users, municipal governments, provincial government - MLAs, Minister's office, other GOA ministries, federal government ministries and agencies and the general public.

Required Education, Experience and Technical Competencies

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

If other, specify:

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

Must have a good understanding of the bridge inspection program, the Specifications for Bridge Construction, contract preparation, tendering and administration and a technical and practical understanding of how to construct, rehabilitate and maintain the various types of bridge and culverts in the Region. Creativity and innovation is required to provide practical repair solutions.

A good knowledge on the application of various repair materials including wood, concrete, steel, adhesives, coatings and sealers is required. Effective communication, both written and oral is required. Skills in word processing, structural analysis, hydrology analysis, geo-technical analysis, drafting, surveying and people management are an asset.

An understanding of the following regulations are also an asset: Occupational Health and Safety Act, Bridge Size Culverts and Design and Drafting Guidelines, Highway Geometric Design Guide, Standard Specifications for Highway

Construction, Alberta Environment's Code of Practice for Water Crossings,

Some media and public contact and a valid driver's license are also required.

This position requires a civil engineering technology diploma and several years of engineering experience.

Behavioral Competencies

Pick 4-5 representative behavioral competencies and their level.

Competency	Level					Level Definition	Examples of how this level best represents the job
	A	B	C	D	E		
Systems Thinking	☐	☒	☐	☐	☐	Considers inter-relationships and emerging trends to attain goals: • Seeks insight on implications of different options • Analyzes long-term outcomes, focus on goals and values • Identifies unintended consequences	Needs to consider their role and projects in the broader context of the Southern Region bridge program. Evaluation of the options both during design and construction and consider the short term (1-3 years) impact to the program and the long term (5-30 year) impacts to operations of the infrastructure. Reviewing cost benefit analyses completed by the contractor and recommending a suitable option based on lifetime costs as opposed to capital cost alone. Review and recommend infrastructure options based on intended use and capital cost. Incorporate lessons learned on the projects in which they are engaged.
Creative Problem Solving	☐	☐	☒	☐	☐	Engages the community and resources at hand to address issues: • Engages perspective to seek root causes • Finds ways to improve complex systems • Employs resources from other areas to solve problems • Engages others and encourages debate and idea generation to solve problems while addressing risks	The nature of construction projects often requires creative solutions to resolve issues. This may include researching topics, contacting industry experts, outside of the box thinking, etc. Liaise with the public and consultants in support of the Department's positive public image. Work with Alberta

			Environment to ensure that the legislative requirements are met with respect to reclamation and close out requirements.
Drive for Results	☐ ☒ ☐ ☐ ☐	Works to exceed goals and partner with others to achieve objectives: • Plans based on past experience • Holds self and others responsible for results • Partners with groups to achieve outcomes • Aims to exceed expectations	Ensures that lessons learned are incorporated on the projects under their supervision. Work with external stakeholders to ensure that mutual concerns are addressed. Deliver projects within the approved budget, on time, and employ sound project management principles to guard against predatory claims against the Province.
Build Collaborative Environments	☐ ☒ ☐ ☐ ☐	Facilitates open communication and leverages team skill: • Leverages skills and knowledge of others • Genuinely values and learns from others • Facilitates open and respectful conflict resolution • Recognizes and appreciates others	Work collaboratively with highway maintenance contractors, engineering consultants and other Department staff to successfully delivery bridge maintenance and construction projects. Work with Alberta Justice and Alberta Environment to ensure that Capital Projects are delivered in a manner that is consistent with the applicable law, standards and specifications for the Government of Alberta and Government of Canada as is applicable.

Benchmarks

List 1-2 potential comparable Government of Alberta: [Benchmark](#)