

INSPECTION POLICIES & PROCEDURES

Requirements for Certification and Re-Certification



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Inspector's Role and Responsibilities

- Identify safety-related deficiencies.
- Take appropriate action (immediate if hazard or risk of failure).
- Perform a thorough inspection.
- Accurately determine the condition of the bridge components.
- Rate the bridge elements in accordance with established criteria (BIM Manual).
- Identify deficiencies and recommend appropriate and timely maintenance.
- Properly document required items on the appropriate inspection form.
- Provide additional documentation to back up ratings and maintenance recommendations.
- Verify, update or collect necessary inventory information.

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Inspector's Skills

- Able to recognize safety-related deficiencies.
- Be decisive in taking appropriate action.
- Able to accurately determine the condition of bridge components.
- Understand the rating system.
- Know the appropriate ratings for the full range of conditions encountered.
- Able to recognize maintenance requirements and make appropriate maintenance recommendations.
- Have written communication skills to produce a proper inspection report.

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Inspector Classifications

Bridge Inspectors are classified as Class A or Class B and are certified to carry out inspections of bridge structures on public roads as follows:

Class A

Qualified to perform a Level 1 inspection on all major bridges, standard bridges, culverts, sign bridges and watercourse training structures (all structure types)

Class B

Qualified to perform a Level 1 inspection on standard bridges, culverts and watercourse training structures only.

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Class B Certification Requirements

High School Diploma or equivalent education and experience acceptable to AT are required

The certification process is **5** Stages: (updated March 22, 2016)

Stage 1:

Successful completion of Alberta Transportation Class B BIM Training Course (5-day course – 70% average score required).

Stage 2:

Successful completion of AT BIM Field Training Course (3-day “Boot Camp”) or AT approved equivalent. Field Trainer recommendation is required).

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Class B Certification Requirements

Stage 3:

Successful completion of the mentorship program.

- Mentor is Class A - or Class B with a minimum of 9 years of certification and approved by AT.
- Inspect 5 different structure types with a mentor
- Mentor selects training sites – a variety of types – Minimum 75% of sites with max. Structural Condition Rating of 45%. Must be accessible.
- Complete min. 25 training sites under mentor if previously completed AT Field Training – OR –
- Complete min. 35 training sites under mentor if previously completed AT approved equivalent Field Training course.
- Completed within 2 years-otherwise +10/year.

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Class B Certification Requirements

- “Letter of Recommendation” from mentor
- Provide pdf copies of training inspections with mentor comments and a Summary Spreadsheet

Stage 4:

- Certification exam (min. 75% score required)

Stage 5:

- Test inspections at 3 sites selected by AT – completed in 1 day and using blank forms.
- Sites are previously benchmarked by AT representative and reviewed for acceptability by AT

(Stages 4 and 5 can be done in reverse order).

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Class B Certification Requirements

If failure of any stage of the process, then:

- One chance to redo that stage.
- Two failures of any stage requires a process to be re-started at Stage 1.

Certification after all 5 stages have been successfully completed and with approval from The director of Bridge Engineering.

Certification is valid until the next certification renewal date – normally 3 years.

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Class B Re-Certification Process

- Requires active involvement in BIM and acceptable performance
- In order to be re-certified, inspectors must meet one of the following criteria:
 - Performed minimum average rate of 2 BIM inspections per month during a previous 3-year period – or –
 - Performed a minimum average rate of 1 BIM inspection per month during the previous 3-year period and have been active in the management, design, or construction of bridges – or –
 - Acted as a reviewer for min. avg. rate 2.5 inspections/month OR Department reviewer for a min. avg. rate of 5 inspections/month during a previous 3-year period, and active in management, design, and construction.

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Class B Re-Certification Process

- Inspector status is reviewed by AT every 3 years
- Decision on re-certification is made by AT
- Assistance from Regional bridge staff as required
- Inspectors meeting requirements will be re-certified and notified by AT
- Inspectors not meeting requirements will be asked if they intend to maintain certification. If so, a 3 member AT panel will review the inspector's status and make recommendations to the Director of Bridge Engineering.
- Panel may develop a plan for the inspector – typically writing re-certification exam and 5 test sites

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Levels of Inspection

- All formal inspections in Alberta must be performed by a certified inspector
- Most bridge structures can be visually inspected by a qualified inspector on a routine basis. (Level 1)
- Some structures or their components will require a specialized inspection (Level 1.5 or 2) in order to:
 - accurately determine their condition
 - gather additional information
 - access components that are not fully accessible during routine Level 1 inspections

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Levels of Inspection

Level 1 Inspection

- A general inspection
- Primarily visual, completed without use of specialized equipment or tools
- Requires completion of the Level 1 BIM inspection report
- Use of basic tools and equipment

Level 1.5 Inspection

- Level 1 visual inspection but within arms reach of all bridge elements using a manlift, snoopers or other specialized access equipment and traffic control.
- Usually select major bridges with elements not visible/accessible in Level 1
- Completed by Certified CI. A inspector

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Levels of Inspection

Level 2 Inspections:

- In-depth inspection of culverts, standard, major, or sign bridges.
- Completed by Certified CI. A inspector (exception is SBM).
- Completion of appropriate Level 2 inspection report (e.g. SBM, TCR, CDK) and Level 1 report.
- Use of specialized knowledge, equipment, tests, or procedures
- Generally, requires traffic control (exceptions might be TCR, SBM)

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Inspection Frequency

Level 1 inspections performed on all bridge structures on a cycle not exceeding:

- All structures located on roadways designated as Level 1 or Level 2 in accordance with the Provincial Highway Service Classification – every 21 months.
- All structures located on roadways designated as Level 3 or Level 4 in accordance with the Provincial Highway Service Classification – every 39 months.
- Major bridges on local roads - 39 months.
- Standard bridges and culverts on local roads - 57 months.
- All new structures – as part of final construction completion.
- After significant maintenance or rehabilitation.
- Frequencies intended to provide benefit of inspecting during different seasonal conditions.

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Inspection Frequency

- In special circumstances (park road - summer access only) Department may modify frequency.
- A shorter cycle may be appropriate depending on:
 - age of the structure.
 - traffic characteristics.
 - known deficiencies.
 - inaccessibility of a component or element.
- If a shorter cycle is necessary, make a recommendation in "Special Comments For Next Inspection" box.
- Reviewer will flag and notify AT if in agreement
- AT will change inspection cycle if in final agreement
- A date beyond the next standard cycle date will not be accepted by the system.
- Level 1.5 and Level 2 inspections on a prescribed cycle or an "as required" basis.
- Refer to BIM Manual – Section 2.5 for more information

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Training of Inspectors



- Technical Services Branch manages the delivery of the BIM Bridge Inspection Courses and the BIM Class B Field Training Course (boot camp)
- Regions responsible for field training Department Staff
- Non-Department staff are responsible to arrange for additional field training after completing 3-day BIM Field Training Course by engaging an appropriate mentor (Stage 3 Mentorship program described earlier)

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Responsibility for Inspection

Technical Services Branch

- Develop and manage the BIM System.
- Develop and monitor standards, policies and procedures.
- Perform audit inspections with assistance from Regions as required
- Provide technical support to Regions.
- Maintain and oversee updating of inventory databases.
- Refer to Section 2.2 and 2.4.1 for further information

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Responsibility for Inspection

Regions

- Manage inspection programs for Provincial Roads and major bridges on Local Roads through BIM inspection consultant.
- Carry out ad hoc inspections.
- Arrange for specialized inspections by others.
- Review and accept inventory updates.
- Review and accept inspection reports.
- Initiate appropriate action where deficiencies are identified.
- Provide technical support to Local Road Authorities as resources permit.

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Responsibility for Inspection

Local Road Authorities

- Manage BIM inspection program for Standard bridges and Culverts on local roads.
- Control and manage the bridge structures in their jurisdictions.
- Print forms and complete scheduled Level 1 inspections on standard bridges and culverts (in-house or consultant delivery).
- Monitor all bridge structures as required.
- Hazardous or structural element concerns (rated 2 or less) are reported to LRA only and are no longer reported to the Regional Bridge Manager
- Perform maintenance.
- Refer to Sections 2.3 and 2.4.2 for further information.

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Responsibility for Inspection

All Inspectors

- Inspectors must follow established guidelines and reporting procedures to ensure that:
 - Proper action is initiated when safety-related concerns are identified.
 - Information is reported in a systematic and organized manner.
 - Proper expertise is applied to inspection and maintenance.
 - Follow-up is done for maintenance recommendations.

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Responsibility for Inspection

All Inspectors

- Use the appropriate BIM report for inspections.
- Carry blank forms for possible structure changes.
- Assign ratings according to BIM system.
- Provide ratings that are consistent with explanations and supporting documentation.
- Gather sufficient information (dimensions, material types, etc.) to initiate structure change when encountered.
- Verify or revise inventory data on the inspection form.
- Provide missing inventory data.

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Responsibility for Inspection

All Inspectors

- Condition ratings of 4 or less the inspector must
 - Provide an explanation of the condition.
 - Supplement with a photo of condition
- Condition ratings of 3 or less the inspector must;
 - Provide an explanation of condition.
 - Provide photos (also sketches/measurements if needed).
 - Make appropriate recommendation for maintenance (include quantities).
(a decrease in the next inspection date might be recommended).

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Responsibility for Inspection

All Inspectors

- Hazardous conditions or structural load-carrying elements rated **2 or less** on structures managed by the Department must be reported within 48 hours to the Regional Bridge Manager and the Bridge Preservation Specialist.
- Hazardous conditions or structural load-carrying elements rated **2 or less** on structures managed by a Local Road Authority must be reported to the LRA only, within 48 hours.
- Rating of 1 on an element critical to the safe operation of the bridge, take immediate steps to close or restrict traffic on the structure and provide appropriate notification.
- Report any deficient signage to the appropriate road authority as soon as possible.

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Responsibility for Inspection

All Inspectors

- Send completed inspection forms with all supporting documentation to Department's BIM consultant for review and entry of inventory updates and inspection data into BIS.
- Inspection reports will be returned to the inspector if requirements are not met.
- Inspector must revise report and resubmit to the BIM consultant.
- Inspector should contact the BIM consultant or the Bridge Manager if there are concerns or questions about the review process.
- Monitor and maintain certification.

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Certification Process

Following is the link to the Certification and Re-Certification Process for bridge inspectors:

<https://open.alberta.ca/publications/bridge-inspection-and-maintenance-bim-system-inspector-certification-process>

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Questions?

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